SAI SANJAYSURANENI
ADVOCATE

#56-4-25, 3rd Floor, Thyagarajan Complex,
High School Road, Patamata,Vijayawada, Andhra Pradesh -520010.
MOBILE: +91 9866182837, E-Mail: suraneni.sanjay@gmail.com

To

The Secretary,
Hon'ble Telangana State Electricity Regulatory Commission,
4th Floor, Singareni Bhavan, Red Hills, Hyderabad – 500 004.

Represented Sir/Ma'am,

We are writing to you on behalf of our client, Bharti Airtel India Limited, in pursuance of the Public Notice dated 21.12.2022 issued by this Hon'ble Commission. We are filing the objections in O.P. No. 81 of 2022. We are herewith enclosing the copy of the objections along with attachments. It is submitted that we have also submitted a copy of the Southern Power Distribution Company of Telangana Limited physically and the acknowledgment of receipt is enclosed along with the objections.

We hereby pray this Hon'ble Commission to take on record the objections filed and kindly provide us with an opportunity of making oral submissions through virtual mode. The link for the hearing may be sent to us on suraneni.sanjay@gmail.com.

Thanking you,

Sanjay Suraneni,
Advocate on behalf of Bharti Airtel India Limited

BEFORE THE HON'BLE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION, SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited

…Petitioner

And

M/s Bharti Airtel Ltd.,

Represented by its Head – Legal & Regulatory,

Mr. D. Pradeep Reddy, S/o Sudershan Reddy,

Having its registered address at Airtel Center,

Plot No.16, Udyog Vihar, Phase IV, Gurugram-122015.

Having its local office at Splendid Towers, Begumpet,

Hyderabad 500016.

....Respondent

OBJECTIONS, SUGGESTIONS AND SUBMISSIONS ON BEHALF OF M/s BHARTI AIRTEL LIMITED PURSUANT TO THE PUBLIC NOTICE DATED 21.12.2022

Though its Counsel:

Advocate Sai Sanjay Suraneni

Email : suraneni.sanjay@gmail.com

Phone: 9866182837

BEFORE THE HON'BLE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION, SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited

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RUNNING INDEX

	Material Papers	-	-	**-**
4.	Copy of Telangana's ICT Policy for FY 2021-2026		30.01.2023	**19-69**
5.	Copy of TRAI report on "Recommendations on Use of Street Furniture for Small Cell and Aerial Fiber Deployment" dated 29.11.2022	29.11.2022	30.01.2023	**70-213**
6.	Copy of G.O.M.S No.6 issued by Government of Andhra Pradesh	16.07.2021	30.01.2023	**214-230**
7.	Copy of IT/ITES policy of Government of Maharashtra	2015	30.01.2023	**231-265**
8.	Copy of Maharashtra State Electricity Regulatory Commission's order in Case No 322 of 2019	30.03.2020	30.01.2023	**266-1018**
9.	Copy of the Circular Order No.323 issued by Maharashtra State Electricity Distribution Company Ltd.	03.04.2020	30.01.2023	**1019-1093**
10.	Copy of National Tariff Policy, 2016	2016	30.01.2023	**1094-1131**
11.	Copy of electricity consumption details by M/s Bharti Airtel Ltd in Telangana from April 2022 to November 2022		30.01.2023	**1132-1133**

Date:30.01.2023

Hyderabad

Counsel for the Respondent

BEFORE THE HON'BLE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION, SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited

…Petitioner

And

M/s Bharti Airtel Ltd.

…Respondent

Name & full address of the Objector with contact number (Whatsapp & Email ID)	Brief details of view(s)/objection(s)/suggestion(s)	Objections against Proposals of	Whether a copy of objections & proof of delivery atthe Licensee's office enclosed	Whether the objector wants to be hard in person through video conference
M/s Bharti Airtel Ltd., Represented by its Head – Legal & Regulatory, Mr. D. Pradeep Reddy, S/o Sudershan Reddy, Having its registered address at Airtel Center, Plot No.16, Udyog Vihar, Phase IV, Gurugram-122015. Having its local office at Splendid Towers,Begumpet, Hyderabad 500016. Contact Number: +91-7022590299, Email	Suggestion/Objection to revise the tariff towards telecommunication towers and categorise the telecommunication towers under LT III (A) tariff category i.e., the Industry (general) tariff category under the Telangana UCT Policy 2021-2026, as the same would facilitate affordability of telecom services to the general public and bridge the digital divide	Enclosed	Yes	Yes, the Objector would like to make oral submissions through video conference.

ID:Pradeep.Reddy@airteI.com For the purpose of service of summons, court process and notices is as mentioned above and also that of his counsels Sanjay Suraneni, having office at Flat No.101, 102, Saai Priya Apartments, 6-3-663/7/6, Jaffar Ali Bagh, Somajiguda, Hyderabad 500 082. Email : suraneni.sanjay@gmail.com Phone: 9866182837				

BEFORE THE HON'BLE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION, SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited

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And

M/s Bharti Airtel Ltd.,
Represented by its Head – Legal & Regulatory,
Mr. D. Pradeep Reddy, S/o Sudershan Reddy,
Having its registered address at Airtel Center,
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Having its local office at Splendid Towers, Begumpet,
Hyderabad 500016.

....Respondent

OBJECTIONS, SUGGESTIONS AND SUBMISSIONS ON BEHALF OF M/S BHARTI AIRTEL LIMITED TO THE PUBLIC NOTICE DATED 21.12.2022

1. The present objections, suggestions and submissions are being filed on behalf of Bharti Airtel Limited in reply to the Public Notice issued by Telangana Electricity Regulatory Commission dated 21.12.2022.

2. That this Hon'ble Commission has issued the Public Notice dated 21.12.2022 (**'Public Notice'**) inviting objections/submissions on the Aggregate Revenue Requirement ("**ARR**") & Tariff Proposals for Retail Supply Business for Financial Year 2023-24 proposed by Co-Operative Electricity Supply Limited,

Sircilla in O.P. No. 79 of 2022, Northern Power Distribution Company in O.P. No. 80 of 2022 and Southern power Distribution Company of Telangana Limited in O.P. No. 81 of 2022 and submitted to this Hon'ble Commission for consideration.

3. It is submitted that our company Bharti Airtel Ltd. (**'Airtel'**) is a global communications solutions provider with over 491 Mn customers in 17 countries across South Asia and Africa. Airtel is one of the largest players in the Indian Telecom Sector with diversified operations in Telecom Infrastructure, Equipment, Mobile Virtual Network Operators (MNVO), White Space Spectrum, 5G, Telephone Service Providers and Broadband. Airtel ranks amongst the top three mobile operators globally and its network covers over two billion people. Airtel is India's largest integrated communications solutions provider. Airtel's retail portfolio includes high speed 4G/4.5G mobile broadband, Airtel Xstream Fiber that promises speeds up to 1 Gbps with convergence across linear and on-demand entertainment, streaming services spanning music and video, digital payments and financial services. For enterprise customers, Airtel offers a gamut of solutions that includes secure connectivity, cloud and data center services, cyber security, IoT, Ad Tech and CPaaS (Airtel IQ)

4. It is submitted that the Government of India has granted infrastructure status to the telecom tower provided industry in the year 2012 to boost the development of telecom infrastructure in India. It is submitted that over the last seven years,

the Indian Telecom Tower industry has grown significantly by 65%. The number of mobile towers increased from 400,000 in 2014 to 660,000 in 2021. Similarly, the number of Mobile Base Transceiver Stations have grown rapidly by 187% and increased from 800,000 in 2014 to 2.3 mn in 2021. Rural tele-density jumps from 44% in March 2014 to 58% in October 2022. The telecom sector continues to play a leading role in successful implementation of various Government programmes like Digital India, Make in India, and development of Smart Cities. These programs and initiatives present plethora of opportunities for the telecom sector especially for the telecom infrastructure providers as the telecommunication infrastructure is the bedrock for achieving the vision of Digital India.

5. It is submitted that the Information Technology, Electronics and Communications (Promotions) Department, Government of Telangana published ICT Policy (**'ICT Policy'**) addressing the current needs of the industry. The Goal of the ICT Policy 2021-2026 is to achieve digital empowerment of every citizen, meaning that every citizen is fully aware of digital opportunities for his needs, and has the wherewithal to access them. A copy of the ICT Policy is filed as **Annexure No.1**.

6. In the said ICT Policy, the State of Telangana has identified eight Focus Sectors such as Life Sciences and Healthcare, BFSI, Computing Systems, Automotive/Mobility, Semiconductors, Energy, Aerospace & Defence, Retail and **Telecom** as sectors with great potential to grow and to adopt digital-based solutions at a rapid pace in the next 5 years.

7. It is pertinent to submit that the Telecom Sector is a foundational pillar and acts as a backbone to the IT Industry. This is because fast internet and leased line connections provided by the Telecom Sector is foundational for smooth functioning and growth of the IT Industry. The ICT Policy as a measure for development of start-up ecosystem also highlights the importance of 5 G Cellular networks which is directly dependent on the telecommunication towers.

8. ICT Policy acknowledges that Hyderabad is one of the first cities in India which has had pilots for 5G communication services done by their telecom partners. That, in future, the State will formulate adequate strategies to enable citizens in both rural and urban locations to use 5G technology. In order to achieve this, the ICT Policy states that "sufficient relaxations and the Right of Way orders will be provided to ease the entry of telecom service providers."

9. Further, the ICT Policy expressly states that the State will provide certain incentives in power, certification, subsidies etc to IT and ITeS Companies to support the IT industry. As stated above, since the Telecom Sector is included within the IT Industry, incentives in power, certification etc should also be provided to the telecom sector. Therefore, it is submitted that industrial tariff should be made applicable to the telecom sector.

10. It is submitted that our company and several others in the Telecom Sector are incurring huge capital expenditure and operational costs in establishing 5G Cellular network. High costs are being incurred by Airtel to cater to the

demand of 5G Cellular networks not only to the IT Industry but also to retail customers in the State of Telangana. One of the main and significant costs is the electricity tariff charged to the telecom towers. Currently, the Telcom towers are charged under the LT II (B) Non-Domestic/Commercial category of tariff. Under the current tariff applicability, the operational costs of telecom towers works out to a substantial amount which makes it difficult for the telecom companies to sustain such infrastructure.

11. It is submitted that the Telecom Regulatory Authority of India in its report titled, "Recommendations on Use of Street Furniture for Small Cell and Aerial Fiber Deployment" dated 29.11.2022, after careful examination of the functioning of the telecom sector and after having considered the vital role being played by the telecommunication and broadband service sector in the economic growth of connected areas and the charges currently raised for providing electricity to telecom sites are very high, as such, has also recommended that it is justified that telecom sites should be provided electricity connection at industrial/utility tariffs. Copy of the report dated 29.11.2022 is filed as **Annexure No. 2**.

12. It is submitted that Airtel currently has 10000 telecom towers in the State of Telangana and Electricity consumption details for the year 2021-2022 are filed herewith as **Annexure No.8.**

13. It is submitted that additionally, enhanced fiberization is a must for 5G services and to achieve the targets fixed by the National Broadband Mission (NBM) of

50 lakh km fiberization, 70 per cent tower fiberization and 50 megabits per second speed of broadband. This would entail heavy capital expenditure, thus, raising the cost of telecom services, leading to a greater digital divide. According to the industry estimates, almost 30 per cent of the operational expense for the telecom towers goes into electricity tariffs, which works out to be a substantial amount, thus, making it crucial for this Hon'ble Commission to categorise the telecom companies under the industrial category, thereby, lowering the burden on the telecom companies which would indirectly lead to facilitating affordability of telecom services to the end customer.

14. It is submitted that the Information Technology, Electronics and Communications (Promotions) Department, Government of Andhra Pradesh vide G.O.MS.No.6 dated 16.07.2021 has notified the "Andhra Pradesh IT Policy 2021-2024" addressing the current needs of the industry. As per the AP IT Policy 2021-2024, the Telecommunications service provider has been defined as:

> *"Telecommunications service provider includes basic telecom service providers (fixed), cellular (mobile) companies, telecom infrastructure companies, Internet Service Providers (ISP) and any other value-added services licensed by Ministry of Electronics and Information Technology (MeitY), Government of India."*

It is further submitted that the AP IT Policy 2021-2024 has expressly included **'Telecom'** within the ambit of IT Industry/IT Projects. Also, that the AP IT

Policy 2021-2024 has expressly mandated under Paragraph 8 (vi) that all IT Companies operating in Andhra Pradesh shall be eligible for industrial tariff towards their power consumption. As stated above, the AP IT Policy 2021-2024 includes the Telecom Sector within the IT Industry, hence, in light of the same, industrial tariff was made applicable to the telecom sector. Copy of the G.O.MS.No.6 dated 16.07.2021 is filed as **Annexure No. 4.**.

15. It is submitted that the Government of Maharashtra, as part of their IT/ITES policy notified the applicability of industrial tariff to the telecommunication towers instead of commercial tariff. It is submitted that the Maharashtra State Electricity Regulatory Commission (MSERC) after taking into consideration the IT/ITeS policy of the Government of Maharashtra specifically categorised Telecommunication Towers in the Industry Tariff vide its order dated 30.03.2020 in Case No. 322 of 2019. In furtherance to the same the Maharashtra State Electricity Distribution Company Ltd. vide Circular Order No. 323 dated 03.04.2020 has revised the electricity tariff for telecommunication towers by placing them in the Industrial Category. The relevant portion of the MSERC order dated 30.03.2020 in Case No. 322 of 2019 on Page 684 and 685 of the said Order are extracted below:

"HIGH TENSION (HT) TARIFF

HT I: HT – Industry

HT I (A): Industry – General *Applicability:*

This tariff category is applicable for electricity for Industrial use at High Voltage for purposes of manufacturing and processing, including electricity used within such premises for general lighting, heating/cooling, etc.

It is also applicable for use of electricity / power supply for Administrative Offices / Canteen, Recreation Hall / Sports Club or facilities / Health Club or facilities/ Gymnasium / Swimming Pool exclusively meant for employees of the industry; lifts, water pumps, fire-fighting pumps and equipment, street and common area lighting; Research and Development units, etc. -

Provided that all such facilities are situated within the same industrial premises and supplied power from the same point of supply.

This tariff category shall be applicable for use of electricity / power supply by an Information Technology (IT) or IT-enabled Services (ITeS) Unit as defined in the applicable IT/ITeS Policy of Government of Maharashtra.

It shall also be applicable for use of electricity / power supply for (but not limited to) the following purposes:

1. *Flour Mills, Dal Mills, Rice Mills, Poha Mills, Masala Mills, Saw Mills;*
2. *Ice Factories, Ice-cream manufacturing units, Milk Processing / Chilling Plants (Dairy);*

3. *Engineering Workshops, Engineering Goods manufacturing units; Printing Presses; Transformer Repair Workshops; Tyre Remoulding/Rethreading units, and Vulcanizing units;*

4. *Mining, Quarrying and Stone Crushing units;*

5. *Garment Manufacturing units*

6. *LPG/CNG bottling plants, etc.;*

7. *Sewage Treatment Plant/ Common Effluent Treatment Plant for industries, and not covered under the HT – PWW category*

8. *Start-up power for Generating Plants, i.e., the power required for trial run of a Power Plant during commissioning of the Unit and its Auxiliaries, and for its start-up after planned or forced outage (but not for construction);*

9. *Brick Kiln (Bhatti);*

10. *Biotechnology Industries covered under the Biotechnology Policy of Government of Maharashtra;*

11. *Cold Storages not covered under HT – Agriculture (Others);*

12. *Food (including Seafood and meat) Processing units.*

13. *Stand-alone Research and Development units.*

14. *Seed manufacturing.*

15. *Dedicated Water Supply Schemes to Power Plants*

16. *Auxiliary Power Supply to EHV/Distribution Substations (but not for construction)*

17. ***Telecommunications Towers*** *"*

A copy of the IT/ITES policy of the Government of Maharashtra is filed herewith as **Annexure No. 5**. A copy of the Maharashtra State Electricity Regulatory Commission's order dated 30.03.2020 in Case No. 322 of 2019 is filed herewith as **Annexure No 6**. A copy of the Circular Order No. 323 dated 03.04.2020 issued by Maharashtra State Electricity Distribution Company Ltd. is filed herewith as **Annexure No.7.**

16. It is submitted that the National Tariff Policy, 2016 in clause 8.3 lays down principles for *"Tariff Design: Linkage of tariffs to cost of services"*. One of the principles specifically states that the tariff should progressively reflect the cost of supply of electricity and suggests that appropriate commissions should take steps to ensure that the tariffs are within 20% of the average cost of supply of electricity. However, the present tariff in the State of Telangana in the commercial category is far more than the average cost of supply, especially for the telecom industry. It is pertinent to reiterate that the telecom infrastructure companies are incurring huge capital expenditure and operational costs to smoothly transition the 5G technology as per the Prime Minister's Gatishakthi Programmee. The high commercial electricity tariffs currently being charged

on the telecommunication towers are only adding to the existing difficulties such as low return on investments and poor revenue realisation in rural areas. Hence, it is the need of the hour for this Hon'ble Commission to review the tariff under the ICT Policy and categorise telecommunication towers under i.e. LT III (A) tariff category i.e. the Industry (General) Tariff Category.

A copy of the National Tariff Policy, 2016 is filed herewith as **Annexure No. 7.**

17. It is submitted that this Hon'ble Commission has ample power under Sections 61,62 and 86 of the Electricity Act, 2003 to revise the tariff for telecommunication towers from Commercial Tariff Category to Industrial Tariff Category.

18. It is submitted that the above stated policies of the Government of Telangana and the Government of India is to enable growth in the IT Industry, not only to attract investments but also in turn to generate employment and grow the infrastructure. Hence, in light of the same it is requested that this Hon'ble Commission may be pleased to consider the present request for change in tariff from Commercial Tariff Category to Industrial Tariff Category.

19. It is submitted that if the Telecommunication towers are not placed in the Industrial Tariff Category it will cause undue loss to the telecom sector and will hinder the development and progress of the telecom sector.

20. It is submitted that each of the objections/suggestions/submission is without prejudice to each other. Airtel craves leave of this Hon'ble Commission to make additional submissions at the time of public hearing.

21. It is submitted that Airtel is filing these objections/suggestions/submissions without prejudice to its rights and contentions under law.

In view of the above, it is humbly prayed that this Hon'ble Commission may be pleased to revise the tariff towards telecommunication towers and categorise the telecommunication towers under the. LT III (A) tariff category i.e., the Industry (General) Tariff Category under the Telangana's ICT Policy 2021 – 2026, as the same would facilitate affordability of telecom services to the general public and bridge the digital divide.

Authorised Signatory for Bharti Airtel Limited

Date: 30.01.2023
Place: HYDERABAD

Counsel for Bharti Airtel Limited

VAKALAT

BEFORE THE HON'BLE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION, SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited …Petitioner

And

M/s Bharti Airtel Ltd. …Respondent

We, M/s Bharti Airtel Ltd., Having its registered address at Airtel Center, Plot No.16, Udyog Vihar, Phase IV, Gurugram-122015. Having its local office at Splendid Towers, Begumpet, Hyderabad 500016, represented by its Head – Legal & Regulatory, Mr. D. Pradeep reddy, S/o. D. Sudershan Reddy, Email : Pradeep.reddy@airtel.com

SANJAY SURANENI

AVANIJA INUGANTI

D PRUDHVI TEJA

ADVOCATES

to appear for me/us in the above case and to conduct and prosecute or defend the same and all proceedings that may be taken in respect of any application for execution of any decree or order passed there in and sign and admit on my/out behalf and compromise petition there in at ay state. I/We empower the above named Advocate to appear in all miscellaneous proceedings in the above suit or matter till all the Decrees or orders are satisfied or adjusted and to obtain the return of documents and draw moneys that might be payable to advocate, to accept on my our behalf service of notices in the suit, application or appeal etc. in any court with regard to the said suit or matter till the final disposal of the same. I/We execute this vakalat as per order 3 rule 4 Civil Procedure Code.

xx

ATTESTATION

I Certify that the contents of this Vakalat are read over explained to the executants in my presence who appeared perfectly to understand the same and signed put the thumb mark on the same in my presence on this the day of January, 2023

HYDERABAD

Date: .01.2023 ADVOCATE

BEFORE THE HON'BLE TELANGANA STATE

ELECTRICITY REGULATORY COMMISSION,

SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited

…Petitioner

And

M/s Bharti Airtel Ltd.

…Respondent

VAKALATNAMA

ACCEPTED

Filed on:

Filed by:

SAI SANJAY SURANENI
AVANIJA INUGANTI
D PRUDHVI TEJA

ADVOCATES

COUNSEL FOR RESPONDENT

Flat No.101, 102, Saai Priya Apartments,

6-3-663/7/6, Jaffar Ali Bagh, Somajiguda, Hyderabad 500 082.

9(A)

తెలంగాణ तेलंगाना TELANGANA
Sl.No. : 619 Date:12-08-2022 Rs.100/-
Sold to: B. Sahoo
S/o: B.C. Sahoo R/o Hyderabad
For Whom: Bharti Airtel Limited,
Splendid Towers, Begumpet, Hyderabad

M. Saritha Devi
AR 799975

M. SARITHA DEVI
LICENCED STAMP VENDOR
LIC. No: 16 – 04 – 1/2005
REN. No. 16 – 04 – 67/2020
H. No.8-3-903/F/1,Opp.Image Hospital ,
Nagarjuna Nagar Road, Ameerpet, ,
HYDERABAD (SOUTH) DISTRICT,
Phone No: 7386965516, 9290118899.

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS THAT I, Shivan Bhargava, Chief Executive Officer (CEO) – Andhra Pradesh & Telangana of Bharti Airtel Limited, a company incorporated under the Companies Act 1956 and having its Registered Office at Airtel Center, Plot No. 16, Udyog Vihar, Phase IV, Gurugram – 122015, Haryana, India (hereinafter, referred to as "the Company") pursuant to the powers conferred one by the Power of Attorney dated January 10, 2022 hereby nominate, constitute and appoint, Mr. D. Pradeep Reddy, S/o. Late. D. Sudershan Reddy, Head – Legal & Regulatory, Andhra Pradesh & Telangana of the Company, so long as he is in the service of the Company, as its true and lawful Attorney (hereinafter, referred to as "the Attorney") to do, execute and perform, for and on behalf of the Company, all or any of the following acts, deeds, matters and things pertaining to Andhra Pradesh and Telangana Circle namely:

1. To pay all taxes, rates, assessments, charges and outgoings whatsoever due and payable or to become due and payable on account of the Company to any Statutory Authorities and to receive refunds thereof.

2. The Attorney by virtue of these presents shall have the power for the purpose(s) mentioned in this Power of Attorney to sign, make, negotiate, execute and do on behalf and in the name of the Company all contracts, agreements, deeds, transfers, assignments, instruments and other things, whatspever, and shall also have the power to renew, vary and discharge all such contracts and agreements and do all things for obtaining a renewal variation and discharge thereof.

True copy

Bharti Airtel Ltd. A.P. & Telangana

9(B)

3. The Attorney by virtue of these presents shall have the power to demand, collect, receive and give effect to bonafide discharge of in the name and on behalf of the Company all debts, advances and claims due to the Company. He shall further have the power to take and use all lawful proceedings and means for recovering the said debts and advances and also to institute, defend, conduct, compromise refer to arbitration, terminate or abandon any such action or other proceedings relating to the property or affairs of the Company or realization of the decrees of the Company or settle any question effecting the Company for all or any of the purposes aforesaid to execute and do such instruments and things thought necessary or expedient in so far as they relate to the supply and/or purchase of goods and / or services by the Company.

4. To take property on lease/license for and on behalf of the company and to execute the necessary lease deed/license deed for and on behalf of the company.

5. To lease out property of the Company and to have lease deeds executed, to realize rent and give receipts and to eject tenants and to take all necessary proceedings and to institute suit/other legal actions in connection thereunder.

6. To make and submit applications/forms/papers and documents for compliance of all applicable legislations and to comply with various applicable Statutory enactments such as Gratuity Act, Provident Fund Act, Shops and Establishment Act, Contract Labour (Abolition) Act 1970, TRAI Act, Indian Telegraph Act 1885, Employees State Insurance Act 1948, The Standards of Weights & Measures Act, 1976 etc. and other legislations applicable to the Company in the ordinary course of business.

7. To make applications for obtaining registration or permission and also to make necessary applications, representations that may be required in the ordinary course of business for the said purpose to various bodies including the following authorities:
   a. Government of India
   b. Department of Telecommunications & allied departments / Bodies / Agencies / MTNL / BSNL etc.
   c. State Governments and State Government Authorities
   d. The Municipal Corporation
   e. The Electricity Boards
   f. The Postal & Telegraph, Telex, Telephones, Fax authorities etc.
   g. Income Tax Authorities
   h. Commercial Taxes Authorities
   i. Customs & Central Excise Authorities
   j. The Reserve Bank of India
   k. Office of the Directorate General of Foreign Trade and
   l. Any other Statutory Authority.

8. To file the appropriate returns and to sign all documents as may be required for the purpose of Service Tax, Income Tax, Sales Tax, Octroi duty, Customs duty or any other duties, taxes and levies whatsoever and to appear before all Service Tax, Income Tax, Sales Tax, Customs and Excise Authorities, Controller of Imports and Exports and other officers and authorities and represent the case of the Company before them and make all petitions, applications in regard to any of the matters enumerated herein.

9. To apply for, obtain and renew all licenses, connections, permits, quotas, sanctions, approvals, permissions, etc. from competent authorities as may be necessary or required for the purpose of carrying on trade and/or business of the Company.

9(c)

10. To institute and defend all legal proceedings, civil, criminal or revenue and to make, sign, execute, verify and register various applications, papers, documents, statements, Writ petitions, affidavits, etc. before any Court or Courts and engage lawyers for representing the case of the company where required and to execute vakalathnamas in their favour and also to revoke such vakalathnamas.

11. To appoint or employ, engage for the Company's transactions and management of affairs, persons in the service of the Company and also from time to time to transfer, re-transfer, re-appoint, re-employ or replace any persons, managers, officers and other employees who may be in the employment of the Company now or hereafter be so employed.

12. To appoint and dismiss agents, sub agents, franchisees, distributors, dealers and sales representatives for such purposes and on such terms as the attorney may think fit.

13. For the better and more efficiently doing, effecting, executing and performing the several acts, matters, deeds and thing aforesaid, the attorney may delegate (subject to such limitations or restrictions as the Attorney may deem fit) from time to time, any of the above mentioned powers to officers of the Company, to be exercised by them individually or jointly. In such a case, the acts of such sub delegate shall be subrogate of acts of the attorney and shall bind the Company.

14. And, generally to do all such other lawful acts, deeds and things usual, necessary or desirable in order to perform any of the aforesaid powers or duties.

PROVIDED THAT this Power of Attorney will cease to have effect from the date it is revoked or shall automatically stand revoked upon the Attorney ceasing to be in the employment of the Company, whichever is earlier.

And the Company does hereby agree that all acts, deeds and things lawfully done by the Attorney shall be construed as acts, deeds and things done by the Company itself on the aforementioned matters and the Company hereby undertakes to ratify and confirm all and whatever its Attorney shall lawfully do or cause to be done for and on behalf of the Company by virtue of the powers hereby given.

IN WITNESS WHEREOF, I, Shivan Bhargava, Chief Executive Officer (CEO) – Andhra Pradesh & Telangana of the Company, on behalf of the Company and by virtue of the above referred Power of Attorney hereunto set and subscribed my hand and signature at Hyderabad on this 30th day of December 2022, in the presence of witnesses.

For and on behalf of
Bharti Airtel Limited

Shivan Bhargava
Chief Executive Officer – Andhra Pradesh & Telangana

"ATTESTED"

G. KANAKALINGESWARA RAO
M.Com., BL
ADVOCATE & NOTARY
G.O. MS. No: 2538
H.I.G-I, Block-5, Flat No. 9
Bagh Lingampally, Hyderabad.

POWER OF ATTORNEY IS ACCEPTED

Pradeep Reddy
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30.12.2022

G. KANAKALINGESWARA RAO NOTARY NOTARIAL Appt. U.T.S. Govt. Hyderabad ADVOCATE & NOTARY

Witnesses:
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Telangana's 2nd ICT Policy

2021 -2026

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Shri KT Rama Rao
Minister of Information Technology Electronics and Communication

Foreword

Information technology has been a major success story in the first 7 years of Telangana. As part of ICT policy 2016-21, we had set a target of doubling the quantum of IT exports in 5 years, and we admirably succeeded in achieving it. Along the way, we set other benchmarks such as encouraging tech innovation and entrepreneurship, providing market-ready tech skills, bringing IT opportunities to Tier-II and Tier-III cities and towns, and delivering technology-led smart governance solutions for the benefits of our citizens.

After 5 years of successful implementation of the first ICT policy, this is a very opportune time to come up with an updated version that is also in tune with the realities we face today. The Covid-19 Pandemic that began in 2020 has brought unparalleled disruption in the world we live in. It is now very clear that post-Covid social and economic recovery will be aided greatly through the process of digitalization. Such a prognosis also provides a tremendous opportunity for the IT ecosystem of Telangana to take a leadership position in the world. Technology companies located in Telangana should become the front-runners with digital tools and solutions relevant to the economic recovery process. Students should have the skills that make them truly ready for the jobs of the future. Young innovators and entrepreneurs should come up with innovative solutions that address the precise pain points that have emerged in the new world order.

The Hon'ble Chief Minister, Mr K Chandrasekhar Rao has always believed that the real test of technology is whether or not it creates a strong public impact.

While the endeavor in the last 6 years has been to become citizen-centric in technology governance, the new policy will go many notches further to benefit the citizens directly through the fruits of technology. The digital divide has become a reality the world over, with those living in rural and remote areas, not having access to devices, and not having a mastery over the English language, repeatedly getting left out. The Covid-19 Pandemic has the potential to further exacerbate this divide. However, as a government, we are very conscious of our responsibility of making the technology world more inclusive. We will strive to ensure the rapid creation of digital infrastructure in every nook and corner of the state, promote digital literacy within every household, and roll out a range of technology interventions that improve the quality of life of every person. Eventually, the goal of the ICT Policy 2021-2026 will be to achieve digital empowerment of every citizen, meaning that every citizen is fully aware of digital opportunities for his needs, and has the wherewithal to access them.

In the past 6 years, Telangana has received many accolades for the adoption of technologies in newer spheres of the public interface and is today recognised as a pioneer in various domains of technology like AI, ML, Blockchain, Data Analytics, Cybersecurity, IMAGE (Animation, Gaming, VFX), Drones, etc. I am confident that we will build upon our successes and continue to be the role-model state for all our stakeholders.

Vision for ITE & C Sector

The Government of Telangana has released the ICT policy of the state in April 2016. The ICT Policy of Telangana was considered as one of the best ICT policies across the country and it led to the launch of several focused sub-sector policies such as Data Center Policy, Open Data policy, AI framework and Electronics policy. The ICT policy has been the guiding document for most of the initiatives, organizations and activities planned by the ITE&C Department, Government of Telangana.

The technology space has transformed considerably over the past five years and even more so in the last year triggered primarily by the pandemic. Considering the below-mentioned factors, we at the ITE&C Department, Government of Telangana feel now is the right time to revamp and launch the new ICT policy.

- The Technology world is dynamic and is constantly evolving and a 5-year period is ideal for us to rejuvenate our goals and approach.
- The Covid-19 pandemic is the new "Y2K" and the digitalisation across sectors driven by the pandemic would accelerate the adoption of technology across sectors.
- The Government of India has launched several schemes and programs aimed at making the country digital and self-reliant. Telangana, as a progressive state, would like to align our efforts and support the nation with these initiatives.
- Benchmarking with the world's leading countries in ICT and adopting from their learnings to leapfrog ahead of competing economies in tech, innovation, and investment attraction.

Digitally Empowered Citizens

Year after year, Telangana has been adjudged as a leader in promoting tech adoption and providing citizens with the best of digital services. However, the Covid-19 pandemic has given us the opportunity to explore digital solutions to the most critical requirements that the citizens have. With the progress that the world is making on the digital front, it is imperative for the state to prepare citizens for this day and age. Equipping citizens with digital skills and supporting them with the required digital infrastructure is going to be the foundation stone for improving the lives of the citizens. The ITE&C department has strategized a multipronged approach to achieve it.

Digital Government

No government service that the citizens would intend to avail would mandate in-person presence unless a physical test or inspection is required. Telangana has set benchmarks for citizen services, leveraging technology to provide contactless, paperless and presenceless citizen services. The government will strive to make the digital transformation, and be more accessible, efficient, and accountable. Officials will be digitally upskilled and smart governance tools will be used to optimize the utilization of resources and enhance service delivery. An omnichannel feedback system will be in place to ensure the service delivery is citizen-centric and decision-making is completely data-driven.

Innovation & Entrepreneurship

Innovation and Entrepreneurship are the backbones for the development of a fast-growing economy like Telangana to increase self-reliability and propel employment generation. Telangana has established world-class infrastructure and organizations over the past 6 years, the prime focus going forward will be to strengthen the ecosystem, develop a skilled talent pool, improve market access, and facilitate a funding environment to make Telangana the hotbed of innovation and start-ups. Hence, Telangana will also have special focus on developing a strong ecosystem for public impact-based start-ups.

ICT as an Industry

Today, Telangana is one of the fastest-growing states in India in terms of GSDP and is a prime destination for IT and Electronics sector establishments. Going forward, Telangana aims to stay the top choice for IT and Electronics sector investments in the country and generate more jobs for the citizens. Developing IT clusters in Tier-II cities will be the key focus in a bid to decentralize development, create employment, and improve standards of living.

ICT For Development

We, at the Government of Telangana, believe that technology's most important impact is to solve the problems of society than being a mere enabler. The COVID-19 pandemic has opened up several opportunities and unmasked the ways in which technology can be used to enhance the living conditions of citizens. The state will leverage technology as a lever to address challenges and develop data-driven solutions in the space of social, environmental, health, education, and livelihood among others.

Focus Areas for 2021-2026

01

IT/ ITeS, Product Development, Engineering and R&D

02

Electronics

03

Innovation & Entrepreneurship

04

Skilling, Upskilling & Reskilling

05

Contactless, Paperless and Presenceless Governance

06

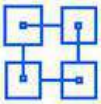
Beyond Digital Infrastructure

07

Beyond Hyderabad

08

Digitally Empowered Citizens



09

Emerging Technologies

10

Cloud-First Policy

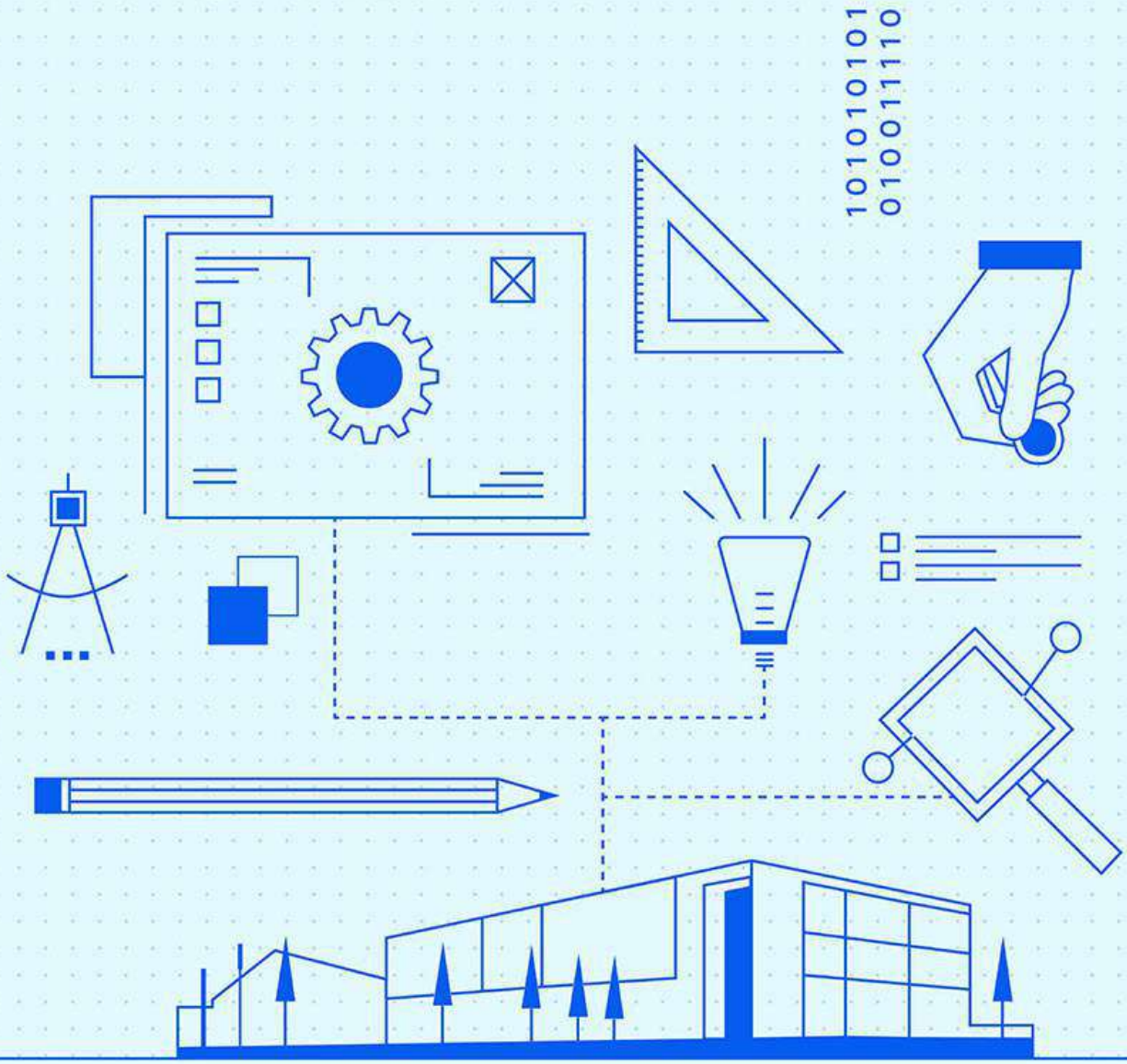
11

Technologies for urban living

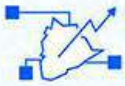
12

ITE&C Department as Tech Enabler

01 IT/ITES, PRODUCT DEVELOPMENT, ENGINEERING AND R&D



TARGETS



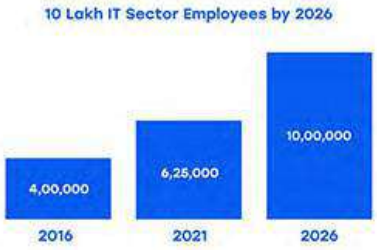
Establish Telangana as the global hub for Product Development, Engineering and R&D

10 Lakh

Increase total direct employment to a 10 Lakh IT Sector jobs by 2026

2x

Double annual IT/ITeS Sector exports to ₹ 3 Lakh Cr. by 2026



Description of pillar

Telangana has evolved as a leader in IT Exports and has become a prime destination for IT/ITeS companies over the last five years. While the focus on the IT/ITeS remains steadfast, Telangana will aim to differentiate itself from competing states and grow as a global hub for Product Development, Engineering and R&D and sunrise sectors to drive the next phase of IT industry growth. Currently, India only hosts about 25% of the world's top 200 Engineering and R&D investors. Telangana currently holds about 12% of India's Product, Engineering and R&D activities, and we see a great opportunity for improvement. Focus on this sector will also enable the state to achieve a multiplier effect on the ICT Sector as the world moving towards a product-led IT economy.

Telangana will also focus on strengthening its Intellectual property output by focusing on strategic fields of study and facilitating research. SMEs will play an important part in the growth of the state's economy and Telangana will support SMEs with business and development.

Strategic Areas of Importance (SAI)

Product Development

Product innovation companies are high-productivity and high-value creators which are critical for any economy in the 21st century. India's product development market is still in a nascent stage despite the availability of low-cost infrastructure and manpower availability. Telangana seeks to be a leader in this space by facilitating IP generation and product development through the initiatives discussed as part of this policy.

Engineering and R&D

The state understands that there is huge potential in attracting investments and generating jobs through specific focus on the Engineering and R&D sectors. In order to make Telangana a leader in this space, the government shall embark on a journey to improve its competency in the necessary reform areas through policy intervention.

Global Capability Centers

Telangana has been an attractive destination for GCCs and has attracted several MNCs and domestic companies to set up their capability centres in the state. The government will focus on further increasing its share in the GCCs coming to India through strategically strengthening the ecosystem and easing the process of entry and doing business.

IT Services

Hyderabad currently has over 6.5 Lakh employees in the IT/ITeS sector, and we would like to sustain the existing base. IT Services is a key component of the existing base. The BPO/KPO segment approximately contributes to 20% of the employee base. While engineering, R&D, product development and GCCs are a focus on expanding the IT sector to new horizons, equal emphasis will be laid upon sustaining the existing base and the IT/ITeS services segment.

The government will facilitate the identified Strategic Areas of Importance through the following initiatives:

Talent Generation: The most important resource required for companies looking to invest in the Product, Engineering and R&D sector would be the availability of skilled talent. Telangana already has an immense pool of trained workforce and will now also focus on creating a research-oriented pool of talent working in the deep technology space. The government will continue collaborating with the industry and the top institutes to co-create the curriculum required for talent in Strategic Areas of Importance.

Promotion of Intellectual Property and Research Output: The state seeks to emerge as the top destination in India that promotes impactful research output that will help improve the lives of citizens in both the urban and rural areas of the state. Research and development in the areas of growing and impactful technologies shall be facilitated through the establishment of a Telangana Research and Innovation Fund.

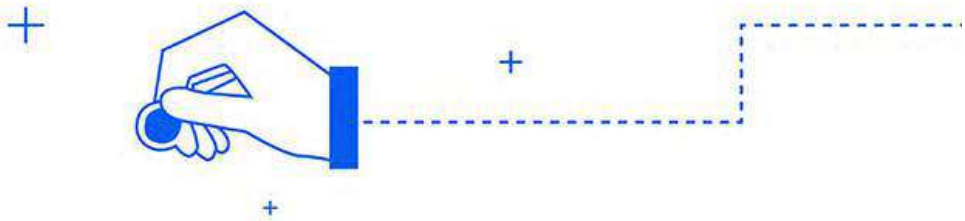
Financial Support and Visibility: Along with the availability of talent, the right environment and physical infrastructure is key to attract R&D establishments in the state. To facilitate this, the state will extend support to R&D centers through incentives being provided to IT/ITeS investors. Ecosystem support will also be provided through RICH to connect with academia and the organisations in the industry. Visibility of the R&D output in the state would also be enhanced through "Go and See Centres" or experience centers set up in collaboration with the industry.

Focus Sectors: While the state would be encouraging work across sectors in IT/ITeS, we have identified eight Focus Sectors that are expected to grow and adopt digital-based solutions at a rapid pace in the next 5 years. The eight Focus Sectors that would be adopting digital/technology-based solutions the most in the next 5 years are: Life Sciences and Healthcare, BFSI, Computing Systems, Automotive/Mobility, Semiconductors, Energy, Aerospace & Defence, Retail, and Telecom.

A conducive ecosystem for investors

Over the last 5 years, Telangana has established a strong network of organizations that would assist companies at various stages in setting up operations in the state. The organizations include the Investment promotion cell for any support during the investment process; TASK for skilling, upskilling and finding the right talent; T-Hub, WE Hub, and TSIC for fulfilling innovation-based requirements and RICH for connect with academia and R&D institutions.

Moving forward, the government will strengthen the infrastructure and ecosystem to produce a seamless landing and operating experience for the investors. The above mentioned ecosystem partners of TASK, RICH, T-HUB, WE-HUB, TSIC, CoEs in Emerging Technologies and the Investment Promotions Cell will work in harmony to improve ease of operations and investments in the state.



Investor Playbook

Telangana has always strived to simplify and smoothen the investment process for investors and as a result, several reputed IT companies have started operations in Telangana. To further ease the process of investment, the state will develop an Investor Playbook with the guiding principles on what the process of investment is and how the government can provide support. The Investment Playbook will be launched with the following details:

Process flow of all the steps involved as part of setting up an office space in Telangana
List of all the potential organizations that the company can collaborate with, the process of engagement, and their value propositions
Best practices identified as part of several investments over the last 5 years
A list of trusted and empanelled vendors that companies can choose for all the common infrastructure requirements

Single Point of Contact for Project Management

Under the ITE&C Department, the Chief Relations Officer will be the single point of contact for any IT/ ITeS entity that wants to establish or expand its presence in the state. The office of the CRO will handhold the investors from registering the company to raising an invoice. The investors will be supported will all the statutory processes and registrations with all the government regulatory bodies and choosing the right facility. The CRO office may provide a dedicated resource for a specific period depending on the complexity and size of the investment.

The Advisory Committee for ICT Policy and Investments in Telangana

The Advisory Committee for ICT Policy and Investments in Telangana has been created to oversee the Development of Engineering, R&D, IT and ITeS development across all thrust areas/ focus sectors.

- Global leaders and senior executives from reputed firms across the various sectors have been chosen to be members of the committee.
- The committee will act as the Business Advisory Committee and will enable the growth of ecosystems in each of the focus sectors that the state will promote.
- A Focus group will be created for each of the verticals under focus.
- The Advisory and Focus groups will also assist CCITI in monitoring and administering the incentive requests from investors.

Special focus on IT SME Sector support

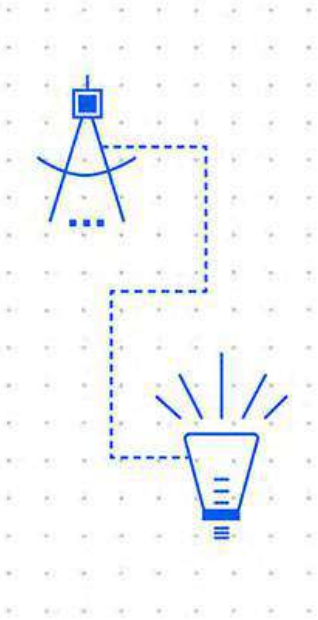
While the IT/ITeS Sector in Telangana has over 6,25,000 employees, it is estimated that over 50% of this employment has been generated by SMEs in the state. Given that SMEs are the backbone for the IT/ITeS sector, it is of paramount importance for us to facilitate their operations.

With the onset of the Covid-19 Pandemic, the SME establishments across the world have taken a major hit. Telangana has provided support for these SMEs to survive the pandemic has also developed mechanisms to keep the support sustained.

1. **Cost Savings:** In order to keep SMEs afloat during the crisis, the government provided financial support to SMEs through rental and talent acquisition subsidies. Space was given in Tier-II and Tier-III cities at no cost for several businesses.
2. **Upskilling Support**: Employees working at SMEs were provided with free upskilling support though TASK during the pandemic to develop the core competencies to improve revenue generation in their sectors.
3. **Government Projects**: Over 20 earmarked Government projects were offered exclusively to SMEs in order to give more business during the dire period when most businesses started facing losses.
4. Global Connect: The Government facilitated the process of finding new customer by connecting SMEs with international trade organisation and embassies. The sector of software exports has especially seen good output in this area.
5. **Digitalisation**: Over a span of a week, more than 1000 kirana stores and SMEs were digitalized in the aspects of internal operations, customer acquisition, payment methodologies and e-commerce capabilities, as an attempt to showcase new opportunities for digitalization.

To guide and coordinate MSME promotion activities in the state, the government of Telangana has already appointed an Advisory Committee on Telangana State IT MSME Promotion with representation from the ITE&C Department and the industry.

The Government has constituted an Advisory Committee on Telangana IT MSME Promotion that will enable experts in the industry to create the required reforms and policy outputs to promote the IT Mimes in the state. The committee will help the growth of Mimes through the following mechanisms:



1. Modify domestic preference guidelines to ensure a majority of the IT projects awarded by the Telangana Government go to Mimes registered in TS. In the case of Large Projects which require multi competency or proportionate financial strength, SME consortiums shall be encouraged to participate.
2. Relax qualification norms around experience, yearly turnover requirement, Ernest Money Deposits (EMD), Performance guarantee etc., and offer suitable Payment Terms for SMEs to promote a level playing field.
3. Create opportunities to increase the visibility of all IT Projects undertaken by the Telangana Government and the SMEs executing them through a dashboard.
4. Improving the government connection with SMEs and enabling proactive solution offerings by SMEs around new technologies like AI-ML/IoT/Cloud/Cyber Security/Computer Vision/AR-VR/ BlockChain & any other latest technologies for the Government departments.

The government will continue to provide support to SMEs through the above-mentioned initiatives along with the utilisation of the Model RFP to increase the service procurement by the Government. The government will also support SMEs and start-ups with the ability to go digital. Access would be given to end-to-end digital solutions created by the government or private organizations. The solutions provided will include back-office operations like finance systems, human resource tracking, accounting, and new-age digital requirements like digital marketing, customer relations management, and cybersecurity.

IT Park Norms

1. Landowners and developers will be able to get IT Park status for land parcels for the following 4 categories after producing the required documentation:
    a. A company that has been offered land by the Government
    b. Real estate developers that have bought land through government auctions or private networks
    c. Individual landowners that wish to promote IT sector activity
    d. Third-party developers who wish to apply on behalf of the owner
2. For Industrial Parks converting into IT Parks, a ratio of 60:40 needs to be maintained for IT vs non-IT implementation. For lands allotted by the Government, the ratio of 60:40 holds good for IT vs non-IT unless there are different terms specified in the allotment MOU. In the GRID Corridors, the ratio is 50:50. For private lands, converting into IT Parks, a minimum of 25% needs to be allotted to IT purposes.
3. The parking requirement in the IT Parks for the state currently stands at 66% of built-up space. Going forward, the new parking requirement will be 40% (+4% for guests) of built-up space. This is done to ensure reduced traffic and congestion in the IT Corridors.

Further details on the regulations will be made available through the Operational Guidelines to be released.

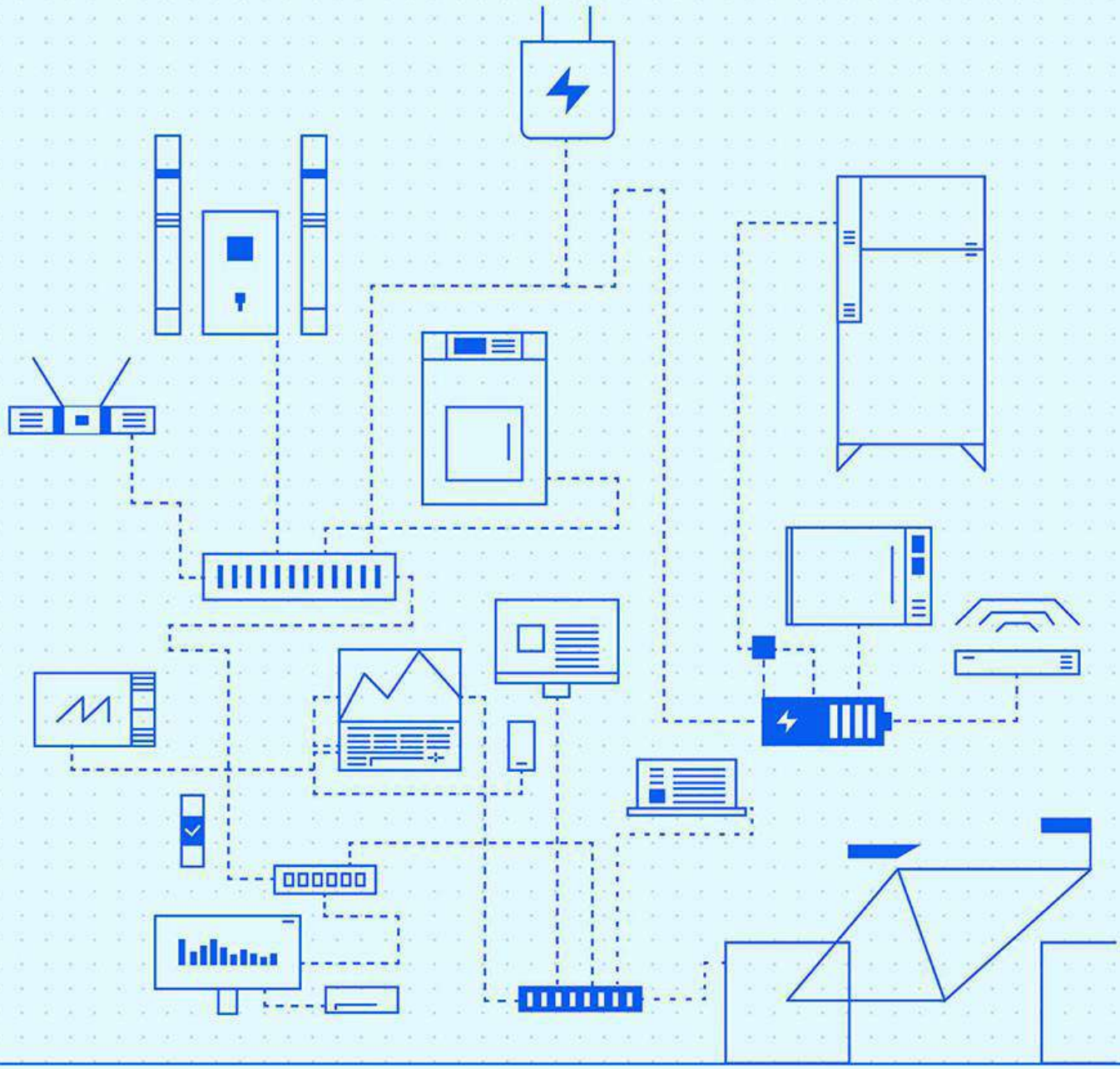
Incentives Provided to IT/ITeS Companies

Moving forward, the state will provide incentives to all the companies investing in the state along the incentive categories listed in the following table. Specifically for organizations engaging in product development, ER&D and cutting-edge innovation and for investments in the GRID Locations, additional incentives will be provided over and above the following incentive schemes.

Incentive Categories	
Allotment of Government Land	Power
Declaration of IT Park Status	Patent Filing Costs/ Copyright/ Trademark
Quality Certification	Recruitment Assistance
Exhibition Rental Refund	Subsidy on Investments is Solar Power
R & D Grants	Subsidy to Anchor Units
Subsidy on Capital Investments	Stamp Duty, Transfer Duty and Registration Fee
Training Subsidy	Interest Rate Subsidy
Subsidy on Lease Rentals	Rebate on Land Cost
Reimbursement of SD and Cost of Tender Document	

02

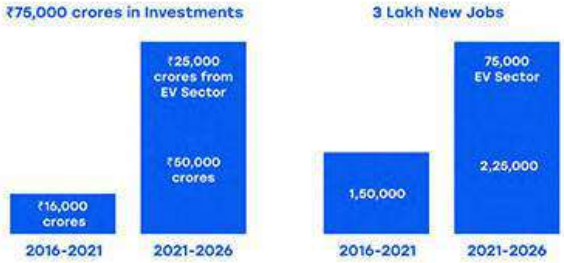
ELECTRONICS



TARGETS

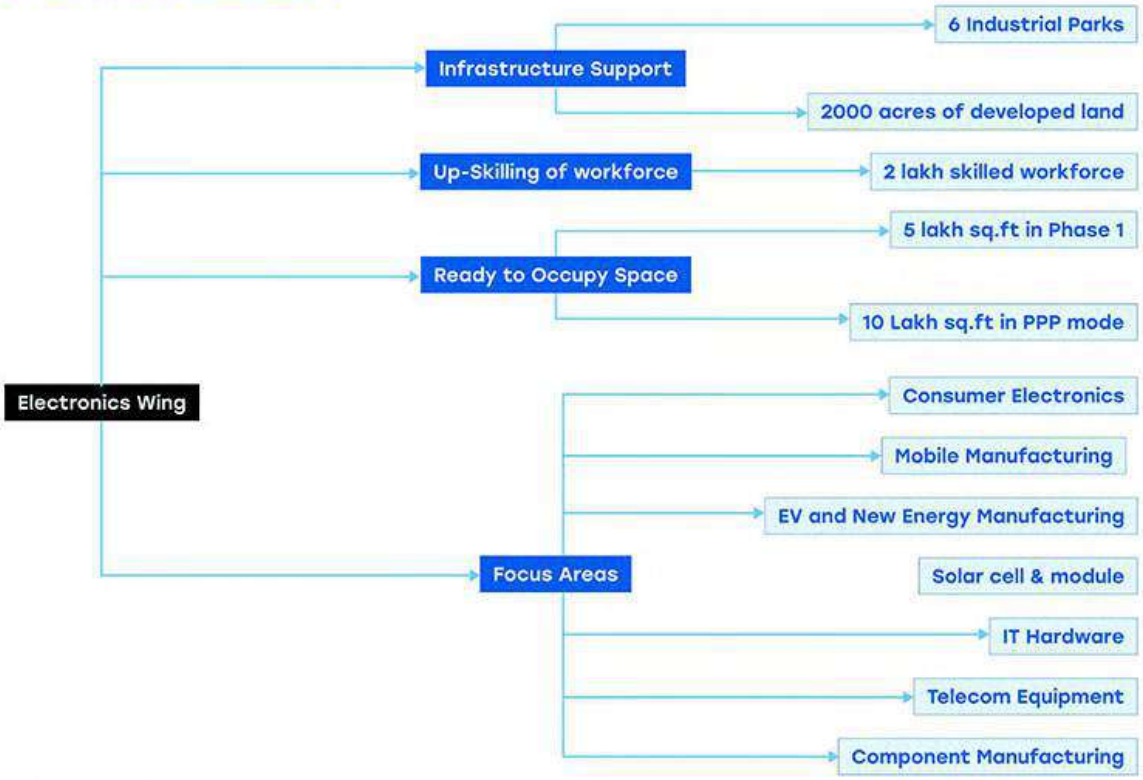
To generate employment of 3 Lakhs by 2026 in the Electronics sector, out of which 75,000 is targeted to be from the EV & ESS sector

To attract ₹75,000 Cr. of total investments in the Electronics sector, of which ₹25,000 Cr. is targeted from the EV & ESS sector



The Government will focus on making the state a top destination for the Electronics sector globally by developing a comprehensive ecosystem which has access to infrastructure, skilled workforce, and effective industry partnerships. The Electronics policy will include the incentives offered to the companies in the Electronics and Allied Sub-sectors.

Overview of Initiatives



Industrial Parks

Land, basic infrastructure, and market connect remain the most critical requirements for Electronics companies, and towards this, the State has established 5 Industrial Clusters catering to Electronics and allied sectors. The State is in the process of establishing additional clusters to cater to the increasing demand in Electronics, EV and New Energy sectors. Telangana has two existing Electronics Manufacturing Clusters, covering an extent of 912 acres, situated at close proximity to the International Airport, Outer Ring Road and Hyderabad City.

The State has established three new clusters at Chandanvelli, Divitipally and Shiv Nagar to cater to investments in Electric Vehicles, New Energy Manufacturing and LED Products which would cumulatively span over 1800 acres. The State is in the process of setting up another park exclusively for Consumer Electronics in an extent of 425 acres.

The industrial parks are equipped with all the necessary common infrastructure for Electronics companies such as Power, Water, Roads, etc and Common Effluent Treatment Plants are being established.

Plug and Play Space for Electronics companies

In order to facilitate small- and large-scale investments and to reduce the time to set up operations, the government has developed plug-and-play spaces in the Industrial Clusters.

The Government has already established 1,80,000 sq. ft. ready to occupy built-up space in E-City EMC and is in the process of establishing a Common Facilities Centre. Additionally, the state targets to create 5 lakh sq. ft. of plug-and-play space in the first phase and an additional 10 lakh sq. ft. of facilities shall be developed through a PPP model. The plug-and-play spaces will have access to all the necessary infrastructure for Electronics companies.

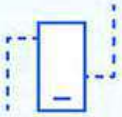
Skill Development

Telangana Academy of Skill and Knowledge (TASK) will provide skilled workforce for the Industry on a no-cost basis. TASK has trained and deployed over 1,80,000 skilled workforce in the Electronics Industry so far. TASK will develop customised training programs and courses with a focus on emerging sectors, in consultation with the industry and educational institutions.

New focus areas for development

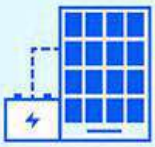
Going forward, the key focus in Electronics would be the following sub sectors

1. **Consumer Electronics:** Consumer Electronics market size was valued at USD 1 Trillion in 2019 and is estimated to grow at a CAGR of over 7% from 2020 to 2026. Large investments in R&D and Manufacturing space for new consumer electronic products such as home appliances, smartphones & smart wearables will drive the growth in this sector.

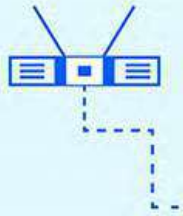


2. **Mobile Manufacturing:** Cellular mobile handset manufacturing has emerged as a flagship sector in India's electronics manufacturing space. India has emerged as the second-largest mobile phone manufacturer in the world with the establishment of more than 200 Mobile Phone Manufacturing units in the last 5 years. Government of India has also launched PLI scheme to promote Mobile Manufacturing with an outlay of ₹40,951 Cr.

3. **EV, New Energy & Energy Storage Systems:** The Indian battery market is expected to grow at a CAGR of more than 15% during 2020-2025. In order to bring down the cost of electric vehicles, local manufacturing of lithium-ion batteries in India is going to be very important, and a lot of companies are expected to start manufacturing units in this space.

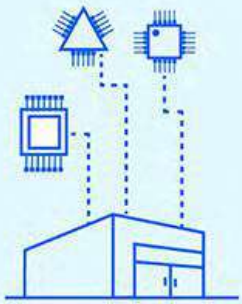


4. Solar PV Cell and Module Manufacturing: India has set an ambitious target of setting up 1,75,000 MW capacity of renewable energy by 2022 and 4,50,000 MW by 2030, of which over 60 percent will be catered through Solar Energy. Currently, domestic manufacturing industry has limited operational annual production capacities of around 2,500 MW for solar PV cells and 9,000-10,000 MW for solar PV modules and presents a huge opportunity for investments in the sector. Government of India has also launched PLI for High Efficiency Solar PV Modules to reduce the import dependence and build domestic capabilities.



5. IT Hardware: India's Digital Economy is currently valued at USD 200 billion and is slated to grow to USD 1 trillion by 2025. According to IDC, the market size for laptops in India was approximately 75 lakh (7.5 million) units in 2019-20 valued at ₹33,950 Cr. (USD 4.85 billion). Similarly, the market size for tablets was around 24 lakh (2.4 million) units, valued at ₹3,500 Cr. (USD 0.5 billion). The server market stood at 2 lakh (0.2 million) units valued at ₹9,100 Cr. (USD 1.3 billion). Currently, this demand in India is largely met through imports and provides a huge opportunity for attracting investments in this sector.

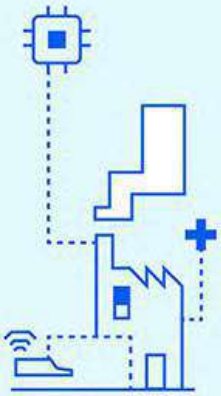
6. Telecom Equipment: Globally, Telecom and Networking Products' exports represent a USD 100 billion market opportunity. Currently, India imports 85% of its wireless Telecom equipment and with the support of PLI scheme by GOI, with a budgetary outlay of ₹12,195 Cr., the sector has a huge potential for attracting large investments from global players. Telangana is fast emerging as the Telecom and Networking hub with the presence of players across the manufacturing spectrum. The State is also implementing Telangana Fiber Grid initiative to provide High Speed Broadband connectivity to over 83 lakh households.



7. Semiconductor Fabrication/ Manufacturing: Telangana was among the first States in the Country to set up a dedicated park (FAB CITY) for Semiconductor Fabrication. "Photonics Valley", a leading photonics cluster, will be created under the Photonics Valley Corporation to promote the use of this technology within the state through a comprehensive ecosystem. Now, in line with the Government of India's focus for development of Semiconductor Manufacturing facilities in the Country, the Government of Telangana is taking up initiatives to nurture Semiconductor & Photonics FAB Unit Manufacturing in the State, with policy and infrastructure interventions. Hyderabad has a comprehensive R&D Ecosystem in this sector, with a huge talent pool of Engineers, due to the presence of Global firms and Institutes of Excellence catering to VLSI, Embedded Systems, Chip Design & Semiconductor industry. The State is in a power surplus and has abundant availability of water to meet the manufacturing needs of Semiconductor Industry.

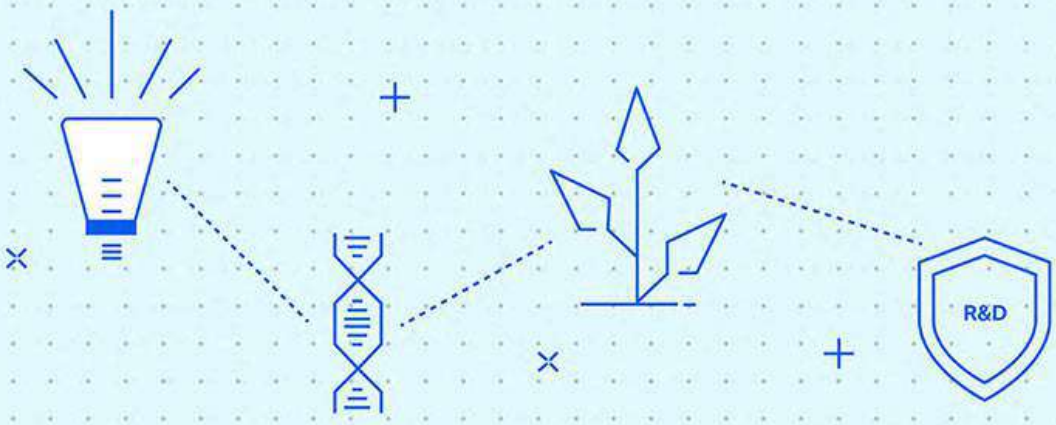
8. Allied Sectors & Component Manufacturing:

1. Medical Devices: India is among the top global markets for medical devices. While the global market is expected to reach USD 169 billion by 2025, the Indian market is expected to increase at a CAGR of 35.4% to reach USD 50 billion. The government of India has also launched PLIs and 100% FDI applicability for Medical Devices.



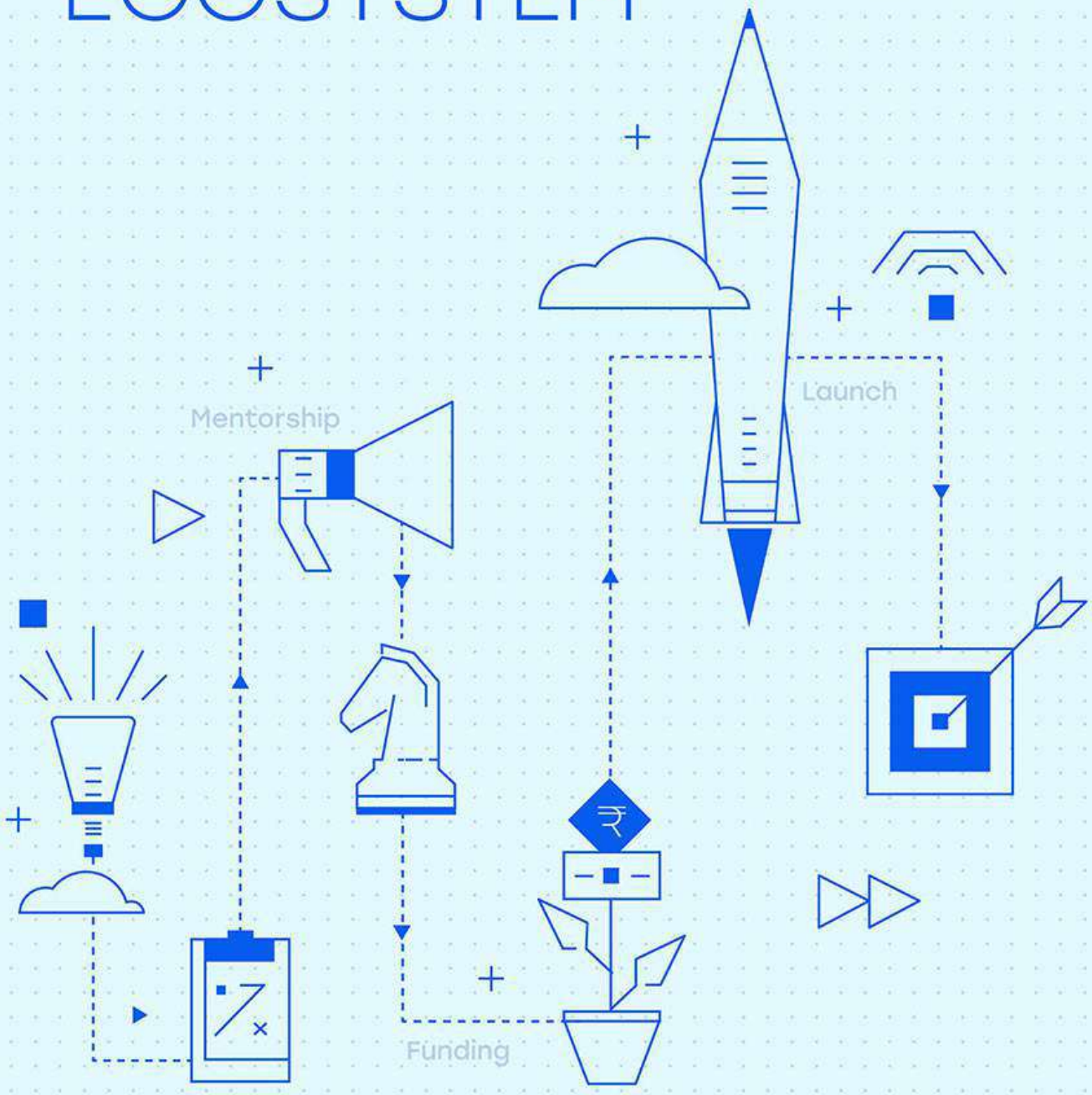
2. *Automotive and Defence:* The Global Defence Electronics market is set to reach USD 422 billion by 2032 and India's Ministry of Defence is likely to spend over USD 68 billion. in the same period on electronics. The global Automotive Electronics market is expected to reach USD 645 billion by 2030 with India's share being significant because of the central government mandate of ADAS Systems by 2022. This presents a huge opportunity for investments in this sector.

3. *Component Manufacturing:* Electronics Components, Semiconductor, PCB and related manufacturing is important for the overall growth of the Electronics Sector. The establishment of component manufacturing in the State will be encouraged through incentivization.



03

INNOVATION & ENTREPRENEURSHIP ECOSYSTEM

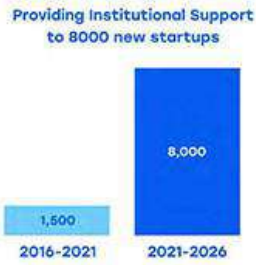


TARGETS

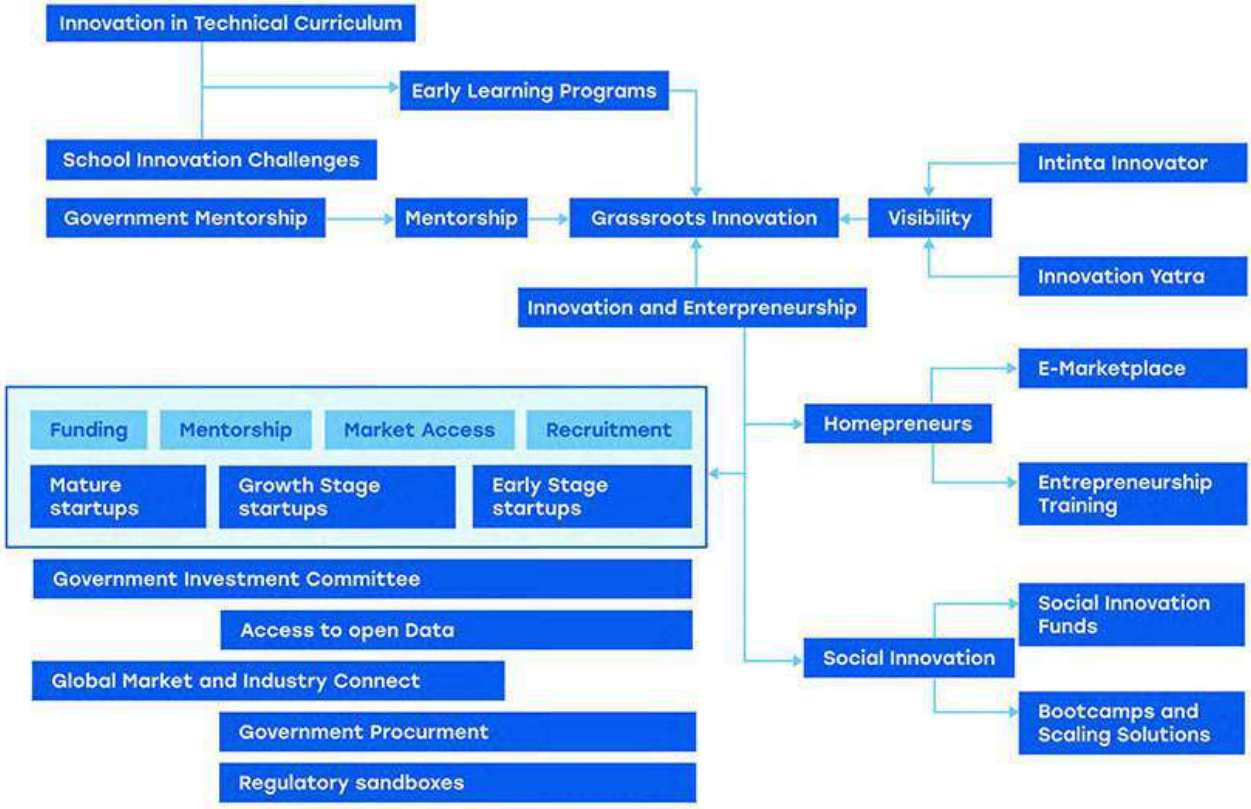
8000
To provide institutional support to over 8000 start-ups.

₹10,000 Cr
To attract over ₹10000 Cr. in investments for start-ups.

1300
To set-up a fund of ₹1300 Cr. for start-ups of which ₹100 Cr. would be for Grassroots Innovation Fund.



The government has set-up T Hub, WE-Hub, TSIC, T Works, TASK and Emerging Technologies Wing to encourage innovation and develop a vibrant start-up ecosystem. The government aims to enhance the start-up ecosystem such that Telangana is the primary choice for entrepreneurs looking to set-up operations with the help of accommodating policy frameworks and ample support across all stages. The government will also focus on grassroots innovations and empower them to transform from ideas to enterprises to create social impact.



Special Focus Sectors

Innovation in Multimedia Animation Gaming and Entertainment (IMAGE)

Telangana has extensively focused on developing its base in the Gaming, Animation, VFX, Computer Vision, and AI Startups. The state has collaborated with the Central Government and established the IMAGE CoE to further the development in this sector. Through its accelerator program, IMAGE CoE is supporting startups with mentorship, funding, and training programs. The upcoming IMAGE Tower is an incubator that is a flagship initiative to establish Telangana as the go-to destination for startups in the IMAGE space boasting a built-up area of 16,00,000 sqft.

Life sciences

Telangana has over 20 Life Sciences incubators which have supported over 200 startups in this space over the last years. The Biopharma Hub (B-Hub) is a flagship initiative for Genome Valley undertaken by the Government of Telangana to strengthen the Biopharma industry and Life Sciences innovation by setting up a Biopharma scale up facility. The facility is being set up in Genome valley with a built-up area of 1,00,000 sqft.

Agriculture

Telangana boasts over 10 Agri focused incubators supporting over 225 startups over the last few years. The state has over 30 agriculture-focused educational and research institutes. The Government of Telangana itself has focused on several tech-based solutions that will help improve the lives of farmers and has recently unveiled the AgHUB located in PJTSAU with a special focus on Agri-tech startups.

Defence

A defence accelerator will be established to promote innovation and R&D in the Defence sector in partnership with the Ministry of Defence and DRDO. Telangana previously has hosted several OEM-linked incubation and acceleration programmes along with T-Hub. Continuing on this path, the defence incubator shall handhold start-ups and private Mimes entering the R&D, manufacturing and service segments in the Defence sector and shall work in tandem with the existing state start-up ecosystem.

End-to-end support providers

The Government of Telangana strives to provide support to start-ups at all stages in the form of requisite infrastructure, funding, mentorship, and ecosystem.

Early-stage start-ups and innovators

Enabling early-stage innovators and researchers to take the next step in turning their ideas into enterprises will be the main focus. Institutional support in the form of funding, mentorship, testing, and industry connections will be facilitated through the innovation ecosystem partners. The government shall take measures to ease the process of setting up a start-up by providing toolkits for all common operations at the time of setting up a start-up to ensure a smooth start to one's entrepreneurial journey. Regulatory sandboxes shall be developed for focus sectors including fintech, healthcare, and education to facilitate ease of testing.

Growth stage start-ups

Through the stage of expansion, special support will be provided for raising funds, acquiring customers, hiring human capital, and gaining visibility. In addition to these activities, the government will enable relaxations in procurement criteria, thus government being the first customer for start-ups.

Mature stage start-ups

Through this stage, the government will ensure the right ecosystem and regulatory framework is maintained for start-ups. Recruitment support will be provided for those seeking high-quality senior management and talent to grow further. Moreover, partnerships will be established with large private firms and global markets to provide access to a larger market for their solutions. A dedicated consulting wing will also be setup by the government to support these start-ups with strategy and expansion.

In addition to the general support, the government will also establish mechanisms to provide corporate services like advocacy, cloud access, cybersecurity, etc. to the start-ups at a subsidized price. Additionally, digitalization support will be provided for back-office requirements.

New Initiatives

A Comprehensive Start-up Funding Ecosystem

a. Collaborative initiatives with VCs and Angel Investors to provide funds for start-ups.

b. Government Investment Committee: The Government shall set up a fund for start-ups and a Government Investment Committee shall be formed with experts in the field. Together with renowned VCs and Angel Investors, the Government Investment Committee will form a core component of the funding mechanism in the state. The state will add to the funds generated through partner VCs and Angel Investors.

Innovation and Model RFP-based procurement

As a progressive state, we strive to give start-ups as much government exposure as possible. The government will connect over 750 start-ups in 5 years with the Government Ecosystem through various programs and facilitate procurement of start-up services in every department. Over 100 start-ups' services and products shall be procured in this period. The Model RFP initiative by MeitY will be used to achieve ease of procurement of services by the government. Additionally, mentorship through the government shall be provided to a minimum of 200 start-ups over 5 years through the Government Mentor Program.

Homepreneurship

The COVID-19 pandemic has moved digitalization ahead by a few years, several home entrepreneurs have spurred to innovate and sell during this period. The government understands the immense scope of these home entrepreneurs and is looking to develop institutional support mechanisms to further their productivity. To provide visibility to such innovators, the government will also create a secure e-marketplace and connect entrepreneurs to potential customers.

Social Entrepreneurship

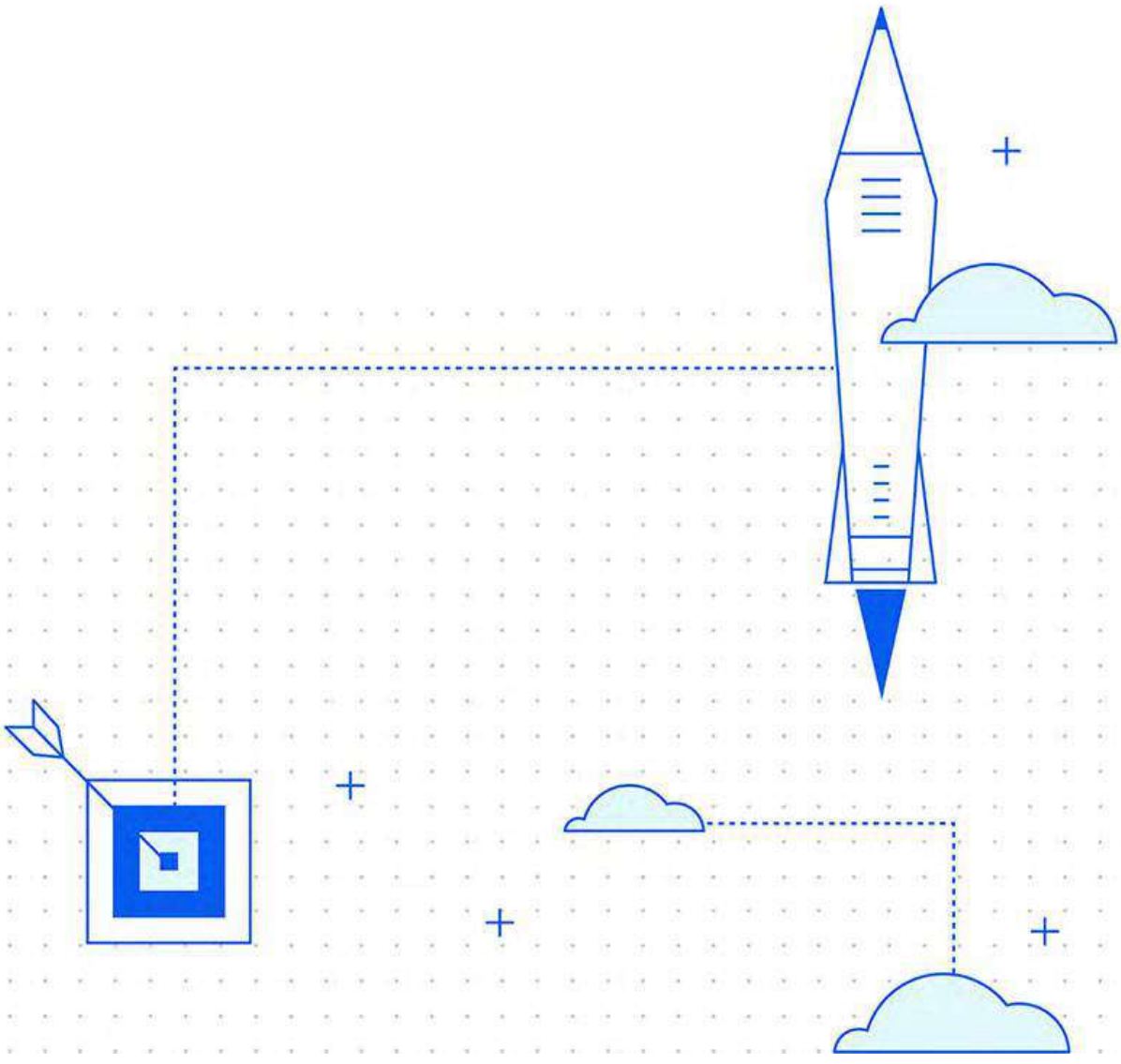
There are hundreds of problems in this world that both urban and rural sections are facing today. Innovation and Entrepreneurship are not only sources of income or employment generation but are also solution providers to some of society's major challenges. The government sees an opportunity in providing innovators in the social entrepreneurship space with a conducive environment to find scalable, implementable solutions that can improve the quality of life in the state.

Through the Social Impact Boot camp conducted in 2020-2021, we have been able to provide institutional support to over 50 start-ups. Looking forward, we aim to facilitate the growth of 5,000 social-impact start-ups over the next 5 years. The government shall allocate ₹100 Cr. for the social impact start-ups and will aim to attract over ₹5000 Cr. of investments from private partners across the world for these start-ups.

School Innovation

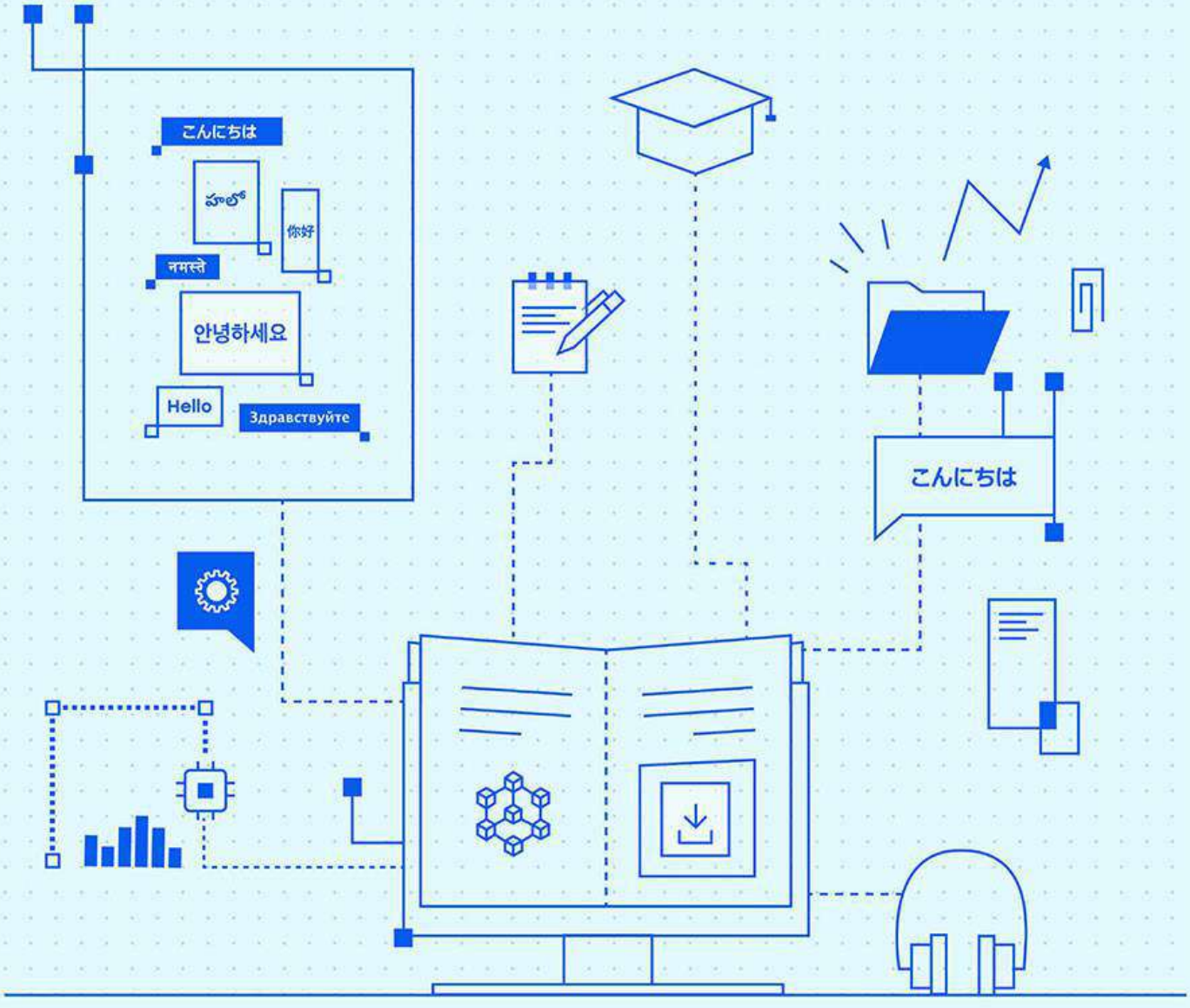
In Telangana, we believe that innovation as a culture has to be inculcated from a young age as the students of today are the entrepreneurs of tomorrow. The government will the school curriculum with special innovation-based courses in order to imbibe critical thinking skills among students at a young age.

The government will sensitize over 25,000 government students to imbibe innovation thinking through School Innovation Challenge across the 33 districts of Telangana. Special design & innovation thinking workshops focused on traditional arts and practices in Telangana will be arranged to further the understanding of the heritage of the state among school students.



04

SKILLING, UPSKILLING & RESKILLING



TARGETS

80%

Upskill, reskill or train the citizens of Telangana with a target to achieve 80% of workforce requirement being met through local talent.

50000+

Train 50,000+ students each year.

To develop an industry-ready talent pool, the Telangana Academy for Skill and Knowledge (TASK) was launched in 2014 and has played an important role in making the college graduates employment ready since then. The focus going forward is to not only enhance availability of talented workforce in the state, but to also skill the citizens of the state in basic technologies. This will help the government develop and deploy digital solutions to support the citizens and improve the quality of living from all socioeconomic backgrounds.

Citizen Digital Skill Enhancement

Early-stage digital skills
The government will launch programs to provide digital skills for students through courses on basic technologies, critical thinking, coding, etc. in order to set a strong base for them to explore the digital world.

Cybersecurity skills
With the onset of the digital era and growth in the number of internet users, it is imperative that the citizens are made aware of the dangers and risks associated with the internet. Special awareness programs will be undertaken to enable safe access to the internet for citizens.

Basic Training in Artificial Intelligence
Considering that AI is going to be an integral part of lives, all students in technology-based courses will be taught the basics of Artificial Intelligence along with skills in programming languages, data annotation, exploratory data analysis and more.

IT Skills as support for other activities
Citizens of the state will be equipped with basic digital skills and awareness to use applications and digital solutions to ease their day-to-day activities. Through this, the state aims to improve the quality of living for citizens.

Reskilling

Re-skilling shall be given special focus to curb unemployment and help citizens who are switching jobs or unemployed get more traction, skills and improve employability. Through partnerships with industry and academia, special courses and certifications will be created to improve hiring chances. Both online and offline media of teaching shall be explored for the citizens.

Upskilling

The government shall focus on upskilling the citizens who desire to pick up new skills, move to new fields of work, or grow within their respective establishments. The state will focus on upskilling existing workforce to be able to grab opportunities in new and emerging technologies. We will be collaborating with industry and academia in Telangana to design the curriculum for these courses.

Effective Industry Partnerships

Foreign Language Training
Several foreign-native companies require expertise in foreign language in addition to requisite skills. Foreign language training programs will be designed keeping in mind the employment demand from foreign locations. Partnerships shall be made with foreign industries and embassies to facilitate this initiative.

Early Industry Connect
Training programs will be introduced to 2nd and 3rd-year students in both technical and non-technical institutes to build employment skills from an early stage. Corporates will be encouraged to take up internships, training programs, and workshops with students.

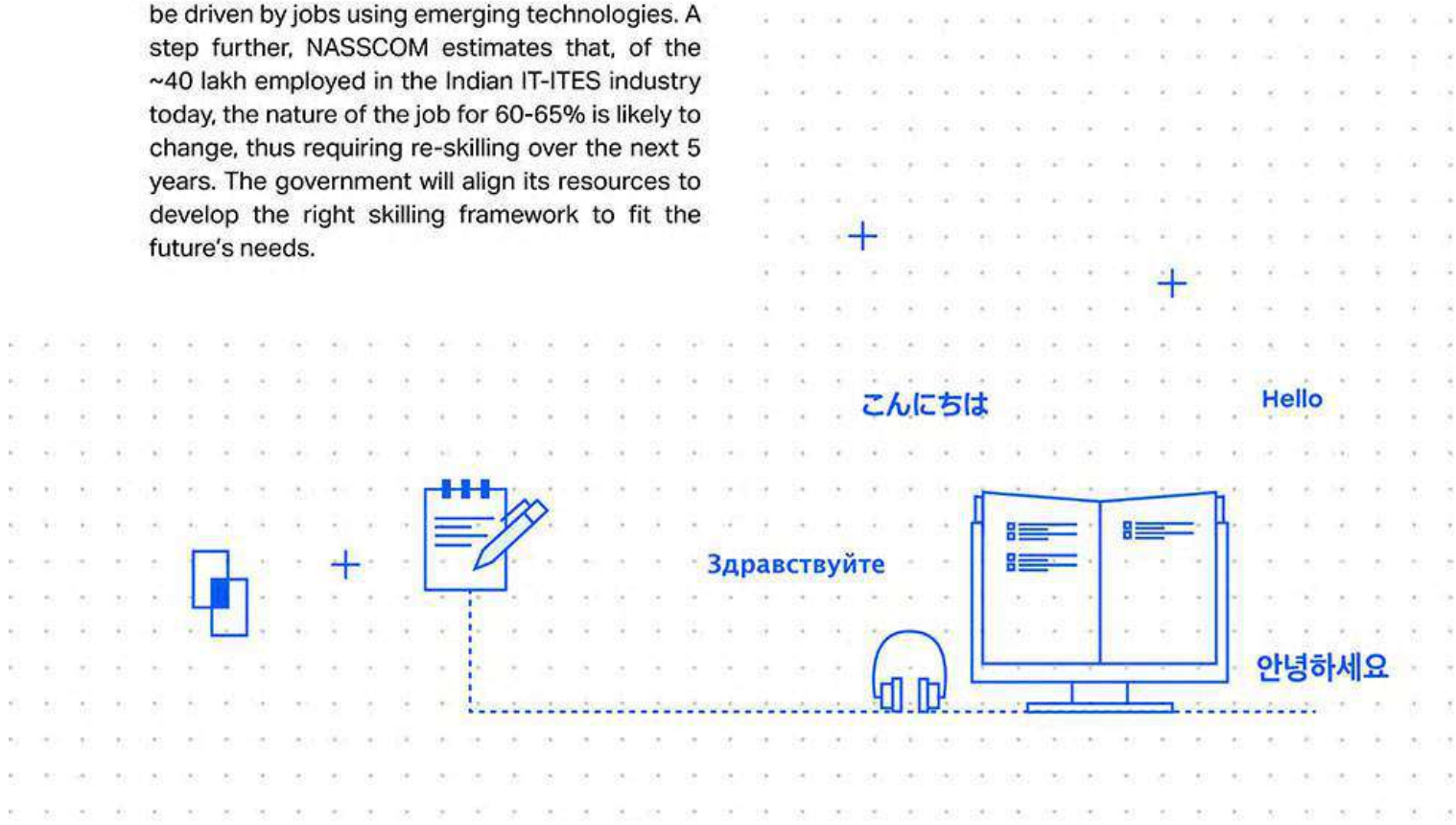
Online Education providers
Collaborations with the best online skilling and academic courses will be leveraged to provide various courses and certification at subsidized prices in the state to ease the process of learning for students.

Emerging Tech. Ready employees

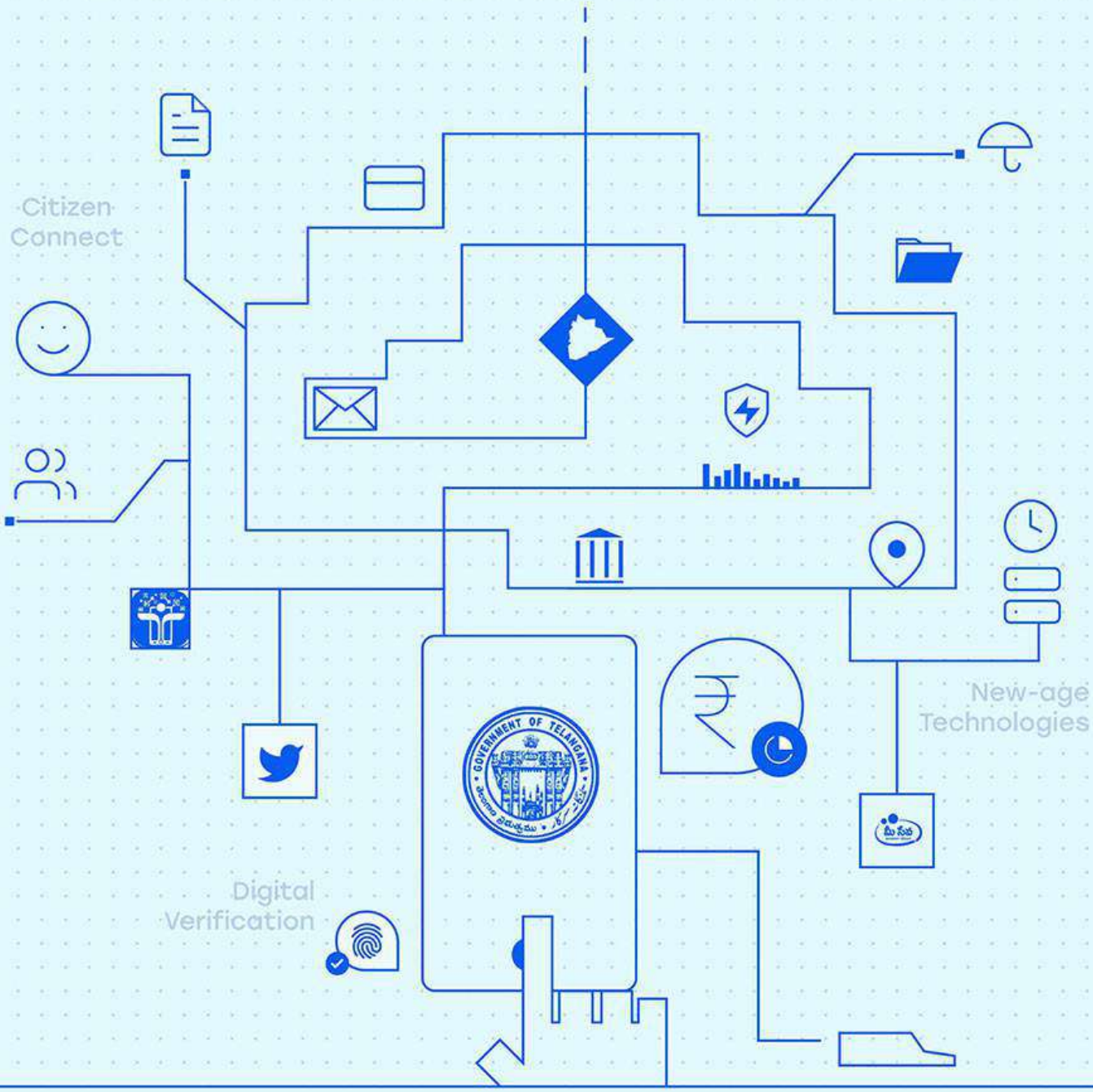
The growth of investments in emerging technologies and solutions that the state will lay focus on will be facilitated through the availability of trained students and professionals ready to pick up the technical and managerial work in these fields. The World Economic Forum expects that by 2025, "increasingly redundant roles will decline from being 15.4% of the workforce to 9%, and that emerging professions in will grow from 7.8% to 13.5%". The increase is expected to be driven by jobs using emerging technologies. A step further, NASSCOM estimates that, of the ~40 lakh employed in the Indian IT-ITES industry today, the nature of the job for 60-65% is likely to change, thus requiring re-skilling over the next 5 years. The government will align its resources to develop the right skilling framework to fit the future's needs.

Work-Ready Talent

While technical skills are core to employees and employers alike, several companies would have to spend resources to develop the soft skills for their young employees. TASK will develop courses to impart non-technical aspects of employment like soft skills and personality development to improve employability and reduce the burden on corporate partners to build these skills for recruits.



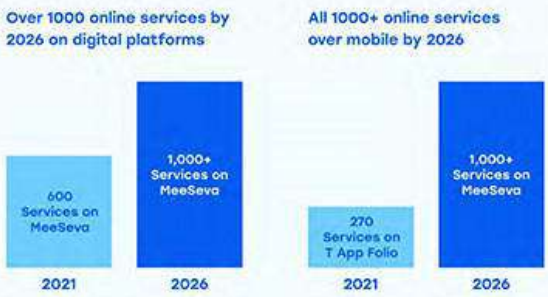
05 CONTACTLESS, PAPERLESS & PRESENCELESS GOVERNMENT



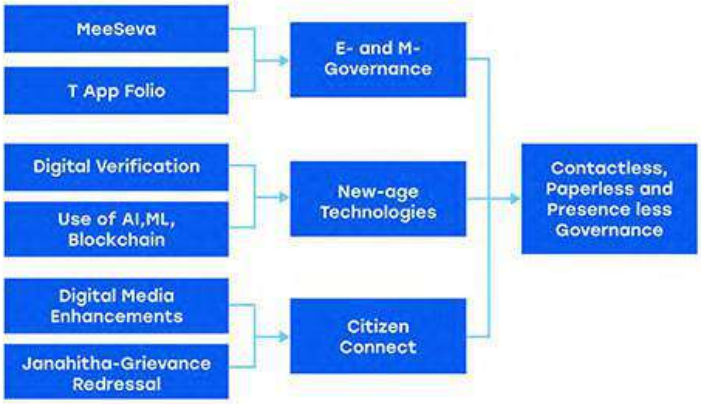
TARGETS

No G2C service shall mandate physical presence of citizens*: 1000+ G2C services online

All 1000+ online G2C services will be made accessible through a mobile-phones with the help of government's service delivery app — T-App Folio



Through the introduction of MeeSeva 2.0 and T-App Folio, most of the Government Services are available to citizens in the comfort of their homes and mobile phones. In the wake of COVID-19 and the onset of the digital revolution, the state aims to deliver all citizen services digitally and ensure that there are sufficient mechanisms to streamline digital interactions with the government. The government will also focus on streamlining service delivery by combining multiple new-age technologies like AI, ML, blockchain, etc. to provide secure verification and data processing.



MeeSeva

MeeSeva is the integrated service delivery platform in the state with 600+ G2C and B2C services of 100+ participating departments/agencies through a network of 4500+ centers located across the state. The government of Telangana has completed a comprehensive up-gradation of technological and process aspects of MeeSeva and MeeSeva 2.0. was rolled out in April 2019. During 2020-21, 35 services have been launched with an average roll out time of fewer than 3 days. MeeSeva has been the go-to platform for launching high-priority services such as LRS, GHMC Flood relief, NPB, Sadabainama and Sadarem.

T App Folio

T App Folio enables delivery of G2C, B2C, VAS, and info services through Smartphones as well as Feature phones (USSD, IVRS, and SMS) and is the only App in India that currently enables application and certificate services to be delivered to citizens. T App Folio has reached over 12+ Lakh downloads and supported 40+ Lakh transactions till March 2021, with onboarding over 270+ services in the same period.

*except incases like drivers license test etc...

Usage of Emerging Technologies in eGovernance

The Government of Telangana commits to increase the usage of emerging technologies such as AI, ML, Big Data, and Blockchain to create a fast, reliable, and secure e-governance experience for the citizens. A special budget for IT and Emerging technologies shall be allocated by each user department to develop applications that can be used by citizens. Going forward, we will not only develop solutions for the state but will also support other states in India that would require the solutions developed in Telangana to empower them and improve the ease of governance.

Online Authentication

All government procedures that require verifications will be done online through the use of RTDAI-Realtime Data Authentication of Identity, a safe and secure product developed by the state to ensure reliable and quick verification of citizen identities. This will enable the government to save several hours for verification processes for the citizens. With the increased usage of smartphones across the state, this project would play a critical role in providing digital services in the most remote locations.

Digital Verification for Beneficiaries

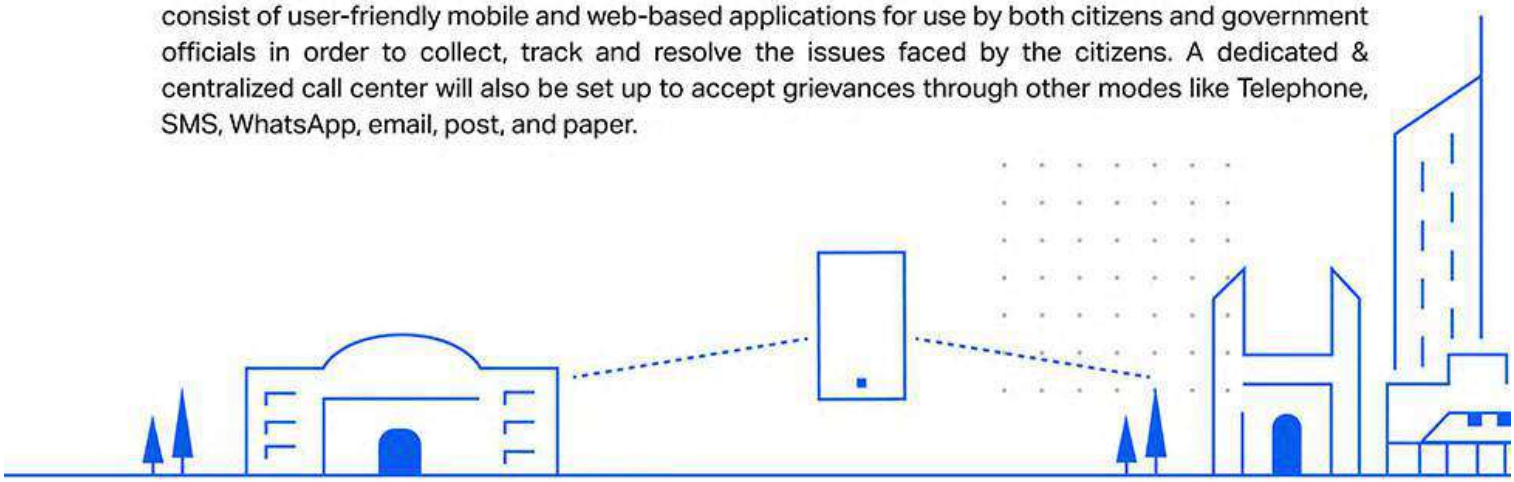
In Telangana, we strongly believe that adopting Emerging Technologies is key to an efficient and accountable Government. To ease the process of verification of details for welfare programs in the state, the digital verification platform developed will use AI, ML, and Big Data analysis methods to study the database of citizen information gathered from departments to assess whether an applicant is truly eligible for a scheme or not. The project has been successfully used for several schemes and has garnered high praise from GoI's Economic Survey (2018-2019) for being a world-class data-based solution.

Citizen Connect

Given the widespread use of digital media among the citizens in the state, the government shall leverage digital platforms to create an effective communication mechanism with the citizens in the state. New and efficient methods of information transfer shall replace the traditional modes of advertising and outreach. A standardized mechanism shall be developed to ensure the quality of interaction through digital media is retained across all departments in the state.

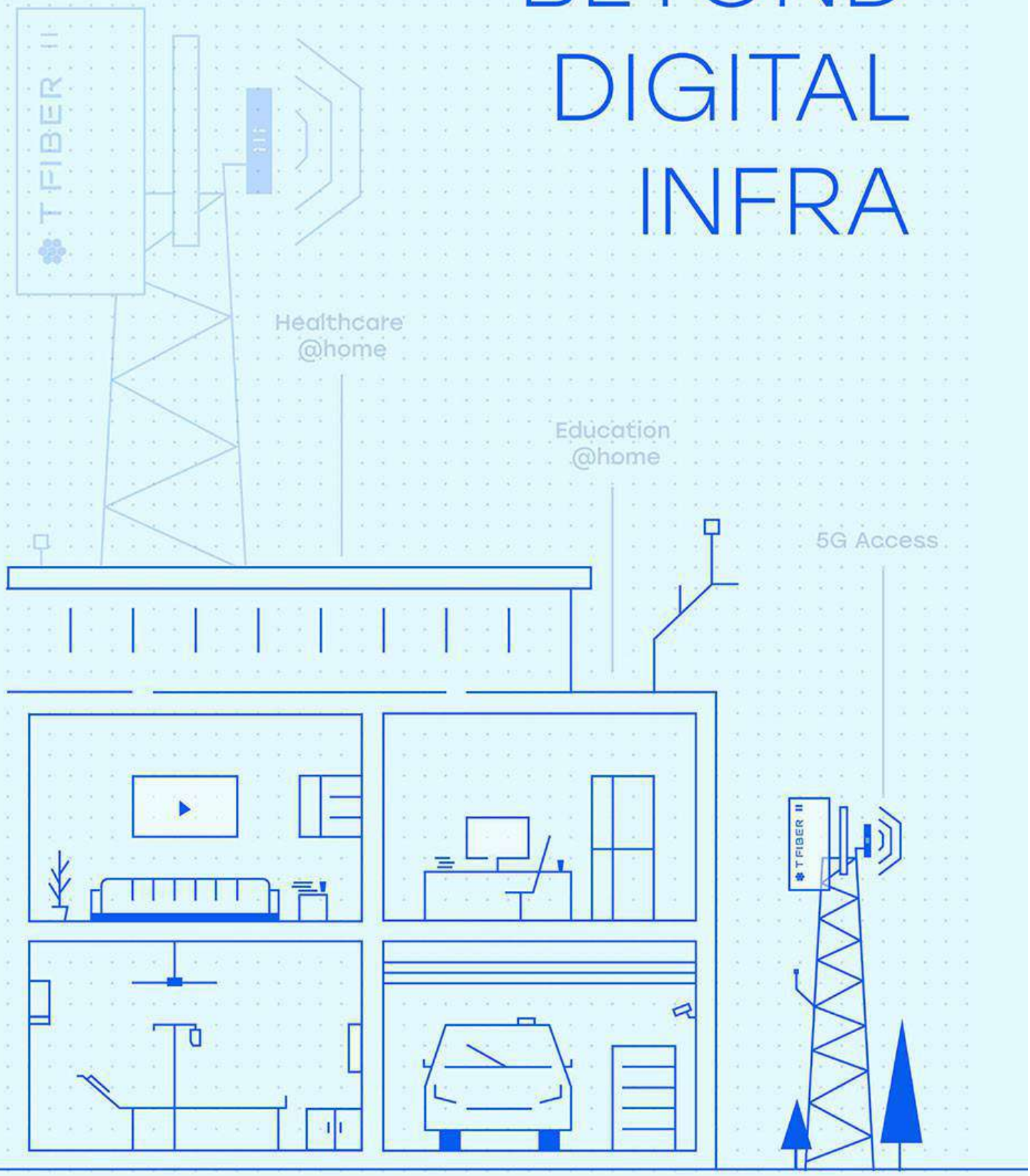
Janahitha – Citizen Grievance Redressal Platform

To make government services transparent, responsive, and user-friendly to the citizens, the government intends to have a Citizen Grievance Redressal System called Janahitha. Janahitha will consist of user-friendly mobile and web-based applications for use by both citizens and government officials in order to collect, track and resolve the issues faced by the citizens. A dedicated & centralized call center will also be set up to accept grievances through other modes like Telephone, SMS, WhatsApp, email, post, and paper.



06

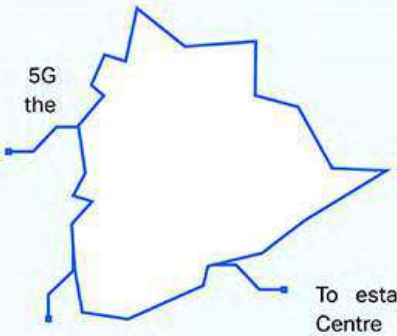
BEYOND DIGITAL INFRA



TARGETS

5G

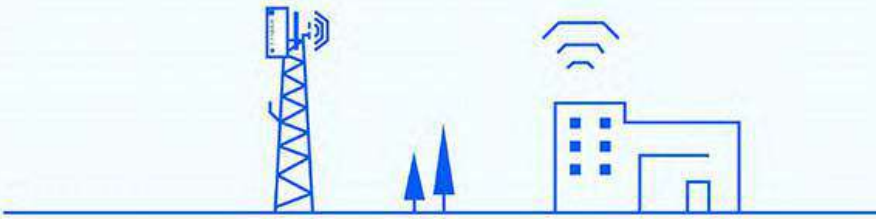
To complete 5G rollout across the state.



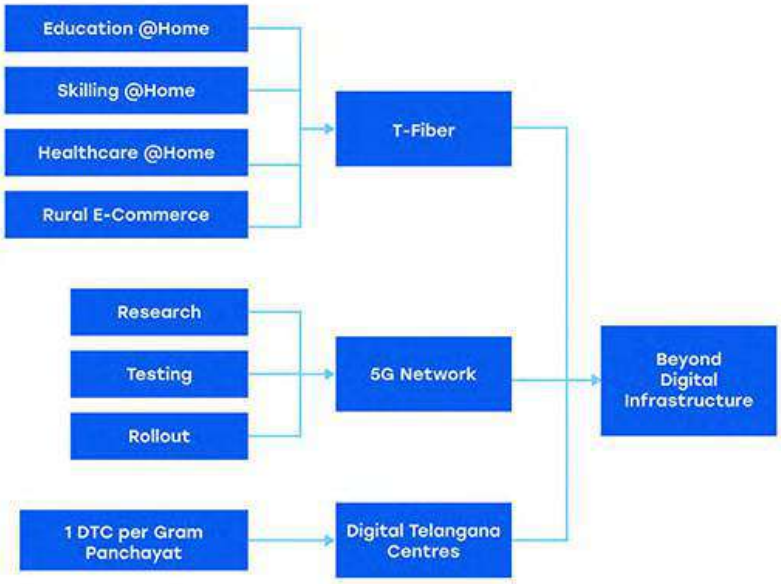
100%

To connect 100% of government institutions, rural and urban households to the Internet through T-Fiber by 2026

To establish one Digital Telangana Centre in each Gram Panchayat in Telangana



To enable digitalization across the state, the government will ensure all citizens are provided with access to the required digital infrastructure. The ambitious T-Fiber project will connect all educational institutes, homes, and government offices to high-speed and reliable internet enabling better access to services and digital content even in the most remote locations. Moreover, access to 5G internet across the state will be facilitated with a complete rollout.



T-Fiber as an enabler

Once established, T-Fiber will be used as the primary source of information and knowledge transfer. All the G2C services that require citizen and other public interactions with the government will be streamlined through the use of T-Fiber. Access to the internet will allow all departments to adapt to and deliver various new-age services at the doorsteps of the citizens.

Education at home

The government shall put special focus on e-learning and delivery of educational content directly to students' homes. Over-the-top media services shall be utilized for giving students access to the best digital education solutions from primary school to higher education on par with the developed countries of the world. The government shall strive to ensure every student in the state gets equal learning opportunities independent of their socioeconomic background.

Skilling at home

Through the high-speed internet service available at homes across the rural areas, skilling and training programs shall be carried out through an internet-based solution developed to facilitate ease of skilling. TASK will work with the industry, academic institutions, and professionals to create learning modules and curriculum for citizens of all demographics. Trainings required for various sections of professionals ranging from farmers to fishing to horticulture and several others will be provided through these programs.

Healthcare at home

Easy access to the internet gives the government new opportunities to meet the healthcare needs of citizens more holistically. The government shall take steps to spread the use of digital health solutions like T-Consult and the central government's National Digital Health Mission direct to home. The government will development new services using emerging technologies like AI, ML, Blockchain, Drones etc. for making activities like testing, basic diagnosis, and medicine delivery more efficient.

Rural e-commerce

With the growth of e-commerce across the world and increasing access to the internet across rural areas, the government sees a new opportunity to connect citizens with sellers and buyers of products in rural and remote locations. The government shall facilitate this through T-Fiber and a specialized e-marketplace developed to enable secure selling, buying, and payment mechanisms for the users.

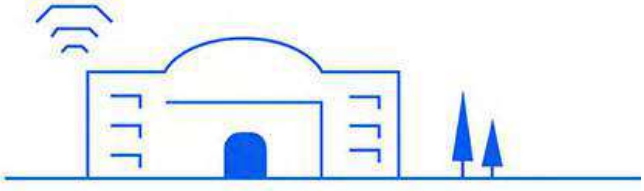
5G Expansion

Telangana has been a pioneer at adopting new technologies and providing citizens with access to the latest communication solutions. In line with leading countries in the world, Telangana has begun experimenting with and developing the base for 5G technology.

Hyderabad is one of the first cities in India which has had pilots for 5G communication services done by our telecom partners. Going forward, the state will formulate adequate strategies to enable citizens in both urban and rural locations to use 5G technology. Sufficient relaxations and Right of Way orders will be provided to ease the entry of the telecom service providers.

Digital Telangana Centers

The Government has created over 1000 Digital Telangana Centers at the Panchayat level. Each center is being managed by a trained Village Level Entrepreneur (VLE). The centers provide various digital G2C services like e-panchayat services (property tax, utility payments etc.), financial services, banking services, insurance services and training services. These operations will be scaled up to reach all 12,765 Gram Panchayats in the state.



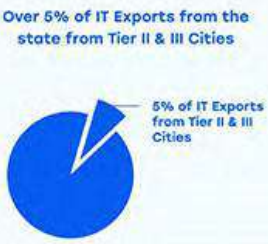
07

BEYOND HYDERABAD

TARGETS

Generate employment of 25,000 in Tier-II & Tier-III cities by 2026

Develop a robust district Innovation Ecosystem in 5 regional centres



The majority of the state's IT/ITeS exports come from Hyderabad, which is a major IT-Hub not only in India but also in the whole world. To generate more employment opportunities in other cities of the state, the government aims to develop Tier-II and Tier-III cities as IT powerhouses and facilitate the growth of a complete ecosystem like Hyderabad in these locations. Cities like Khammam, Karimnagar, Nizamabad, Warangal, etc. have already been established as IT-Hubs. The government shall make efforts to develop these cities into well-established smart cities.

Ecosystem development

An environment conducive for investors will be developed by establishing government institutions in these cities. Centres for T-HUB, WE-HUB, TASK, and TSIC will be made functional in the Tier II & Tier-III cities like Khammam, Warangal, Karimnagar, Nizamabad, Mahbubnagar, Siddipet, Nalgonda, and Ramagundam. These divisions will work together in each city to develop the infrastructure and government support available for investors and working professionals.

College and Industry connect

To improve the learning and skilling outcomes for students and professionals, TASK will work closely with the industry, collect feedback, and improve the employability of citizens in Tier-II and Tier-III cities. Special training programs will be developed for students in collaboration with the industry to begin training from the 2nd and 3rd years of college education to give students more time to learn and a more hands-on training experience.

Information and Communications Technology Hubs

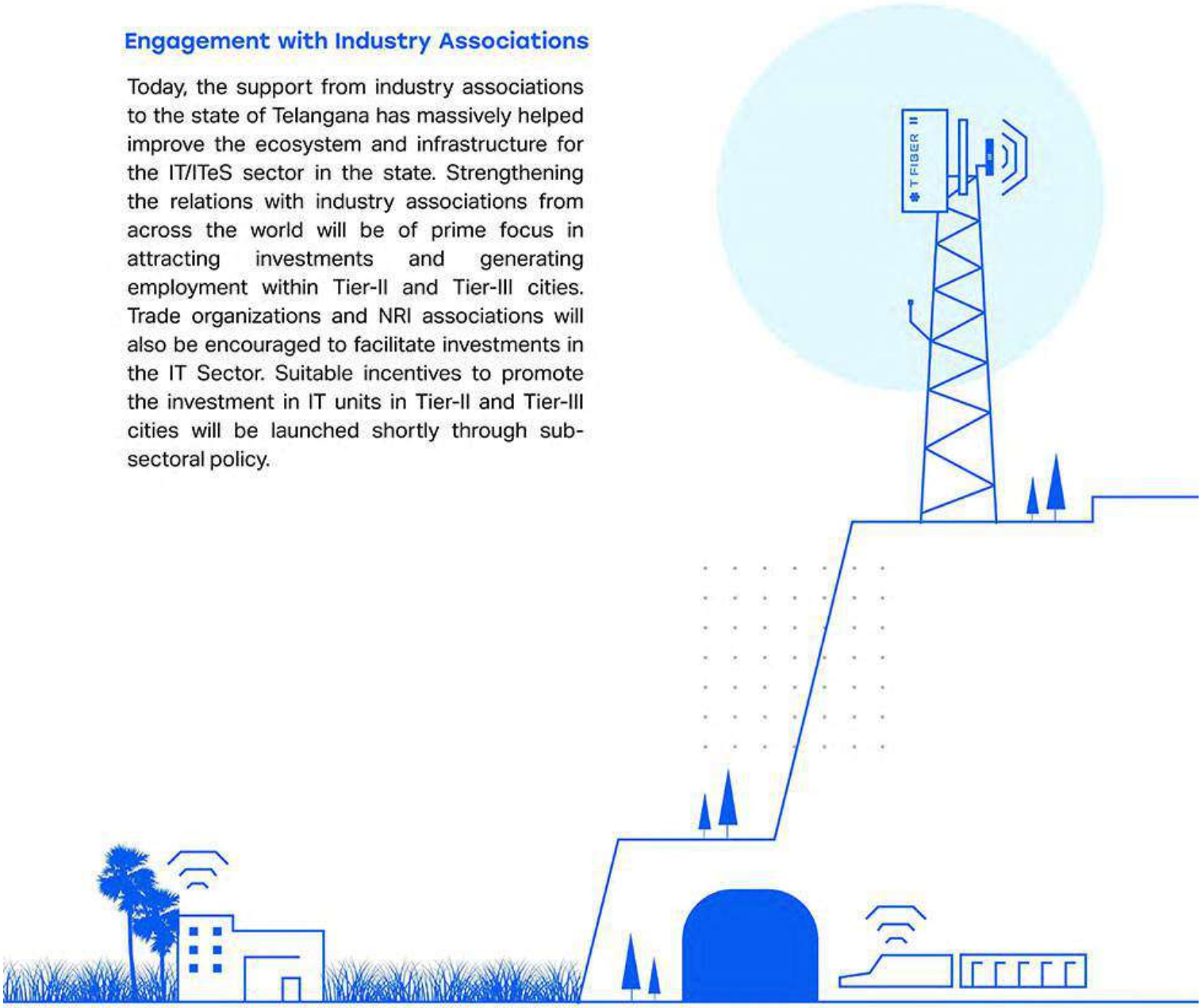
The state has already built over 1,50,000 square feet of ready-to-occupy space in IT-Hubs in Warangal, Khammam, and Karimnagar which are fully occupied by several IT/ITeS investors. New technology centres are currently being developed in the cities of Nizamabad, Mahabubnagar, Siddipet, and Nalgonda. To attract more investors to these cities with a plug-and-play model of IT-Hubs, the Government will incentivize private developers to set up technology centres in Tier II & Tier III locations through a Private-Public Partnership model.

Happening Telangana

The government will facilitate the all-round development of Tier-II and Tier-III cities by improving the general infrastructure of the locations through the promotion of high-end malls, schools, tourism attractions, and other leisure activities. These cities will also be a major part of the smart cities' initiatives taken up by the state and the quality of living shall be improved to incentivize top talents to stay within the Tier-II and Tier-III cities.

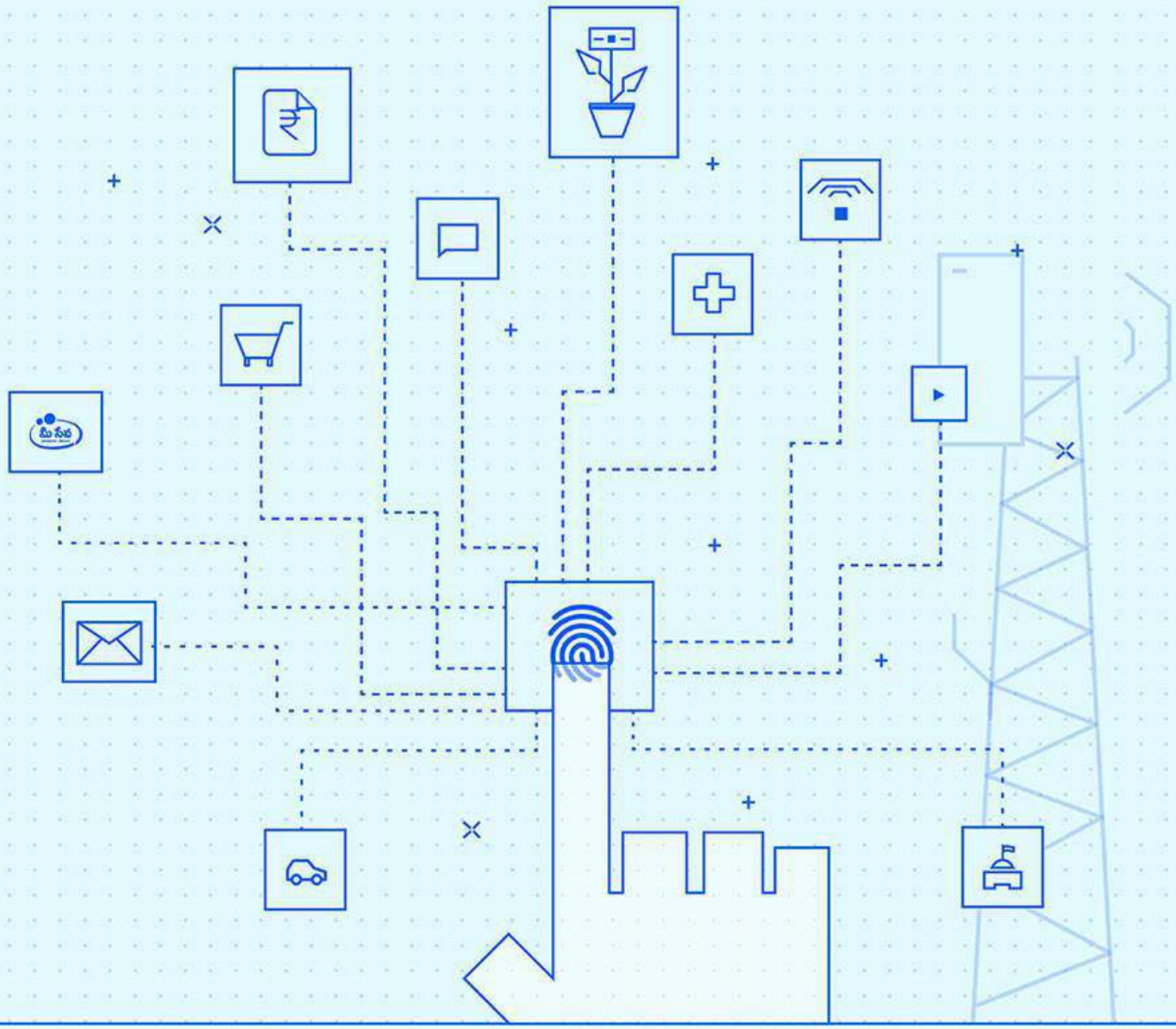
Engagement with Industry Associations

Today, the support from industry associations to the state of Telangana has massively helped improve the ecosystem and infrastructure for the IT/ITeS sector in the state. Strengthening the relations with industry associations from across the world will be of prime focus in attracting investments and generating employment within Tier-II and Tier-III cities. Trade organizations and NRI associations will also be encouraged to facilitate investments in the IT Sector. Suitable incentives to promote the investment in IT units in Tier-II and Tier-III cities will be launched shortly through sub-sectoral policy.



08

DIGITALLLY EMPOWERED CITIZENS



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TARGETS

To ensure that at least one individual in each household and SHG is digitally literate and is empowered to take advantage of the digital ecosystem.

One Digitally Literate member per household

One Digitally Capable member per Self Help Group

Right from the start of the digital age, as expected, the digital divide among citizens belonging to different socioeconomic backgrounds has been increasing. It is only imperative for the state to be extremely conscious of this fact and bridge the digital divide. The state will create solutions to give an advantage to the disadvantaged and will ensure that the citizens are sufficiently skilled to embark on the digitalization journey. Focus will also be on ensuring citizens of the state have a safe and secure access to the internet. Cybersecurity and data protection will be key areas of focus in order to protect citizens who will enter the digital world.

Digital Opportunities

Several requirements/needs of the citizens can be solved efficiently and quickly with the help of digital solutions. The government will focus on creating and deploying citizen-centric digital solutions keeping in mind the requirements of citizens.

Scalable Solutions

The government has piloted several solutions across sectors like agriculture, education, healthcare, etc. to provide highly capable solutions to the citizens in the state. Going forward, the state will focus on scaling up the solutions to reach each and every corner of the state and ensure the benefits are realized by even the most vulnerable citizens of the society.

Infrastructure Development

While solutions are being developed at a rapid pace, it is also important to make them accessible to all citizens. The main barriers that must be addressed are:

Access to the Internet

T-Fiber, a flagship initiative of the state that will connect all government institutions, urban and rural households is underway and will ensure the entire state has access to the internet in the next few years.

Digital Connection Points

To provide the citizens with common service locations in the state, several initiatives to build infrastructure have been taken up. In the case of agriculture, Rythu Vedikas have been built across the state. For education, we have several educational institutions and for citizen services, we have CSCs, MeeSeva centres and Digital Telangana Centers. More such destinations will be created for sector-specific needs like healthcare, SHGs, etc. which will all be connected to T-Fiber.

Digital Devices

To reap the full benefits of digital solutions, giving citizens access to end-point devices is important. The government will ensure that digital end-point devices like mobiles, tablets, etc. will be available at all the digital venues mentioned above.

Support Across Areas

Taking the socioeconomic status of citizens into account, the government will build and offer digital solutions across all the important focus sectors. For example,

T-Consult service which is a telemedicine service will be made available across the state in the coming years. The government is already offering digital classes through T-SAT. These services, solutions will be scaled up and efforts to meet the infrastructural needs of students will be taken up.
Basic agricultural support is being provided at the Rythu Vedika centres in the state. The government will ensure that the farmer have access to new-age technology-based solutions and can learn about them at Rythu Vedika centres.

The effectiveness of projects like Stree Nidhi is enhanced through the use of technologies like blockchain and AI to provide better support to these groups. The government will work towards ensuring that at least one individual in each SHG is digitally literate and is empowered to take advantage of the digital ecosystem.

Repository of Opportunities

A repository of all the digital solutions developed for various categories of beneficiaries will be created and access to it will be facilitated. The government's focus will be to ensure that beneficiaries are aware of all the solutions that are available to them.

Improved cybersecurity & awareness for citizens

With the development of digital infrastructure, the digital solutions available to the citizens, and the rapid increase in the number of internet users, developing mechanisms to improve the cyber-readiness of users is key. Cybersecurity for the citizens is now more important than ever, and the government has already launched a cybersecurity policy in this regard. The Government shall design cybersecurity awareness campaigns to increase the cyber-readiness of citizens & government departments.

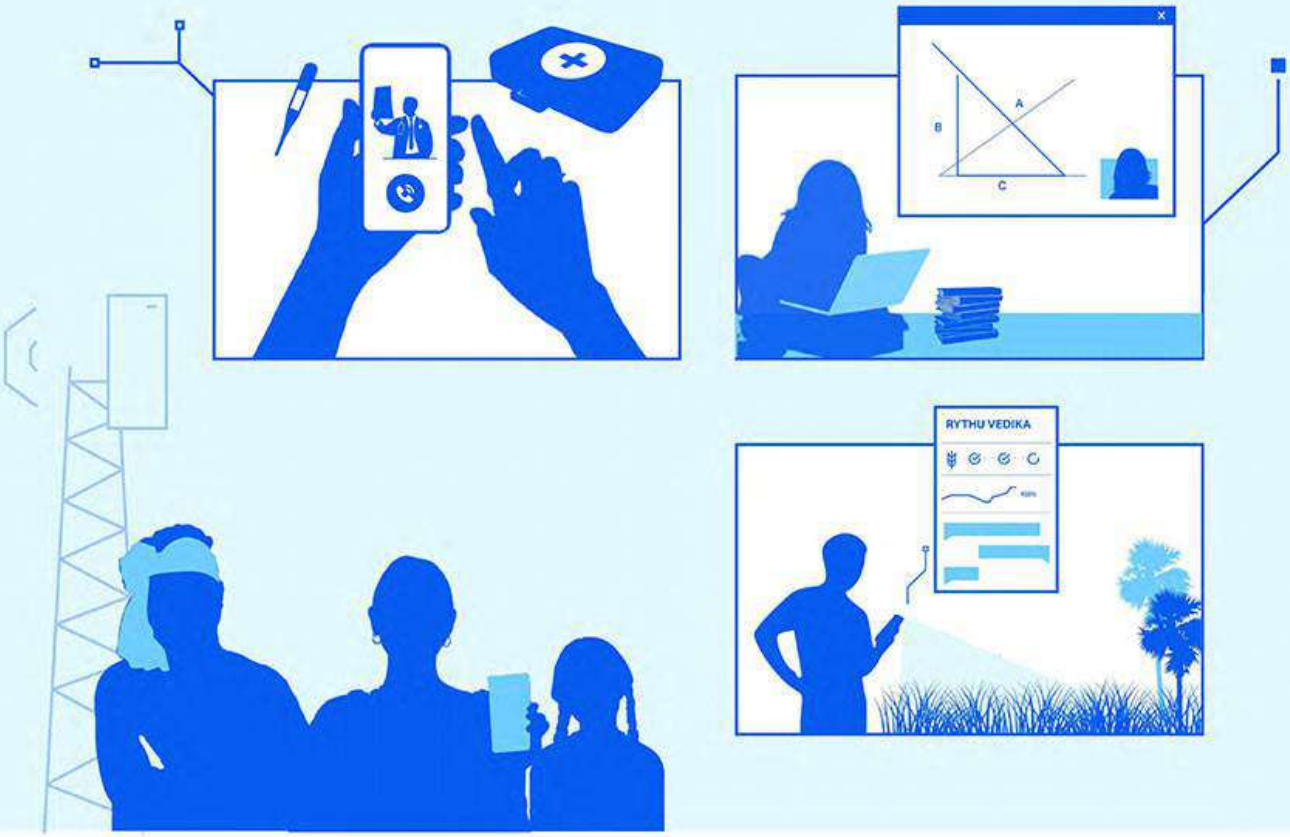
In addition to the preventive measures taken by the government, the Cyber Security Police Force will be strengthened to better address citizen grievances. Child and women safety will be bolstered with focused campaigns and special cybersecurity teams.

Accelerating PMGDISHA

Basic actions like bill payment, railway reservations, banking services among others are proven to make the citizens' lives hassle-free. The government has supported the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) by Digital India and facilitated the development of over 10 Lakh certified digitally literate citizens. Over the next 5 years, the government aims to increase the number of digitally literate citizens to over 50 Lakhs.

The Case of Ramana and Deepti

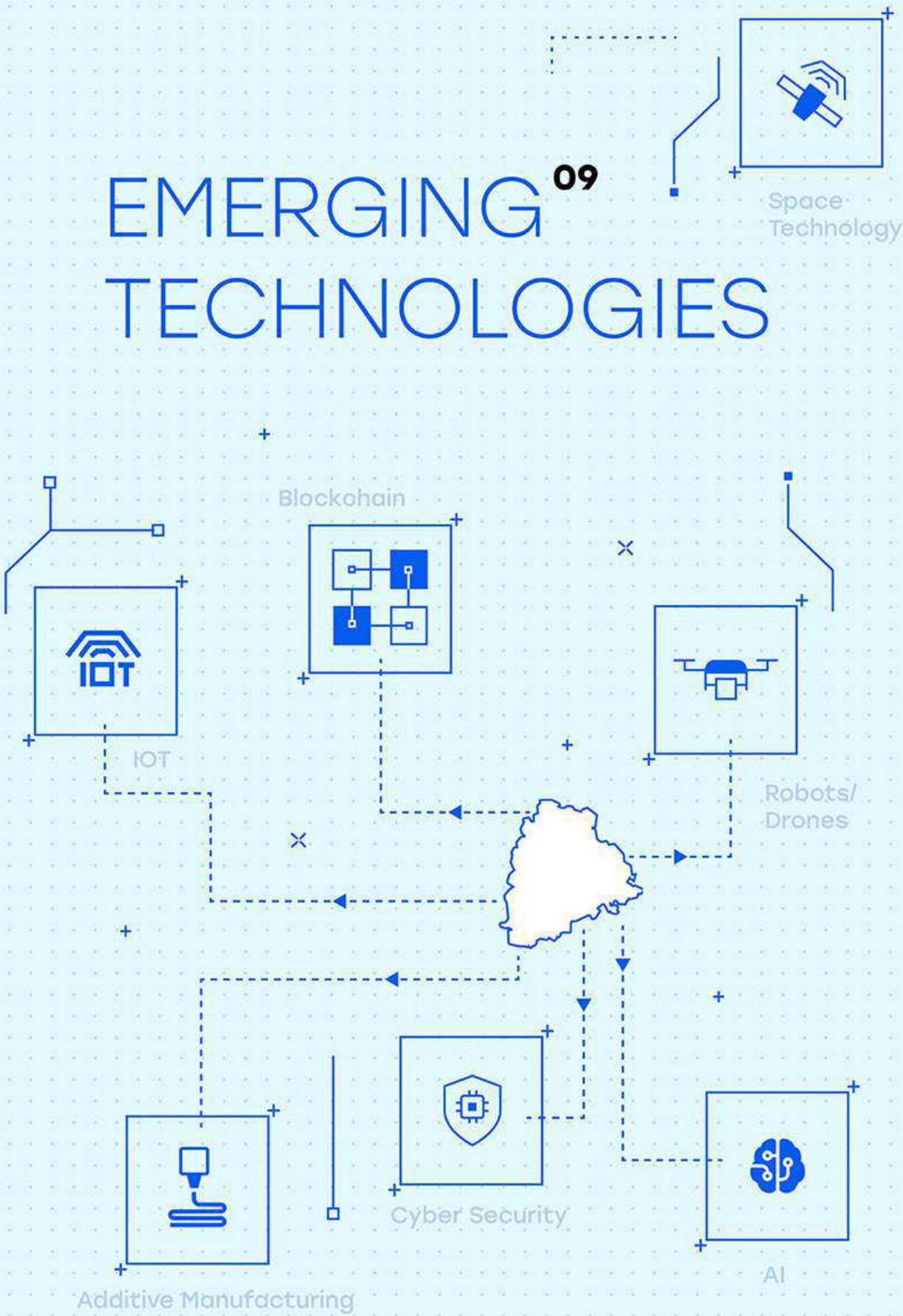
Ramana and Deepti are small families situated in a village in the Bhadradri Kothagudem district of Telangana. Ramana is a farmer who harvests cow gram and Deepti is a housewife. They have one daughter who is 13 years old, and she studies in the local government school. With the implementation of T-Fiber across the State of Telangana, their entire village is well connected and Ramana's family recently began attending the digital literacy online classes being organised by the government. By helping themselves become more digitally literate, Deepti could immediately access teleconsultation services to resolve a major health issue she has been suffering from. However, Ramana has been facing serious challenges with pest control of the crop. He then learnt from his peers about the Rythu Vedika and decided to access it for the benefit of his harvest.



Ramana was asked to click a picture of the present condition of his crop and the pest problem he was facing. On uploading the photograph, he got the required help in resolving this problem. He also got all the necessary support in seeking market prices for his crop in 5 different regions which allowed him to make a sensible and informed decision on his pricing strategy. Ramana greatly benefitted from all the support he got and could finally turn his business around into profits. This also made him realise the importance of not having an information gap with the market.

Due to the pandemic, their daughter has been unable to go to school and even as she has been attending online classes, Deepti was concerned about her daughter developing a good skill set. She was keen on her daughter improving some of her math and problem-solving skills by attending a supplementary course apart from customary coursework. She found out about classes given by professionals on the T-SAT application and ensured her daughter attended them in the evenings. This way, Ramana's entire family is digitally empowered and is secure of their access to infrastructure, necessary resources and required external knowledge.

EMERGING TECHNOLOGIES 09



TARGETS

75

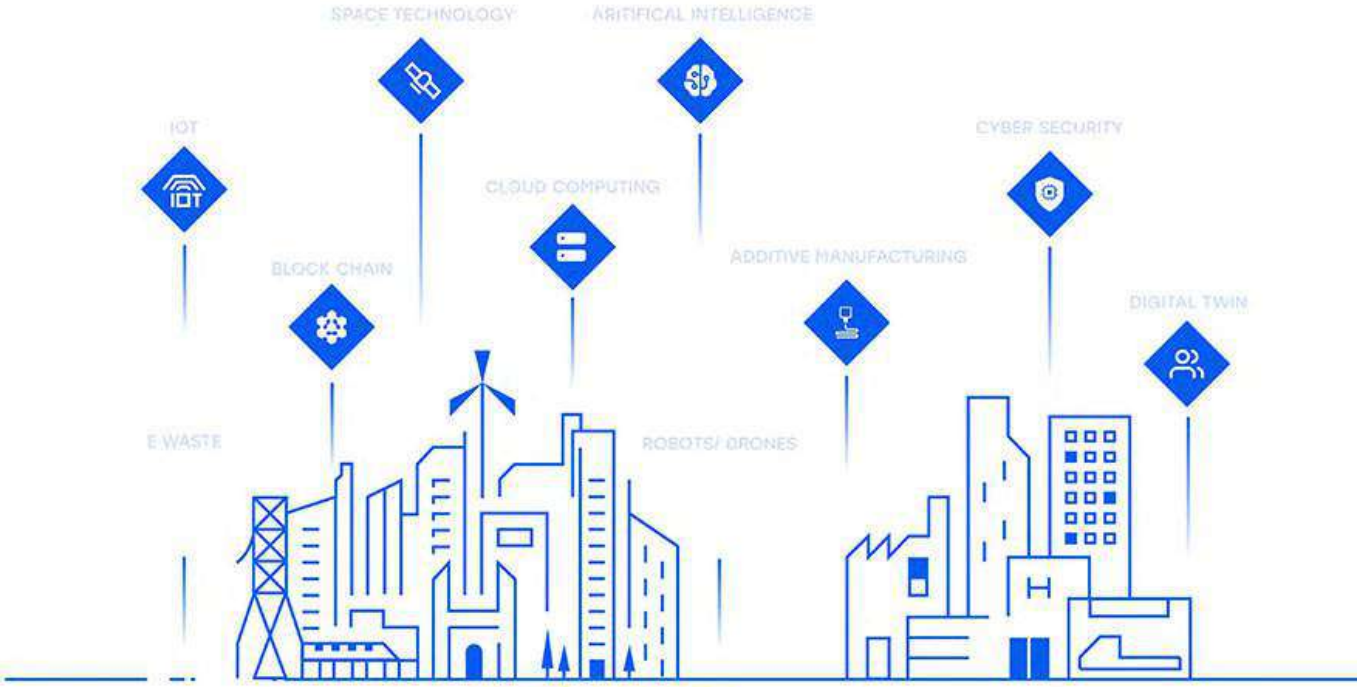
Undertake 75 innovative projects with focus on citizen services

10

Establish 10 emerging technologies focused Capability Centers (e.g., CoEs)

5

Establish 5 R&D centers to undertake deep research for new products and solutions



TET CORRIDOR

Acknowledging the fact that Emerging Technologies are driving disruptive innovations in many sectors, the Telangana State has been proactive at setting up the required institutional support and infrastructure for these technologies. The focus is on two aspects — ecosystem development for these technologies and government adoption to improve service delivery to citizens and businesses. The state has formulated strategy and policy frameworks for emerging technologies such as AI, Cloud Adoption, Blockchain, Drones, Cyber Security, E-waste and IoT. Centre of excellences or CoEs have also been established to drive the implementation of the strategic frameworks such as Telangana AI-Mission (T-AIM), Cyber Security CoE, E-Waste Management CoE, Centre for Responsible Deployment of Emerging Technologies (CRDET). The State envisions to retain its leadership position in emerging technologies.

Identifying high impact technologies

The government continues to explore the global developments for opportunities around transformative emerging technologies, the ones that have the potential to bring in disruptive innovations in the next three to five years. A few technologies that are showing great potential to be considered in the near term are:

Additive Manufacturing (AM)
AM or 3D Printing is transforming businesses with its potential of optimizing material consumption, creating new & complex shapes, and shortening production times. Further, the 'National Strategy for Additive Manufacturing' has been released to boost India's share in the global market projected to be USD 35.6 billion by 2023.

Space Technology
It has the potential for global commercialization and huge multiplier effect on the economy. From launch vehicles & satellites enabling indigenization to downstream applications enabling impact on sectors like agriculture, space is the new frontier. Also, there is national impetus to grow the private participation with release of Spacecom Policy, Space RS Policy, National geospatial policy*, etc. and gain share in global market projected to be USD 558 billion by 2026.

Robotics
The amalgamation of Computer Vision, AI, and robotics has enabled the development of automated equipment for multitude of tasks across diverse industrial settings. As of 2019, India ranked 10th in annual installations of industrial robots with just ~3% the number of installations compared to country that was ranked 1st, so the potential for growth is huge and the market is expected to reach USD 52 billion by 2026.

Digital Twins
Digital twins provide an exact virtual replica of an object (living or non-living), process or system, and even cities in the real world. The combinatorial use of IoT, Big Data and 5G for digital twins has unlocked various applications such as monitoring in construction and energy industry, healthcare by digital twins of patients, and planning, efficiency & traffic management in smart cities.

Adapting to changing workforce dynamics

The World Economic Forum in its report estimates that globally 850 lakh jobs may be displaced but 970 lakh new roles may emerge by 2025 as a result of emerging technologies. The destruction of jobs is accelerating and to ensure Telangana's workforce is trained for the future, Telangana Academy for Skill and Knowledge (TASK) shall monitor the state's shifting requirements and the skill-demand paradigms to develop a through and dynamic action plan to training for 'jobs of tomorrow'.

Establish Research & Development Centers

To truly become the hub for emerging technologies, the first link of the value-chain i.e., research is paramount. The government shall actively facilitate deep partnerships between industry, academia, and research institutions to establish R&D centers for developing new products and solutions in emerging technologies.

Realize the potential of Data Economy

The rise of smartphones, e-commerce, social media and IoT devices has led to generation of huge amount of data. The Internet traffic in India alone is expected to be 78 exabytes in 2021 (1 exabyte = 1 million terabytes). McKinsey estimates that India's core digital sectors have the potential to more than double to USD 435 billion by 2025, and the newly digitizing sectors incl. government applications can create incremental value of up to USD 150 billion in the same period. The data economy benefits the governments, citizens, industry and, academia in various ways ranging from transparency and empowerment of users to economic impact arising from innovation.

Telangana will try to achieve the potential of the data economy by creating a data stack ecosystem in the key sectors such as healthcare, agriculture, education, smart cities, and environment. A data marketplace will be set-up that will help discover and exchange data based on open standards, interoperability, open APIs, security-by-design, privacy-by-design and flexible data governance models.

Telangana as the Epicentre for GovTech

The state is already at the forefront of adopting innovative solutions developed by start-ups and SMEs. The solutions are being used to improve delivery of citizen services, governance, and process efficiencies. Currently, there are already 40+ ongoing projects using emerging technologies and the state endeavors to ensure full-scale implementations and adoption of such projects in user departments. To accelerate the development of innovative solutions for social good in the areas including but not limited to agriculture, healthcare, education, environment and smart cities, the government shall enable the digital ecosystem by:

Creating a Data Stack
A dynamic data stack is required to ensure rapid innovation and product development. So, the state shall create digital assets such as Electronic Health Records (EHR), Electronic Farmer Records (EFR), GIS Maps, etc. A Data Market Place (DMP) shall be established for the innovators to test their solutions in a sandbox using both government and commercial private data. The standards and guidelines for the use of data shall also be clearly defined.

Ethical and Responsible Deployment of Emerging Technologies
The state aims to create regulatory frameworks and guidelines that will help in addressing critical issues such as privacy, trust, and ethics ensuring that the transformative potential of emerging technologies is fully leveraged.

Promoting Digital Public Goods (DPGs)
The Digital Public Goods Alliance (DPGA), now endorsed by UN Secretary General's Roadmap for Digital Cooperation, is an effort by UNICEF and Govt. of Norway to promote digital public goods as a push to advancing the Sustainable Development Goals (SDGs). Telangana shall endeavor to support the development of citizen facing social good solutions such that they can contribute towards the development of DPGs that can potentially be used worldwide.

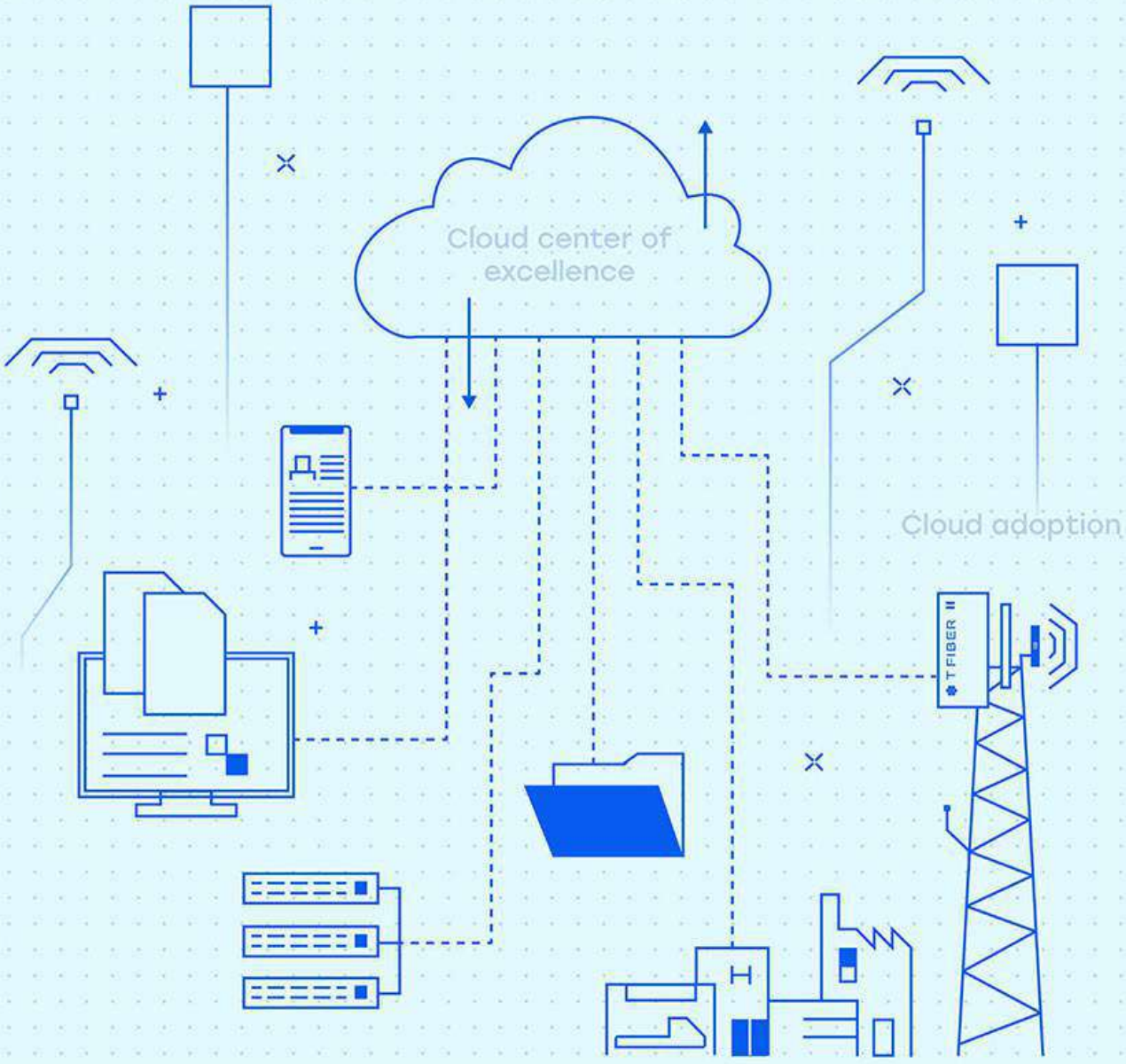
Easing Procurement
In addition to existing relaxations for start-ups in such public procurements, the procurement process would be streamlined with a model RFP outlining outcome-based requirements, new revenue models, new payment methods, risk mitigation measures in procuring from start-ups, etc.

Providing Government Mentorship
The government shall share problem statements, provide domain expertise, mentorship, and give an opportunity for start-ups to pilot the solutions. It shall also provide guidance for reconfiguring existing solutions to local context such as use of vernacular languages and integration with existing platforms.

TET (Telangana Emerging Technologies) Corridor

The government has come up with specific policy frameworks in AI, blockchain, Drones, cyber security and established Centres of Excellences to provide a platform for various stakeholders including industry, government, academia, user enterprises, and innovators to collaborate and co-create solutions and products. The CoEs or the technology Centers of Excellences proved to be a powerful economic development tool. Therefore, in order to coalesce the varied efforts and to foster a world-class ecosystem for emerging technologies in Telangana, the government shall set up the Telangana Emerging Technologies (TET) Corridor. The TET Corridor shall act as a "Hub for CoEs or Technology Centers". TET Corridor shall act as a platform for providing institutional support, thought leadership, promoting R&D and innovation, offering incubation, attracting investments, building partnerships, facilitating capacity building and more.

10 CLOUD – FIRST POLICY



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TARGETS

100% cloud adoption across government departments

The Government of Telangana has always led the adoption of new technologies through sectoral policies for several technologies like Cyber-Security, e-Waste Management, AI and Blockchain. In line with the Meghraj Policy launched by the Central Government in 2013, Telangana has launched the Cloud Adoption Framework for the state, mandating the use of cloud computing technologies within the government. The usage of such public cloud solutions will make the government solutions more agile and reliable while also providing the freedom to the departments to scale up or develop advanced solutions with ease.

Government Adoption

While the use of the cloud has been mandated in the state, it is necessary to educate the government departments and help them understand the advantages of using the public cloud over traditional on-site digital infrastructure. Fast becoming the new norm, cloud services provide the state with an opportunity to rethink digital service procurement and citizen service deployment. The Cloud Adoption Framework released by the Government lays out the key principles of cloud services and the methodologies of adopting these services.

Cloud Center of Excellence

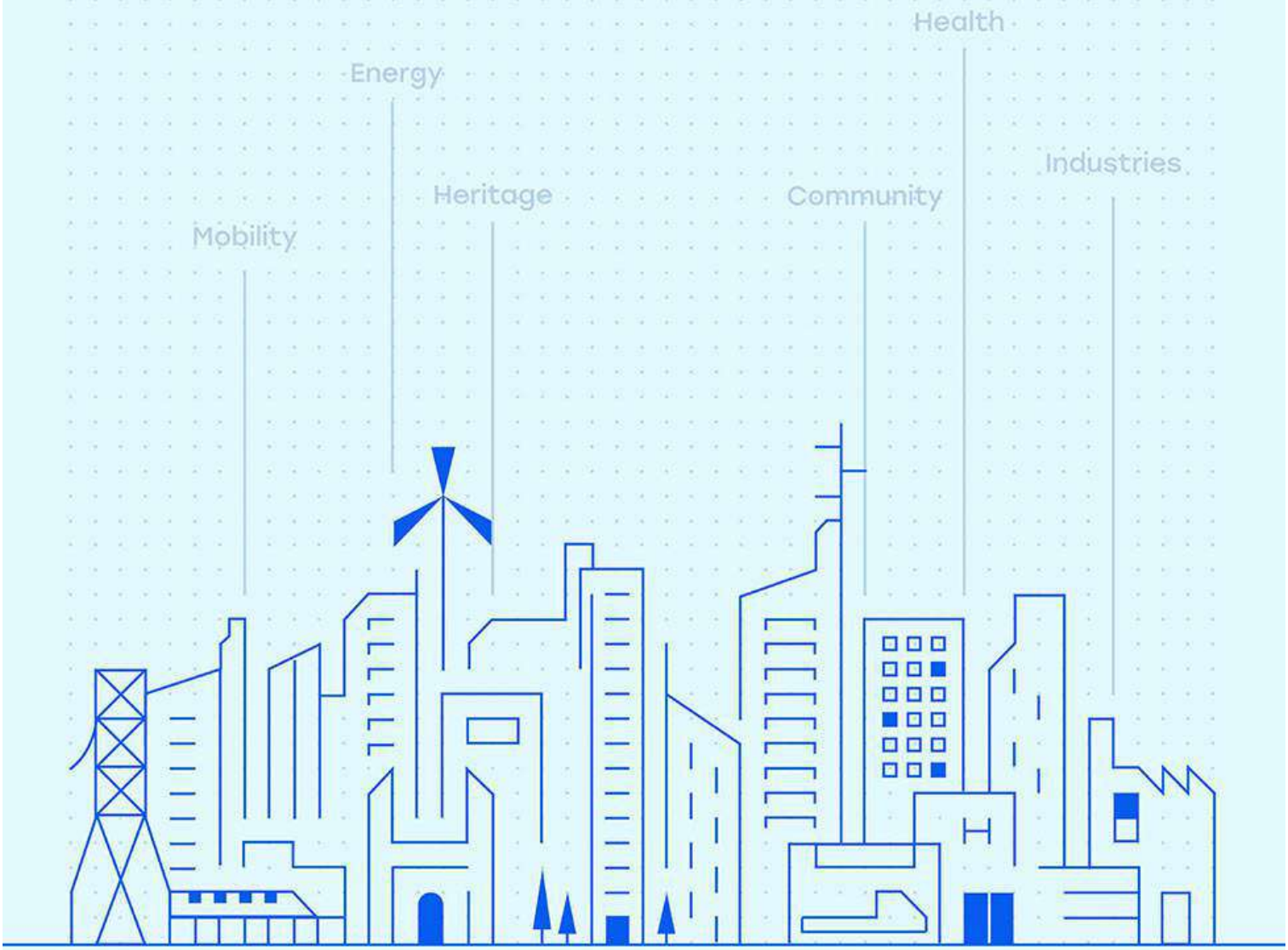
To assist the government in moving towards the cloud, the ITE&C Department is setting up a dedicated team of cloud specialists. This will help us accelerate cloud adoption across Telangana's user departments by propagating the best practices and capacity building across functions. The key functions of the Cloud Centre of Excellence would be:

- To assist user departments to comply with Telangana's cloud mandate
- To conduct a series of capacity building sessions for all key government stakeholders
- To provide advisory services around budgeting, evaluation, procurement, and continuous optimization migration plans, to-be architecture, and network & security configurations

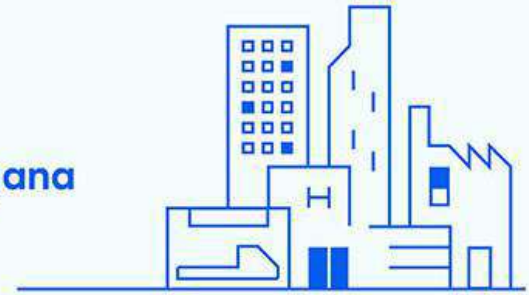
Cloud Service Providers and Data Center Investors

To better promote the use of cloud services and ease the process of cloud procurement, the government will facilitate cloud adoption following the empanelment model of MeitY. A service catalogue will be provided to the government department with empanelled services from cloud service providers after scrutiny of abilities. The catalogue will ease the process of price discovery and will outline a process of procurement that enables the users to make full use of cloud services. More details on the government's cloud adoption would be included in the cloud framework.

11 TECHNOLOGIES FOR URBAN LIVING



40+ Smart cities and localities in Telangana by 2026



Telangana is one of the most urbanized states in the country with over 40% of the state's population being urban residents. The government aims to convert all cities and major towns in the state into smart cities and facilitate this conversion for rural locations as well.

Town Domain Services

A multitude of town-specific application services in the domains such as mobility planning, waste management, housing, parking, health, and education facilities will be supported through new technological functionalities.

Smart Lighting

The use of IoT has greatly improved the scope and potential of Lighting Solutions in cities. LED and IoT-based smart lighting systems will be used to enhance power savings and add additional features to study air quality, noise pollution and pedestrian safety.

Smart Water

Smart Irrigation and water supply systems will be developed in the upcoming smart cities to study and improve the availability of water, decrease waste and monitor the usage of water better.

Smart Education

Digital education solutions will help us serve the students of the state better. The ITE&C Department will work with the Education Department and develop state-of-the-art learning solutions and give all students access to the best learning solutions.

Smart Healthcare

Digital Healthcare is a fast-growing space with innovations taking over the healthcare needs of citizens. Digital consulting, record-keeping, monitoring, and medicine delivery among others will be explored and made standard in the smart cities.

Smart Mobility

New technologies have the potential to transform to transportation needs of citizens. Projects like smart traffic signals, smart buses tracked public transport solutions will be explored by the government to improve reliability, accountability, and to ease citizens' lives.

Smart Tourism

With the emergence of technologies like AR and VR, there is a lot of scope to make tourist spots in the state more interactive and attractive for local and international tourists. The government will deploy suitable solutions with an emphasis on cultural showcases.

Smart Waste Management

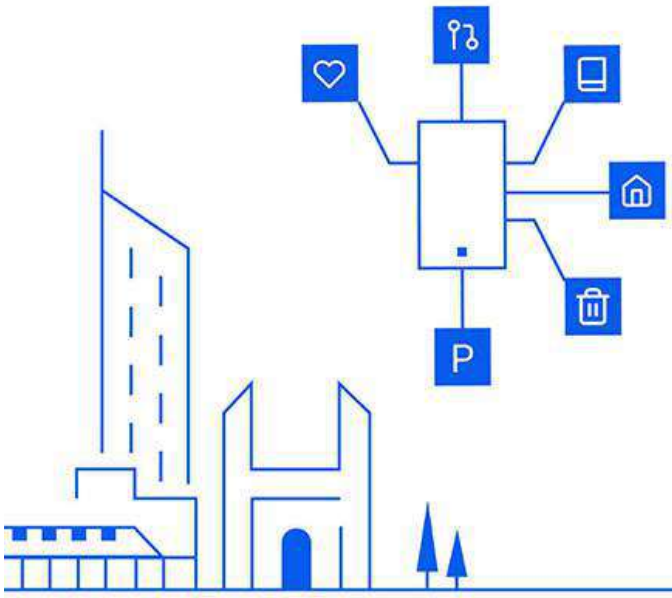
Waste management is a key consideration to designing a well-structured city. Hyderabad already has IoT-based smart waste management systems that help save fuel, time, and other resources. More such solutions will be explored, and more locations will have such smart technologies for waste management.

Data Driven Administration

Tools for smart administration will be set up in the city to monitor the operations, quality, and flow of elements like water, air, and traffic. The government and citizens will be enabled to get a holistic view of the city's operations and status. In addition, this will also enable data-driven and evidence-based decision-making and planning for the activities in the city.

Emergency Control

ICT functionalities will be developed in the selected smart localities to control activities and help the town's administrators to carry out operations efficiently during medical emergencies and natural calamities. Facilities along the lines of smart ambulances, smart traffic systems, and early crisis detection will be developed to aid emergency control services.



Government Services Enablement

Through E-Governance and M-Governance services, the government is en route to enabling a 100% digital service environment. The government will facilitate the setting up of physical infrastructure in the form of MeeSeva centres and T-Fiber to promote accessibility of digital services from the government.

Safety and Security

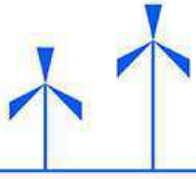
The digital transformation provides us with opportunities to improve the safety and security standards in smart cities. While the risks faced by citizens are both online and physical, through the use of technology, cyber-security police will be facilitated to counter them. There will also be a special focus on developing technological systems to make Telangana the safest state for women and children.

Employment and Investment Attraction

Data generated will not only allow innovators to provide solutions but will also help the smart cities to track and enhance objective development metrics like the Quality of Living Index, Municipal Performance Index, and ISO indices. These will portray development and attract further investments, jobs, and highly skilled employees to these cities. The Government of Telangana will engage with various private consulting and research organizations, to benchmark itself with the best in the world.

Safety and Security

The government will set up a dedicated Smart Cities wing equipped with expertise in this space. It will consist of resources from the MA&UD Department and the ITE&C Department that will focus on identifying the ideal solutions, piloting projects, and strategizing the deployment of the projects.



ITE&C DEPARTMENT AS THE TECH ENABLER

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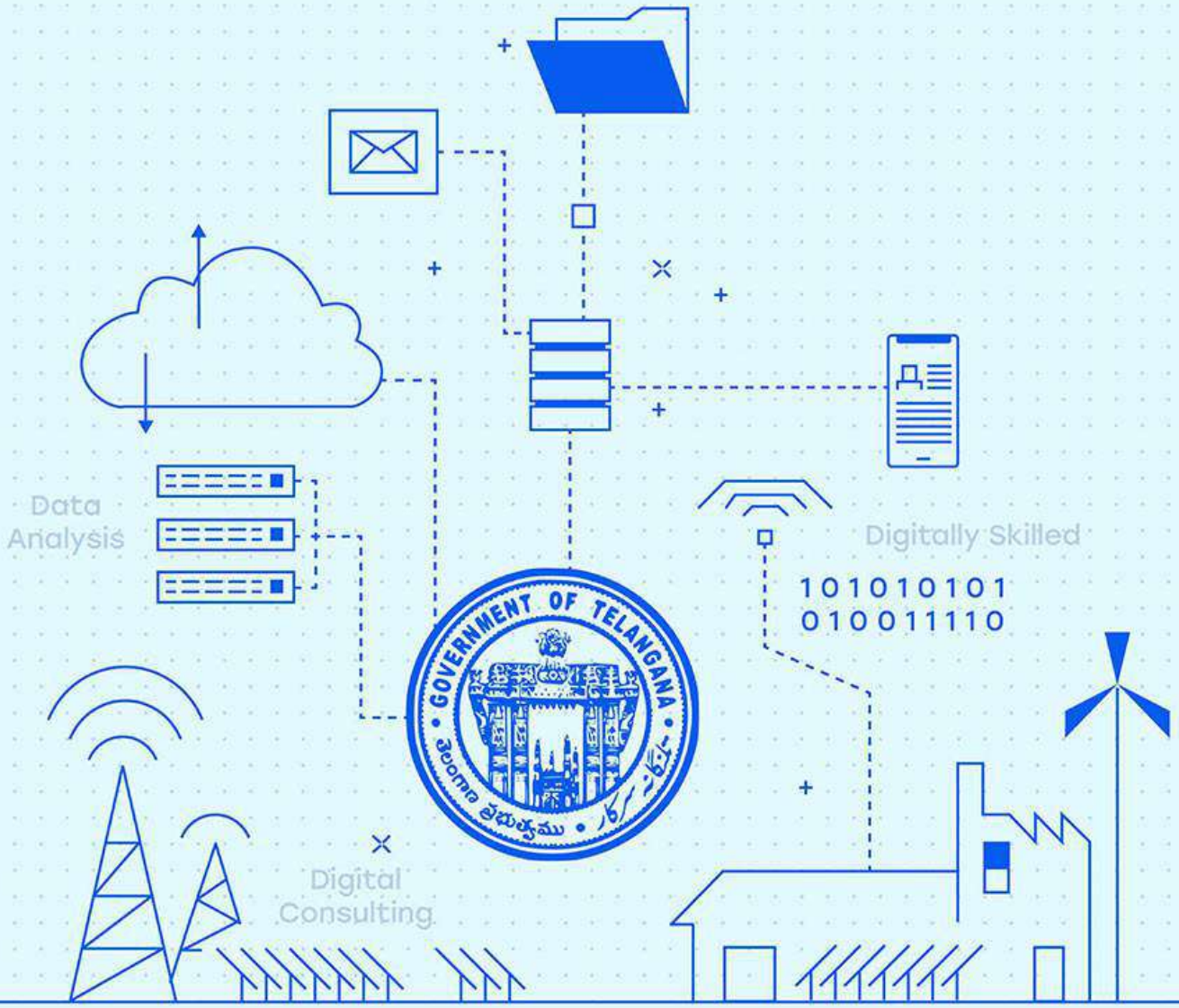

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TARGETS

50+ Digital Transformation Projects in the Government

40+ User Department Collaborations

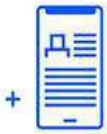
Telangana's journey to being a true digital state requires the government to be at the forefront of innovation and technology. The government will take a citizen-centric and data-driven design approach to develop and deploy solutions. The ITE&C Department will anchor this transition and will provide all the necessary support that government departments need for their digital solutions. Ensuring high quality of digital services and the safety of users will be of key focus moving forward.

ITE&C as the Technological Advisor

The government has taken steps to facilitate the use of new-generation technologies and digital solutions to serve citizens better. Telangana State Technology Services (TSTS) was established with the aim to provide all government departments with the right skills, guidance, and confidence to go digital.

Hardware and Software Procurement

TSTS is the nodal agency for the state departments to get their Hardware and Software requirements fulfilled. A Technical-cum-purchase committee has been created in TSTS to evaluate every request for procurement services. The committee will ensure the services provided to the state have been technically and financially evaluated in order to give the user departments the best services possible.



Digitally Skilled Workforce

Digital skills in the government are key to take up any form of digital transition. TSTS has the capability to identify or provide the right workforce required by the departments to carry out their activities. Given TSTS's expertise, it will also assist the government departments in recruiting suitably skilled employees for the state.

Digital Consultancy

Expertise in the digital sector is often a necessity to implement a project at scale from the process of planning and procurement. The expertise of TSTS in digital procurement and management will be used to provide the state with IT advisory facilities and to get the best solutions prepared. The government will also set up a dedicated arm in TSTS to support other states in the country with indigenously developed technology.

The T-WEB Project

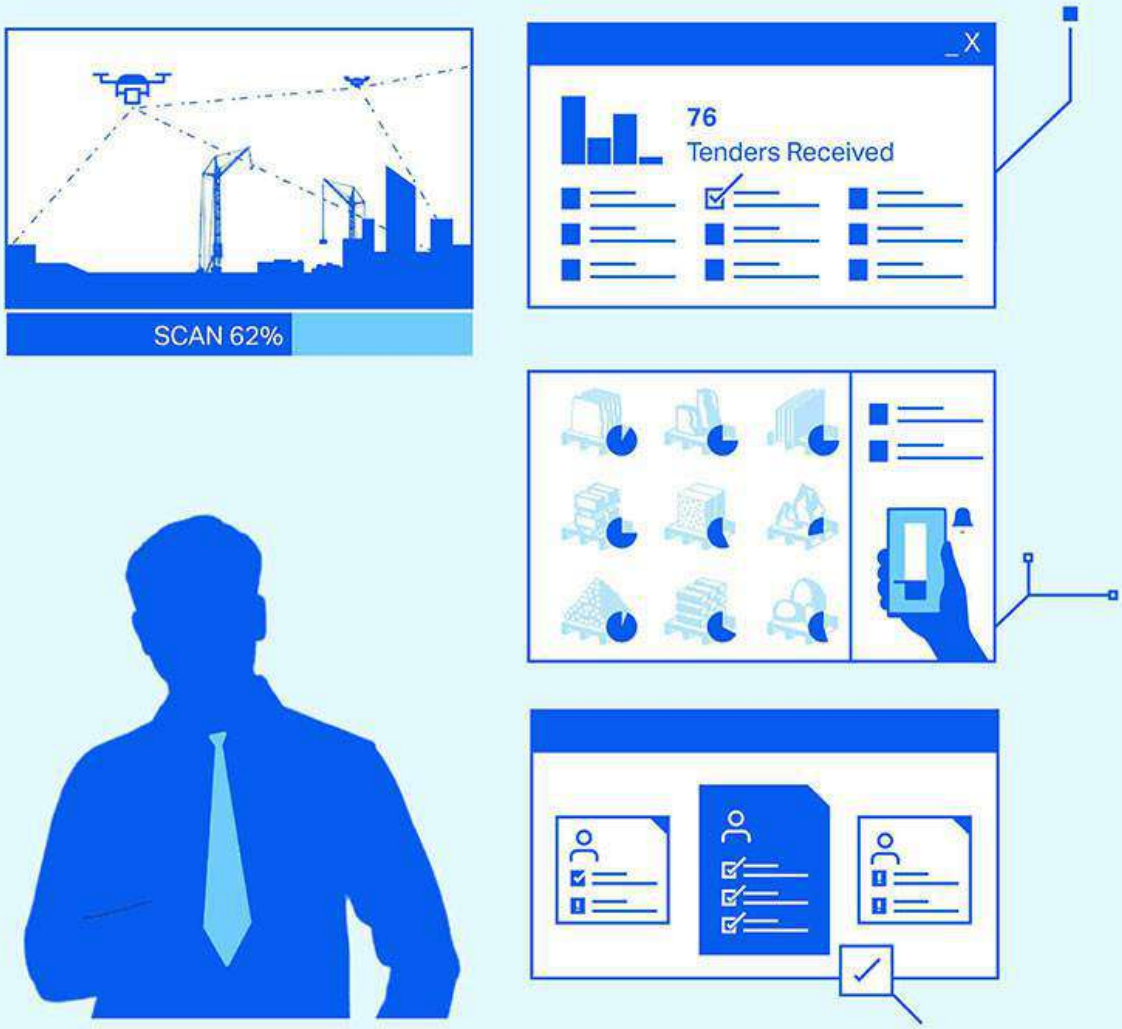
The Government of India through its Ministries, Departments and agencies have come up with guidelines for Websites and e-Governance Services including, but not limited to, Guidelines for Indian Government Websites (GIGW), National eGovernance Service Delivery Assessment (NeSDA). The Government of Telangana has adopted these guidelines and extended its scope to prepare Guidelines for Telangana Government Websites (GTGW) incorporating categories like social media integration, localisation, device-neutral access, and compliance to Aadhaar and RTI Acts.

All these compliance efforts are clubbed together under one umbrella called the T-Web Project. The ITE&C Department shall provide the necessary assistance to all the Government Departments to make their websites and online services comply with the relevant guidelines. The objective of these efforts is to make websites and online services Secure, Usable, User-Centric and Universally Accessible.

Data Analysis Wing

Understanding the citizens within the state is key to creating an effective digital strategy. To further the citizen-centric service deployment, a data analysis wing will be created within the ITE&C Department to better understand users from the data generated across government departments and to deliver data-driven services for the citizens. This model will not only ease communication and service delivery but will also aid data-driven policy decisions.

The Case of Srinivas



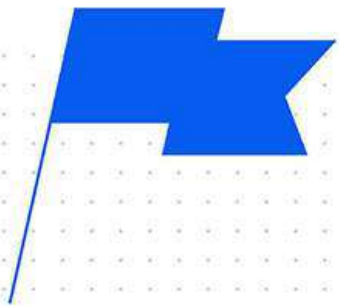
Srinivas is the project manager for the 2BHK dignity housing scheme being implemented by the Government of Telangana looking after all activities of the project in the region of Hyderabad. He made use of survey drones to identify suitable plots of land to commence construction of the project. After identification of the project, he was able to finalize on the construction firms through an e-tendering process led by the procurement portal. All permissions required for the buildings were given to the contractors in a matter of 21 days through the TS-iPASS portal. Once construction commenced, he was able to track the availability of resources by using the resource planner application created for the project. The progress was also tracked on the same project with regular updates from the site all through the use of the application. When several thousands of applications have come in from the public, he used the AI-based Digital Verification Tool available to identify the right beneficiaries and saved several man-hours of work for the same. With some help from the technological solutions developed by the government, Srinivas was able to identify the deserved beneficiaries and help them realize their dream of dignified housing much sooner than expected.

Looking Ahead

Telangana has been on an incredible journey of excellence since its establishment as a new state in 2014. This has been possible due to the visionary leadership and executional excellence shown by the state's leaders. They set the trajectory for Telangana's growth at its inception and then followed through with flawless execution. From the beginning, it was decided that technology would be the enabler that would help the state reach greatness and all that the state has achieved is because of the dedication to this vision.

However, Telangana is not resting now with the laurels it has accumulated. The state has taken stock of where it can improve and is now gearing towards the next big leap. After benchmarking with the best of economies, the state is looking to double production, productivity, farmers' income and overall, improve the welfare of all sections of society. It also aims at having the most optimum utilization of natural resources, high quality of living and an accountable and citizen-centric government. As has been Telangana's history, technology will play a major role in pursuing all the above goals going forward as well.

To this end, the 2nd ICT Policy will be the instrument that will place IT in the centre stage of fulfilling the vision of Golden Telangana. This policy document will set the path for Telangana to continue achieving greatness and empowering the lives of all its citizens.



Shri Jayesh Ranjan, IAS
Principal Secretary, ITE&C Department,
Government of Telangana

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Hyderabad, Telangana 500063

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040-23453233

Annexure 2

Telecom Regulatory Authority of India

Recommendations

on

USE OF STREET FURNITURE FOR SMALL CELL AND AERIAL FIBER DEPLOYMENT

New Delhi, India

29.11.2022

Mahanagar Door Sanchar Bhawan,

Jawahar Lal Nehru Marg,

New Delhi – 110002

CONTENTS

TABLES

ANNEXURES

CHAPTER 1
INTRODUCTION

1.1 The consumer demand for smarter devices like mobile phones, pads, tablets, smart watches, and gaming consoles that support smart applications is rising immensely. With the Covid pandemic, the digital landscape has further changed. There is insistence on the quality of data usage and the need for the swift adoption of next generation communication services to support work, entertainment and learning from anywhere. A large ecosystem of application vendors reliant on high speed, low-latency and ubiquitous wireless connectivity has also emerged. Over 812 million internet wireless internet subscribers in India, consuming about 17.68 Gb average data per subscriber per month[1] is a testimony to the changing digital landscape in India.

1.2 Data consumption will further increase with rollout of next generation technologies as 5G is expected to better support new services and advanced technologies such as IoT, Artificial Intelligence (AI), Virtual Reality (VR) etc. It is imperative that the 5G networks are designed to keep up with the changing demands of citizens, industries, and cities. New age requirements are forcing the use of higher frequency bands to ensure support for ultra-high speeds. However, the use of higher frequency bands for 5G rollout poses the downside of shorter coverage and lower cell radii which in turn forces the need for densification of the network to ensure consistent coverage. Densification of the network means Telecom Service Providers (TSPs) must install a greater number of radio equipment and associated infrastructure. This poses a major economic and operational challenge for them. To handle this densification challenge, they need to have equipment that is small enough to be mounted on any structure, yet capable of supporting new age applications. The financial viability will also be kept in mind. Supplementing macro cells with a large number of small cells due to its

[1] July 2022 TRAI internal data analysis reports

portable and easy to deploy nature makes it a promising solution to achieve network densification.

1.3 Small cells are low-powered radio access nodes or base stations (BS) operating in licensed or unlicensed spectrum that have a coverage range from a few meters up to a few hundred meters[2]. The attributes of small cells (radio, antenna) are compressed such that they are portable and easy to deploy. Small cells intend to provide localized coverage in households and hotspot services especially in areas like city centres and transport hubs. Small cells provide coverage only for a very short distance and therefore they are installed in a dense or hyper dense manner, i.e., a very large number (even more than 200 per square kilometer) for good geographical coverage to provide highly reliable and high-capacity broadband. Due to its lower level of radiation, small cells require less stringent security and installation practices so easy to install and operate. Also, there are suitable to be mounted on any existing street furniture like poles, bus stands, traffic lights, buildings, etc. Despite being low on physical footprint these radio units provide huge data capacities to their users.

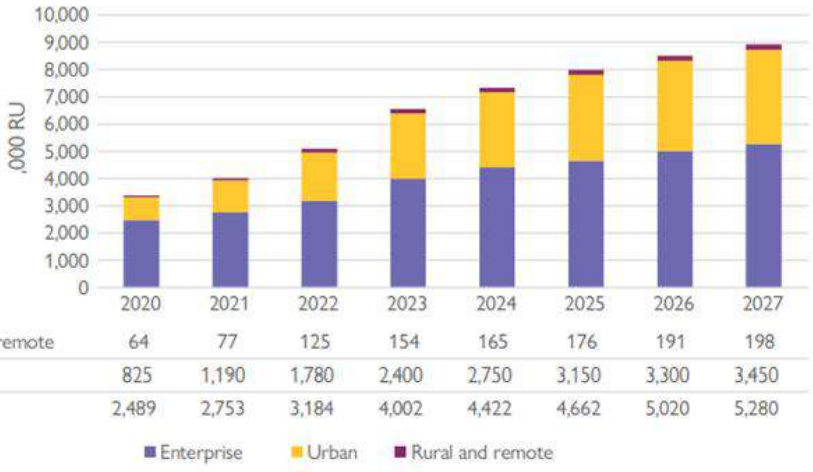
1.4 The Small Cell Forum (SCF), through its Market Forecast Report 2022[3] predicts that there will be steady growth in small cell deployment between 2020 and 2027. Figure 1.1 displays the forecasted growth of small cells in enterprises, urban areas, rural and remote areas for the whole global market. The sharpest growth is expected to take place till 2024 as major rollouts will be completed and much of this growth is driven by an uptick in deployment of urban small cells. Figure 1.2 represents the forecasted deployment growth of small cells in regional terms. The Asia-Pacific region is expected to become the chief deployment engine owing to the large-scale rollout in China, South

[2]https://www.gsma.com/publicpolicy/wp-content/uploads/2016/12/GSMA_Small_Cell_Deployment_Booklet.pdf

[3] https://scf.io/en/documents/050_-_Small_cells_market_forecast.php

Korea, Japan including India with its growing investment in 5G small cells.

Figure 1.1: Forecasted trends of deployment of small cells at the Global level

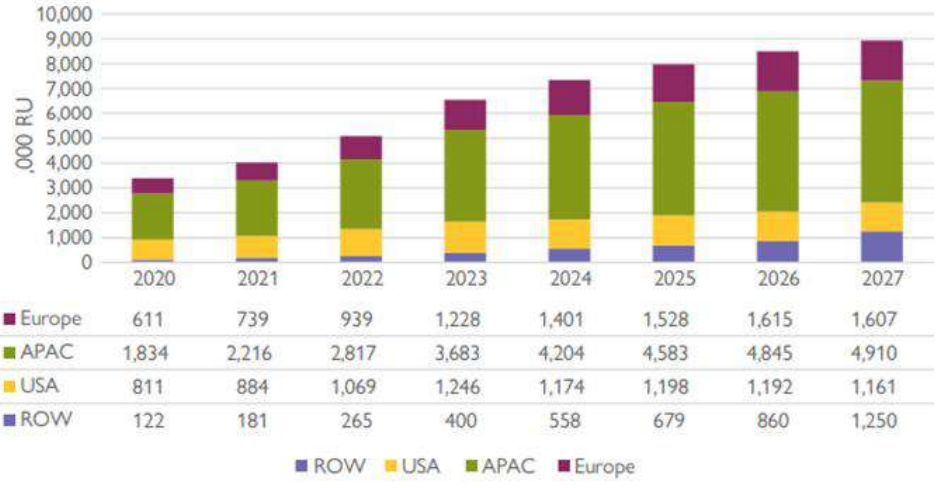


	2020	2021	2022	2023	2024	2025	2026	2027
Rural and remote	64	77	125	154	165	176	191	198
Urban	825	1,190	1,780	2,400	2,750	3,150	3,300	3,450
Enterprise	2,489	2,753	3,184	4,002	4,422	4,662	5,020	5,280

Figure 1-1. New deployments and upgrades of small cells and DAS by environment 2020-27 (by numbers of radio units deployed or upgraded)[3]

(Source: Small cell Forum market forecast, July 2022)

Figure 1.2: Region wise comparison of forecasted trends of deployment of small cells



	2020	2021	2022	2023	2024	2025	2026	2027
Europe	611	739	939	1,228	1,401	1,528	1,615	1,607
APAC	1,834	2,216	2,817	3,683	4,204	4,583	4,845	4,910
USA	811	884	1,069	1,246	1,174	1,198	1,192	1,161
ROW	122	181	265	400	558	679	860	1,250

Figure 1-2. New deployments and upgrades of small cells and DAS by region 2020-27 (by numbers of radio units deployed or upgraded)

APAC – Asia –Pacific, ROW- Rest of World
(Source: Small cell Forum market forecast, July 2022)

1.5 For densification of the 5G network infrastructure, making use of the wide variety of Street Furniture (SF) (publicly owned structures like

utility poles, billboards, lamp posts, traffic signals, and public structures like gazebos, bus stops, etc.) to place small cell and aerial fiber equipment can act as the most economically feasible and sustainable mechanism for large-scale deployment of small cells. It can provide a win-win situation to the public and the authorities owning the street structures as they can benefit and gain from 5G use cases. On the other hand, TSPs can benefit from lower deployment costs.

1.6 This potential solution of making use of street furniture for small cell and aerial fiber deployment has its own challenges. These include regulatory and public concerns such as that related to local approval, Right of Way access, aesthetics and safety, availability of backhaul and power at SF. Collaboration between several stakeholders like administrators, local/municipal councils, power sector entities, service providers, infrastructure providers, vendors shall be essential to the success of this deployment model.

1.7 In the telecom sector, collaboration is not a new phenomenon. It has proven its worth when the need of more towers to provide 3G services and increasing pressure on the bottom-line, the TSPs started collaborating within the sector for infrastructure co-creation and sharing. Independent infrastructure providers (IP-I) created towers and ducts that were shared and used by multiple TSPs. Now the outlook needs to shift from within the sector to collaboration with cross-sectoral partners like Smart Cities, City Municipalities, Airport/Port owners, DISCOMs etc. to use their street furniture for network deployment.

1.8 Internationally there are many lessons which can be studied and used to develop India specific deployment models. Several countries have adopted different mechanisms to tackle various regulatory and technical challenges. USA has adopted stipulated timelines for review and acceptance of permits and specification of the types of fees that can be collected for small cell deployment. EU is one of the first regions to have clearly defined the permit free physical and technical characteristics of

small cells and adopted the installation classes as per the International Electrotechnical Commission (IEC).

1.9 While 5G rollout can certainly keep up with the promises of a reliable and high-speed connectivity to support the upcoming technologies, bringing in a structured pathway to achieve large scale densification for 5G rollout seems to be the first and foremost step. The Authority realized the importance of small cells in 5G network rollouts and in its broadband recommendations dated 31st August 2021, the Authority had mentioned that there is a need to evolve a regulatory framework regarding the use of public places and street furniture that is fair, transparent, and effective, ensuring standardized guidelines to make street furniture ready to deploy small cells. In view of the deliberation in the broadband recommendations dated 31st August 2021, the Authority released a Consultation Paper on the topic "Use of Street Furniture for Small Cell and Aerial Fiber Deployment" on 23rd March 2022. This is hereinafter referred to as CP in these recommendations.

1.10 During consultation process, the Authority sought inputs from the stakeholders on issues like RoW, power, permit exemption, challenges of commercial deployment, sharing of street furniture and the need to define and adopt a regulatory and legal framework for the use of street furniture for small cells and aerial fiber deployment for the successful rollout of next generation networks in the country. In response to the CP, TRAI received 17 comments and 2 counter comments from stakeholders. These were placed on TRAI's website: www.trai.gov.in. Open house discussion (OHD) with stakeholders in respect of the CP was organized on 24.08.2022.

1.11 In addition to floating of the Consultation Paper, TRAI has simultaneously initiated pilots at Bhopal Smart City, GMR International Airport New Delhi, Deendayal Port Kandla and Namma Metro Bengaluru on use of street furniture for Small Cells and aerial fiber deployment. Major Telecom Service Providers and Infrastructure Providers like Bharti

Airtel, Reliance Jio, Vodafone-Idea and BSNL are participating in these Pilots at different locations.

1.12 The objective of these pilot projects was to understand and analyze the technical and logistical challenges in future deployment of small cells over street furniture and to ensure complete synergy among all stakeholders. For each Pilot, a working group has been constituted by TRAI. Significant progress has been achieved in the Pilots in a short time with the active support from working groups included officers from TRAI Regional Offices, BMRCL, Deendayal Port Authority, Bhopal Smart City, GMR, Ministry of Housing & Urban Affairs (MoHUA), Department of Telecommunications, Telecom Service Providers (TSP) and Infrastructure Providers (IPs).

1.13 These pilots were designed to explore challenges in using brownfield infrastructure created by entities belonging to sectors other than telecom like electricity poles owned by DISCOMs, traffic lights owned by traffic police, etc. These pilots, which were in the spirit of the objectives of the PM GatiShakti programme, were thus expected to help develop a suggestive cross-sector participative framework particularly for the use of street furniture for deployment of small cells on it. While finalizing these recommendations, the Authority has also taken into consideration the practical on-ground difficulties faced and the learnings from these pilots.

1.14 After analyzing the various issues involved and considering the comments received from stakeholders from written responses and OHD and in consideration of the learnings from the pilot, the Authority has finalized these recommendations.

1.15 The objective of these recommendations is to develop and recommend a structured and uniform system to the Government for deployment of small cells and aerial fiber using SF. A well-streamlined approval process inculcated in the legal framework, along with properly defined physical and technical characteristics for equipment usage and EMF emissions

will simplify the administrative process and reduce the time to market of the TSPs/IPs and optimize resource utilization for the 5G rollout.

1.16 Therefore, the recommendations intend to pave a path on the subject while taking into consideration the regulatory and technical concerns of multiple stakeholders like the Administrators, TSPs, ISPs, IPs, OEMs, street structure owners and citizens of the country at the same time. Appreciating that the policy measures suggested in these recommendations are linked to each other and all together form a coordinated approach, an integrated approach wherein all these recommendations are considered in their entirety would be best to ensure a positive result in the deployment of small cells using street furniture.

1.17 These recommendations are broadly categorized into following:

A. Right of Way (RoW) Issues and adequacy of current provisions in ROW rules 2016
B. Infrastructure sharing by the Controlling Administrative Authorities (CAA) with TSPs and IP1s
C. Street furniture and small cell sharing among TSPs and IP-Is
D. Process Simplification, Permission Exemption for small cells and standardization of small cells and installation practices
E. Power related issues and solutions
F. Institutional mechanism for enabling Collaboration between Controlling Administrative Authorities and TSPs/IP-Is

1.18 Chapter 1 introduces the background and objective of the recommendations. Chapter 2 discusses the issues related to the deployment of small cells and aerial fiber on street furniture, comments of the stakeholders and recommendations of Authority based on the analysis and learnings from the pilots. Finally, Chapter 3 summarizes the various recommendations.

CHAPTER 2

USE OF STREET FURNITURE FOR SMALL CELL AND AERIAL FIBER DEPLOYMENT

2.1 The CP released on 23rd March 2022 discussed the potential challenges for the use of street furniture for small cells and aerial fiber deployment in the country. Questions were raised to seek inputs from the stakeholders on several important issues. These issues, comments of stakeholders, analysis of these comments, and the views of the Authority are presented in the following sections.

A. Right of Way (RoW) Issues and Adequacy of current provisions in RoW Rules 2016

2.2 The RoW permissions are governed by the Indian Telegraph Act, 1885 and rules made thereunder. With an objective to ensure uniform adoption of RoW rules across all the states and streamlining the process of RoW approvals, the Indian Telegraph RoW rules were notified in 2016. These RoW rules were further amended in 2021 to facilitate laying aerial optical fiber cables[4]. After issuing this Consultation Paper, DoT had come out with another amendment to RoW rules in August 2022 that addresses some of the issues that were flagged in TRAI's CP. This amendment to Right of Way Rules had made the charges for RoW permissions reasonable and a ceiling for RoW charges for installation of 5G small cells and optical fiber cable on street furniture has been fixed. These amendments will facilitate deployment of 5G small cells on existing street infrastructure.

2.3 Rollout of 5G network will require increasing number of radio and backhaul equipment that will need to be installed on street furniture infrastructure that are under the control of multiple authorities. These Controlling Administrative Authorities (CAAs) have their different RoW

[4] https://dot.gov.in/sites/default/files/Gazette%20Notification%20dated%2021

policies. In addition to varying RoW policy framework at State/UT level, another issue is of different policies being followed by central departments for granting RoW permissions. Absence of specific provisions for seeking permissions for deployment of small cells is another issue. In the CP, the Authority has discussed the issues related to provisions related to the use of street furniture for small cell deployment, uniform definition, fees, and timelines. The Authority has raised the following questions for seeking the response from the stakeholders:

i) Is there a requirement for any modification in existing RoW Rules as notified by DoT to accommodate small cell deployment on street furniture? If yes, please provide the changes required.

ii) Are the amendments issued to RoW rules able to take care of the needs of aerial fiber deployment? If not, what further amendments are suggested? Please provide the exact text with justification.

iii) What are the suggestions of stakeholders for aligning RoW policies issued by various other Central Government Bodies with existing DoT RoW policy?

Comments of Stakeholders on modification in RoW rules to accommodate small cell deployment on street furniture

On modification in Indian Telegraph RoW Rules, stakeholders have submitted the following –

2.4 Inclusion of specific definition for Small Cells and Street Furniture - Most of the stakeholders said that the present RoW rules are more aligned towards overground mobile towers and underground fiber deployment. These rules are silent on small cell deployment and access to street furniture. So, the details about small cells should be explicitly captured in a technology neutral way as part of overground (OG) infrastructure besides mobile towers and telegraph lines, in the opening paragraph of the rules. Inclusion of a dedicated section for street furniture use with enforceable provisions is another suggestion that has been put forward for the same. On the contrary, some stakeholders are

also of the view that there is no requirement for any modification as the existing RoW policy provides sufficient directions to enable telecom operators to execute all telecom infra projects.

2.5 Provision of single Online RoW portal – Several stakeholders have opined that for RoW clearances, a single pan India portal should be developed by the Central Government. State Governments and all appropriate authorities under the Central Government should be encouraged to join the portal rather than having portals for each authority or state separately. The portal should implement features like:

a. a user-friendly 'end-to-end digitized process'.

b. the concept of deemed approval.

c. Single window clearance within 30 days.

d. Empowered centralized coordinating agencies can be established to fast-track and smoothen the process of permissions for usage and upgradation of existing SF in the portal.

e. Submission of RoW applications for approvals (including suitable alerts/notifications/notices to users, receipts, acknowledgement, Service-level agreements (SLAs), contact details of relevant technical officials and 1st/2nd level of escalations).

f. Display of stages of approvals and status of a particular application.

g. Clearly defined roles for central, state, and local authorities.

h. The portal should cater to all aspects of the approvals including fiber, power, and access to street furniture.

i. The list of applicable street furniture shall be maintained by the CAAs on the portal with defined uniform norms, terms, and rate schedule along with relevant details like height, design, weight bearing capacity, location coordinates etc.

j. Creation of a national GIS (Geographical Information System) by the DoT which could be used by all the common agencies to coordinate for issuing RoW permissions. It should comprise State/UT wise GIS data for the applicant.

k. The applicant should be required to submit to the Authority a self-declared intimation on the portal for the usage of street furniture.

l. Provision to issue notices through digitized process on RoW portal before taking any adverse action like fiber cutting.

m. The details of authorized structural engineers shall be made available on a portal attesting to the structural safety of the street furniture where the small cells are proposed to be deployed. However, some stakeholders have suggested that provisions of the structural stability certificates should not be made applicable for the small cells.

2.6 Streamlining of RoW charges and authorization procedures - One of the biggest bottlenecks for speedy rollout of telecom infra, as pointed out by the stakeholders, is high RoW charges. In the opinion of a stakeholder, existing RoW charges are unreasonable and not based on the actual work done principle. It was added by the stakeholder that there are certain states like Odisha which have prescribed forward looking and technology supportive charges for utilization of street furniture, but majority of the states and municipal bodies treat RoW permissions as a "cash cow". Few stakeholders have put forward request that no application fee or compensation should be levied for installing the poles for providing support to over-ground telecom lines over the immovable property of the Local/ Government Authority. For establishment of poles over private land and buildings, it was suggested that application fee and one-time charge should not exceed Rs. 100. One of the service providers has submitted that the compensation for usage of immovable property for establishment of telecom infrastructure should be fixed for a minimum period of five years irrespective of whether the ownership of

the land resides with Central or State Government. One stakeholder was of the opinion that the fee of Rs.1000 per application as per the RoW rules of DoT should be further rationalized. Another stakeholder has submitted that in cases any agency like a CPSE/private distribution company desires a fee, the fee charged should be nominal (not more than Rs. 100/annum). A couple of stakeholders said that the charging schedule should be fixed based on defined area and street furniture category. Another stakeholder suggested that the Authority can recommend slabs based on the number of small cells deployed on the street furniture.

2.7 There is a submission that seeking Bank Guarantees (BGs) should not be insisted on for small cell deployment since this will result in blocking huge working capital and impacting TSPs financially and operationally.

2.8 Other suggestions –

- Stakeholders have suggested including instant or fast one-time bulk RoW permissions at zero cost.
- One service provider suggested that the respective authority/agency/ department should request for the removal of small cells only by giving a 30-day notice and providing an alternative location for re-installation.
- Compliance with RoW Rules and mandatory access to small cells for mounting telecom infra should be a precondition while issuing permissions to erect street furniture.

Comments on provisions of RoW Rules (Amendment) 2021, related to aerial fiber

2.9 In response to the query on whether the 2021 RoW amendment has been able to address various aerial fiber deployment issues, few stakeholders have opined that the 2021 amendments had the right intent to address the issues of aerial fiber proliferation, however, it is the lack of enforceability provisions that have impacted the effectiveness of the

rules as all the states are yet to incorporate the same in their policies. To tackle the issue of enforceability, some stakeholders have suggested that the amendments must be brought as a parliamentary law, so that they may be made mandatorily applicable to every central/state/local agency. Another stakeholder has suggested the inclusion of key Government agencies like Railways, Defense, Gas pipeline network, forests, ports etc. under the DoT RoW rules.

2.10 Stakeholders have suggested that the annual compensation for using existing poles to establish an OFC should not exceed Rs. 100 and Rs. 50 per pole in urban and non-urban areas, respectively. CAAs should be restricted from charging any additional fee other than that prescribed in DoT RoW rules schedule. In line with no RoW charge for BharatNet, the same must also be applied to the rollout of aerial fiber for any telecom infra project.

2.11 A few stakeholders have suggested that a list of street furniture which can be used for deployment of aerial fiber can be uploaded on the respective State's RoW Portal/Central Authority's portal by the CAAs. One stakeholder has proposed that all state electricity poles, municipal poles can be allowed for laying of aerial fiber. The use of existing billboards, metro pillars, gas pipelines etc., for lightweight aerial fiber, clamped with the right accessories, can also be permitted. Mandating/encouraging the sharing of aerial fiber as much as possible was suggested by a few stakeholders. The need to define rules by the local authority to maintain aesthetics of the area was another suggestion.

Comments on Alignment of Central RoW rules across states/local bodies/ agencies

2.12 Several stakeholders have made suggestions to bring consistency in RoW related procedures and general principles related to RoW permission, fees, compensation, charges etc. The basis of some of the suggestions is that 'telecom' is a central subject, and that the Center has

exclusive privilege to provide for guiding principles in relation to establishment of telecom infrastructure in the country. One of the stakeholders has stated that the Central Government can exercise their powers and mandate adoption of RoW rules by the central government bodies and states in their respective policies/ by-laws.

2.13 A stakeholder has suggested that the term 'Central Government Authorities' should be expanded to include any central agency, department, ministry, and their assets. Many stakeholders have suggested that all central government bodies, agencies, ministries, departments, and the authorities under these CPSEs, PSUs falling under the Union ministries/departments, Airports should operate under DoT RoW Rules. Any Smart City, municipality, state body getting financial support through Union Government funding must also facilitate deployment of Small Cells and telecom infrastructure by way of suitable amendments in their respective policies.

Analysis of the issues and views of the Authority

2.14 The Department of Telecom (DoT) notified the Indian Telegraph RoW Rules[5] on 15th November 2016 to ensure uniform adoption and streamlining of the process of RoW approvals across all the states. The Authority recognizes that the issue of RoW permissions can potentially hamper the proliferation of small cells in India. The adequacy of provisions of existing RoW rules needs to be ascertained for the use of street furniture for deployment of small cells and telecom infrastructure. Given the important role that small cells will play in enhancement of coverage and capacity, it needs to be ensured that the RoW permissions for small cells are not affected due to tedious application processes, delayed/denied permissions by the authorities, site restrictions, and arbitrary charges.

2.15 After this Consultation Paper was issued, DoT had come out with another amendment to RoW rules on 17.08.2022 that addressed some

[5] https://dot.gov.in/actrules/indian-telegraph-row-rules-2016

of the issues that were flagged in TRAI's CP. This amendment to Right of Way Rules has made the charges for RoW permissions reasonable and a ceiling for RoW charges for installation of 5G small cells and optical fiber cable on street furniture has been fixed. These amendments will facilitate deployment of 5G small cells on existing street infrastructure.

2.16 After analyzing the comments, the major concerns related to RoW provisions and views of the Authority are as follows:

i) **Inclusion of definition for small cell and street furniture in RoW Rules**

2.17 When the Indian Telegraph Right of Way (RoW) Rules 2016 were first notified on 15th November 2016, the opening paragraph mentioned that:

> *"In exercise of the powers conferred by sub-section (1) and clause (e) of sub-section (2) of section 7 read with sections 10, 12 and 15 of the Indian Telegraph Act, 1885 (13 of 1885), the Central Government hereby makes the following rules to regulate underground infrastructure (optical fiber) and overground infrastructure (mobile towers), namely……"*

2.18 The rules did not have a definition of underground infrastructure and overground infrastructure. The Rules rather had definition for "underground telegraph infrastructure[6]" and "overground telegraph infrastructure[7]" which was quite wide and inclusive definition. However, the G.S.R part of the RoW, 2016 rules included just optical fiber as part of the underground infrastructure and mobile towers alone as part of the overground infrastructure. This created a confusion amongst stakeholders and Appropriate Authorities. The Authority thus felt that amending the G.S.R part would broaden the scope of the rules for

[6] "Underground telegraph infrastructure" means a telegraph line laid under the ground and includes manholes, marker stones, appliances, and apparatus for the purposes of establishment or maintenance of the telegraph line.

[7] "Overground telegraph infrastructure" means a telegraph or a telegraph line established over the ground and includes posts or other above ground contrivances, appliances and apparatus for the purpose of establishment or maintenance of the telegraph or the telegraph line.

inclusion of aerial fiber on poles and installation of small cells on street furniture for rollout of emerging technologies i.e., 5G. In TRAI's Response dated 25.07.2022 to DoT back reference on Recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed', the Authority therefore recommended amending the opening paragraph of Indian Telegraph Right of Way Rules, 2016 as follows:

> *"G.S.R. 1070(E). —In exercise of the powers conferred by subsection (1) and clause (e) of sub-section (2) of section 7 read with sections 10, 12 and 15 of the Indian Telegraph Act, 1885(13 of 1885), the Central Government hereby makes the following rules to regulate underground telegraph infrastructure and overground telegraph infrastructure, namely"*

2.19 DoT has recently amended the ROW Rules 2016 on 17.08.2022 and have incorporated provisions for faster processing of RoW permissions, predetermined charges for granting RoW permissions for installation of 5G small cells and optical fiber cable on street furniture, etc. In this amendment, DoT has omitted the brackets and words (optical fiber) and (mobile towers and telegraph line) from the opening paragraph. Subsequent to the amendment, the opening paragraph of Indian Telegraph Right of Way Rules, 2016 reads as follows:

> *"G.S.R. 1070(E). — In exercise of the powers conferred by sub-section (1) and clause (e) of sub-section (2) of section 7 read with sections 10, 12 and 15 of the Indian Telegraph Act, 1885(13 of 1885), the Central Government hereby makes the following rules to regulate underground infrastructure and overground infrastructure, namely"*

2.20 Thus, DoT has already modified the opening G.S.R part to broaden the scope of the rules. This has dealt the issue of otherwise restrictive interpretation that someone could have made and has removed any

scope for confusion for inclusion of aerial fiber on poles and installation of small cells on street furniture for rollout of emerging technologies.

2.21 In the opinion of Authority, the definition of "overground telegraph infrastructure" in the Indian Telegraph Right of Way Rules as *'a telegraph or a telegraph line established over the ground and includes posts or other above ground contrivances, appliances and apparatus for the purpose of establishment or maintenance of the telegraph or the telegraph line;'* is wide enough and sufficiently covers various telegraph infrastructure like small cells and aerial optical fiber cable. Any further inclusion of definition or clarification was not required.

2.22 However, Authority has noted that vide Indian Telegraph Right of Way (Amendment) Rules, 2022, following definitions have been added in Sub-rule (5) in Rule 10 of Chapter III:

> (5) For the purposes of this rule, and rule 10B and the Schedule, the expression,
>
> (a) "mobile tower" means any above-ground contrivance for carrying, suspending or supporting a telegraph and does not include pole;
>
> (b) "pole" means any above-ground contrivance of height not exceeding eight meters for carrying, suspending or supporting a telegraph and does not include mobile tower;
>
> (c) "small cell" means a low powered cellular radio access node that has a coverage of distance from ten meters to two kilometers.

2.23 Further, DoT vide letter (attached as **Annexure I**) dated 26th October 2022 has clarified that the term "Street furniture" mentioned in the Right of Way (Amendment) Rules, 2022 includes "post/pole used for electricity, streetlight, traffic light, traffic sign, bus stop, tram stop, taxi stand, public lavatory. memorial, public sculpture, utility pole or any other structure or contrivance of such nature established over the property of an appropriate authority". This has obviated the need for a

further definition/clarification. But the Authority is of the opinion that this clarification should be subsequently made part of the RoW rules through an amendment in relevant Gazette Notification.

2.24 **Therefore, the Authority recommends that the DoT clarification dated 26.10.2022 on Indian Telegraph RoW rules 2016 regarding the term "street furniture", should be made part of the Indian Telegraph RoW rules through a suitable amendment in a relevant Gazette Notification.**

ii) **Online Central RoW portal**

2.25 For a faster and efficient deployment of 5G in the country, a single-window clearance through online application process for all RoW proposals at the level of the states/UTs as well as in the Central Government/Departments can avoid administrative hindrances like multiple applications, different rules by different departments, permission delays etc. The Authority agrees with the industry inputs on the importance of a National RoW portal. In its recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31.08.2021, the Authority has emphasized for creation of National Portal for RoW permissions to facilitate expeditious rollout of telecom and other essential utilities infrastructure.

2.26 Various appropriate authorities like those dealing with Irrigation, PWD, Forest, Railways, Defense Estate, Power, National Highways, State Highways, and other bigger entities having land parcels under their control like Universities, Industrial Park, Logistic Parks, Ports, Airports etc., have already instituted mechanisms for granting RoWs permission to service providers and infrastructure providers for Telegraph Services. Some of these entities are using their own portals for giving such permissions. Recognizing that multiplicity of portals at several levels can further increase the complexity rather than reduce it, in the 31st August 2021 recommendations, the Authority had also recommended that

"*wherever Appropriate Authorities, i.e. different Central Government Departments, States, Union Territories, Local Authorities and their agencies, have already established the web based portals for grant of RoW permissions, the same should be integrated with the proposed national portal for RoW permissions.*"

2.27 The Authority is happy to note that in sync with its thought process, the Sub-rule (2) of Rule 4 of the RoW rules 2016 has been amended as follows in the RoW (Amendment) Rules 2022:

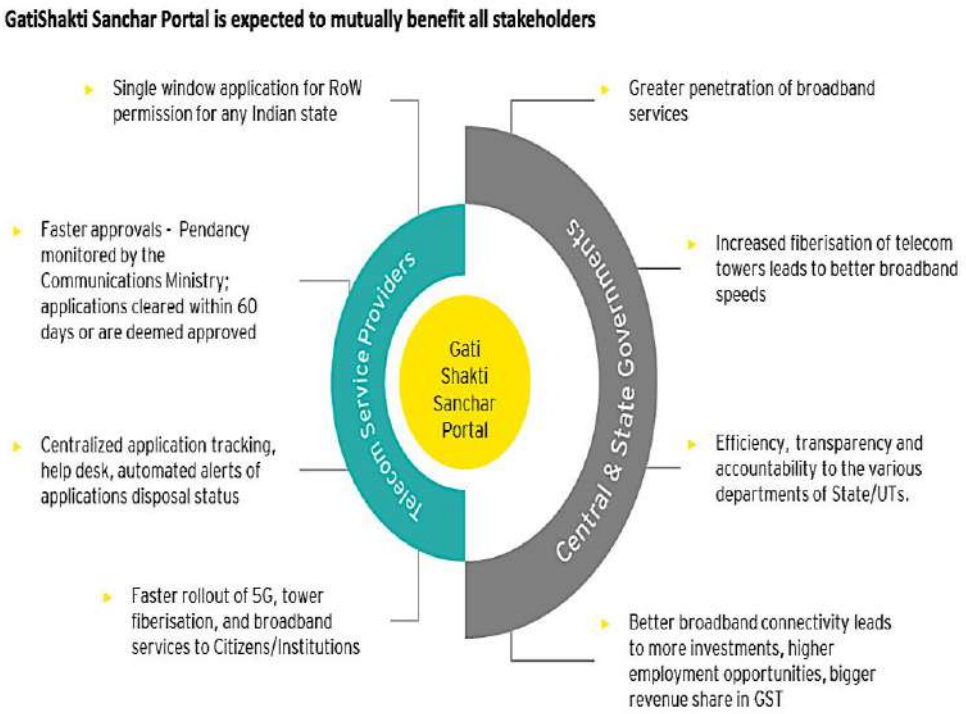
> ***4. Nodal officer to be designated by local authority, etc.-***
>
> *(1) Every appropriate authority shall designate a nodal officer for the purposes of these rules.*
>
> *(2) Every application for permission under these rules shall be made by the licensee on an electronic portal developed by the Central Government.*

2.28 The above amendment is an important initiation to integrate the central/state/local level applications on a single portal. The IT systems of all States/UTs and major infrastructure central ministries such as Railway, Highways have been integrated with the portal to make India ready for 5G launch. This can aid the State Governments & Union Territories in RoW policy alignment and can greatly reduce the complexity of multiple permissions. In addition to the above, the launch of a new 5G RoW application 'form' on GatiShakti Sanchar Portal in August 2022 is another big leap to enable faster 5G rollout in India.

2.29 For making the PM GatiShakti initiative successful, it is necessary that right of way permission needs to be approached in a holistic manner. Given the complexity of the numerous NOC's, physical documents, and permissions that would increase with the use of small cells, the establishment of the portal will act as a single window clearance is a need of the hour. The Authority appreciates the efforts of DoT launching the **"GatiShakti Sanchar Portal" (https://sugamsanchar.gov.in/)** in May 2022, in line with Hon'ble PM's vision of development of

infrastructure services in an integrated manner. This is a collaborative institutional mechanism between all stakeholders including Central and State/UT Government(s), Local bodies, and Service Providers to facilitate the Right of Way (RoW) Application Process through a single interface. This portal envisages bringing transparency, accountability and responsiveness to all stakeholders while processing the application. This is also a giant leap towards "Ease of Doing Business" as this can take care of the delay in the application process for installation of Digital Connectivity Infrastructure (DCI) due to inconsistency and uncertainty of policy through the maintenance of a fast-tracking application process. Figure 2.1 shows the various provisions of the portal and the benefits it can provide for both TSPs and the Government.

Figure 2.1: Provisions in the GatiShakti Sanchar portal



2.30 Power sector contributes to majority of accessible street furniture like electric poles/lines/supply pillars/cabinets/posts, which can be utilized by the telecom operators for the deployment of 5G Small cells. Appreciating that a huge number of applications for power connection at several poles/SF shall also be an integral part of the deployment

process, the Authority had previously recommended the following in its 31.08.2022 recommendations.

7.14. National RoW Portal

(iii) *In order to facilitate cross-sector collaboration for RoW permissions with other utility providers like water, electricity, gas etc. and co-deployment of telegraph lines with other utility infrastructure creation, at later date, it should be possible to expand the scope of the proposed national portal to grant RoW permissions to other utility providers also.*

2.31 Currently the "GatiShakti Sanchar Portal" does not have a provision for power related applications and permissions. Considering the above;

2.32 **The Authority reiterates its earlier recommendations issued in the context of Broadband Recommendations dated 31.08.2022 vide Para 7.14.iii that the scope of the proposed national portal should be expanded to grant RoW permissions from utility providers like water, electricity, gas etc. also. More specifically, since most of the SF assets are under the control of the power sector, the portal shall also include a facility to process RoW falling under the jurisdiction of power sector including DISCOMS.**

iii) **Provision of Bulk approval for small cells:**

2.33 The Sub-rule (1) of Rule 10A under 'Application by a licensee for Establishment Of Overground Telegraph Infrastructure' provisions that *"A licensee shall for the purpose of installation of small cell and telegraph line submit an application, along with details of street furniture and a copy of certification by a structural engineer authorized by appropriate authority, attesting to the structural safety of the street furniture where installation of small cells and telegraph line is proposed to be deployed, to the appropriate authority for permission to use street furniture for*

installation of small cells and telegraph line." The Authority feels that adding a provision for bulk approval and bulk processing for small cell applications along with the above rule would be required to serve the needs of the licensees who want to establish small cells in large numbers. Some countries don't require approvals in the first place. For instance, in Australia, only a consultation with the councils is required. But currently in the context of India and in view of avoiding administrative delays, the Authority supports the idea of batch processing for groups of small cells.

2.34 Considering the above, **the Authority recommends the following amendments to the Indian Telegraph Right of Way (Amendment) Rules, 2022:**

Sub-rule (1) of Rule 10A of the Indian Telegraph Right of Way (Amendment) Rules, 2022 should be amended as:

A licensee shall for the purpose of installation of small cell and telegraph line submit an application, along with details of street furniture and a copy of certification by a structural engineer authorized by appropriate authority, attesting to the structural safety of the street furniture where installation of small cells and telegraph line is proposed to be deployed, to the appropriate authority for permission to use street furniture for installation of small cells and telegraph lines.

Provided that licensee may have option to submit single application for multiple sites and appropriate authority shall make due provisions for accepting such applications and issuing single permission for multiple sites accordingly for establishment of small Cells.

2.35 **The Authority also recommends that DoT should make provision in the GatiShakti Sanchar Portal for accepting single application for bulk processing of sites for granting various permissions, including RoW and power connection.**

iv) **Cataloguing street furniture and GIS Mapping**

2.36 GIS mapping is one of the crucial instruments to monitor and assess the infrastructure deployment and utilization. GIS is prevalent in several nations for ICT development. Availability of details of the street furniture and all the passive infra that individual TSP/ISP/IP-I intends to offer for sharing along with its location on common GIS platform will help in bridging the information gap. To facilitate sharing of passive infrastructure such as ducts, optical fibers, posts, etc., the Authority had earlier recommended cataloguing of telegraph related passive infrastructure, establishment of an e-marketplace and suggested that the available passive infra can be mapped by each TSP/ISP/IP-I using a common GIS platform which should be maintained by the Government. The relevant extracts of the recommendations dated 31.08.2021 are as follows:

7.31 To facilitate the sharing of passive infrastructure such as ducts, optical fibers, posts etc. the Authority recommends that:

In order to ensure common standards for mapping of available passive infrastructure using the Geographic Information System (GIS), Telecom Engineering Centre (TEC) should notify the standards for this purpose.

The passive infrastructure available in the country should be mapped by each service provider and infrastructure provider using the GIS standardized by TEC.

After mapping of the passive infrastructure details by individual service provider and infrastructure provider, the same should be aggregated on the common GIS, which should be maintained by the Central Government or the Regulator. Passive infrastructure of individual service provider and infrastructure provider which is available for sharing and selling should be clearly delineated on this system.

To facilitate leasing and trading of passive infrastructure in an efficient manner, the Central Government should enable establishment of e-marketplace(s) for this purpose. Such e-marketplace should be able to access the details of the passive infrastructure of individual service provider and infrastructure provider which is delineated for sharing and selling on the common GIS platform.

2.37 PM GatiShakti National Master Plan has been developed as a Digital Master Planning tool by Logistics Division, Ministry of Commerce. The plan has been prepared in a dynamic GIS platform wherein data on specific action plan of various Ministries/Departments have been incorporated within a comprehensive database. Dynamic mapping of all infrastructure projects with real-time updation will be provided by way of a map developed by BISAG-N. The map is built on open-source technologies and hosted securely on Meghraj (Government of India's cloud service). It will also use Satellite imagery available from ISRO and base maps from Survey of India. Once the individual Ministries update their data in the software using its separate user identification, all the data will be integrated in one platform which will be available for planning, review, and monitoring. The Logistics Division, Ministry of Commerce will further assist all the stakeholders through BISAG-N, in creating and updating their required layers in the system and update their database through Application Programming Interface (APIs). Analysis by providing the entire data at one place with GIS based spatial planning and analytical tools having large number of layers like land

use, existing structures (e.g., bridge, railway crossing, culvert), soil quality, infrastructure (Road, Rail, Waterway etc.), elevation data/3D (contour and gradient), habitation sprawl etc. enabling better visibility to the executing agency.

2.38 The Department for Promotion of Industry and Internal trade (DPIIT) has requested the states and UTs for integration of various data layers related to different infrastructure assets on State Master Plan portal. Subsequently, in a significant move, the DPIIT vide letter (attached as **Annexure II**) dated 24th June 2022 has further requested the states to map additional data layers namely electric poles, traffic light poles, bus terminal / bus shelters and Government buildings (State Govt/Central Govt, PSU) which are thought to be used for mounting 5G small cells. This is an important initiative for creating the infrastructure suitable for supporting the 5G rollout in the country.

2.39 Using the data being collected in the master plan, if the Government can facilitate a platform dedicated for street furniture, the TSP/ISP/IP-I's will be able to immediately know the availability of SF at a location where they intend to deploy small cells. Both the SF provider and seeker will be benefitted by the existence of such an e-marketplace/ GIS platform. This can facilitate faster small cell and 5G network rollouts. The Authority feels that cataloguing and maintaining a list of applicable street furniture on the national RoW portal as suggested by most stakeholders, can add to expanding the scope of the portal multifold. The list can be uploaded by the CAAs with terms of sharing and rate schedule along with relevant details like height, design, weight bearing capacity, location coordinates etc.

2.40 There are immense benefits for street furniture owning agencies to do GIS mapping of their assets. This will enable them to offer their assets for utilization by TSPs and other third parties on digital platforms in the most efficient and cost-effective manner. Cost savings resulting from greater efficiency, better decision making, better geographic information recordkeeping etc. can be other advantages. This will go a long way in

improving the penetration of 5G and its technologies, thereby benefiting the economy as a whole. Further, the development of 5G for their citizens, enterprises, and city governance, could be possible by transforming the city's DCI. Use of drones for GIS mapping of large terrain is commercially viable and now being used widely by various industries of geotagging of their critical assets. These 5G enabled drones can go beyond visual range and can collect huge amounts of vital data about the subjects of interest in most efficient and cost-effective manner.

2.41 **The Authority recommends that a Catalogue of GIS mapped Street furniture assets in the National RoW portal should be created with the following specifications:**

a) **Height, load bearing, and wind load capability of structure**
b) **Wattage, type of power (AC/DC), voltage etc. if power is available.**
c) **Picture of SF**
d) **Non-discriminatory terms and conditions offered for hiring**
e) **Contact details (Mobile number, landline number and email ID) of the nodal person for the particular Street Furniture.**

2.42 **The Authority also recommends that use of Drone based mapping in the GIS system should be considered for quick assessment of the location of small cell infrastructure and for the creation of the street furniture catalogue.**

v) **Safety of equipment:**

2.43 As stated by the stakeholders, vandalism of the communications infrastructure is a prevalent problem that requires immediate attention The cases of vandalism can take many forms including siphoning of fuel from the generators, stealing of back-up batteries solar panels, and

lightning arrestors, fiber cable cuts (deliberate or otherwise), stealing of copper rods from masts. In certain cases, communications infrastructure is vandalized accidentally during excavations, road repairs and constructions. Since vandalism increases the operational and maintenance costs and may discourage prospective investors, it is important that legal provisions regarding vandalism of telecom equipment shall be put in place.

2.44 The recently released Draft Telecommunications Bill 2022 has tried to address the security of Telecommunications Assets through the provision imbued under clauses of Chapter 10 and Chapter 11 as follows:

38. Civil liability

The Central Government may prescribe civil liabilities, including compensation payable by any person causing damage to telecommunication network or telecommunication infrastructure, to the licensee or registered entity, as the case may be, and the applicable penalties.

47. General provisions related to offences

(1) Any person or entity committing any offence listed in Schedule 3 shall be punished with fine or imprisonment, or through suspension of telecommunication service, or through a combination thereof, as specified in Schedule 3. The provisions of Schedule 3 shall apply to the abetment of, or attempt to commit, an offence as they apply to the offence.

Schedule – 3: Offences and Penalties

S. No	Offence under the Act	Penalty	Cognizable or Non-cognizable	Compoundable or Non-compoundable
5	Willfully removing or tampering with or causing damage to telecommunication infrastructure or telecommunication network.	Imprisonment for a term which may extend to one year, or with fine up to rupees one crore, or both.	Cognizable	Compoundable
6	Causing damage through negligence to telecommunication infrastructure or telecommunication network.	Fine up to rupees fifty lakhs	Non-cognizable	Compoundable

The Authority is of the opinion that the provisions of the draft bill can take care of the issues of vandalism once it is passed as an act by the Parliament. However, the Authority is of the opinion that till the bill becomes a law, the Government should specifically monitor action taken by the state police (in collaboration with MHA) through a joint committee to address the security of Telecommunications Assets.

2.45 **The Authority recommends that till the Draft Telecommunications Bill 2022 is passed as a law, the Government should specifically monitor action taken by the state police, for security of Telecommunications Asset, through a DoT and MHA joint committee.**

vi) Access to use of private and public infrastructure for small cell and aerial fiber deployment

2.46 In the absence of a holistic policy framework between and within states, the deployment progress of small cells may vary from city to city. A streamlined policy on access to use of private and public infrastructure for small cell and aerial fiber deployment and rationalized uniform charges are important to ensure a level playing field and equitable development across the nation. Many stakeholders have commented that small cell installation on government owned structures and street furniture should be allowed at no cost. For privately owned infrastructure, this access should be allowed at a reasonable fixed cost.

2.47 The Authority has noted that the RoW (amendment) rules 2022 has included two new sections (10A and 10B). The sub-rules 3 of rule 10A provisions the following:

> *"(5) The appropriate central authority may permit installation of small cells on their buildings and structures.*
>
> *(6) For the purposes of sub-rule (5), the "appropriate central authority" means the Central Government or the authority, body, company or institution, incorporated or established by the Central Government, in respect of property, under, over, along, across, in or upon which underground or overground telegraph infrastructure, is to be established or maintained, vested in, or under, the control or management of such Government, authority, body, company or institution."*

2.48 The Authority is of the opinion that the term "appropriate central authority" defined as above will help in specifying the role of central bodies different from state authorities which are included as per the definition of "appropriate authority" laid in clause (e) of rule 2. The amendment to Rules has thus taken care of installations of small cells on central government buildings and structures.

2.49 As far as access to private owned infrastructure is concerned, the following has been provisioned as per the new rule 10B in the RoW (amendment) rules 2022:

> *"10B. Establishment of telegraph infrastructure over private property. – Where the licensee proposes the establishment of overground telegraph infrastructure over any private property, the licensee shall not require any permission from the appropriate authority:*
> *Provided that in case of establishment of mobile tower or pole over a private building or structure, the licensee shall submit an intimation, in writing, to the appropriate authority, prior to commencement of such establishment:*
> *Provided further that along with the intimation, he shall also submit the details of the building or structure, where the establishment of mobile tower or pole is proposed, and a copy of certification by a structural engineer, authorized by the appropriate authority, attesting to the structural safety of the building or structure, where the mobile tower or pole is proposed to be established."*

2.50 Subsequent to these amendments to RoW rules by the DoT, the Authority is of the opinion that new rules 10A and 10B are expected to ensure equitable access at reasonable cost to the operators. As far as access within the buildings is concerned, the Authority is handling the issue separately and has floated a Consultation Paper on "Rating of Buildings or Areas for Digital Connectivity" dated 25th March 2022.

vii) **Rationalizing fees and charges**

2.51 Complicated and time-consuming processes and excessive charges for RoW can result in delays in network rollouts. The Authority agrees with the stakeholders that high RoW charges levied for the street furniture will make the rollout of 5G small cells un-viable and hence will become the biggest roadblock in early deployment of 5G in the country, if not resolved timely. Indian states, cities and towns cannot afford to lose the

benefits of 5G accruing to their people and enterprises because of deployment delays. The Authority also agree with the viewpoint that CAAs should look at ROW permissions for DCI creation from the perspective of essential service delivery and overall economic development rather than considering it as a source of revenue generation.

2.52 The Authority has noted that DoT, vide the latest amendments to RoW rules, has already introduced provisions to rationalize the charges for RoW permissions across the country. A schedule has been added to the rules defining the fee, charges for restoration, and compensation for different items. The following table represents the schedule as provided in the RoW (amendment) rules 2022.

Table 2.1: The Schedule provided in the RoW Amendment rules 2022

Rule	Item	Amount
Part-I FEE		
5(3)	For establishment of overground telegraph infrastructure	One thousand rupees per kilometer.
9(3)	For establishment of overground telegraph infrastructure	(i)Ten thousand rupees for establishment of mobile towers (ii)One thousand rupees per kilometer for establishment of overground telegraph line. (iii) Nil for establishment of poles, for installation of small cells and telegraph line, on the immovable property vested in, or under control or management of appropriate central authority (iv)One thousand rupees per pole for establishment of poles, for installation of small cells and telegraph line, on the immovable property vested in, or under control or management of appropriate authority, other than appropriate central authority.
10A(2)	For installation of small cells and telegraph line using the street furniture	Nil.

Rule	Item	Amount
Part-II Charges for restoration		
6(2)(a)	Establishment of underground telegraph infrastructure where undertaking is not given by the licensee to discharge the responsibility to restore the damages	Sum required to restore immovable property as per the rate prescribed by central public works department for that area or as per the rate prescribed by state public works department for that area, if no rate has been prescribed by central public works department for that area.
6(3)	Bank guarantee as security for performance in case of establishment of underground telegraph infrastructure where undertaking is given by the licensee to discharge the responsibility to restore the damages	20% of the sum required to restore immovable property as per the rate prescribed by central public works department for that area or as per the rate prescribed by state public works department for that area, if no rate has been prescribed by central public works department for that area.
10(3)(a)	Establishment of overground telegraph infrastructure	Sum required to restore immovable property as per the rate prescribed by central public works department for that area or as per the rate prescribed by state public works department for that area, if no rate has been prescribed by central public works department for that area. Further, licensee shall restore the damage incurred in case of establishment of poles for installation of Small Cells and telegraph line.

Rule	Item	Amount
Part-III Compensation		
6(1)(B)	Establishment of underground telegraph infrastructure	Nil.
10(2)	Establishment of poles for installation of small cells and telegraph line	Nil.
10A(4)	Usage of street furniture for installation of small cells and telegraph line	(i)For installation of small cells: Three hundred rupees per annum for urban area and one hundred and fifty rupees per annum for rural areas per street

		furniture. (ii)For installation of telegraph line: One hundred rupees per annum per street furniture.

2.53 Regarding the application for the establishment of overground telegraph line, sub-rule 3 of rule 9 of the amendment rules 2022 provides the following:

> *"Every application under sub-rule (1) shall be accompanied with such fee to meet administrative expenses for examination of the application and the proposed work as the appropriate authority may, by general order, deem fit:*
> *Provided that the one-time fee, to meet administrative expenses, accompanying every application shall not exceed the amount specified in Part-I of the Schedule."*

2.54 As can be observed from part I of the schedule, the one-time fee for establishment of poles, for installation of small cells and telegraph line, on the immovable property vested in, or under control or management of appropriate central authority has been prescribed to be Nil and for establishment of poles for installation of small cells and telegraph line, on the immovable property vested in, or under control or management of appropriate authority, other than appropriate central authority has been specified to be Rs. 1000per pole.

2.55 Besides the one-time charges, the following amendment of sub-rule (2) of rule 10 is another also rationalizes and uniformizes the compensation for use of infrastructure

> *"10. Grant of permission by appropriate authority. -(1) The appropriate authority shall examine the application with respect to the following parameters, namely: -*
>
> *.....*

(2) Where the establishment of the overground telegraph infrastructure renders the immoveable property, vested in the control or management of any appropriate authority over which such overground telegraph infrastructure is established, unlikely to be used for any other purpose, the appropriate authority shall be entitled to compensation for the value of the immoveable property, either once or annually, assessed on such rates as that appropriate authority may, by general order, specify.

Provided that the compensation payable for the immovable property for the establishment of poles for installation of small cells and telegraph line shall not exceed the amount specified in Part-III of the Schedule."

2.56 For charges related to restoration, the clause a of sub-rule (3) of rule 10 has been amended as follows:

"(3) The appropriate authority shall, within a period not exceeding sixty days from the date of application made under rule 9 -
(a) grant permission on such conditions including, but not limited to, the time, mode of execution, measures to mitigate public inconvenience or enhance public safety or structural safety and payment of restoration charge, not exceeding the amount specified in Part-II of the Schedule, or compensation, as specified in sub-rule (2); or
(b) reject the application for reasons to be recorded in writing:"

2.57 Further, while the ceiling of the fee to be collected from the licensee was limited to establishing overground telegraph infrastructure in RoW rules 2016, in the latest amendment, the scope has been expanded to include maintaining, working, repairing, transferring, or shifting overground telegraph infrastructure as can be seen from following proviso:

"10. Grant of permission by appropriate authority.
(4) The appropriate authority shall not charge any fee and compensation other than those mentioned under sub-rule (3) of rule

9, sub-rule (2) and clause (a) of sub-rule (3) from the licensee for establishing, maintaining, working, repairing, transferring, or shifting overground telegraph infrastructure."

2.58 The Authority applauds the efforts of DoT in significantly rationalizing various ROW related charges. The Authority feels that no further intervention is required in this regard currently.

viii) **Aerial fiber related amendments**

2.59 Aerial fiber is a widely used, quick and easy backhauling solution. It plays an important role in meeting the requirement of exponential data growth. But the extensive approval process and the large number of document submissions demanded by the authorities for grant for permission has been hindering the high-speed deployment of aerial fiber. Even with the RoW amendment of 2021 which intended to address the issue of laying aerial optical fiber cables, majority of the stakeholders are of the opinion that these set of guidelines have not pervasively covered the issues of aerial fiber deployment.

2.60 The RoW Amendment rules 2022 through rule 9 has provisioned–the following

9. Application by a licensee. —

…….

Provided that the documents mentioned in clauses (ii), (iii), (v) (ix), (x) and (xi) shall not be required in case of application made for establishment of overground telegraph line—:

10. Grant of permission by appropriate authority. –

…..

Provided that the parameters mentioned in clauses (a), (b), (c), (g) and (h) shall not be necessary for examination of the application made for establishment of overground telegraph line:

2.61 With the above provisions in place, issues like longer timeframe, involvement of large number of authorities, and higher costs for aerial fiber deployment, have been addressed. The approval process has been simplified to a large extent because a lot of steps that were previously applicable in the 2016 RoW rules have been reduced to just the examination of the route plan of the overground telegraph line by the appropriate authority. Therefore, the Authority is of the opinion that no further intervention is required regarding simplification of the procedures involved in approval for the installation of the overground telegraph line.

2.62 Apart from the permission process, in the absence of a holistic policy framework earlier, aerial fiber charges also varied from state to state. Some states are taking a one-time charge, some recurring and some both. The basis of charging is also not explained or unclear. The high fragmentation and in some cases, exorbitant state wise RoW charges for small cells and aerial fiber can end up becoming a significant input cost towards digital connectivity. This may lead to a situation where the TSPs may not be able to deliver services to their full potential and create gaps between the network connectivity achieved among different states and between rural and urban areas, thereby widening the digital divide.

2.63 DoT through the RoW (amendment) rules 2022 has tried to resolve the above issue through specification of one-time fee, restoration charges and compensation charges that can be levied for the establishment and usage of telegraph infrastructure. Sub rule 3 of Rule 9 has specified the upper limit for the one-time fee for establishment of overground telegraph line. The restoration charge for establishment of over ground telegraph infrastructure has been specified in Part II of the schedule as per Rule 10(3)(a). The compensation for the establishment of poles for installation of small cells and telegraph line has been specified to be Nil and usage of street furniture for installation of telegraph line has been rationalized as per rules 10(2) and 10(A)(4) respectively. With this amendment in place, the charges fixed thereof will reduce the state-wise

disparity. Therefore, the Authority is of the view that no further intervention is required in this regard at this stage.

B. Infrastructure sharing by the Controlling Administrative Authorities with TSPs and IPs

2.64 To improve quality of service, ensure availability of services from multiple TSPs, and reduce the cost of infrastructure creation/usage, it is important that infrastructure sharing policies be encouraged. It is equally important to provide access to telecom infrastructure at all locations including airports, metro hubs, railway stations, ports, residential buildings etc. for service providers in a non-discriminatory manner. This will require the creation of standardized guidelines mandating access, regulating access, and sharing of telecom infrastructure. In this context, following questions were raised in the CP regarding creating a framework related to encouraging and provisioning asset sharing:

iv) Whether it should be mandated that certain public infrastructure (municipality buildings, post offices, bus, and railway stations, etc.) be earmarked to have dedicated spaces that allow service providers to deploy macro/small cells? If yes, what can be the possibilities and under what legal framework this can be done? What should be the terms and conditions of use of such infrastructure? Please provide detailed inputs.

v) Can some of the street furniture like traffic lights, metro pillars etc. be earmarked for mandatory sharing between controlling administrative authority and Telecom Service/Infrastructure providers for deployment of small cells and aerial fiber? Does the existing legal framework support such mandating? What should be the terms and conditions of such sharing? Please provide details.

vi) How can infrastructure mutualization and infrastructure collaboration be ensured to avoid exclusive right of ways? What legal provisions can support mandating these? Provide full details.

Comments on mandating earmarking of dedicated spaces for provisioning of telecom infra on public land/other infrastructure

2.65 Majority of stakeholders have put forward that there is an immediate need to design a legal framework to mandate certain public infrastructure to have dedicated spaces to deploy small cells, through suitable insertions in RoW rules. But there are a few other stakeholders who have proposed that this should be facilitated through a mutual agreement. One stakeholder has submitted that all private and Government utility providers while putting up new assets such as gas pipelines, HT power lines, streetlights etc. should be required to create corridors for accommodating telecom infrastructure.

2.66 A couple of associations have suggested that standard designed cabinets of specific dimensions on street light poles/traffic lights along with 24x7 power availability can be made available as dedicated space. Availability of reliable AC power and feasible space for battery backup, security for the protection of the installed equipment, and accessibility for maintenance on 24x7 basis are some of the primary requirements suggested for identifying dedicated spaces. Two of the stakeholders, after their assessments, have specifically provided that the required space for pole and infra (SMPS & Battery Bank) may be 1.5 x 1.5 meter to accommodate power, antenna and associated cabling equipment.

2.67 Following are the other suggestions prescribing terms and conditions for earmarking and use of dedicated spaces on public land/other infra:

- General terms and conditions need to be worked out by DoT so that certain minimum fees for using dedicated spaces may be prescribed.
- Proper advanced notification by TSPs indicating their network plan and timeline to CAAs.
- Guidelines containing rules related to the size and number of small cells that can be deployed on any single piece of street furniture may be prepared.

2.68 Common Telecom Infrastructure (CTI): One of the most common suggestions that has been put forth by most stakeholders is to amend the National Building Code. Ensuring compliance of provision of DAS/IBS and CTI for telecom services in all upcoming complexes should be a condition for grant of Building Completion certificate. One stakeholder suggested that TRAI may recommend the Government to form an expert group under TEC to design standards/guidelines for IBS.

Comments on mandating sharing of SF with TSPs/IPs for deployment of small cells

2.69 Majority of the stakeholders have suggested that all government owned SF shall be extended for deployment of small cells on a non-discriminatory, non-exclusive basis. One of them suggested that suitable amendments should be made in the current RoW Rules to mandate SF sharing.

2.70 To ensure easy access, stakeholders are of the opinion that the CAAs should be encouraged to come up with their own guidelines providing for SF infrastructures free of cost or bare minimum charges. Some stakeholders have pointed out the necessity of assessing the structural fitness of the structures prior to sharing.

2.71 Many stakeholders have proposed that CAAs can be incentivized to encourage them to share their assets with the operators. One of the associations has stated that CAAs can be incentivized by providing complimentary services for them through small cell networks deployed on their SF assets (like installation of surveillance cameras). Another service provider has put forth that the traffic light poles could be changed to smart connected traffic light poles (with a provision for mounting small cells) as a part of smart city initiative.

2.72 Regarding mandating of sharing of SF by the CAAs, a few terms and conditions have been suggested by the stakeholders:

- Green field Street furniture can have inbuilt provision for mounting small cells/Aerial fiber. However, if brownfield street furniture is

utilized, then TRAI can issue regulations and guidelines for mounting the small cells and aerial fiber on it.

- The list of street furniture can be cataloged in the centralized online portal with info about wind load and structural stability. There should be no requirement to take separate individual permissions for use of spaces of cataloged SF, only intimation may be required.
- A long lease option with bare minimum recurring charges for space usage can be prescribed. Simple, nominal, uniform charges depending on the number/ size/weight of equipment and per km in case of fiber needs to be fixed and charges should not be benchmarked with local area land rates/ commercial rates.
- Equitable access to SF with a spirit of accommodating all operators may be followed.

Comments on Infrastructure Mutualization and Collaboration

2.73 Most stakeholders are of the opinion that infrastructure mutualization must be made mandatory and exclusive RoW should not be given to anyone. This is to avoid any market distortions, monopoly on street furniture assets and to optimize the utilization of such street furniture across multiple TSPs. As per an association, in order to ensure co-existing ownership rights, service providers should be allowed to erect street furniture in collaboration with administrative authority.

2.74 Few of the service providers have provided a detailed interpretation of the two concepts of infrastructure mutualization and collaboration –

a. Infrastructure mutualization strategy will operate successfully when a common infrastructure is built, operated, and maintained by an infrastructure provider, and jointly used by TSPs, with each leasing a portion of the mutualized infrastructure and paying for it at a wholesale price.
b. Infrastructure collaboration/cooperation occurs when utility operators share RoW with broadband operators, or when telecom operators that provide different services share the same physical infrastructure. Cooperation differs from mutualization because

agents are not competing in the same market and, as a result, are more willing to share.

2.75 Few other stakeholders are of the opinion that the state of infrastructure in an urban area should be the factor considered to decide whether infrastructure mutualization is a suitable model to infrastructure collaboration. For instance, PPP model of infrastructure mutualization will be more useful for already built cities where the common infrastructure upgrade has been completed, whereas infrastructure collaboration will be a more suitable model for cities which are undertaking infrastructure upgrade projects or upcoming smart city projects. One of the smart cities corporations is of the view that in either of the scenarios, there should be a legal binding agreement on the shared infrastructure and the way it is being used. This is to monitor multiple agencies from the point of view of operation and maintenance.

2.76 To prevent exclusivity and ensure transparency of approvals, the following were suggested by one of the service providers:

- Suitable terms and conditions should be introduced in the Unified license and IP-I registrations, mandating the licensee/registration holder not to get into an exclusive tie-up for taking rights over street furniture.
- Fees must be publicly disclosed, competitively neutral, technology neutral, and based on actual and direct costs.
- Permits must be approved or denied on publicly available criteria that are reasonable, objective, and non-discriminatory.

Analysis of the issues and views of the Authority

2.77 The Authority is of the view that mandating dedicated spaces at public infrastructure and sharing of street furniture by CAAs can significantly speed up 5G network rollouts, particularly considering that India has a high density of street furniture structures. With such mandating, existing government structures (with or without minor modification or upgradation) can be used for rolling out 5G services. This would slash

the outlays required for building new structures and lower the costs. The Authority is of the view that Central and State Government authorities, statutory bodies, defense/cantonment areas, PSUs, educational institutes, public infrastructure project area which are developed in PPP model such as airports, seaports, metro rail, highways etc. should also permit the deployment of DCI like small/macro cells on government buildings and structures. Further, mandating provision of government spaces for DCI would save huge time and efforts of TSPs that might go in negotiating with the owners or CAAs.

2.78 The biggest beneficiaries of these small cell deployments would be administrative units which control critical infrastructure like ports, airports, metro trains and smart cities. One of the major benefits to these administrative units would come from immensely improved coverage in these areas where due to many technical and other reasons establishing big mobile towers has some limitations and patchy mobile coverage cost them in terms of customer experience and competitiveness. 5G small cell deployment can overcome these limitations.

2.79 Another big advantage for these administrative units is that small cells network, will transform their enterprise communication landscape in a big way. They stand to benefit from deployment of 5G small cells as the same will enable them to deploy various enterprise level applications which will enhance efficiency of their operations, reduce turnaround time of their critical operational activities, thereby reducing costs and increasing their profitability. This will also give them a huge competitive advantage over other competitors. 5G small cells will enable those Industry 4.0 technologies like Industrial Internet of Things (IIoT), Automation, Artificial intelligence, Digital Twining, Robotics, Edge Computing etc. which in coming years will become bedrock of next industrial transformation. Apart from Industry 4.0 applications, some of the use cases which are going to be enabled by these technologies are assistive driving, public safety and surveillance, emergency response and smart ambulances.

2.80 Among others one of the biggest beneficiaries of 5G small Cells will be the large number of Smart Cities across the country. The purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life by harnessing technology. 5G networks in general and small cells in particular will play a pivotal role in Smart Cities development, due to its capacity to offer next generation solutions to meet the needs of Smart City dwellers. A 5G network with Small Cells can transport data from a massive number of small IoT devices embedded in roads and pavements to City Control Center which will result in better traffic management by reducing the idling time at traffic lights. There is a need for high bandwidth and a secure and dependable data flow for provision of smart services like public safety even in hard-to-reach locations such as underground car parks or pavements. The 5G use cases that smart cities can implement, will help them in adopting innovative approach to promote sustainable and inclusive cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions.

2.81 Some countries like UK, Singapore, US have already provisioned for such sharing or access to street furniture structures through state laws/codes. The German Telecommunications Act[8] entitles operators of public telecom to use trafficways free of charge. Further, under the Act, the owner of a property cannot prohibit the setting up, operation and renewal of telecommunications lines on his property subject to certain conditions. Japan Government has allowed its service providers to set up 5G base stations on traffic signals, hoping to reduce the cost and time it takes to roll out the ultrafast networks[9]. Roughly 200,000 traffic signals administered by local governments can be used. For incentivizing the local authorities, they have been allowed to use the networks for self-driving vehicle projects and emergency communications in natural disasters. It is also expected that the cost of

[8] https://rm.coe.int/16806af19e
[9] https://asia.nikkei.com/Spotlight/5G-networks/Japan-to-greenlight-5G-base-stations-on-200-000-traffic-signals

using the traffic signals would be split with the local governments. The Punjab draft policy for small cells has provisions for infrastructure sharing to all mobile network operators on an open access basis.

2.82 Town and Country Planning Organization under Ministry of Housing and Urban Affairs has issued guidelines, through addendum to Model Building Byelaws, 2016[10], to mandate charging infrastructure provisions in various buildings. Based on the occupancy pattern and the total parking provisions in the premises of the various building types, charging infrastructures is to be provided for electric vehicles, which is currently assumed to be 20% of all 'vehicle holding capacity' at the premises. Additionally, the building premises must have an additional power load, equivalent to the power of all the charging points operated simultaneously. The Authority is of the view that in a similar way provisions can be made in different acts so that buildings, public spaces, etc. can be mandated to have dedicated spaces earmarked for placement of DCI like small cells.

2.83 One of the most common suggestions given by stakeholders is regarding provision of DAS/IBS and Common DCI for telecom services in all upcoming complexes. As mentioned in the CP, the Authority is handling the issue of inbuilding access through a separate consultation paper on "Rating of Buildings or Areas for Digital Connectivity" that has been released on 25th March 2022. Keeping in mind the exponential growth in communication network expansion and introduction of new technologies especially in the wireless segment, this Consultation Paper discusses the importance of creating a well-defined system to ensure availability of reliable and robust digital connectivity infrastructure in every building.

2.84 The Authority agrees with the view of stakeholders, that for faster deployment of small cells certain street furniture should be mandated for use for small cell deployment as has been done in Japan. This will

[10] https://archive.pib.gov.in/documents/rlink/2019/feb/p201921501.pdf

ensure the available infrastructure is readily available for deploying small cells and will reduce the hassle of getting ROW permissions. Therefore, the Authority feels that if CAAs can be mandated to (a) share certain street furniture and (b) earmark certain dedicated spaces in government buildings, this can help in the rollout of 5G services at much lower costs. The CAAs in turn will be benefited by availability of 5G networks and services.

2.85 In view of the above, **the Authority recommends that:**

i **DoT should issue advisory guidelines to States for mandating CAAs that own/control traffic lights to share these assets with TSPs/IP-Is for deployment of small cells subject to structural stability.**

ii **All Central Government entities should earmark dedicated spaces in their existing and planned buildings/structures for installing DCI including small and macro cells. Dedicated spaces on rooftops should be identified for deploying small/macro cells. All such spaces should be GIS mapped and made available on GatiShakti Sanchar portal for charge free use by TSPs/IP-Is on non-discriminatory basis.**

iii **Advisory guidelines should also be issued to State Governments for similar action by their entities and local bodies. DoT should also follow up with State Government for implementing the guidelines.**

2.86 In the Pilot project conducted by TRAI at Bhopal Smart city, some of the identified street furniture such as electricity pole, metro pillar and overhead water tanks could not be used for small cell deployment due to feasibility issues. For example, some of the electric poles could not be used for deploying small cells because of safety concerns and unavailability of sufficient space at desired height for antenna and RF module. Similarly, overhead tanks were not found suitable due to

unavailability of mounting provisions at required height. Since there are lot of variations in the specifications of street furniture across locations, GIS mapping, image of street furniture and cataloging the street furniture online along with their specifications can serve as an effective and simpler process to know about availability and suitability of street furniture. The Authority is in sync with the stakeholders' suggestion that the list of suitable street furniture can be shared in the centralized online portal after assessing their structural stability (for weight and wind load) and availability of power supply. Recommendations in this regard have already been made above.

2.87 As far as infrastructure mutualization and collaboration is concerned, the Authority has always advocated infrastructure sharing for the sector's growth. Infrastructure sharing enables economies of scale, improves affordability, and avoids duplication of networks where possible. It allows faster rollout of networks and services. World Bank has also advocated that for governments, sharing is an opportunity to expand the knowledge society faster and at lower costs[11]. The Authority in its recommendation on "Infrastructure sharing" dated 11th April 2007 had advocated for sharing of passive and active infrastructure. TRAI has also recommended that infrastructure providers (IP-I) should be allowed provisioning of various active network elements. These recommendations have been made through the recommendations on 'Enhancement of Scope of Infrastructure Providers Category-I (IP-I) Registration' dated 13th March 2020 and reiterated through Recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31st August 2021. Recently, TRAI vide letter (attached as **Annexure III**) to the DoT dated 1st February 2022 had pointed out that infrastructure sharing provisions in Unified License mentioned in the chapters related to generic conditions and authorization specific chapters are at contradiction. Thereby it was

11 https://thedocs.worldbank.org/en/doc/5332/original/WDR16BPInfrastructureMutualisationGarcia.pdf

requested that the DoT should bring clarity on the provisions of sharing of infrastructure under different licenses.

2.88 Infrastructure sharing in the telecom sector has sometimes led to exclusive arrangements entered into by stakeholders. Therefore, apart from mandating sharing of SF, it is also important to ensure equality and non-discrimination in sharing. Exclusive arrangements in the infrastructure sharing needs to be avoided for a level playing field. This would go a long way in ensuring optimum uptake of street furniture for small cell deployment, thereby helping in densification of networks.

2.89 The Authority agrees with the stakeholders' opinion that in case of limited SF availability against demand, equitable distribution with a spirit of accommodating all operators should be followed. When any asset controlling authority is offering their infrastructure, sharing by all possible candidates should be ensured to the extent possible. The Authority therefore feels that apart from cataloguing the available street furniture for sharing, respective CAAs should also ensure that such SF is made available on a shareable and non-exclusive basis. The Authority firmly believes that no exclusive rights of street furniture be given to any TSP.

2.90 **The Authority therefore recommends that enabling provisions or suitable terms and conditions shall be introduced in all telecom licenses and IP-I registration agreement prohibiting the TSPs/IP-I providers from entering into any exclusive contract or right of ways with infrastructure owners/CAAs or any other authority.**

2.91 **The Authority also recommends that DoT should include the following in their advisory guidelines to States:**

i All CAAs or asset controlling authorities should prohibit entering into exclusive rights/exclusive tie-up with any

licensee/registration holder. SF infrastructure should be offered in a non-exclusive and non-discriminatory manner.

ii **In future, tenders for setting up new SF structures by the appropriate authorities, the possibility of sharing of SF on non-exclusive basis, for hosting DCI like small cells and aerial fiber should be kept in mind. The terms and conditions for offering all assets that are catalogued and uploaded on GIS portal, should have a mention that the SF is being offered on non-exclusive basis and will be shared with other eligible entities.**

iii **In line with GatiShakti initiative, in all future projects of utility providers that are partially or fully funded by government to put-up new assets (such as gas pipelines, HT power lines, streetlights) or expand existing assets, provisions to host/support DCI such as small cells, towers, and aerial fiber should be in-built.**

2.92 **The Authority also recommends that DoT should immediately act on TRAI's letter dated 1st February 2022 (attached as Annexure III) and bring clarity on the provisions of sharing of infrastructure under different licenses to remove the ambiguity in infrastructure sharing provisions in Unified License mentioned in the Chapters related to generic conditions and authorization specific chapters.**

2.93 The Authority as per its Recommendations on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed dated 31st August 2021 had suggested the formation of an agency for undertaking the planning and development of common ducts and posts infrastructure across the country on a non-exclusive basis as below:

7.23 For planning and development of common ducts and posts infrastructure across the country, a central entity, namely

'Common Ducts and Posts Development Agency (CDPDA)', on nonexclusive basis, should be established by the Central Government with the following functions: —

i. *Planning, development, and management of sharable common ducts for laying underground optical fiber cables;*
ii. *Planning, development, and management of sharable common posts for laying overground aerial optical fiber cables and hosting of small cells equipment;*
iii. *Coordinate with Appropriate Authorities to identify an exclusive strip of land of about 0.5 Meter width along public pathways for laying common ducts;*
iv. *Formulating and implementing schemes, including in Public-Private Partnership (PPP) mode, for development of sharable common ducts and posts;*
v. *Coordinate with Appropriate Authorities to exempt RoW charges for development of sharable common ducts and posts;*
vi. *Cross-sector collaboration with other utility providers i.e., roadways, railways, water, electricity, gas etc. for co-deployment of common ducts;*
vii. *Declare terms and conditions of sale/ leasing of common ducts and posts in non-discriminatory manner to service providers and infrastructure providers;*
viii. *Developing and providing consultancy and construction services for common ducts and posts on a national and international level.*

2.94 'Common Ducts and Posts Development Agency' (CDPDA), is expected to coordinate and collaborate with providers as well as seekers of common ducts and posts for creation of common ducts in the country. The back-reference dated 28th June 2022, received from DoT on TRAI's recommendations on "Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed", had suggested that the co-deployment of common telecom duct may be managed by the proposed National Fiber Authority (NFA). TRAI had agreed to the same through its response dated 25th July 2022, thereby replacing CDPDA with NFA. Regarding the above

recommendation, the Authority is of the opinion that the scope of the NFA should be expanded beyond common ducts and telegraph posts, to undertake responsibilities related to above-ground contrivances, appliances, and apparatus. Further, the agency should also be given the responsibility of ensuring that CAAs share street furniture assets on a non-exclusive basis to the extent possible.

2.95 The Authority has observed that the Hong Kong Authority Guidelines[12] on the use of public payphone kiosks/bus stops for the installation of Radio Base Stations (RBSs) for provision of Public Mobile Services, provision has been made for that in case more than one MNOs have made requests to use the same structure and there is insufficient space available to meet the demands of all the MNOs concerned, the Bus company/kiosk owner (CAAs) advises the mobile network operator (MNO) that they should coordinate among themselves to work out a technically feasible solution for the shared use of the structure for the installation of RBSs. In case the MNOs concerned fail to reach agreement for the shared use of a specific structure, they should accept the decision of the CAA which may use a fair and reasonable method to determine the MNO(s) selected to make use of the structure for installation of RBSs.

2.96 The Authority in its earlier recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31.08.2021 vide para 7.11, *inter alia*, has emphasized that the Central Government in coordination with the State Governments should consider constitution of a National RoW Council so that in timebound manner the policy and legal framework for RoW permissions could be put-in-place.

The Authority is of the opinion that the proposed council can oversee the RoW matters concerning access to street furniture as well for small cell deployment. Now that the latest RoW Amendment Rules 2022 have included specific provisions for access to street furniture for small cell

[12] https://www.coms-auth.hk/filemanager/statement/en/upload/567/gn122021.pdf

deployment, the proposed council can monitor the implementation of these rules.

2.97 Considering the above, **the Authority reiterates that its earlier recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31.08.2021 (para 7.23) may be implemented at the earliest. National Fiber Authority (NFA) should be formed in priority to undertake the planning and development of common duct and posts infrastructure. The scope of the agency should be expanded beyond common ducts and telegraph posts, to undertake responsibilities related to above-ground contrivances, appliances, and apparatus. Further, NFA should also be given responsibility of ensuring, in consultation with State Governments that CAAs share street furniture assets on non-discriminatory, transparent, and non-exclusive basis.**

2.98 **The Authority also recommends that in case more than one TSP makes requests to use the same SF and there is insufficient space available to meet the demands of all the requesting TSPs, they should coordinate among themselves to work out a technically feasible solution for shared use of the structure for the installation of equipment. In case the TSPs fail to reach an agreement, they should accept the decision of the CAA which may use a fair and reasonable method to select the TSP(s) who will use the SF**

The above provision should be made part of the Indian Telegraph Right of Way Rules, 2016 through a suitable amendment by issuing a Gazette notification.

2.99 **The Authority reiterates its earlier recommendation on 'Roadmap to Promote Broadband Connectivity and Enhanced**

Broadband Speed' dated 31.08.2021 (para 7.11) for formation of a National RoW Council. All the RoW matters related to street furniture should also be placed before this council.

C. Street furniture and small cell sharing among TSPs and IP-Is

2.100 Infrastructure sharing is critical for small cell networks due to the required density of deployment[13]. In absence of appropriate framework to promote sharing amongst TSPs, it will be difficult to achieve the required small cell densities. SF sharing practices will help India's small cell deployment scenario in terms of enabling economies of scale and affordability. In the discussions related to sharing of street furniture and also active infrastructure through the possibility of a MO-RAN model, the following question was raised in the CP to solicit the opinion of the stakeholders.

vii) How can sharing street furniture for small cell deployment be mandated or incentivized? What operational, regulatory, and licensing related issues are expected to be involved in sharing of small cells through various techniques in the Indian context and what are the suggested measures to deal with the same?

Comments on sharing of street furniture and small cells among TSPs/IPs

Sharing of street furniture

2.101 A couple of stakeholders have suggested that sharing of street furniture should be mandated/incentivized through insertions of suitable clauses in the tenders for all the PPP projects. One stakeholder suggested that the scope of IP should be enhanced and TSPs should be asked to avail the facility provided by the IPs instead of developing their own system.

[13] https://ec.europa.eu/downloadPublic?documentIds=PPGMS

This will reduce the cost, enhance the utility of small cells, ease the maintenance of networks at street furniture, thus leading to a full expansion of 5G services and fair competition between TSPs. An association had added that IP-Is should be the first one to be offered development of common infrastructure. Exclusive rights of laying infrastructure should be given to ensure some long-term business viability

2.102 In order to encourage sharing of street furniture, a few incentivization strategies were shared by the stakeholders. One suggestion was on providing financial incentives in payment of Spectrum usage charges (SUC)/License fee (LF). Another suggestion was that there should be both fiscal and non-fiscal incentives for the operators. A stakeholder suggested that wherever suitable, sharing should be incentivized and any revenue from such sharing should be allowed to be deducted from Gross Revenue while calculating the AGR/ApGR. Currently IP-Is who provide overground infrastructure already follow a mechanism of subsidizing the fees based on the number of tenants on a particular site. A similar process could be adopted for incentivizing the services providers while sharing the street furniture. The application of the Plan Build Operate (PBO) model which provides land use rights to TSPs/IPs to create and share the infrastructure among themselves was another suggestion put forward by a service provider.

2.103 One of the service providers is against mandating sharing of street furniture because sharing of the same structure by multiple TSPs would make the individual site bulky and it will be difficult to maintain the aesthetic appeal. Further, the current stringent EMF requirements, if unchanged for small cells, would be a massive deterrent for small cell sites to be co-located. Further, it might be difficult to accommodate all the independent requirements of TSPs at a single location. The following alternate solutions were provided to tackle the same:

i. TSPs to deploy at alternate site locations rather than co-locating at a single location.

ii. Smart Poles can be deployed by the TSPs which will cater to all the TSPs and city requirements which can be incentivized by offering OFC RoW and waiver of some fees.

Sharing of small cells

2.104 Stakeholders have expressed varied opinions regarding small cell sharing. As per majority of the comments, sharing of small cells among telecom licensees should be left to mutual negotiations, and no regulatory intervention is required. Out of those in favor of small cell sharing, two of them are of the opinion that there is no issue in such sharing since it does not entail spectrum sharing and hence no licensing or regulatory hurdle is envisaged for a telecom licensee. Some stakeholders have suggested encouraging MO-RAN based sharing as discussed in the CP. It has been suggested that the capital cost involved in installation of network shall be borne by all TSPs equally, but operational cost may be apportioned amongst TSPs according to the share of total traffic by each TSP.

Analysis of the issues and views of the Authority

2.105 In a pilot study conducted at Amsterdam, a TSP collaborated with a global leading company which owns over 100,000 street furniture assets in the Netherlands. The SF owning company had existing agreements with the local authorities, with contracts of 10-20 years already in place. By leveraging these existing permits, the said TSP and other operators were able to significantly speed up their small cell rollouts. The street furniture used included facilities for powering the small cells and terminating fibers that were laid on the street, thus eliminating or reducing the need for additional civil works and providing future-proofed high-speed backhauling capable of supporting upgrades to 5G. One additional major benefit of the same was that it enabled multi-operator passive sharing (MO-RAN) by accommodating up to four separate small cells within the same street furniture asset. This is an example of how

street furniture sharing, and small cell sharing can speed up the deployment.

2.106 Some stakeholders have suggested adoption of MO-RAN model in case small cell sharing is to be done. For this, the Authority points out that the DoT has already enabled sharing of radio elements for Access and ISP authorizations under the UL and UL-VNO licenses 2022, in Operating conditions for 'Sharing of Infrastructure' stated as under:

> *Sharing of Active infrastructure amongst Service Providers based on the mutual agreements entered amongst them is permitted. Active infrastructure sharing will be limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only. Sharing of infrastructure related to Wi-Fi equipment such as Wi-Fi router, Access Point etc. is allowed. Sharing of backhaul is also permitted.*

The Authority opines that MO-RAN sharing can be adopted on a mutually agreed basis by licensees as per their license terms and conditions and no additional action or separate provision for small cells radio equipment is required at this moment.

2.107 The Authority is of the view that actual deployment scenarios for small cells scenarios are still emerging. The involved cost structures in different deployment scenarios are still uncertain. This also came out from the pilot study conducted by TRAI. Sharing will happen only in such deployment scenarios where cost savings are substantial. The Authority agrees with submissions of stakeholders that sharing of small cells should be left to mutual negotiations for the time being and that no regulatory intervention for sharing of small cell radio equipment is required at this stage. This may however be later reviewed when clear deployment scenarios emerge and there is better understanding of costs involved in different deployment scenarios.

2.108 The Authority agrees with stakeholders that sharing telecom infrastructure helps in expanding network coverage, reducing CAPEX

and OPEX and minimizing duplication of infrastructure. The possibility that sharing can be mediated by a neutral third party (e.g., IP-I companies), which serve multiple service providers in each site, even as their individual networks remain competitively independent of each other, makes sharing an interesting option. Currently IP-Is who provide overground infrastructure already follow a mechanism of subsidizing the fees based on the number of tenants on a particular site. Thus, sharing has an inherent incentivization mechanism whereby the participating entities gain through reduced costs. Despite that, the Authority has observed during the four Pilot projects that TSPs were not very keen on adopting to sharing. The Authority is of the opinion that in a market where there are large number of players, the inherent or inbuilt incentives of cost reductions can promote infrastructure sharing. However, in a market which has only a few players, some players may look at building exclusive networks to gain competitive advantage. This may not be in the overall interest of the country where large investments are still required to build DCI in every nook and corner of the country. The Authority thus feels that there is a need for a nudge intervention whereby there should be incentives for those Telecom Service Providers who build infrastructure and come forward to share it with others. TSPs who lease their infrastructure for sharing (lessor) should get some incentives. One of the ways of offering them an incentive is by way of allowing deduction of revenues earned by the lessor TSP by way of the payments received from the lessee (the other TSP who seeks to use the infrastructure of lessor TSPs for sharing) from their Gross Revenues (GR) for arriving at Applicable Gross Revenues (ApGR).

2.109 IP-Is are the main players to be offered development of common sharing infrastructure, as their business model is based on sharing on a non-discriminatory manner. The revised guidelines[14] for registration of IP-I, 2021 provisions that the registration of IP-I shall be on a non-exclusive

[14] https://dot.gov.in/sites/default/files/RevisedIP-1Guidlines22122021.pdf?download=1

basis without any restriction on the number of tenants and shall provide for the use of infrastructure in a non-discriminatory manner.

2.110 The following are the relevant extracts from the IP-I registration guidelines:

"The Infrastructure Providers Category-I are those Infrastructure Providers who provide assets such as dark fibers, Right of Way, duct space & tower.

.....

8. The IP-I registered company shall provide dark fibers, Right of Way, duct space, towers on lease / rent out / sale basis to the licensees of telecom services on mutually agreed terms and conditions."

.....

2.111 The following are the relevant extracts from the IP-I registration certificate

"This is to certify that M/s ----------with registered office at ---------- is registered as Infrastructure Provider Category I (IP-I) to establish and maintain the assets such as Dark Fibers, Right of Way, Duct Space and Tower for the purpose to grant on lease/rent/sale basis to the licensees of Telecom Services licensed under Section 4 of Indian Telegraph Act, 1885 on mutually agreed terms and conditions."

2.112 The existing guidelines as quoted above are focused on macro cells. With the evolution of 5G services, the Authority is of the opinion that these guidelines should be modified to include the term 'poles' as defined in the RoW-2016 rules, (as amended in 17.08.2022).

2.113 **In view of the aforesaid, the Authority recommends that charges paid by lessee TSP to lessor TSP for use of shared infrastructure should be reduced from the Gross Revenues of**

the lessor TSP to arrive at Applicable Gross Revenue (ApGR) of such Lessor TSP. To implement this, a new item named as "Revenue earned from other licensed TSPs from sharing/leasing of infrastructure" should be inserted under existing license condition named as "List of other items to be excluded from GR to arrive at ApGR". This modification may be carried out in UL, UL(VNO) and ISP licenses. Also, the information collected in the "Format of Statement of Revenue and License Fee" that is attached with each authorization chapter in UL, UL(VNO) and with ISP licenses needs to be modified to capture information from such revenues under a separate head.

2.114 **The Authority also recommends that the guidelines and registration agreement of IP-I providers should be modified to exclusively mention the term 'poles' in their scope of work.**

D. Process Simplification, Permission Exemption, Standardization of small cells and Installation practices

2.115 The use of higher frequency bands, lower penetration of those frequencies, large bandwidth and low latency requirements of 5G use cases will require thousands of small cells in an area. Accordingly, the EU Staff Commission document, 2020 states that "If the current rules on deployment of macro-cells remain applicable also to small cells, without exceptions, this would have a multiplicative effect on the administrative effort to request, assess and grant individual permits. The resource burden both on the operators' side and on the public administrations' side would become excessive and thus cause long delays and finally stifle investment". The importance of adopting a system where approvals are provided at a national level using generic

declarations and standardized classes in order to evolve towards a system of simplified, standardized, and repeatable set of processes was covered in the CP. The Authority had taken up the subject in detail and studied the best practices being followed by various countries.

2.116 Comments relating to the need for standard documentation and adoption of international standards for permit exemption, were solicited from the stakeholders through the following questions. A question related to the need for standardization of small cell equipment or installation practices was also posed alongside.

viii) Should there be permission exemption for deploying certain categories of small cells at all places or all categories of small cells at certain places (Like apartments etc.)? What legal framework will support such exemptions?

ix) What should be the criterion/ conditions (like power, height etc.) and administrative procedure for implementing such exemptions? Please provide exact text with detailed justifications.

x) For Small Cells that do not fall under the exemption category, should there be a simplified administrative approval process (like bulk approvals etc.) for deployment? If yes, what should be the suggested process? If not, what should be the alternative approach?

xi) Is there a need for standardizing the equipment or installation practices for next generation small cell deployment on street furniture? If yes, what are the suggested standards and what should be the institutional mechanisms for defining, and complying to them?

Comments on permit exemption and criteria for exemption for installation of small cells

2.117 Broadly, most of the stakeholders opined on adopting the concept of permission exemption for small cells. But their views diverge on the location and type of small cells that can be exempted. Stakeholders have

suggested a) exemption from paying user charges, b) exemption from building permits, and c) exemption from frequency exposure certification for small cells. Regarding the questions on the two types of exemption posed in the CP, few of them have suggested that all categories of small cells can be exempted at certain places. Few of the others suggested that only certain categories of small cells need to be exempted at all places or certain places. The suggested areas for exemption include common areas in apartment complexes/buildings, privately owned commercial places like shopping malls/complexes and Government or PSU buildings. Small cell infrastructure to be installed within such existing buildings can be exempted from specific notification or other permission requirements.

2.118 A few stakeholders have suggested that wall mount outdoor small cells and those small cells with an EIRP less than 10W can be exempted from permissions. Along with small cells, it was also suggested that Micro-Communication equipment, supporting telecom infra like in-building fiber laying, installing termination boxes, putting OLTs, laying ODN should also be exempted from formal permissions. One service provider has stated that there should be no restriction on the type of small cells installed as long as it meets the EMF radiation norms of DoT. Another suggestion was that safety and structural capacity of the infrastructure should be the only consideration for deciding small cell installations and no other permissions should be required.

2.119 One of the stakeholders had suggested that for small cells working at the same EIRP, the exemption process should be decided separately for rural and urban areas, and indoor vs outdoor installations. Another stakeholder suggested that different slabs of technical specifications based on the size, shape, area of coverage can be defined and within those slabs, certain categories could be exempted from the permissions. The building code should also be modified to provide for identified space for these exemption category small cells in the building.

2.120 Majority of the stakeholders have proposed that criteria based on power emitted and deployment heights needs to be adopted and a general declaration and certification of the equipment at a national/regional/local level can be made. It was also suggested by a stakeholder that either the DoT in consultation with the operators or TEC in conjunction with TRAI, should have a detailed discussion with TSPs and Original Equipment Manufacturers (OEMs) to decide on the permit exemption mechanism and criteria. A suggestion to consider additional factors such as maximum radiated power, minimum loss between transmitter and passing people, and network performance was also put forward by one of the associations for prescribing necessary exemptions. It was put forward by one of the Smart cities that TRAI should develop standards and guidelines similar to Europe's EECC for public and privately owned buildings by incorporating permissible criteria on the power, antenna position, etc. A few of the stakeholders opined that India should adopt installation classes IEC 62232 and ITU-T K10032 similar to those adopted by the EU as discussed in detail in the CP. Some other ranges of factors have been suggested for consideration including area, volume and radio characteristics. An association has cited the example of the USA that has adopted rules exempting small cells from environmental assessments that meet certain limitations on size and visibility. The following table summarizes some of the submissions of stakeholders on exemption criteria for small cells.

Table 2.2: Suggestions of small cell and site wise permit exemption criteria

	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder 4
Output power	4*5W	1.2- 1.5 KW	38dBm	<10W
Duplexing	4*4 MIMO			
Permissible deployment height	>3m	6 m	>=10m	> 9m
EMF Applicable	>1000W			

Power	3KW			
Power backup	4hrs			
Weight of equipment		100 to 150 KG (3 Small Cells + power back up + FDB with fiber)		

2.121 A couple of the stakeholders have stated that the RF-EMF compliance boundaries typically evaluated based on peak transmit powers create overly conservative RF-EMF limits that constrain the density of small cell deployments. For facilitating network densification, they suggest that the EMF exposure levels should be reviewed, and the recent guidelines issued by ICNIRP in 2020 be adopted in India also.

Comments on Simplified administrative approval process for Small Cells installation that do not fall under the exemption category

2.122 For those small cells that do not fall under the exemption criteria, most stakeholders have unanimously proposed for the implementation of a one-time bulk approval/intimation route through simple online process/digital tools. Another suggestion put forward by the majority was around reducing the approval timelines to 15-30 days with automatic deemed approval after 30 days through online portals. In contrast to the suggestion of bulk approval, one of the stakeholders has stated that administrative approval may be necessary and should be decided case to case, instead of bulk approval.

2.123 It was proposed by a service provider that the small cells not falling under the exemption category should be kept under a much-simplified administrative self-certification based deemed approval process. Since the output power of small cells is much less compared to macro cells, small cells can be installed at lower height as it emits lower power, hence a generic declaration conforming to the maximum allowable power under the small cells category should be sufficient without any additional document process. The documentation requirement can be

simplified through this self-certification mechanism with a minimum one-time fee covering all types of costs for such small cells.

Comments on Standardization of small cell equipment or Installation practices

Standardization of small cell equipment

2.124 Since standardization of small cell equipment might have both pros and cons on the deployment of small cells, a few stakeholders are in favor while a few are against standardization. A stakeholder has suggested that the standards of equipment and installation practices may be fixed so that new street furniture may conform to it, and existing street furniture may adapt. Another stakeholder has added that manufacturers of small cell equipment must ensure that they conform to relevant technical standards and to any essential requirements in terms of health and safety. A suggestion provided is that TEC in consultation with TSPs can come up with broad guidelines for design specifications through a separate activity and that no other local agency/body/authority should prescribe any requirements. It has also been suggested that standardization should be market driven.

2.125 Two stakeholders have commented that the size of small cell equipment (cabinet, holding box, device dimensions, etc.) should be standard, be modular in nature for installation and deinstallation needs and that there should not be any additional requirement for wiring. As per another stakeholder, similar to BIS, IEC, ARAI etc. standard creating bodies, the Government shall entrust public bodies to verify and provide approvals based on relevant parameters of the equipment and installation process. Another suggestion was that the equipment should comply with TEC standard TEC 13019:2021, as may be amended from time to time. One stakeholder suggested that configurations such as RF frequencies, backhaul connectivity (OFC, microwave etc.), wind speed/load, noise (not greater than 65 dBA measured at 25 feet), and structural integrity can be considered for equipment standardization. An

association has suggested exploring and standardizing convergence of fiber and power connectivity and giving emphasis on new OFC technologies such as Ribbon technologies. Further it was suggested that telecom infrastructure deployed under the National Building Code (NBC) /within any premises must comply with fire safety requirements like the CPR rating in European countries. In contrast to the above, a few of the stakeholders believe that an immediate need for this standardization may not be prudent and may even be counterproductive at this stage. Therefore, they proposed that standardization needs to be done only for structures, poles and other street furniture that will be developed in the future.

Standardization of installation practices

2.126 A few stakeholders state that the deployment templates will emerge under the market-based evolution, therefore standardization of installation practices is not prudent currently. Contrarily, one of the service providers opines that depending on the street furniture category, deployment and installation guidelines can be specified to minimize visual impact and ensure positive opinion from the public. Another stakeholder adds that TEC can issue guidelines in respect of the structural safety of the SF for installation of small cells. A stakeholder has suggested detailed characteristics of installation for outdoor small cells which is as follows: The power of the small cell should be between 1.2 to 1.5 KW and the antenna should be placed at a height of six meters. Given that the pole can usually sustain up to 100 to 150 kg, it can accommodate three small cells, power backup and FDB with fiber. Clamps should be made available in the SF for mounting small cell and the SF shall be able to withstand a predefined applicable wind velocity in that area under maximum permissible loading

Analysis of the issues and views of the Authority

2.127 The Authority recognizes that the issuance of individual permissions for small cells at the state, regional or local level can make it difficult for

operators to keep track of the variety of rules and processes that will be followed by each authority. To deal with the humongous volume of small cell installation permissions continuing with the existing process may become difficult not only for telcos but also for permission processing authorities. Process complexity and also resource bottlenecks will result in delays as the number of applications increases. The Authority feels that introducing a permit-exempt regime can aid in minimizing such delays and will help in quick modernization and upgradation of the networks. A permit-exempt regime will help in ease of doing business for service providers thus resulting in quicker rollout of the next generation network. At the same time, there is need to keep in mind that public health is protected, and visual landscape remains coherent. Therefore, the most important factor for creating an exemption regime is the selection and specification of characteristics that serve balanced interests of various stakeholders, generate public acceptance as well as improve network rollout significantly.

2.128 As far as the radio frequency related monitoring is concerned, in India, the Department of Telecommunications (DoT) gives guidance on the EMF exposure assessment, providing various categories based on the reference from several ITU recommendations and international standards. The TEC report on "Test Procedure for Measurement of Electromagnetic Fields from Base Station Antenna, No: Tec 13019: 202" has released a test procedure to ensure that the EMF exposure from cellular base station installations conform to the exposure limits prescribed by DoT.

2.129 TEC has also provided for the audit requirement of base stations in line with the introduction of Low Power Base Transceiver Station (LPBTS) (having EIRP limited to 100 W) in the Indian telecom market. Simplified Assessment Procedure criteria based on mounting height, main lobe direction and distance to other ambient sources as EMF evaluation techniques has been adopted as per the ITU-T Recommendation K.100. Out of the three classes of base stations defined by the TEC, the

Inherently compliant category includes base stations with EIRP <=2W where no assessment procedure is required, only self-certification is needed. The normally compliant class includes those base stations with EIRP > 2 and ≤ 100 Watts. For this class, a report is to be filed proving that compliance as per Simplified Assessment Criteria (SAC) (as per Table 2.3) is exhibited. The Provisionally compliant class that includes base stations with EIRP >100 Watts EIRP shall be subjected to LSA Units audit by measurement of EMF exposure levels using Broadband / Frequency selective measurement procedures.

Table 2.3: Simplified assessment criteria as per No: Tec 13019: 202

Restriction on minimum height of lowest radiating part of antenna and minimum distance to areas accessible to general public in the main lobe direction for Low Power Base Station (EIRP <100 W)

Table 1: For base stations with Frequency of operation between 400 MHz to 2000 MHz

Sr. No.	EIRP (in Watts)	Minimum Height(in metres) as per different antenna tilts in degrees				Minimum distance (in metres) for publically accessible area in the main lobe direction	Minimum distance (in metres) for other emitters (≥ 10 W) in the main lobe direction
		0°	5°	10°	15°		
1	≤ 2	No specific criteria. According to [ITU-T K.52] emitters with a maximum EIRP of 2 W or less are inherently compliant					
2	≤ 10	2.5	2.7	2.8	3.0	1.9	9
3	≤ 20	2.8	3.0	3.2	3.4	2.6	13
4	≤ 30	2.9	3.2	3.5	3.7	3.2	16
5	≤ 40	3.1	3.4	3.7	4.0	3.7	19
6	≤ 50	3.2	3.5	3.9	4.2	4.2	21
7	≤ 60	3.3	3.7	4.1	4.4	4.6	23
8	≤ 70	3.4	3.8	4.2	4.6	4.9	25
9	≤ 80	3.5	4.0	4.4	4.8	5.3	26
10	≤ 90	3.6	4.1	4.5	4.9	5.6	28
11	≤ 100	3.7	4.2	4.7	5.1	5.9	29

Table 2: For base stations with Frequency of operation between 2000 MHz to 40000 MHz

Sr. No.	EIRP (in Watts)	Minimum Height(in metres) as per different antenna tilts in degrees				Minimum distance (in metres) for publically accessible area in the main lobe direction	Minimum distance (in metres) for other emitters (≥ 10 W) in the main lobe direction
		0°	5°	10°	15°		
1	≤ 2	No specific criteria. According to [ITU-T K.52] emitters with a maximum EIRP of 2 W or less are inherently compliant					
2	≤ 10	2.5	2.6	2.8	2.9	1.8	9
3	≤ 20	2.7	2.9	3.1	3.3	2.5	13
4	≤ 30	2.9	3.1	3.4	3.6	3.1	16
5	≤ 40	3.0	3.3	3.6	3.8	3.6	18
6	≤ 50	3.1	3.5	3.8	4.1	4.0	20
7	≤ 60	3.2	3.6	4.0	4.3	4.4	22
8	≤ 70	3.3	3.7	4.1	4.5	4.7	24
9	≤ 80	3.4	3.9	4.3	4.7	5.0	25
10	≤ 90	3.5	4.0	4.4	4.8	5.4	27
11	≤ 100	3.6	4.1	4.5	5.0	5.6	28

2.130 The guidelines developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) are widely adopted by national authorities around the world. In terms of providing protection for 5G technologies, the latest ICNIRP guidelines in 2020 for limiting exposure to Electromagnetic fields (100 kHz to 300 GHz) has made several changes to ensure that new technologies such as 5G will not be able to cause harm, regardless of our current expectations. Reference levels have been derived to provide an equivalent degree of protection to the basic restrictions, and thus an exposure is taken to be compliant with the guidelines if it is shown to be below either the relevant basic restrictions or relevant reference levels. Table 2.4 presents the latest reference levels for local exposure averaged over six minutes.

Table 2.4: ICNIRP Reference levels for local exposure, averaged over six min, to electromagnetic fields from 100 kHz to 300 GHz (unperturbed rms values)

Exposure scenario	Frequency range	Incident E-field strength; E_{inc} (V m^{-1})	Incident H-field strength; H_{inc} (A m^{-1})	Incident power density; S_{inc} (W m^{-2})
Occupational	0.1 – 30 MHz	$1504/f_M^{0.7}$	$10.8/f_M$	NA
	>30 – 400 MHz	139	0.36	50
	>400 – 2000 MHz	$10.58f_M^{0.43}$	$0.0274f_M^{0.43}$	$0.29f_M^{0.86}$
	>2 – 6 GHz	NA	NA	200
	>6 – <300 GHz	NA	NA	$275/f_G^{0.177}$
	300 GHz	NA	NA	100
General public	0.1 – 30 MHz	$671/f_M^{0.7}$	$4.9/f_M$	NA
	>30 – 400 MHz	62	0.163	10
	>400 – 2000 MHz	$4.72f_M^{0.43}$	$0.0123f_M^{0.43}$	$0.058f_M^{0.86}$
	>2 – 6 GHz	NA	NA	40
	>6 – 300 GHz	NA	NA	$55/f_G^{0.177}$
	300 GHz	NA	NA	20

[a] Note:
1. "NA" signifies "not applicable" and does not need to be taken into account when determining compliance.
2. f_M is frequency in MHz; f_G is frequency in GHz.

(Source: ICNIRP EMF guidelines 2020)

2.131 Several stakeholders through their comments had shared that the EMF exposure levels should be reviewed, and the recent guidelines issued by ICNIRP in 2020 be adopted in India for facilitating the network densification, they suggest. The Malaysian Government is an example of a country that has affected revision of EMF standards in view of the

change in ICNIRP guidelines brought in 2020 and the EU through its Staff Commission working document had also shared that the ICNIRP guidelines 2020 confirm the health safety margin of existing EMF exposure limits at the EU level set out in Recommendation 1999/519/EC. In the revised MS-EMF, the Malaysian Commission decided to follow Table 5 of ICNIRP guidelines for assessment for EMF exposure over the whole body from radio communications infrastructures (RCI).

2.132 Recent actions taken by DoT/TEC to create special EMF compliance dispensation for Small Cells:

a. Vide letter dated 27.08.21, DoT issued revised "TEST PROCEDURE FOR MEASUREMENT OF ELECTROMAGNETIC FIELDS FROM BASE STATION ANTENNA No: TEC 13019: 2021". Vide Para 4.1 of Part A of this document TEC has stated … "*Normally compliant: Normally compliant installations contain sources that produce EMF that can exceed relevant exposure limits. All base stations with EIRP between > 2 and ≤ 100 Watts are considered as normally compliant and >100 Watts EIRP are considered as provisionally compliant. As a result of normal installation practices and the typical use of these sources for communication purposes, the exceedance zone of these sources is not accessible to people under ordinary conditions. Examples include small cells with low transmit power (with EIRP ≤ 100 Watts) and antennas mounted on sufficiently tall towers. Precaution may need to be exercised by maintenance personnel who come into the close vicinity of emitters in certain normally compliant installations.*" So, a Small Cell was defined as equipment radiating EIRP<=100 W. The same Para stated that the LSA Units may conduct only physical audit of base stations covered under Simplified Assessment Criteria for checking compliance to the requirement based on the EIRP declared by the TSP and no measurements need be conducted.

b. DOT vide letter 09.05.22 issued instructions for "Simplification of SACFA siting clearance guidelines- procedure for clearance of Low Power BTS/ small cells i.e., Micro, Pico and Femto cells on existing street furniture/infrastructure and the cases of additional antenna". These instructions inter alia stated *"...it has been further decided that the following guidelines shall be applicable for the SACFA siting clearance for Low Power BTSs (EIRP <=100W) ... The requirement for a formal application for SACFA processing is done away with for such Low Power BTSs..."*

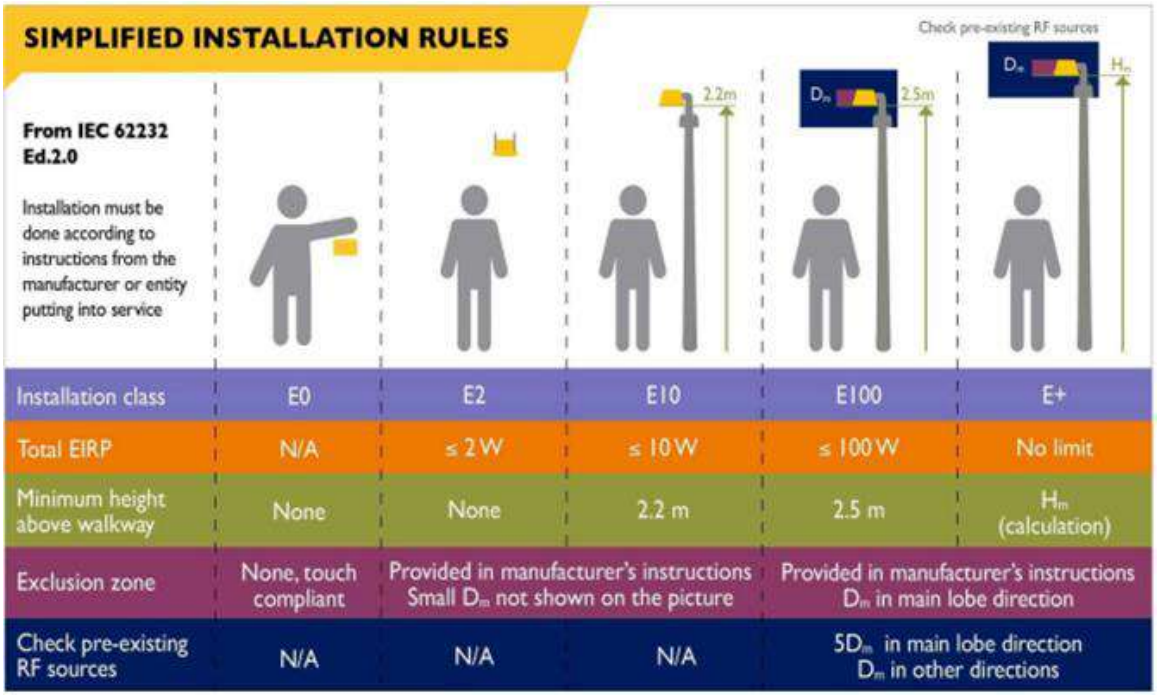
2.133 TRAI conducted four pilots at International Airport (New Delhi), Kandla Port (Gujarat), Bengaluru Namma Metro (Karnataka) and Bhopal Smart City (MP) to understand challenges for using Street Furniture at these places for mounting Small Cells. During these Pilots TSPs used the 5G small Cells of EIRP <= 600W to demonstrate how small cells of these capacities mounted on street furniture can be used to meet coverage and capacity requirements of these places.

2.134 As validated from the responses received, installation procedures for small cells are usually developed and established based on internationally accepted equipment classes and such international reference accepted by the national authorities to enable generic permits for installation and operation. As was elaborated in the CP, a common approach for base station classification is through the basis of installation classes derived from parameters, including transmit power, effective isotropic radiated power (EIRP), antenna installation height and installation location (outdoor or indoor). A number of standards have been specified by various standard developing organizations (SDOs), to reduce inconsistencies in the selection of classification parameters in different regulatory regimes. The current consensus seems to be building around the IEC 62232 Ed.2.0 guidelines as the preferred classification method which uses criteria of EIRP and antenna

installation height but also provides more detailed elaboration on technical rationale and evaluation approaches.

2.135 Several countries across the world have a regime for small cells focused on ensuring aesthetical visual appearance and sufficiently low emission power for building public acceptance and ensuring safety of the public. The current global landscape witness's diversity in parameters and the limits used to qualify sites for exemptions. As discussed in the CP, the EU uses the IEC 62232 guidelines to specify that an overall emission power limit not exceeding 10 W of equivalent isotropic radiated power (EIRP) (applicable to E10) as well as class-dependent requirements as one of the criterions to provide exemption from building permits. Figure 2.2 shows a pictorial representation of the IEC 62232 and ITU K100 simplified installation rules.

Figure 2.2: Pictorial representation of IEC Simplified Installation Rules



2.136 A few other countries have used location as the criteria to give exemption. In Cyprus, if the base station is "outside the boundary of urban development" then site permits are not needed when the antenna mast is less than 25 meters tall. Transmitters inside buildings in

Lithuania and transmitters in privately owned buildings of Spain are granted exemption from permits. Based on the power parameter, some countries have provided exemptions. In Belgium, no environmental permit is needed for transmitters with ERP of 2 W or less. In Estonia, no permits or Health Board approval are needed for base stations with ERP ≤100W. For France, no declaration or ANFR (French Regulatory agency for spectrum management) authorization is needed for stations radiating less than 1 W EIRP. Any station operating on an assigned frequency at 1-5 W EIRP, which is their de facto definition of small cells, must notify ANFR and the local governing authority about the station's technical characteristics. In Germany, radio stations with EIRP of 100 mW or less do not need site certificates. BNetzA (Federal Network Agency) must be notified two weeks in advance about the commissioning of new or substantially modified stations whose EIRP is greater than 100 mW, but less than 10 W and civic authorities must be informed at the same time. In certain parts of Italy, for base stations <10 W and surface area <0.5 m^2 the local planning authority requires notification but does not have to decide on a permit.

2.137 In Denmark, local permits are not needed for panel antennas for mobile communication with associated radio modules and transmission links in neutral colors, set on existing masts used for public mobile communications when the height of the building is not increased. In Sweden, antennas (and thereby small cells) are exempted from building permits if they do not materially change the appearance of the building. Some municipalities in Amsterdam and Barcelona have been supporting low visual impact installations by conducting public campaigns for encouraging aesthetical designs of SAWAPs. Finland is another country that has initiated the same through a nationwide design competition in Helsinki on "standard model designs" which can smoothly fit a variety of environments and are easily scalable for mass production.

2.138 From the aforesaid, it can be seen that there are diverse practices adopted by countries for exempting different types of permits based on

the location and power parameters used. Some other parameters such as mounting, total size of equipment, mast height, appearance, etc. have also been adopted. Considering that one of the primary factors for exemption adopted commonly by most countries is the EIRP of the small cell equipment, the Authority feels that exempting certain categories of small cells at all places through use of EIRP as an exemption criterion is an approach that can be adopted in the context of India also.

2.139 In the four Pilots that were carried out by TRAI on deployment of small cells and aerial fiber on street furniture, most of the small cells used by TSPs had maximum EIRP between 52 dBm to 57.5 dBm (say up to 600 watts). The Authority has noted that TEC has currently defined Low power Base Station Transmitters (LPBTS) as having EIRP limited to 100 Watts in its TEC Test Procedure No: TEC/TP/EMF/001/02.OCT.2012 on Simplified Assessment Procedure for EMF compliance of Low Power BTS dated 16.11.2015. TEC document acknowledges the fact that such BTSs are small in size and radiate lower power vis-a-vis micro BTS and therefore, they require different treatment from the point of view of audit of EMF radiation limits already laid down by the DoT. The audit requirement for these types of BTS has been accordingly called Simplified Assessment Criteria (SAC). This TEC document details the self-certification requirement from the TSP and audit by TERM Cells under SAC. There are certain concessions given to such LPBTS sites. For example, there is no requirement of signage for the BTS falling under SAC. TERM Cells may conduct physical audit of BTS covered under SAC for checking compliance to the requirement based on the EIRP declared by the TSP and no measurements need be conducted. Any violation of this requirement will be dealt with as per the procedure prescribed by DoT/Licensor. However, while conducting measurement for EMF compliance for BTSs not covered under SAC, the EMF contribution from micro BTS to the total radiation will also be taken into consideration. In such cases, micro BTS radiation must meet the prescribed EMF limit. The format for self-certification of such LPBTS has been provided as follows in Figure 2.3:

Figure 2.3: Format for self-certification of low power BTS

FORMAT FOR SELF CERTIFICATION OF LOW POWER BTS

SITE DATA & TECHNICAL PARAMETERS

Name of TSP:
Name of the BTS :

Sr. No.	Item	Units	Site Data
1	Site ID		
2	Date of Commissioning		
3	Address		
4	Lat / Long (minimum 5 decimal places)	deg	
5	Pole/wall Height	(m)	
6	Height of lowest part of radiating antenna(s) from public accessible area	(m)	
7	Make and model of Antenna/BTS		
8	System Technology (GSM/CDMA/W-CDMA/ OFDM)		
9	Base Channel Frequencies (BCCH/CPICH/PBCH)	(MHz)	
10	No. of Carriers / Sub-Carriers		
11	Antenna Gain	dBi	
12	Tx Power	(dBm)	
13	EIRP	(dBm)	
14	Any radiating element within 14 meters in the main lobe direction & 2.7 meters in any other direction.	Yes/No	

It is to certify that above BTS comply with the installation criteria/ technical requirements mentioned in Table-1 of Addendum No. 4 to TEC Test Procedure No: TEC/TP/EMF/001/02.OCT. 2012 , Dated : 16-11-2015

Signature of authorised representative of TSP

2.140 As has been discussed above, TEC has also provided for the audit requirement of base stations in line with the introduction of LPBTS (having EIRP limited to 100 W) in the Indian telecom market. Simplified Assessment Procedure criteria based on mounting height, main lobe direction and distance to other ambient sources as EMF evaluation techniques has been for normally compliant class that includes those base stations with EIRP > 2 and ≤ 100 Watts. Since most of the small cells that are being deployed are having EIRP upto 600 watts, the Authority feels that it would be prudent to revise the EIRP limits for

LPBTS definition upto 600 watts. The normally compliant class should include those base stations with EIRP > 2 and ≤ 600 Watts and TEC should accordingly modify the tables (As provided in Table 2.3) for this class.

2.141 In the matter of conducting EMF audit and providing self-certificates by the licensees, DoT through a notification[15] dated 4th February 2021 has reviewed the biennial submission of self-certificates confirming compliance to the EMF norms as prescribed by the ICNIRP from time to time. The cycle of submission has now been changed from two years (biennial) to three years (triennial). Further, the triennial submission of self-certificate shall not be done if following self-certificates have been submitted by the TSPs during the three-year cycle: -

a) Self-certificates for New BTS

b) Self-certificate for Upgradation of BTS.

c) Self certificate due to upgrade/ addition of BTSs of other/ sharing TSP.

DoTs instructions on the matter have been attached as **Annexure IV**.

2.142 **The Authority, therefore, recommends that Low Power Base Transceiver Stations (LPBTS) should be defined as those BTS that radiate EIRP<=600 W. Such equipment/small cells should be exempted from seeking any kind of permission from any Authority except from the Street Furniture/building owning Agency at all places.**

2.143 **DoT's simplified EMF compliance framework should redefine normally compliant class to include those LPBTS**

[15] https://dot.gov.in/sites/default/files/04-02-2021.pdf?download=1

with EIRP > 2 and ≤ 600 Watts and TEC should accordingly modify the tables (As provided in Table 2.3) for this class.

2.144 **Recent actions have been taken by DoT for simplifying the process for SACFA compliance, for low power equipment/small cell radiating EIRP<=100 W. DoT should increase this limit to 600W to cover most of the Small Cells/LPBTSs that are being deployed.**

2.145 **Presently TERM Cell is required to audit 10% of sites for which TSPs have submitted self-certification to their offices. TERM cells for undertaking this exercise depend upon TSPs like providing Testers etc. However, considering the sheer volume of Small Cells, which otherwise may put severe strain on TERM cell and TSPs resources, this audit criteria for Small Cell may be relaxed. DoT should consult the Ministry of Statistics and Programme Implementation (MOSPI) to come up with a scientific sample size for auditing BTS/small cell sites.**

2.146 **Presently TSPs are required to provide self-certification for EMF radiation compliance every three years. However, considering the sheer volume of Small Cells, which otherwise may put severe strain on TSPs resources, self-certification criteria for LPBTS should be relaxed to five years.**

2.147 In addition to the exemptions for those cells that will require permissions for installations, the Authority is of the view that putting in place a

simplified administrative process can reduce time and costs. This will be beneficial for both the Government and the Industry.

2.148 The concept of batched applications for small cells has been provisioned by the FCC in USA. As per the FCC, shot clocks are defined as the time frame within which the authority generally must act on a given wireless application. The code has presented its discussions on whether the batched applications should be subject to either longer or shorter shot clocks than would apply if each component of the batch were submitted separately[16]. Each small cell application will fall within either of the two categories –

i. Review of an application to collocate a Small Wireless Facility using an existing structure: 60 days, or
ii. Review of an application to deploy a Small Wireless Facility using a new structure: 90 days.

2.149 As per the code, if a single application under either of the above categories seeks authorization for multiple deployments, then the reasonable period of time for the application as a whole is equal to that for a single deployment within that category. If a single application seeks authorization for multiple deployments wherein the components are a mix of deployments of the two categories, then the reasonable period for the application as a whole is 90 days.

2.150 At state level, the Punjab Government has come out with a draft policy where they have tried to simplify the administrative process for approval of small cells. It is provided in the draft policy that the telecom service providers/infrastructure providers shall take one time permission from the competent authority through an online application on the Punjab Invest Business First Portal (pbindustries.gov.in). The permission shall be given by the concerned department/corporation/agency within a maximum of 60 days of making the application. To speed up the approval process, for site locations where electricity authorities or any

[16] https://docs.fcc.gov/public/attachments/FCC-18-133A1.pdf

other appropriate authority have permitted the installation of small cells and/or aerial optical fiber, further permission from municipal corporations or local bodies may not be required.

2.151 As far as duration of permission is concerned, the deemed approval for permissions for usage of street furniture for small cell and aerial fiber deployment is 60 days as per sub-rule 3 of 10A in the Amendment rule 2022. Some stakeholders have suggested reducing it to 30 days. As has been discussed above, even FCC process defines 60-day and 90-day timelines for processing the permissions. The Authority feels that a sixty-day deemed approval clause in the rules should serve the purpose for the time being. It is more important to monitor delays and rejections and ensure that flimsy excuses are not given to seek further clarifications as the time period approaches. The Sub-rule (2) of Rule 4 of the RoW rules 2016, as amended, already provides for appointment of Nodal officers. The Authority is of the opinion that a close monitoring at the portal admin level and coordination with Nodal officers will ensure timely processing of application and reduce unwanted rejections.

2.152 In order to manage the large number of small cell applications, a batch processing or bulk processing provision is important for facilitating speedy deployment of small cells. The Authority as per para 2.34 and 2.35 has already recommended the same. Once the bulk approval provision is in place in the RoW rules, the Authority is of the opinion that the concept of bulk approval for small cells can also be incorporated in the National RoW GatiShakti Sanchar Portal.

2.153 Considering the above, **the Authority recommends that DoT should put in place a mechanism for close monitoring of all RoW applications by portal administrators and also coordination with Nodal officers of Appropriate Authorities to ensure timely processing of application and reduce unwanted rejections.**

2.154 **The Authority also recommends that DoT should make necessary provisions in the GatiShakti Sanchar Portal to incorporate bulk application filing and processing for all categories of Small Cells.**

Standardization of small cell equipment and installation practices

2.155 The Authority notes that few stakeholders are in favor of standardization of small cell equipment, but they have failed to provide sound justification in favor of their arguments. Most stakeholders have not felt an immediate need for standardization of the equipment as it may be counterproductive at this stage when the 5G ecosystem is still developing. The Authority feels that there is a lot of variation/customization in designs of street furniture itself and every installation may be required to be tailored to meet specific conditions such as quality and design of SF, power related issues etc. The type of small cells expected to deploy varies as per the requirements of service providers and use cases. Not giving vendors the liberty to choose from a wide variety of options would strangle innovation and ingenuity in finding site specific solutions. Also, standard designs for mounting equipment may not be able to accommodate different types of equipment available. Considering the fact that the design of 5G outdoor small cells by service providers are currently under development and the finalization of exact specifications may take time as the current specifications may change (in dimensions and power specs) based on future developments. As time progresses, deployment templates will emerge that can be replicated by TSPs on their own across all similar types of locations. Therefore, the Authority is of the opinion that adoption of standard equipment or installation practices may not help network rollouts at this stage.

E. Power related issues and solutions

2.156 The Authority through the CP had discussed the importance of continuous and affordable power supply for the efficient functioning of small cells. Though small cells consume much lower power compared to macro base stations given the lower coverage area and the lesser requirement for site support infrastructure (e.g., cooling systems), a continuous power source is nevertheless required at the street furniture for deploying small cells. Discussing various power related challenges for deployment of small cells on street furniture's, following questions were raised in the CP to gather more detailed inputs from the stakeholders:

xii) What power related problems are envisaged in deploying small cells on street furniture? Please provide full details.

xiii) What viable solutions are suggested to address these problems? Please provide full details.

Comments on power related issues

2.157 Getting adequate uninterrupted power to all the telecom infrastructure is an issue pointed out by majority stakeholders. Another issue raised is related to the cumbersome process of getting permission for the electricity meter at every street pole and managing billing of a large number of sites. Some of the DISCOMs are not giving a separate connection for installing electricity meters on SF. Two stakeholders have shared that there is the need for appropriately designing power back up. High commercial tariffs, frequent annual revision in electricity rates and supply at only locations where a connection already exists are some of the other issues shared by stakeholders. One stakeholder has stated that the electrical bill comprises fixed demand charge (on sanctioned load) irrespective of running load drawn, which results in paying huge monthly payments on unutilized sanctioned load. A few stakeholders have also expressed concerns regarding the different rates for commercial, industrial, utility, etc. connections by different SERCs.

Comments on solutions to power related problems

2.158 As a solution to the cumbersome process of metering and billing at every pole, most stakeholders have proposed that a system of providing power connections on several poles through the process of single application based bulk approvals should be considered. To resolve the problem of proper physical address at SF locations where power supply is to be provisioned, stakeholders have suggested that DISCOMs should provide power supply on temporary addresses or else give address codes to SF locations. Enabling open access to support the telecom infrastructure by suitable modification and doing away with restrictions of minimum connected load per site is another solution given by a few stakeholders.

2.159 Many stakeholders have stated that back-up battery requirements are a limiting factor in deploying small-cell power systems on street furniture. As per one of the associations, in addition to the conventional AC/DC power supply system, the small cell site should have a fallback mechanism to work on battery backup (preferably Li-Ion)/suitable solar based power solution in the absence of conventional AC supply. Since both Radio and Baseband require DC-48V supply Power-plant will be required to convert from AC supply. A suggestion given is that TSPs/IPs should be allowed to have their own backup suited to the type of small cells. Making available a centralized power source inclusive of back-up (for a cluster of street furniture with a power cut-off mechanism localized at the location) and distribution mechanism have been put forward by a couple of stakeholders.

2.160 One of the associations has proposed the usage of two types of power systems. The first one is miniaturized DC-power systems which are modular designs that offer flexible power-distribution options and can support larger batteries for longer back-up power periods. The second type of unit is the “pole/wall mount” category of all-in-one power systems; however, they usually have less configuration flexibility and more limited back-up battery options. Power conversion efficiency must also be a factor in the design of small-cell power systems. Ensuring

reliable and stable AC/DC power and exploring cost-effective ways such as DC supply through battery banks or through solar panels by way of subsidization by states have been suggested by some stakeholders.

2.161 The adoption of a *'One DISCOM-One Bill-One Payment policy'* by the DISCOMs has been proposed by the majority. A service provider has suggested deployment of meters on 5%-10% of installed small cells base, and the metering for all installations can be done based on this sample. Charging of such sampled meters can be averaged and extrapolated to arrive at the bill. Another service provider has suggested that slab rates can be defined and established based on the power rating of the equipment and that bulk billing as per the cumulative equipment installed can be done at the respective division level by DISCOMs.

2.162 The suggestion that has been proposed by the majority of stakeholders is with regard to lowering the electricity tariff, more specifically based on industrial tariff or utility tariff. Further, provision for priority electricity connection within 15 days at these rates was given by the majority. Imposing minimum requirements, discounted prices, and charges while raising demand notice at the time of EB installation was put forward by one of the associations.

2.163 Granting permissions for digging earth pits or sharing the same among different operators and subletting of electricity from the private entity are some other submissions made by stakeholders. It was also submitted that DISCOMs should not process disconnection in haste on minor complaints of residents and corporations.

Analysis of the issues and views of the Authority

2.164 As India walks towards the deployment of next generation technologies, not only is there a paradigm shift in the physical infrastructure requirements, but there is also a vast difference in the powering requirements for 4G and 5G. While 4G powering is mainly characterized by the presence of huge power cabinet to each tower along with renewable energy sources used for backup, 5G requires providing

separate connection from the grid to each of the densely placed small cells although the power required for each of the individual small cell is less than that of macro BTS.

2.165 Power being the lifeline on which telecom network runs, the Authority has already taken an initiative for cross-sectoral collaboration between the Telecom and Power sectors. At the behest of TRAI, Forum of India Regulators (FOIR) had constituted a working group on Cross Sector Collaborative Regulation between the Telecom Regulators and Electricity Regulators. The working group had representation from TRAI, Central Electricity Regulatory Commission (CERC), State Electricity Regulatory Commissions (SERCs), DISCOMs, Infrastructure Providers and has a provision to co-opt experts from other organizations as well. It had identified certain issues and made its recommendations to FOIR (attached as **Annexure V**). Subsequently on some of these issues, TRAI had made a presentation to FOIR in its 49th Meeting of the Governing Body. In the presentation, the Governing Body was briefed on the recommendations of the working group on the following subjects:

- Development of a centralized portal & GIS Mapping of Assets
- Monetizing assets of power utility companies
- Placement of telecom antennas and associated equipment on the transmission towers
- Utilizing transmission assets such as electric substation lands & buildings
- Deployment of small cells and aerial fiber on electric poles

2.166 Based on this meeting, it was noted that the recommendations of the working group should be disseminated among all the DISCOMs, as it would be infrastructure of the DISCOMs which would be used to install the 5G cells and related equipment. It was also decided that the recommendations of the working group will be presented before the Forum of Regulators to sensitize the State Electricity Regulators on the importance and need for sharing infrastructure to enable the implementation of the 5G technology. FOIR vide its letter

dated 27.04.2022 intimated Secretary SERCs/JERCs, of the deliberations during the 49th GB meeting of FOIR and requested them to share the recommendations of the Working Group and the minutes of 49th GB meeting to the DISCOMs under his jurisdiction. Also, basis the decision taken in the FOIR Governing Body meeting; TRAI made a presentation to Chairman of all SERCs/ JERCs in the 79th meeting of the Forum of Regulators (FOR) which was held on 22.04.2022.

2.167 As there will be thousands of small cells deployed on the available street furniture while rolling out 5G in an area, the issue of availability of continuous power supply to the installed equipment in a cost-effective manner needs to be addressed. Usually, distribution licensees only allow one grid connection point for each consumer address. On most street furniture like billboards, bus shelters, traffic lights etc. electric connection is already present. Some DISCOMs do not treat street furniture as a commercial address while some others refuse to provide another connection on the same SF address. Therefore, to enable multiple connections on the same street furniture asset, the Authority is of the view that the distribution licensees should consider small cells as 'consumers' (i.e., end user) of electricity and be entitled to get a separate electricity connection regardless of whether they are using the premises/apparatus of an existing consumer. The best approach can be to share the already available connection on these SFs by putting a sub-meter. Subletting of an existing power connection from one consumer to another by installing sub meters is not allowed under the existing regulatory framework of some DISCOMS. Sharing of power connection is in the domain of electricity regulations and the States where there is an embargo on tapping connection (by putting a sub-meter) from already available connection, the SERCs may have to re-look at the policy.

2.168 The traditional model of powering a cell site — in which the site is powered by the AC power grid, with a backup power source available as a fallback— cannot be applied to small cells, as these sites either do not currently come with power backup or will have very limited backup, and

therefore, would go down during a power outage. The way to fix that would be to have a system that has some level of backup that maintains 24*7 uninterrupted power available in the traditional telecom network. A power hub cabinet that has battery backup distributes that power from a centralized location can be a solution. In Korea, service providers have experimented with small cells that have only radiating antennas at the cell site while the processing and power units are centralized for small area that may have few small cell sites in vicinity. The Authority is of the opinion that such solutions will keep evolving with time and it should be left to market forces to experiment with new emerging solutions.

2.169 Another important concern is that electrical bill comprises of fix demand charge (on Sanctioned load) irrespective of running load drawing, which results into a telecom operator paying huge monthly payments on unutilized sanctioned load as well, leading to huge financial burden. Considering the deployment of huge number of small cells, it is imperative that DISCOMs should consider issuing electricity bill on the basis the running load and not on the sanctioned load. Therefore, the Authority is of the opinion that charging of power should be based on running load, there should not be any charges on the basis of fixed load in order to incentivize the operators.

2.170 Smart meter technologies as being installed under various schemes of Government of India as well as by the State Utilities themselves are designed to accommodate the evolution of communication services over time. Smart meters will provide accurate, not estimated bills and allow suppliers to better predict demand, thus helping to shape energy infrastructure to become more reliable and efficient. According to the National Infrastructure Commission of UK, a complete smart energy grid could save the nation 8 billion pound each year[17]. The Government of India is providing funding to the States for implementation of smart metering under National Smart Grid Mission (NSGM) and Integrated

[17] https://www.yesenergysolutions.co.uk/advice/benefits-of-smart-meters

Power Development Scheme (IPDS)[18]. Further, Revamped Distribution Sector Scheme (RDSS) was launched on 20th July 2021 under which deployment of ~25 crore smart prepaid meters for all domestic consumers have been envisaged till March 2025. The Government has been providing financial assistance under these various schemes (viz. IPDS, NSGM etc.). A sum of Rs. 22,500 crore has been earmarked as Central Government grant for the installation of those 25-crore smart prepaid meters across the country under the RDSS scheme for power distribution entities (DISCOMs) recently approved by the Cabinet[19]. RDSS envisages smart metering on the OPEX mode and provides financial support to DISCOMs opting for prepaid smart metering. Under the scheme, the States which can install smart prepaid meters before December 2023 will also be eligible for an additional incentive of Rs 450 per meter. As small cells will be in thousands, processing and paying individual bills will be tedious for service providers. Pre-paid smart meters can help in releasing funds locked in security deposit for the TSPs/IP-Is. It will also enhance revenue realization for DISCOMS who will benefit by getting all usage paid upfront. Given the benefits of smart metering, the Authority is of the opinion that smart pre-paid electricity meters should be installed in all existing telecom installations on priority and in a time bound manner. Also on all new installations, including those for small cells, DISCOMs should only install smart prepaid electric meters.

2.171 SERCs prescribe different rates for commercial, industrial, utility, billboard etc. connections. The rate for public utilities is Rs 6.25/unit whereas the same for advertisement & hoardings is Rs 8.50/unit, these variations in the tariffs for different street furniture assets can affect the viability of a cell site. As per the Electricity Act 2003, respective SERCs in each state determine the electricity tariff applicable on consumption of electricity by different classes of consumers (such as domestic,

[18] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1797348
[19] https://www.financialexpress.com/govt-earmarks-rs-22500-crore-for-smart-pre-paid-meters--new-discom-scheme/

commercial, industrial etc.). Providing telecommunications is part of service industry. The vital role of telecommunication and broadband service in the economic growth of connected areas justifies that telecom sites should be provided electricity connection at industrial/utility tariffs.

2.172 Given the importance of connectivity in Government service delivery, commerce, education, health and other sectors, the State Government should consider providing electricity to Telecom sites on priority (within 15 days of connections request). Currently the charges raised for providing electricity to telecom sites are very high and dissuade installation of new sites. The State Governments should also consider waiving off last mile installation charges for extending electric connection to telecom sites.

2.173 In the case of mass deployment of small cell equipment across a geography, processing separate applications for each individual electrical connection will be cumbersome. To facilitate faster rollouts, the requirement of taking power connection on several poles or street furniture can be facilitated through the process of bulk approvals. Considering the large number of power supply applications that would follow as part of small cell densification, a provision for bulk processing of applications is also necessary to enhance ease of doing business.

2.174 Thousands of small cells will together consume megawatts of energy. For making sector footprints greener, it is essential to enable green energy access for powering small cells. The Open Access (OA) policy can be very helpful for telecom operators to support the telecom infrastructure and achieve green energy targets. One of the stakeholders has submitted that a major bottleneck in the OA policies is that the buyer must have a minimum 'Connected Load' of typically 1MW, which is being followed by most states. Authority has observed that Ministry of Power has notified Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 06.06.2022 with the objective of ensuring access to affordable, reliable, sustainable and green energy for all. These rules

address several issues like reduction of Open Access Transaction limit from 1 MW to 100 kW and have made appropriate provisions for cross-subsidy surcharge, additional surcharge, standby charge. This will incentivize the common consumers to get Green Power at reasonable rates. However, from a TSP/IP-I perspective, these rules may still not be very helpful since individual small cell, or any other telecom site will consume significantly less electricity than 100 KW. This will restrict TSPs from making use of OA policy for renewable sources. However, if the aggregated demand of all sites of a service provider under a DISCOM is considered, it will go in megawatts. Therefore, Authority feels that the OA policy for using solar/renewable energy sources needs to be modified to incorporate provision to aggregate demand from all sites of a TSP/IP-I that are served by a DISCOM.

2.175 **The Authority therefore recommends that DOT should take up the case with Ministry of Power, State governments and SERCs for implementation of following:**

i. **DISCOMs should make provisions to provide connections for telecom sites to TSPs/IP-Is on priority basis. The timelines for providing the connection should be fixed (preferably 15 days) and monitored through portal.**
ii. **Given the importance of DCI for socio-economic development of States, DISCOMs should not charge the TSPs/IP-Is for installation/upgradation of transformer or for pulling the last mile of the electrical connection. If required, states should make necessary provisions for compensating DISCOMs for such waiver of charges.**
iii. **As the power requirements for small cells remain almost flat throughout the day, DISCOMs should charge TSPs/IP-Is on the basis the running load and not on the sanctioned load.**
iv. **All DISCOMs should treat Street Furniture Address as Commercial Address for the purpose of providing a power**

connection and allow multiple power connections at the same SF commercial address to different commercial entities.

v. **DISCOMs should allow sub-letting of connections at street furniture locations.**

vi. **Smart pre-paid electricity meters should be installed in all existing telecom installations on priority and in a time bound manner. Also on all new installations, including that for small cells, DISCOMs should only install smart prepaid electric meters.**

vii. **Provision for one application for bulk processing of connection requests for multiple sites should be made available through portals for promoting ease of doing business.**

viii. **Telecom sites should be provided electricity connection under Utility/Industrial tariff.**

ix. **DISCOMs should adopt One DISCOM-One Bill-One Payment policy for all Telecom sector service/infra providers users that use electricity connections at multiple locations.**

x. **OA policy for using solar/renewable energy sources needs to be modified to incorporate provision to aggregate demand from all sites of a TSP/IP-I that are served by a DISCOM.**

xi. **DISCOMs should share their maintenance schedules with TSPs/IPs (site owners) in advance so that site owners can be prepared in the event of power cuts. The actual duration of all power outages should also be made available area wise on their website.**

2.176 The role of power sector in supporting telecom networks is well-known. Similarly, the roll that telecom sector plays in modernizing smart transmission and distribution networks of power sector need not be emphasized. 5G when deployed on DISCOM's infrastructure creates a win-win situation where the distribution companies can benefit from 5G

use cases of smart metering, smart grid monitoring, disaster management, automation, fiber-ready network for power grids, energy management etc. Thus, there are new revenue and cost-saving opportunities for transmission companies and DISCOMs when their infrastructure is utilized for telecom installations. A cross sectoral collaboration between telecom and power sector, in sync with GatiShakti initiative, needs to be further improved. However, there are certain challenges in the same that will need to be addressed.

2.177 The aforementioned FOIR Working Group that was formulated to submit its recommendations on "Cross Sector Collaborative Regulation between Telecom Regulators and Electricity Regulators" has, in its report mentioned:

> "*Delhi Electricity Regulatory Commission (DERC) has allowed for utilization of distribution assets for Telecom services on revenue sharing basis and same can be adopted by other State Regulators also. However, Municipal Corporation are imposing tax liability in cases where transmission assets i.e., Substation lands & buildings, are shared for cross function use on revenue sharing model. The Working Group recommends that this issue needs to be taken up at appropriate level so that whenever land is provided on favorable terms to utility companies and those utility companies are sharing the same for utilization with other utility company, then terms of use of land should not change.*"

2.178 **In the collaborative spirit of GatiShakti and to promote sharing of infrastructure above, the Authority recommends that DoT should take up the issue with the states that whenever land is provided on favorable terms to utility company and those utility company shares the same for utilization with other utility company, then terms of use of land should not change.**

F. Institutional mechanism for enabling Collaboration between Controlling Administrative Authorities and TSPs/IP-Is

2.179 To ensure that 5G deployment take place in a coordinated environment and the challenges due to interdependencies on different agencies are addressed, strong collaboration between stakeholders is needed[20]. This will aid the infrastructure creation at a cost efficient and time bound manner and improve the operator's confidence in providing services. Recommendations relating to cross sectoral collaboration for infrastructure creation for provision of shared duct infrastructure in municipalities, rural areas and national highways was provided by the Authority in the prior broadband recommendations dated 31st August 2021. In order to gather further insights on cross sectoral collaboration specific to the use of street furniture, the following questions were raised in the CP:

xiv) Is there a need for a specific mechanism for collaboration among local bodies / agencies for deployment of small cells and aerial fiber using street furniture? If yes, what mechanisms should be put in place for collaboration among various local bodies/agencies involved in the process of permissions with TSPs/IP-Is and to deal with other aspects of Small Cell deployment?

xv) Kindly suggest an enabling Framework that shall include suggestions about the role of various authorities, rules of coordination among them, compliance rules and responsibilities, approval process, levies of fees/penalties, access rules etc.

xvi) What should be the commercial arrangements between the TSPs/Infrastructure Providers and street furniture owners for the same?

xvii) Whether there should be any specific regulatory and legal framework to enable Small Cell and Aerial Cable deployment on

[20] https://www3.weforum.org/docs/WEF_The_Impact_of_5G_Report.pdf

Bus Shelters

Billboards

Electric/ Smart Poles

Traffic lights

Any other street furniture

Comments on Mechanism for collaboration and Role of various Authorities

2.180 Various suggestions given by stakeholders for collaborative mechanisms to coordinate and oversee the 5G deployment process are as follows:

a) Coordination Committees: One of the stakeholders has proposed the formation of a three-layer committee with representatives from DoT, Industry experts, and other central PSUs in the field of telecommunication. These committees at the state/district/ local body level would help facilitate the process of approvals.

I. National level committee to suggest overall guidelines for RoW permission, charges and other governing rules.
II. State level committee to coordinate with different state agencies and ensure the implementation at state level. The State Broadband Committee and its Sub Committee (Operational Committee) will be able to bring about necessary coordination wherever there is any problem.
III. Local body at Secondary Switching Service Area (SSA) level, headed by district collector, to take care of single point of contact for roll-out issues.

The requirement of establishing a nodal agency that can be equipped with all the powers under RoW regulations, coordination with all bodies and simplifying the application process was put forward by a few stakeholders. The contact details of nodal officers of local bodies, and the TSPs/IPs should be mandatorily available on the Portals. The appointment of Nodal Officers by every concerned department at State level can add to better coordination. State level/district level

nodal officers may be appointed with delegated power to decide on grant of permission and for resolutions in case of any disputes and responsibility matrix to be published online along with the escalation and grievance redressal process.

b) Use of existing Broadband Committees: Many stakeholders had put forward suggestions on the constitution and role of committees under National Broadband Mission (NBM) and its requirement to be sensitive to the needs of 5G deployment on street furniture. The committees under NBM should function as both knowledge gathering and sharing hubs. It was suggested by a service provider that on lines of State Broadband Committees (SBCs), a Joint committee with Central agencies/departments can be created with sole purpose of expediting RoW permissions. The SBCs can also have districts/towns specific representatives like DMs, Mayors to discuss and facilitate small cells/aerial fiber deployment issues. It should be mandatory for NBM to hold monthly meetings and in that, if possible, members of SERC, DISCOMs and agencies like airport, port trust, metro/railways could be co-opted as members. Besides this it is utmost important to have representations of TSPs and IP-Is also in those committees.

c) National RoW Portal: The Online Central National RoW Portal (GatiShakti Sanchar Portal) should also provide for communication including notices between the concerned stakeholders like TSP/IP-Is and appropriate/administrative/ local authorities. Besides, the role of different stakeholders, rules of compliance, assessments, approvals, etc. can be very well addressed through the portal.

d) Dedicated specialized authority: A special team should be formed which will have the End-to-End responsibility of street furniture deployment and process the applications in a time bound manner. This team should also have the right to publish amendments as required by the specific city to meet its requirement along with the authority to collect fees and levy fines/ penalties.

e) Many of the stakeholders have commented on the role that the PM GatiShakti initiative can play in enhancing collaboration.

f) Setting up a nationwide Small Cell Information Exchange (SCIX), a digital platform that would hold real time information about availability, backhaul connectivity, monthly rent and permit status for infrastructure capable of hosting small cells has been suggested similar to that of the UK.

2.181 The responsibilities of the Central, State, and local authorities have been put forward by the stakeholders. The Central Government can play a role in setting the overall strategy for connectivity, and framing appropriate legal structure, policy, and regulation. Local planning authorities can play a vital role in facilitating network development and in helping to identify the SF suitable for small cells deployment.

Comments on Commercial Arrangements between CAAs and TSPs/IPs

2.182 Regarding TSPs/IPs entering into arrangements with CAAs, most of the stakeholders are of the opinion that consistent with the light touch regulatory regime, it should be left to a voluntary arrangement. To this, one of the associations has added that only the time taken to grant permissions and cap on charges to be paid by the IP-Is, should be specified. Few stakeholders have submitted that TSPs/IPs should work out with street furniture owners and submit it to DoT to frame a uniform policy/ standardized agreement format across the country.

2.183 Various commercial arrangements and viable business models suggested for sharing SF are -

a. Revenue sharing models like Public Private Partnership (PPP), Build–operate–transfer (BOT) models.
b. The commercial arrangement should be on a no-profit no-loss basis, through a national rate card for all types of street

furniture. The rate card should be designed on the lines of a classification of circles, i.e., A/B/C circles.

c. Provision of complimentary services by the service providers at designated infra to the local bodies viz., Passenger Feedback Solutions at Railway Station, Bus Stations, Smart Street Light solutions, i.e., a win-win situation is an effective arrangement. Providing free 5G services for smart solutions i.e., IoT/M2M by converting bus shelters to smart bus shelters is an example. The same can be applied for multiple street furniture so that the fixed cost may be avoided.

Comments on Enabling a framework for specific street furniture structures like Bus Shelters, Billboards, Traffic lights etc.

2.184 A few stakeholders are in support of bringing a specific regulatory and legal framework for specific SF as it will ensure uniformity in the equipment and installation process. With regard to permissions, it has been proposed by a service provider that SEBs/DISCOMs should be instructed to permit usage of electricity poles; municipal agencies/authorities to permit use of smart poles, streetlights and billboards; and State Road transport authorities/agencies should be instructed to allow the use of Bus Shelters for small cells deployment. A few others are of the opinion that a specific legal framework for each street furniture is not required at this stage.

Analysis of the issues and views of the Authority

a) Mechanism for collaboration

2.185 The Authority is of the view that systematic collaboration between the industry stakeholders and governance stakeholders along with coordinated decision making is necessary to aid the infrastructure creation required to achieve large scale deployment. It is understood that the involvement of multiple government bodies or utility service providers i.e., telegraph, electricity, water, gas etc., for the approval of

small cells, necessitates that the process should be considerably simplified and streamlined to avoid unnecessary delays.

2.186 The constitution of the National Broadband Mission (NBM) was envisaged by the National Digital Communication Policy (NDCP) in 2018. NBM aims to operationalize the 'Broadband for All' objective by facilitating the creation of digital communications infrastructure and provisioning of services thereon. Under the NBM, one of the objectives is to enhance cooperation among concerned stakeholders by developing innovative implementation models for RoW. Another objective is to work with States/UTs for having consistent policies pertaining to expansion of DCI including for RoW approvals required for laying of OFC. Thus, streamlining the RoW permission framework is already a part of the responsibility of various setups proposed in NBM such as Governing Council for broadband, Broadband Steering Committee, and the State Broadband Committee. At the Central level the work is carried out by the Broadband Steering Committee, while at the State level the work is carried by the State Broadband Committee. For monitoring at the District/Municipal level, the States/UTs are required to set up a District level Committee. These elaborate institutional arrangements for streamlining RoW permissions were recommended in the Broadband recommendations by the Authority.

Figure 2.4: Representation of Broadband steering committee under NBM

Secretary, Department of Telecom	Chairperson
Administrator, USOF	Member
Representatives from (Not below the level of Joint Secretary)	
Niti Aayog	Member
Department of Economic Affairs	Member
MeitY	Member
MoRTH	Member
Petroleum & Natural Gas	Member
Environment & Forest	Member
Power	Member
Housing & Urban Affairs	Member
Department of Space	Member
Railway Board	Member
Joint Secretary and Mission Director, Department of Telecom	Member Convenor

2.187 The Authority through its recommendations on "Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed" had appreciated the role of NBM committees as one of the key collaborative strategies to streamline RoW permissions. Few of the relevant extracts are presented as follows:

7.13 Following institutional arrangements for streamlining RoW permissions framework should be put in place:

i. Under the National Broadband Mission (NBM), the Central Government has put-in-place the institutional mechanism, in form of the Governing Council for Broadband, the Broadband Steering Committee, and the State Broadband Committee, for inter-ministerial coordination at Center and State level. The objective of the Council and the Committees should be broadened to streamline RoW permissions framework for all utilities by inclusion of additional members nominated from other utility departments/ service providers.

ii. *In the State Broadband Committees, Secretaries in charge of panchayat and local self-governments, and industry departments should also be included. Further, the Chairman of the State Broadband Committees may coopt the state level representative of the central agency(ies) on need basis in the meeting to resolve the RoW issues in time.*

iii. *Additionally, District Level Committees, with District Magistrate as Chairman, a representative from LSA unit of DoT, and Superintendent Engineer (SE) / Executive Engineer (Ex. Eng.) of the Public Works Department (PWD), be set up to streamline the RoW permissions framework at the district level. The District Level Committees could necessarily include representatives from:*

   a. *Irrigation Department,*
   b. *Forest Department,*
   c. *Rural Development Department,*
   d. *Local Bodies like Municipal Corporation, Municipality, etc. and*
   e. *Utility service providers like telegraph, electricity, water, gas etc.*

2.188 Since the SF structures are owned by both State and Central bodies, the Authority deduces that the involvement of both Broadband Steering Committee and State Broadband Committees as institutionalized in the NBM can play a key role in taking care of the needs of 5G deployment. The Authority is of the opinion that the institutional framework has already been put in place in writing under the NBM, so a separate provision is not required at this stage. Further, the Authority has already recommended the expansion of the objective of these entities to include streamlining of RoW permission framework for all utilities. Implementing this on priority will suffice to take care of the needs of both macro cells and small cells.

2.189 Figure 2.4 displays the representations of the various Ministries/ Departments involved in the National Broadband committee. To develop consensus among the stakeholders and ensure ease in collaboration

among sectors, it is important to bring together all those CAAs associated with the deployment of small cells into a common platform. The NBM report states that the Broadband Steering Committee may incorporate representation from other Ministries / Departments and experts as per requirement. With respect to the above statement, the Authority opines that the current representation of the committee shall be expanded to include other relevant departments also. Since some bodies like the Airports, ports etc. can play an important role in the commercial rollout of 5G, the inclusion of these bodies in the State committees shall also be vital to streamline RoW permissions.

2.190 Regarding the above discussion, the Authority recommends the following:

2.191 **In order to evaluate and assess the progress of small cell rollout, the role of Broadband steering committee, State broadband committee and District/ Municipal Monitoring Committee, should be expanded to include continuous monitoring of the issues of small cells at Central, State and District/Municipal levels, respectively.**

2.192 **The representation of the Broadband Steering Committee should be expanded to co-opt other Ministries or Departments like Civil Aviation, Defense, Ports, Shipping and Waterways, Power etc. as per requirement.**

2.193 **For the State broadband committee members from major ports, airports, metro rail and other relevant commercial bodies that are present in the states, should be co-opted.**

2.194 **In cities where street furniture is controlled by multiple agencies, the concerned State/Local government should**

nominate one of the assets owning agencies as lead/nodal Authority to monitor the permissions related to small cells.

2.195 **The details of the nodal ministry and nodal officers from each of the states along with the TSPs/IPs and IPs should be included in the Monitoring Dashboard as envisaged in the NBM to track the progress of the small cell deployment across each State and District of the country.**

2.196 **The Authority reiterates that its earlier recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31.08.2021 (Para 7.14.ii) in the context of defining clear roles for the Central, State, and Local Body authorities in the RoW portal, should be implemented by the Government on priority. The Authority further recommends that these roles should be widened to administer the use of street furniture for small cell and aerial fiber deployment.**

2.197 In response to the suggestion of a few stakeholders on setting up a nationwide Small Cell Information Exchange (SCIX), the Authority agrees that information sharing shall be one of the ways to strengthen collaborations between industry and the Government. The UK government has said that it would invest in piloting the latest innovations in digital asset management platforms, to help local councils share data more easily with network operators. This would help to deal with the difficulties of network operators on getting the required information to verify a structure is suitable, like its location or physical dimensions, proximity to the street, or access to a power source.

2.198 As has been discussed previously, DPIIT has requested the states to map additional data layers namely electric poles, traffic light poles, bus terminal / bus shelters and Government buildings (State Govt/Central Govt, PSU) which are thought to be used for mounting 5G small cells. As part of these recommendations, the Authority in previous sections has already recommended that a catalogue of GIS mapped Street furniture assets in the National RoW portal should be created with the certain specifications. It has also been recommended that dedicated spaces on rooftops should be identified for deploying small/macro cells. All such spaces should be GIS mapped and mad available on GatiShakti Sanchar portal for charge free use by TSPs/IP-Is on non-discriminatory basis.

2.199 The Authority in its recommendation (numbered 7.31) on "Roadmap to Promote Broadband Connectivity and Enhanced Broadband speed" dated 31st August 2021, had recommended the establishment of an e-market place to facilitate leasing and trading of passive infrastructures using a common GIS platform. The relevant extracts of the recommendation have been mentioned under Section A (refer to para 2.36). But the mentioned recommendation was limited to the sharing of information of only passive infrastructure. With the evolution of 5G, an interactive marketplace and online mapping application for small cells built on reliable and trustworthy data is important. This will aggregate and visualize various dimensions for demand-supply management of small cells to enhance the 5G network connectivity. Therefore, the Authority is of the opinion that the e-marketplace enabled through GIS mapping should be expanded for small cells along with the passive infrastructure.

2.200 With regard to the above discussion, **the Authority recommends that the scope of e-marketplace which was recommended by the Authority in para 7.31.iv of its recommendations dated 31.08.2021 on "Roadmap to Promote Broadband Connectivity and Enhanced Broadband speed" to facilitate leasing and trading of passive infrastructures using a common GIS platform should be expanded to include small cells along with the passive infrastructure.**

b) Regulatory framework for specific street furniture

2.201 The Pilot study conducted by TRAI had given insights on how certain street furniture assets are owned and/or controlled by multiple agencies. It was also observed that the feasibility for housing small cell equipment varied across street furniture structures. As the rollout of 5G is at a nascent stage, the designs of infrastructure associated with it are also evolving. Specifying a regulatory framework for each type of street furniture structures can restrain free development of designs and installation practices. In order to arrive at cost effective strategies and practices of small cell deployment in the near future, it is necessary that the market should be left to evolve without major restrictions. Therefore, the Authority is of the opinion that there is no need for defining a specific regulatory framework for different street furniture structure. All assets including streetlights, traffic poles, kiosks, bus shelters etc. that are potentially capable to host small cells, should be made available for use by TSPs for small cell deployment.

c) Commercial arrangements

2.202 The operators/infrastructure providers generally enter arrangements with street furniture owners in the interest of greater accessibility, time and cost savings. But in most cases, it is of concern that the deployment of small cells on the public structures are seen solely as a source of revenue by various local Authorities and Government bodies, instead of understanding the long-term benefits for the economy. Through the RoW

amendment rules (2022), DoT has already specified the compensation for the establishment and usage of poles and street furniture for the deployment of small cells and overground telegraph line. The Authority is of the opinion that the recent amendment to ROW rules has already addressed the issue of charges levied by the appropriate authorities from the applicants (service providers) for deployment of small cells and aerial fiber on street furniture and no further intervention is required at present.

CHAPTER 3

SUMMARY OF THE RECOMMENDATIONS

A. Right of Way (RoW) Issues and adequacy of current provisions in ROW rules 2016

3.1 The Authority recommends that the DoT clarification dated 26.10.2022 on Indian Telegraph RoW rules 2016 regarding the term "street furniture", should be made part of the Indian Telegraph RoW rules through a suitable amendment in a relevant Gazette Notification.

[Para 2.24]

3.2 The Authority reiterates its earlier recommendations issued in the context of Broadband Recommendations dated 31.08.2022 vide Para 7.14.iii that the scope of the proposed national portal should be expanded to grant RoW permissions from utility providers like water, electricity, gas etc. also. More specifically, since most of the SF assets are under the control of the power sector, the portal shall also include a facility to process RoW falling under the jurisdiction of power sector including DISCOMs.

[Para 2.32]

3.3 The Authority recommends the following amendments to the Indian Telegraph Right of Way (Amendment) Rules, 2022:

Sub-rule (1) of Rule 10A of the Indian Telegraph Right of Way (Amendment) Rules, 2022 should be amended as:

A licensee shall for the purpose of installation of small cell and telegraph line submit an application, along with details of street furniture and a copy of certification by a structural engineer authorized by appropriate authority, attesting to the structural safety of the street furniture where installation of small cells and

telegraph line is proposed to be deployed, to the appropriate authority for permission to use street furniture for installation of small cells and telegraph lines.

Provided that licensee may have option to submit single application for multiple sites and appropriate authority shall make due provisions for accepting such applications and issuing single permission for multiple sites accordingly for establishment of small Cells.

[Para 2.34]

3.4 The Authority recommends that DoT should make provision in the GatiShakti Sanchar Portal for accepting single applications for bulk processing of sites for granting various permissions, including RoW and power connection.

[Para 2.35]

3.5 The Authority recommends that a Catalogue of GIS mapped Street furniture assets in the National RoW portal should be created with the following specifications:

a) Height, load bearing, and wind load capability of structure.

b) Wattage, type of power (AC/DC), voltage etc. if power is available.

c) Picture of SF.

d) Non-discriminatory terms and conditions offered for hiring.

e) Contact details (Mobile number, landline number and email ID) of the nodal person for the particular Street Furniture.

[Para 2.41]

3.6 The Authority recommends that use of Drone based mapping in the GIS system should be considered for quick assessment of the location of small cell infrastructure and for the creation of the street furniture catalogue.

[Para 2.42]

3.7 The Authority recommends that till the Draft Telecommunications Bill 2022 is passed as a law, the Government should specifically monitor action taken by the state police, for security of Telecommunications Asset, through a DoT and MHA joint committee.

[Para 2.45]

B. Infrastructure sharing by the Controlling Administrative Authorities (CAA) with TSPs and IP-Is

3.8 The Authority recommends that:

i DoT should issue advisory guidelines to States for mandating CAAs that own/control traffic lights to share these assets with TSPs/IP-Is for deployment of small cells subject to structural stability.

ii All Central Government entities should earmark dedicated spaces in their existing and planned buildings/structures for installing DCI including small and macro cells. Dedicated spaces on rooftops should be identified for deploying small/macro cells. All such spaces should be GIS mapped and made available on GatiShakti Sanchar portal for charge free use by TSPs/IP-Is on non-discriminatory basis.

iii Advisory guidelines should also be issued to State Governments for similar action by their entities and local bodies. DoT should also follow up with State Governments for implementing the guidelines.

[Para 2.85]

3.9 The Authority recommends that enabling provisions or suitable terms and conditions shall be introduced in all telecom licenses and IP-I registration agreement prohibiting the TSPs/IP-I providers from entering into any exclusive contract or right of ways with infrastructure owners/CAAs or any other authority.

[Para 2.90]

3.10 The Authority recommends that DoT should include the following in their advisory guidelines to States:

i **All CAAs or asset controlling authorities should prohibit entering into exclusive rights/exclusive tie-up with any licensee/registration holder. SF infrastructure should be offered in a non-exclusive and non-discriminatory manner.**

ii **In future, tenders for setting up new SF structures by the appropriate authorities, the possibility of sharing of SF on non-exclusive basis, for hosting DCI like small cells and aerial fiber, should be kept in mind. The terms and conditions for offering all assets that are catalogued and uploaded on GIS portal, should have a mention that the SF is being offered on non-exclusive basis and will be shared with other eligible entities.**

iii **In line with GatiShakti initiative, in all future projects of utility providers that are partially or fully funded by government to put-up new assets (such as gas pipelines, HT power lines, streetlights) or expand existing assets, provisions to host/support DCI such as small cells, towers, and aerial fiber should be in-built.**

[Para 2.91]

3.11 The Authority also recommends that DoT should immediately act on TRAI's letter dated 1st February 2022 (attached as Annexure III) and bring clarity on the provisions of sharing of infrastructure under different licenses to remove the ambiguity in infrastructure sharing provisions in Unified License mentioned in the Chapters related to generic conditions and authorization specific chapters.

[Para 2.92]

3.12 The Authority reiterates that its earlier recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced

Broadband Speed' dated 31.08.2021 (para 7.23) may be implemented at the earliest. National Fiber Authority (NFA) should be formed in priority to undertake the planning and development of common duct and posts infrastructure. The scope of the agency should be expanded beyond common ducts and telegraph posts, to undertake responsibilities related to above-ground contrivances, appliances, and apparatus. Further, NFA should also be given responsibility of ensuring, in consultation with State Governments that CAAs share street furniture assets on non-discriminatory, transparent, and non-exclusive basis.

[Para 2.97]

3.13 The Authority recommends that in case more than one TSP makes requests to use the same SF and there is insufficient space available to meet the demands of all the requesting TSPs, they should coordinate among themselves to work out a technically feasible solution for shared use of the structure for the installation of equipment. In case the TSPs fail to reach an agreement, they should accept the decision of the CAA which may use a fair and reasonable method to select the TSP(s) who will use the SF.

The above provision should be made part of the Indian Telegraph Right of Way Rules, 2016 through a suitable amendment by issuing a Gazette notification.

[Para 2.98]

3.14 The Authority reiterates its earlier recommendation on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31.08.2021 (para 7.11) for formation of a National RoW Council. All the RoW matters related to street furniture should also be placed before this council.

[Para 2.99]

C. Street furniture and small cell sharing among TSPs and IP-Is

3.15 The Authority recommends that charges paid by lessee TSP to lessor TSP for use of shared infrastructure should be reduced from the Gross Revenues of the lessor TSP to arrive at Applicable Gross Revenue (ApGR) of such Lessor TSP. To implement this, a new item named as "Revenue earned from other licensed TSPs from sharing/leasing of infrastructure" should be inserted under existing license condition named as "List of other items to be excluded from GR to arrive at ApGR". This modification may be carried out in UL, UL(VNO) and ISP licenses. Also, the information collected in "Format of Statement of Revenue and License Fee" that is attached with each authorization chapter in UL, UL(VNO) and with ISP licenses needs to be modified to capture information from such revenues under a separate head.

[Para 2.113]

3.16 The Authority recommends that the guidelines and registration agreement of IP-I providers should be modified to exclusively mention the term 'poles' in their scope of work.

[Para 2.114]

D. Process Simplification, Permission Exemption, Standardization of small cells and Installation practices

3.17 The Authority recommends that Low Power Base Transceiver Stations (LPBTS) should be defined as those BTS that radiate EIRP<=600 W. Such equipment/small cells should be exempted from seeking any kind of permission from any Authority except from the Street Furniture/building owning Agency at all places.

[Para 2.142]

3.18 DoT's simplified EMF compliance framework should redefine normally compliant class to include those LPBTS with EIRP > 2 and ≤ 600 Watt and TEC should accordingly modify the tables (As provided in Table 2.3) for this class.

[Para 2.143]

3.19 Recent actions have been taken by DoT for simplifying the process for SACFA compliance, for low power equipment/small cell radiating EIRP<=100 W. DoT should increase this limit to 600 W to cover most of the Small Cells/LPBTSs that are being deployed.

[Para 2.144]

3.20 Presently TERM Cell is required to audit 10% of sites for which TSPs have submitted self-certification to their offices. However, considering the sheer volume of Small Cells, which otherwise may put severe strain on TERM cell and TSPs resources, this audit criteria for Small Cell may be relaxed. DoT should consult Ministry of Statistics and Programme Implementation (MOSPI) to come up with a scientific sample size for auditing BTS/small cell sites.

[Para 2.145]

3.21 Presently TSPs are required to provide self-certification for EMF radiation compliance every three years. However, considering the sheer volume of Small Cells, which otherwise may put severe strain on TSPs resources, self-certification criteria for LPBTS should be relaxed to five years.

[Para 2.146]

3.22 The Authority recommends that DoT should put in place a mechanism for close monitoring of all RoW applications by portal administrators and also coordination with Nodal officers of

Appropriate Authorities to ensure timely processing of application and reduce unwanted rejections.

[Para 2.153]

3.23 The Authority recommends that DoT should make necessary provisions in the GatiShakti Sanchar Portal to incorporate bulk application filing and processing for all categories of Small Cells.

[Para 2.154]

E. Power related issues and solutions

3.24 The Authority recommends that DOT should take up the case with Ministry of Power, State governments and SERCs for implementation of following:

i. DISCOMs should make provisions to provide connections for telecom sites to TSPs/IP-Is on priority basis. The timelines for providing the connection should be fixed (preferably 15 days) and monitored through portal.

ii. Given the importance of DCI for socio-economic development of States, DISCOMs should not charge the TSPs/IP-Is for installation/upgradation of transformer or for pulling the last mile of the electrical connection. If required, states should make necessary provisions for compensating DISCOMs for such waiver of charges.

iii. As the power requirements for small cells remain almost flat throughout the day, DISCOMs should charge TSPs/IP-Is on the basis the running load and not on the sanctioned load.

iv. All DISCOMs should treat Street Furniture Address as Commercial Address for the purpose of providing a power connection and allow multiple power connections at the same SF commercial address to different commercial entities.

v. **DISCOMs should allow sub-letting of connections at street furniture locations.**

vi. **Smart pre-paid electricity meters should be installed in all existing telecom installations on priority and in a time bound manner. Also on all new installations, including that for small cells, DISCOMs should only install smart prepaid electric meters.**

vii. **Provision for one application for bulk processing of connection requests for multiple sites should be made available through portals for promoting ease of doing business.**

viii. **Telecom sites should be provided electricity connection under Utility/Industrial tariff.**

ix. **DISCOMs should adopt One DISCOM-One Bill-One Payment policy for all Telecom sector service/infra providers users that use electricity connections at multiple locations.**

x. **Open Access policy for using solar/renewable energy sources needs to be modified to incorporate provision to aggregate demand from all sites of a TSP/IP-I that are served by a DISCOM.**

xi. **DISCOMs should share their maintenance schedules with TSPs/IPs (site owners) in advance so that site owners can be prepared in the event of power cuts. The actual duration of all power outages should also be made available area wise on their website.**

[Para 2.175]

3.25 In the collaborative spirit of GatiShakti and to promote sharing of infrastructure above, the Authority recommends that DoT should take up the issue with the states that whenever land is

provided on favorable terms to utility company and those utility company shares the same for utilization with other utility company, then terms of use of land should not change.

[Para 2.178]

F. Institutional mechanism for enabling Collaboration between Controlling Administrative Authorities and TSPs/IP-Is

3.26 In order to evaluate and assess the progress of small cell rollout, the role of Broadband steering committee, State broadband committee and District/Municipal Monitoring Committee, should be expanded to include continuous monitoring of the issues of small cells at Central, State and District/Municipal levels, respectively.

[Para 2.191]

3.27 The representation of the Broadband Steering Committee should be expanded to co-opt other Ministries or Departments like Civil Aviation, Defense, Ports, Shipping and Waterways, Power etc. as per requirement.

[Para 2.192]

3.28 For the State broadband committee members from major ports, airports, metro rail and other relevant commercial bodies that are present in the states, should be co-opted.

[Para 2.193]

3.29 In cities where street furniture is controlled by multiple agencies, the concerned State/Local government should nominate one of the assets owning agencies as lead/nodal Authority to monitor the permissions related to small cells.

[Para 2.194]

3.30 The details of the nodal ministry and nodal officers from each of the states along with the TSPs/IPs and IPs should be included in the Monitoring Dashboard as envisaged in the NBM to track the

progress of the small cell deployment across each State and District of the country.

[Para 2.195]

3.31 The Authority reiterates that its earlier recommendations on 'Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed' dated 31.08.2021 (Para 7.14.ii) in the context of defining clear roles for the Central, State, and Local Body authorities in the RoW portal, should be implemented by the Government on priority. The Authority further recommends that these roles should be widened to administer the use of street furniture for small cell and aerial fiber deployment.

[Para 2.196]

3.32 The Authority recommends that the scope of e-marketplace which was recommended by the Authority in para 7.31.iv of its recommendations dated 31.08.2021 on "Roadmap to Promote Broadband Connectivity and Enhanced Broadband speed" to facilitate leasing and trading of passive infrastructures using a common GIS platform should be expanded to include small cells along with the passive infrastructure.

[Para 2.200]

ANNEXURE I

DoT clarification (dated 26.10.2022) on Indian Telegraph RoW rules, 2016

No.2-10/2022-Policy
Government of India
Ministry of Communications
Department of Telecommunication
*****

Sanchar Bhawan, 20, Ashoka Road
New Delhi, the 26th October, 2022.

OFFICE MEMORANDUM

Subject: - Indian Telegraph Right of Way Rules, 2016 (as amended from time to time) – Clarifications - regarding.

The undersigned is directed to refer to the provisions related to application fee to be paid by the applicants for seeking permission for Right of Way for establishment of telegraph infrastructure and rejection of application [Rule 6(2)(b) and 10(3)(b)] under the Indian Telegraph Right of Way Rules, 2016. In this regard, it is clarified that application fee shall not be deducted (fully or partly) by agencies processing the application, in case of rejection of application on account of deficiency in the documents submitted by the applicants and the application fee paid shall be adjusted on re-submission of application after rectification for the same site.

2. Further, it is also clarified that the term "Street furniture" mentioned in the Indian Telegraph Right of Way (Amendment) Rules, 2022 includes "post/pole used for electricity, street light, traffic light, traffic sign, bus stop, tram stop, taxi stand, public lavatory, memorial, public sculpture, utility pole or any other structure or contrivance of such nature established over the property of an appropriate authority".

3. All concerned Central Ministries/Departments and State Governments/UT Administrations are requested to convey the above clarification to all the agencies who are involved in granting Right of Way permissions for establishment of telegraph infrastructure.

[Rahul Dwivedi]
Under Secretary to the Government of India
Tel. No. 011-23713715

To

1. **Secretaries of all concerned Ministries/Departments** (as per list enclosed).
2. **The Chief Secretaries/Administrators of all States/UTs** (as per list enclosed)

For information to:

1. **The Director General,** Cellular Operators Association of India(COAI), New Delhi.
2. **The Director General, Digital Infrastructure Providers Association(DIPA),** New Delhi.
3. **The President, Internet Service Providers Association of India,** Nehru Place, New Delhi.

ANNEXURE II

DPIIT letter (dated 24th June 2022) instructing to include additional data layers in the State Master plan

No. National Master Plan/Logistics/2021
Government of India
Ministry of Commerce & Industry
Department for Promotion of Industry and Internal Trade
(Logistics Division)
*****

Udhyog Bhawan, New delhi
Dated 24th June 2022

OFFICE MEMORANDUM

Subject: PM Gatishakti State Master Plan - Development of State Master Plan
Ref: OM no. National Master Plan/Logistics/2021 dated 3rd March 2022

The undersigned is directed to refer to above mentioned OM wherein States have been requested to update 24 data layers on PM Gatishakti State Master Plan. In this regard a request has been received from Department of Telecommunication(DoT) (Copy enclosed) regarding additional data layers which can be used for deployment of 5G Cell as DoT is planning to roll out 5G mobile network in the country. Therefore, following additional layers are required to be mapped on the State Master Plan.

i. Electric poles
ii. Traffic light poles
iii. Bus terminal and Bus shelters
iv. Government buildings (State Govt/ Central Govt/ PSU)

2. All States are requested to integrate these layers, as far as possible, in their State Master Plan in coordination with BISAG-N.

(Pramod Kumar Verma)
Under Secretary to Govt of India

Encl: As above

To,

i. Chief Secretaries of all States and UTs
ii. PM Gatishakti nodal officers of all States and UTs

Copy for kind information to:

1. Secretary, DPIIT
2. Shri T.P. Singh, Director General, BISAG-N
3. Shri Vinay Thakur, Additional Director General, BISAG-N
4. Shri Neeraj Kumar, DDG(NBM), DoT and Member NPG

No. 1-1/2021-DGT/NMPPMGatiShakti
Government of India
Ministry of Communications
Department of Telecommunications
O/o DG Telecom HQ
(Broadband Mission)

Dated: 21.06.2022

To
Special Secretary (Logistics)
Department for Promotion of Industry and Internal Trade
Udyog Bhawan, New Delhi – 110011

Subject: PM GatiShakti State Master Plan - inclusion of electric poles for 5G rollout

Reference:

1. DPIIT OM No. National Master Plan /Logistics/2021 dated 3rd March,2022 from Under Secretary to Chief Secretaries of all States & UTs.
2. DO.No. 39-1/2020-DGTHQ/3 dated 11th Feb 2022 from Secretary, (Telecom) to all Chief Secretaries (copy attached)

Please refer to DPIIT OM dated 03.03.2022 mentioned above, wherein DPIIT has requested Chief Secretaries of all States & UTs for integration of data layers (in Annex-A of the letter) into the State Master Plan through the assistance of BISAG-N. Out of the 24 layers suggested for mapping by States one of the layers is for mapping of 'Power transmission and distribution'.

2. In this regard it is suggested that DPIIT may specifically ask States to map the location of the electric Poles as part of mapping of 'Power transmission and distribution'. This is necessary, for imminent 5G rollout, as the Telecom Service Providers may need to install 5G cells at very short distances and the electric poles may be one of the most important choices.

3. It may also be conveyed to the States that it will be good if the States can also identify other potential Street furniture viz. traffic light poles, bus shelters, potential sites of Govt. buildings, bus terminals etc. which may be used for deployment of 5G cells, as DoT is targeting 5G rollout in 15 identified cities of the country, which will be followed by full-fledged rollout in the future.

4. In view of the important role of States in supporting the 5G rollout, it is requested to issue another memorandum to Chief Secretaries of all States & UTs with above points.

(Neeraj Kumar)
DDG & Mission Director
National Broadband Mission

ANNEXURE III

TRAI letter to DoT (dated 1.02.2022) on Streamlining the guidelines of passive and active infrastructure sharing

भारतीय दूरसंचार विनियामक प्राधिकरण
TELECOM REGULATORY AUTHORITY OF INDIA
भारत सरकार /Government of India
TRAI

File No. M-7/1/6(4)/2022-BBPA

Date :1st February, 2022

To

Shri K. Rajaraman,
Secretary,
Department of Telecommunications,
Ministry of Communications
Sanchar Bhawan,
20, Ashoka Road, New Delhi - 110001

Subject: Streamlining the guidelines of Passive and Active Infra Sharing as per Authority's Recommendations-Regarding

This is regarding issue of Active and Passive sharing as authorized under various Access and Internet Service provision Licenses and Authorization. The provisions allowing active and passive infrastructure sharing in the different licenses/authorizations that were issued at different points in time vary, thus dissuading infrastructure sharing and creating issues of level playing field.

2. About Sharing of passive and Active Infrastructure, Authority in its recent recommendations of August 2021 titled "Recommendations on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed" vide Para 3.47 said that similar to the Access Service authorization, passive as well as active infrastructure sharing should be allowed under the Internet Service License, and Internet Service authorization under the Unified License (UL) and UL(VNO) licenses." A similar recommendation was made in the context of "Proliferation of Broadband through public Wi-Fi networks" dated 9th March 2017.

3. It may be noted that UL and UL-VNO License agreement, each has two parts. Part-I has seven chapters and specify conditions that are applicable to all Licensees irrespective of the Authorizations. Part-II has different chapters dedicated to each of the Authorizations like Access Service, ISP, NLD, ILD etc and have specific clauses that are applicable to that particular Authorization over and above the general conditions

Contd/-

महानगर दूरसंचार भवन, जवाहर लाल नेहरू मार्ग, Mahanagar Doorsanchar Bhawan, Jawahar Lal Nehru Marg
(पुराना मिन्टो रोड), नई दिल्ली / (Old Minto Road), New Delhi-110002
फैक्स/Fax : +91-11-23213294, ईपीबीएक्स नं0/EPBX No. : +91-11-23664145

mentioned in Part-I. Presently different clauses for Active/Passive Infra Sharing under Common Conditions (PART-I) and Specific Service Conditions (PART-II) in different authorizations/Licenses are mentioned (compiled as **Annexure-I).** Plain reading of these conditions can be confusing on following grounds :

a) The Conditions mentioned in Part-I are in conflict with conditions mentioned in Part-II. For example, Clause 33.1 of UL License mentions *"Sharing of active/passive infrastructure shall be governed by the terms and conditions of respective service authorization and amendment/guidelines to be issued by the Licensor from time to time."* However, under ISP Authorization chapter there is no mention of any Active Infrastructure sharing.

b) The conditions mentioned for Access and ISP authorization are not similar.

4. In addition, in the Case of ISP licenses issued under 2002 and 2007 guidelines, there is no clarity about passive Infra sharing or sharing of active infrastructure like antenna, feeder cable, and transmission systems.

5. Authority thus feels that terms of Active/Passive Infrastructure Sharing should be similar in all Licenses/authorizations, to the extent possible. The scope of provisions in common conditions (Part-I of UL and UL-VNO) and specific service conditions (Part-II of UL and UL-VNO) should be clearly mentioned as to whether the clauses in part-II are "additional clauses" or "having overriding effect". DoT may accordingly issue clarification/amendment to license conditions so that sharing of active/passive Infra can be further facilitated.

Encl: As above

RAGHUNANDAN
VARTHAKAVI

(V. Raghunandan)
Secretary, TRAI

	Unified License			Unified License (VNO)			ISP 2002	ISP 2007
	Provision under common conditions	**Provision under Access service authorization under UL**	**Provision under ISP Service authorization under UL**	**Provision under common conditions**	**Provision under Access authorization under UL**	**Provision under ISP authorization under UL**		
Passive Sharing		4.2(i) Sharing of "passive" infrastructure viz., building, tower, dark fiber, duct space, Right of Way etc. with other Licensees.	2.1(xi)The Licensee may share "passive" infrastructure namely building, tower, dark fiber, duct space, Right of Way owned, established and operated by it under the scope of this Authorization with other Licensees.	32.1 The terms and conditions of sharing of infrastructure between the NSO(s) and VNO shall be left to the market i.e. on the basis of mutually accepted terms and conditions between the NSO(s) and the VNO.	4.2(i) Sharing of "passive" infrastructure viz., building, tower, dark fiber, duct space, Right of Way etc. with other Licensees.	2.1 (vii) The Licensee may share "passive" infrastructure namely building, tower, dark fiber, duct space, Right of Way owned, established and operated by it under the scope of this Authorization with other VNO Licensees.		
Active Sharing	33.1 Sharing of active/passive infrastructure shall be governed by the terms and conditions of respective service authorization and amendment/guidelines to be issued by the Licensor from time to time.	4.2 The sharing of infrastructure, owned, established and operated by the Licensee under the scope of this Authorization, is permitted as below: (ii) Provision of point to point bandwidth from their own infrastructure within their Service Area to other licensed telecom service providers for their own use. However, the Licensee hiring the bandwidth shall not resell such bandwidth.		32.1 The terms and conditions of sharing of infrastructure between the NSO(s) and VNO shall be left to the market i.e. on the basis of mutually accepted terms and conditions between the NSO(s) and the VNO.	4.2 The sharing of infrastructure, owned, established and operated by the Licensee under the scope of this Authorization, is permitted as below: (ii) Provision of point to point bandwidth from their own infrastructure within their Service Area to other licensed telecom service providers for their own use. However, the Licensee hiring the bandwidth shall not resell such bandwidth.		Sharing of Active infrastructure amongst Service Providers based on mutual agreements entered amongst them is permitted. Active infrastructure sharing will be limited to WiFi equipment such as Wi-Fi router, Access Point etc. (Inserted in Guideline on 31.03.2021)	Sharing of Active infrastructure amongst Service Providers based on mutual agreements entered amongst them is permitted. Active infrastructure sharing will be limited to WiFi equipment such as Wi-Fi router, Access Point etc. (Inserted in Guideline on 31.03.2021)
	3.2 Sharing of Active infrastructure amongst Service Providers based on the mutual agreements entered amongst them is permitted. Active infrastructure sharing will	4.3 Further, the Licensee may share its own active and passive infrastructure		32.2 Sharing of Active infrastructure amongst Service Providers based on the mutual agreements entered amongst them is permitted. Active	4.3 Further, the Licensee may share its own active and passive infrastructure for providing other services authorized to it under the license.			

	be limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only. (Amended vide DoT's letter no. 20-443/2014 AS-I Pt. dated 11.02.2016)	for providing other services authorized to it under the license.		infrastructure sharing will be limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only.				
	Sharing of infrastructure related to Wi-Fi equipment such as Wi-Fi router, Access Point etc. is allowed. Sharing of backhaul is also permitted. (Amended vide DoT's letter no. 20-271/2010 AS-I (Vol.-III) dated 06.04.2021)	4.4 Moreover, sharing of active infrastructure with other licensees shall be governed by the license conditions/amendments issued by the Licensor from time to time.		33.3 The Licensee may share its own active and passive infrastructure for providing other services authorized to it under any other telecom license issued by Licensor. (Amended vide letter no. 20-271/2010 AS-I (Vol.-III) dated 23.09.2021 & 27.09.2021)	4.4 Moreover, sharing of active infrastructure with other licensees shall be governed by the license conditions/amendments issued by the Licensor from time to time.			
	33.3 The Licensee may share its own active and passive infrastructure for providing other services authorized to it under any other telecom license issued by Licensor. (Amended vide letter no. 20-271/2010 AS-I (Vol.-III) dated 23.09.2021 & 27.09.2021)	2.1(x) Spectrum sharing and trading would be permitted as per guidelines issued by the Government from time to time. (Amended vide DoT letter no 20-271/2010 AS-I dated 03.12.2015)		33.4 An authorized Gateway hub operated by the satellite provider itself is permitted to be shared with the satellite bandwidth seeker. (Amended vide letter no. 20-271/2010 AS-I (Vol.-III) dated 23.09.2021 & 27.09.2021)				
	33.4 An authorized Gateway hub operated by the satellite provider itself is permitted to be shared with the satellite bandwidth seeker. (Amended vide letter no. 20- 271/2010 AS-I (Vol.-III) dated 23.09.2021 & 27.09.2021)							

ANNEXURE IV

DOT's Instructions (dated 04.02.2021) on the Review of EMF Audit Biennial Self-certification

Government of India
Ministry of Communications
Department of Telecommunications
(Access Services Wing)
Sanchar Bhawan, 20, Ashoka Road, New Delhi

File No.:800-15/2010-VAS (Pt.) **Date: 04.02.2021**

To,

All CMTS/UASL/UL (having Access Service Authorization) Licensees

Subject: Review of Biennial Self-Certificate submitted by the TSPs.

This is in reference to Clause 6.1 of letter no. 800-15/2010-VAS dated 20.11.2013 which states that *"In case of all BTSs, except new BTSs commissioned during the cycle, the TSPs are required to submit the self-certificate within the window of 2 years, which is presently from 01.04.2013 to 31.03.2015, subject to a time gap of at least one year in submission of self-certificate in 2 consecutive cycles. In case of upgraded sites, these certificates are to be submitted in addition to revised certificates submitted at the time of site upgradation."*

2. The matter has been further examined and the process of submission of Biennial certificates has been modified as below:-

i. The cycle of submission of self-certificates shall be changed from two years (Biennial) to three years (Triennial). The current cycle commences w.e.f 01.04.2019 and ends on 31.03.2022.

ii. The Triennial submission of self-certificates shall not be done in respect of those BTSs for which following self-certificates have been submitted by the TSPs during the three year cycle:-
   - **a)** Self-certificates for New BTS.
   - **b)** Self-certificate for Upgradation of BTS.
   - **c)** Self certificate due to upgrade/addition of BTSs of other/sharing TSP.

3. All existing instructions in general and particularly those issued vide letter no. 800-15/2010-VAS dated 20.11.2013 shall remain same.

This is issued with the approval of competent authority.

(Suresh Kumar)
ADG(AS-II)

Copy to:
1. DG (T), DoT HQ, New Delhi.
2. All Advisor(s)/Sr. DDGs of LSA Units of DoT.
3. COAI.

ANNEXURE V

Recommendations of the Working Group to FOIR

Recommendations of the Working Group to the FOIR on "Cross Sector Collaborative Regulation between Telecom Regulators and Electricity Regulators"

Background

Based on discussions in the 21st Annual General Body Meeting of FOIR, held on 30.09.2020, a Working Group was constituted (**Annexure-I**) to submit its recommendations on "Cross Sector Collaborative Regulation between Telecom Regulators and Electricity Regulators". The working group was to submit its recommendations within 3 months from the date of its constitution. However, due to the ongoing pandemic and vastness of the subject which necessitated formation of some sub-groups, the recommendations of the Working Group were delayed.

Meetings of the Working Group

Meetings of the Working Group took place on **23.11.2020, 27.01.2021, 21.10.2021, 08.11.2021**, and **16.11.2021**. Deliberations/Presentations were made on how telecom sector can utilize available infrastructure in the electricity sector, international case studies, and information and communication technologies (ICTs) requirements of electricity utilities. Bhaskaracharya National Institute for Space Applications and Geo-informatics{BISAG} , an Autonomous Scientific Society registered under the Societies Registration Act, 1860 under the MeitY, Government of India to undertake technology development & management, research & development, facilitate National & International cooperation, capacity building and support technology transfer & entrepreneurship development in area of geo-spatial technology was requested to make a presentation before the Working Group as they have data of various sectors in realtime form, which can be super imposed to know actual availability of Telecom & Discoms Electrical Poles, OFC etc. The presentation was made by DG of BISAG-N on **8.11.2021**

regarding the work they are doing for development of various portals for the Government.

Constitution of Sub-groups

As the subject was extensive and various aspects were to be studied and analysed in detail, the Working Group decided to further constitute following four sub-groups :

S.N.	Group & Mandate	Members	TOR
1	**Group 1 - Mapping ofavailable infrastructure/assets**	- Shri H.S Kaushal; CTU (POWERGRID) - Shri H C Sharma, TPDDL - Shri M K Singh, Indus Towers	Guidelines to evolve a country wide National Fibre Grid map based on the fibre optic networks of various utilities which can be further utilized for 5G infrastructure.
2	**Group 2 - Installation practices for small cells**	Shri H C Sharma; TPDDL Shri M K Singh; Indus Towers Er. J. Prabhakaran; TNERC	
3	**Group 3 - Installation practices for aerial fibre**	Shri H C Sharma; TPDDL Er. J. Prabhakaran; TNERC	
4	**Group 4 – Legal, regulatory and licensing issues to enable cross sector collaboration**	Shri Manoj Kumar Singh; Indus Towers Shri H.S Kaushal; CTU (POWERGRID) Mr. H C Sharma; TPDDL Shri Sanjay Sharma , Joint Director - DERC Ms Shilpa Agarwal, Joint - Chief (Engg), CERC	To look into the appropriate provisions of the relevant Acts, Regulations etc. in order to have a seamless participation of Power & Telecom sectors for the development of 5G infrastructure in India. appropriate relevant Acts.

These Sub-Groups held various meetings and submitted their reports. Based on deliberations held in various meetings and the reports of the sub-groups, the recommendations of the Working Group has been framed as follows :

Recommendations of Working Group

(i) Government has already announced the GatiShakti programme that marks a paradigm shift in decision making to break the silos of departmentalism. The Working Group strongly feels that FOIR platform can be leveraged to make this program a success. A well thought through and effective cross-sector partnership between Telecom and Power sector can benefit both sectors through increased scales, leveraging shared resources, improve reach and amplify overall developmental impact. Figures below depicts some of the possible areas for cross sectoral collaboration that can bring in new revenue opportunities and cost savings for the service/infra providers of both Telecom & Power sector.

While the possibilities for cross-sectoral collaborations are limitless, the Working Group has identified few areas as low hanging fruits that can be picked up easily to start with. The suggested areas of collaborations are:

a. **Cross-sector collaboration for Aerial/underground fiber deployment**

Overhead or Aerial fiber deployment is deployment of optical fiber cables (OFC) using pole or tower infrastructure and in process avoids the need to dig roads to lay cables or to create new ducts/pipelines. Many developed countries like Japan and Europe have rolled out aerial fibers as part of their broadband plans due to their relatively quick and easy installation

characteristics. South Korea, which has one of the highest Fiber-to-the Home (FTTH) penetration, has relied heavily on aerial fiber deployments in initial years. International experience in the telecom sector has proved that collaborative regulations are helping in the speedy deployment of the 5G Networks. For instance, Georgia Power of the US is utilizing its assets to deploy 5G infrastructure by offering 5 lakh outdoor streetlights poles and 90,000 transmission structures to telecom service providers.

With most of the population residing in Tier 2/Tier 3/Rural areas in India, the overhead fibers can be a good option for rolling out the last mile fiber connections for increasing broadband penetration in hard-to-reach areas. Either existing electricity poles or dedicated poles erected overground for this purpose could be used for laying aerial OFC. Access to the utility poles as well as commercial or residential buildings is also required for installing aerial OFC, small cells, and In-building solutions. This can boost the cross-sector infrastructure development and sharing with other utility sectors can provide added cost advantages.

Power transmission companies like PGCIL have laid down and owns around 1 lac kilometers of optical fiber network Pan India and already provided transmission towers for use by the telecom/ internet service providers. Service providers of Telecom and power sectors together own majority of the utility poles/tower infrastructure and cross-sector collaboration between these two sectors can promote aerial OFC proliferation. Service providers thus can have a mix of underground deployment and overhead deployment along transmission or distribution lines, eliminating infrastructure hurdles of digging and Right of Way (RoW) permissions. This can ensure fast and wide-spread OFC deployment across the country on one hand and can also generate additional revenues from existing assets.

b. Cross-sector collaboration for 5G Small Cells deployment

Small cells are low-powered radio access nodes or base stations operating in the licensed or unlicensed spectrum that have a coverage range from a few meters upto several hundred meters. They can be deployed to facilitate connectivity, increase the network capacity and coverage in localized areas whether inside buildings or in outdoor spaces. Small cells will be much closer to mobile users and hence can offer better voice quality and data performance. In the 5G technology, the deployment of small cells will increase tremendously. To promote mobile connectivity, street furniture can be a highly effective tool in expanding the coverage of existing 4G as well as upcoming 5G networks. Moreover, there is a close relationship between street furniture access and aerial fiber deployments.

Granting access to public places like Government buildings/railway stations/metro rail stations/airports/ stadiums etc. and street furniture, such as bus stop shelters, utility poles, lamp posts, or traffic lights, owned by municipalities, at reasonable cost could remove a significant hurdle in 5G small cell deployment in the country.

In India, the power sector contributes to accessible street furniture like electric poles/lines/ supply pillars/cabinets/posts. Most of the infrastructure owned by the power sector distribution utilities in cities can be utilized by the telecom operators for the deployment of 5G Small cells. Alliances can be made with power DISCOMs, cable operators, and municipal authorities for using their utility poles and fibers for small cell deployments and for

providing OFC backhaul to these small cells, LT electric poles can be utilised subject to compliance of safety requirements.

c. **Cross-sector collaboration for smart metering, smart grid monitoring etc.**

5G when deployed on DISCOM's infrastructure creates a Win-Win situation where the distribution companies can be benefited from 5G use cases of smart metering, smart grid monitoring, disaster management, automation, fiber-ready network for power grids, energy management etc. Thus, there are new revenue and cost-saving opportunities for transmission companies and DISCOMs when their infrastructure is utilized for telecom installations.

(i) DISCOMs may rapidly facilitate to overlay the 5G infrastructure over Discom infrastructure which will provide seamless and ubiquitous digital connectivity, enabling adoption of emerging technologies e.g. AI, M2M, IoT, VR etc. for modernization/upgradation of DISCOMs infrastructure on mutual terms and conditions.

(ii) Though the above identified collaboration opportunities are win-win for utility service providers of both sectors, the Working Group felt that there are certain bottlenecks that prevent cross sectoral use of assets. The first major bottleneck is the information asymmetry whereby the utility company of one sector does not know which assets of the utility of other sector are available for sharing/use. The Working Group therefore recommends that a portal should be developed where utilities can give details of existing assets and fibers. A format for collection of Fibre Optics/Tower details from various utilities is being recommended (**Annexure-II**). This information will also help in creation of National Fibre Grid map by Department of Telecommunications (DoT) . The Working Group recommends that a

national portal may be created to publish this information on digital maps. The portal should also have provision whereby a utility company can indicate which of its assets are available for sharing and all other stakeholders can convey their response, if interested. Such a portal will thus be able to match demand and supply for sharing of the assets of utility companies of Power and Telecom sector.

(iii) The Working Group has parallelly requested BISAG-N to develop a prototype portal marking assets of Power and Telecom service providers such as for a 2 km x 2 km area in Delhi which will cover data of telecom towers, electric poles and overhead & underground Fibre networks of State Transmission & DISCOMs. However, this may take some time and the utility companies may not respond to the Working Group's request for data. Therefore, without waiting for the outcome of this initiative, the Working Group recommends that FOIR may ask DoT to get the portal developed.

(iv) The Working Group has observed that many utility companies have either laid optical fiber or own OPGW/ADSS, but are not monetizing these assets by renting them out. Utility companies can register as Infrastructure Providers with DoT to lease out dark fiber. Tata Power have in place their guidelines in this regard. The same can be shared with all power sector utility companies to help them in monetizing their dark fiber assets.

(v) Central Electricity Regulatory Commission (CERC) Regulation (Sharing of Revenue Derived from Utilization of Transmission Assets for Other Businesses), 2020 describes the manner of revenue sharing if any transmission licensee engages in telecommunication business (The amount of the sharing is 10% of gross revenue from Telecom business in a financial year). The Working Group recommends that CERC may request FOIR to either issue guidelines to SERCs or frame model regulations for SERCs on similar lines. The same may be suitably modified and adopted by SERCs.

(vi) It was brought to the notice of the Working Group that POWERGRID has developed an innovative solution for utilizing earth wire & transmission tower obviating the need of land acquisition and equipment power supply for Telecom equipment. Full-fledged demo set up was established by POWERGRID at Jhatikara substation on 400kV Jhatikara-Mundka line for tapping the auxiliary power from the earth wire to feed the tower mounted BTS equipment. Approx six kms Earthwire is isolated using arching horns to take care of intended lightening protection. Auxiliary power in the range of 4.1kW was obtained using induced current of the isolated E/W. This auxiliary power is fed to the BTS equipment by using a suitable DCPS convertor. The telecom antennas and the BTS with associated panel, batteries, charger etc were placed on a platform mounted on the transmission tower. A typical installation has been depicted in **Annexure-III**. The set-up has been working satisfactorily since 18.06.2017. The Working Group therefore recommends utilization of the 400kV & 765kV transmission line Towers (and any other suitable ones) located near urban/rural population for placement of Telecom antennas and associated equipment on the towers itself (wherever feasible) to cater to the requirement of telecom towers.

(vii) In the matter of utilisation of Transmission Tower for placement of Telecom equipment and auxiliary power from earth wire, CERC has issued an Order i.r.o POWERGRID petition and has decided for revenue sharing with beneficiaries in ratio of 50:50 for one year and same shall be reviewed after one year. The Working Group recommends that CERC may request FOIR to either issues guidelines to SERCs or frame model regulations for SERCs on revenue sharing model similar to CERC's order w.r.t. POWERGRID petition.

(viii) The Working Group also recommends utilization of transmission assets such as electric substations lands & buildings as location for

placing Telecom sector equipment (wherever feasible) as they are operational on 24x7 power supply.

(ix) Delhi Electricity Regulatory Commission (DERC) has allowed for utilization of distribution assets for Telecom services on revenue sharing basis and same can be adopted by other State Regulators also. However, Municipal Corporation are imposing tax liability in cases where transmission assets i.e. Substation lands & buildings, are shared for cross function use on revenue sharing model. The Working Group recommends that this issue needs to be taken up at appropriate level so that whenever land is provided on favourable terms to utility companies and those utility companies are sharing the same for utilization with other utility company, then terms of use of land should not change.

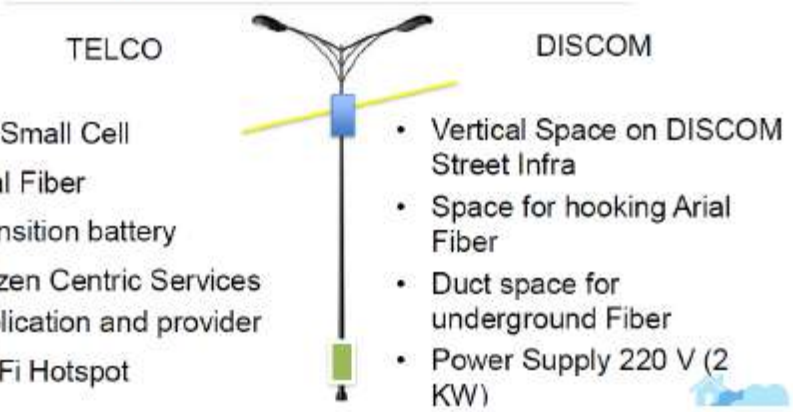
(x) As far as deployment of small cells on electric poles is concerned, the Working Group is of the opinion that Utility Poles would need following retrofit for small Cell Deployment :

a. Mounts for deployment of Small cell / Wi-Fi
b. Electricity Connection : 2KW
c. Outdoor enclosure for hoisting Power / Fiber / Telecom Equipment

As per the information provided to the Working Group, typical requirements of cabinets on utility poles for small cell deployment will be as follows:

Item	Details
Small Cell &Power Enclosure	1. Cabinet with Power Backup= 300(W)*450(L)*575(H) in MM. Weight= 32Kg ± 2Kg 2. Cabinet without Power Backup= 200(W)*275(L)*375(H) in MM. Weight= 22 Kg ± 2Kg 3. Only one Cabinet will be installed at one Pole as per requirement. 4. Small Cell= 300*300*50 Weight= 14 Kg for 1 unit, 2 Units atone pole. 5. Pole Mount Assembly= Weight= 6 kg

(xi) However, to have full understanding of all the requirements, the Working Group recommends that FOIR can initiate a pilot project to practically show how assets of Telecom and Power sector can be shared as shown below:



For the same, FOIR can identify 2 DISCOMs with 50-100 nos. of locations of street light poles. One or two Infrastructure providers can deploy 5G & Fiber Infra over DISCOM Infra (Indus Tower has already shown interest to work on this pilot). Citizen Centric Service and App provider can be looped in by these players to identify 2-3 use case for DISCOM i.e. Smart Metering, Uptime Management & QoS at user end. The Pilot Project may run for 3 months and detailed report to be submitted.

Additional recommendations for consideration of FOIR

The Working Group was also apprised of some issues that if addressed, can help in rapid infrastructure creation and faster rollout of 5G services. The same have been listed below for consideration of FOIR.

(i) A sum of Rs 22,500 crore has been earmarked as Central Government grant for installation of 25 crore smart prepaid meters across the country under the Rs 3-lakh-crore scheme for power distribution entities (DISCOMs) recently approved by the Cabinet. SERCs may direct the DISCOMs to Install Prepaid smart meters at telecom sites on priority.

(ii) As per CBDT Circular dtd. 30th June, 2021, Companies are paying 0.1% TDS over DISCOM bill payments, whereas DISCOMs are yet to upgrade their payment portals to accept bill nett of TDS. Due to this , the industry is burdened with 0.1% of additional out flow (Paying 0.1% TDS & not deducting from the bills). As there is no adverse impact on the DISCOMs , there is reluctance to upgrade their system to accept payments net off TDS. It is recommended that either DISCOMs seek exclusion from CBDT for TDS applicability upon electricity payments or seek some moratorium period to upgrade their system, to stop double payment problem currently faced by Service providers/Infrastructure providers of telecom sector.

(iii) Telecom sites should be provided electricity connection under Utility/Industrial tariff. SERCs may be requested to incorporate the same in their tariff orders.

(iv) Discoms should adopt One Discom-One Bill-One Payment policy for all Business users that use electricity connections at multiple locations including Telecom sector service/infra providers. SERCs may be requested to incorporate the same in their tariff orders.

(v) Electricity consumption at each telecom site may be allowed to be aggregated and offset with green power (solar, wind, hydro etc) generated at distant locations. SERCs may be requested to incorporate same in their regulations.

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Annexure - I

Members of the Working Group

1. Shri Sanjeev Kumar Sharma, Advisor, TRAI – Chairman of the Working Group
2. Shri J.K. Vaid, Director (Tariff), PSERC- Member
3. Ms. Sujata Das Chakrabarti, Secretary, TERC - Member
4. Shri Sanjay Kumar Sharma, Joint Director (PS & Engg.), DERC - Member
5. Ms Shilpa Agarwal, Joint Chief (Engg.), CERC - Member
6. Shri S.T.Anada, Joint Director, GERC – Member
7. Er. J.Prabhakaran, Dy.Director/ Engg. (II), TNERC - Member
8. Shri Shouvik Banerjee, SE (E), CPD, WBSETCL – Member
9. Shri Manoj Kumar Singh, Chief of Technology, Indus Towers Limited - Member
10. Shri H.S Kaushal, Senior General Manager, CTU (POWERGRID) – Member & Convenor
11. Ms. Rashmi Somasekharan Nair, Dy. Chief (RA), CERC, FOIR Secretariat

Special Invitee

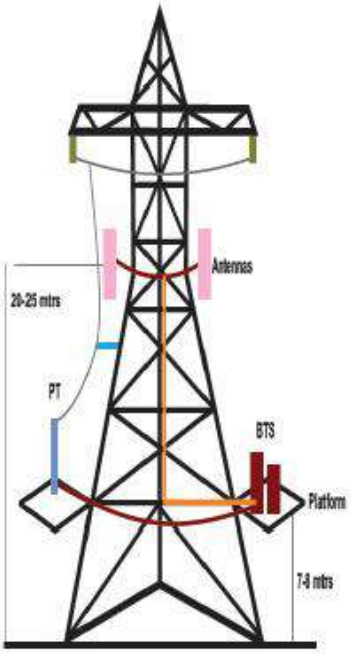
Mr. H C Sharma, GM, TPDDL

Annexure-II

Format for Assets Database											
Utility Name (TELCO/POWERTEL/GAIL/RAILTEL/BSNL/MTNL/SEB/Other) -											
Sr. No.	Name of link				No. of Fibre (24/48/96)	Possible Fibre Sharing		Whether Space is available in Node-A for BTS/MTS equipment/ Monitoring Center (Y/N)	Whether Space is available in Node-B for BTS/MTS equipment/ Monitoring Center (Y/N)	Remarks (if any)
	From Node-A		To Node-B			Whether Dark fibres Available (Y/N)	Whether Bandwidth Available (Y/N)			
	Node Name	Co-ordinate	Node Name	Co-ordinate						
1										
2										
3										

Power Distribution Utility (DISCOM) Name-								
Sl No.	Tower/Pole Details							
	Name of city	Details of Towers/Poles for mounting of 5G equipment (Mico Cells) – Height/Weight carrying capacity	Area/ Location of Pole	Latitude	Longitude	Clearance from ground available for mounting equipment	Whether electric connection available	Whether Tower Pole is available for sharing
1								
2								

Annexure-III



List of Acronyms

S. No.	Acronym	Description
1	3D	Three Dimensional
2	3G	Third generation
3	4G	Fourth generation
4	5G	Fifth generation
5	AC	Alternating current
6	AGR	Adjusted Gross Revenue
7	AI	Artificial Intelligence
8	ANFR	French Regulatory agency for spectrum management
9	ApGR	Applicable Gross Revenue
10	API	Application programming interface
11	ARAI	Automotive Research Association of India
12	BG	Bank Guarantee
13	BIS	Bureau of Indian Standards
14	BISAG-N	Bhaskaracharya National Institute for Space Applications and Geo-informatics
15	BMRCL	Bengaluru Metro Rail Corporation
16	BOT	Build–operate–transfer
17	BSNL	Bharat Sanchar Nigam Limited
18	CAAs	Controlling administrative authorities
19	CAPEX	Capital Expenditure
20	CDPDA	Common Ducts and Posts Development Agency
21	CERC	Central Electricity Regulatory Commission
22	CP	Consultation Paper
23	CPR	Construction Products Regulation
24	CPSE	Central Public Sector Enterprises
25	CTI	Common Telecom Infrastructure
26	DAS	Distributed antenna systems
27	dBm	decibel milliwatts
28	DC	Direct current
29	DCI	Digital Connectivity Infrastructure
30	DERC	Delhi Electricity Regulatory Commission
31	DISCOMs	Distribution Company
32	DoT	Department of Telecommunications
33	DPIIT	Department for Promotion of Industry and Internal Trade.
34	EB	Electricity Board

35	EECC	European Electronics Communication Code
36	EIRP	Effective Isotropic Radiation Power
37	EMF	Electromagnetic fields
38	EU	European Union
39	FCC	Federal Code of Communication
40	FDB	Fibre Splitter Distribution box
41	FOIR	Forum of India Regulators
42	FOR	Forum of Regulators
43	G.S.R	General Statutory Rules
44	GB	General Body
45	GIS	Geographic Information System
46	HT	High tension
47	IBS	In-building systems
48	ICNIRP	International Commission on Non-Ionizing Radiation Protection
49	ICT	Information and Communication Technology
50	IEC	International Electrotechnical Commission
51	IoT	Internet of Things
52	IP	Infrastructure Provider
53	IPDS	Integrated Power Development Scheme
54	IP-I	Infrastructure Provider Category -I
55	ISP	Internet Service Provider
56	ISRO	Indian Space Research Organisation
57	ITU	International Telecommunication Union
58	JERC	Joint Electricity Regulatory Commission
59	km	kilometre
60	LF	License fee
61	LPBTS	Low power Base Station Transmitters
62	LSA	Licensed Service Area
63	M2M	Machine to Machine communications
64	MIMO	Multiple-Input Multiple-Output
65	MNO	Mobile Network Operator
66	MoHUA	Ministry of Housing and Urban Affairs
67	MO-RAN	Multi-operator Radio Access Network
68	MOSPI	Ministry of Statistics and Programme Implementation
69	NBC	National Building Code
70	NBM	National Broadband Mission
71	NDCP	National Digital Communications Policy
72	NFA	National Fiber Authority
73	NOC	No objection Certificate

74	NSGM	National Smart Grid Mission
75	OA	Open Access
76	ODN	Optical Distribution Network
77	OEMs	Original equipment manufacturer
78	OFC	Optical fibre cables
79	OG	Overground
80	OHD	Open House Discussion
81	OLT	Optical line termination
82	OPEX	Operational Expenditure
83	PBO	Plan Build Operate
84	PM	Prime Minister
85	PPP	Public Private Partnership
86	PSU	Public Sector Undertaking
87	PWD	Public Works Department
88	RBS	Radio base station
89	RCI	radio communications infrastructures
90	RDSS	Revamped Distribution Sector Scheme
91	RF	Radio frequency
92	RoW	Right of Way
93	SAC	Simplified Assessment Criteria
94	SBC	State Broadband Committees
95	SCF	Small cell forum
96	SCIX	Small Cell Information Exchange
97	SDO	standard developing organizations
98	SE	Superintend Engineer
99	SEB	State Electricity Board
100	SERC	State Electricity Regulatory Commission
101	SF	Street Furniture
102	SLAs	Service-level agreements
103	SMPS	Switched Mode Power Supply
104	SSA	Secondary Switching Service Area
105	SUC	Spectrum usage charges
106	TEC	Telecom Engineering Centre
107	TP	Test Procedure
108	TRAI	Telecom Regulatory Authority of India
109	TSPs	Telecom Service Providers
110	UK	United Kingdom
111	UL	Unified license
112	UL-VNO	Unified license -Virtual Network Operators
113	US	United States
114	USA	United States of America
115	UT	Union Territory

116	VR	Virtual Reality
117	W	Watts
118	Wi-Fi	Wireless Fidelity

Annexure-3

GOVERNMENT OF ANDHRAPRADESH
ABSTRACT

ITE&C Department - IT Promotion– Andhra Pradesh Information Technology (IT) 2021-2024 Policy – Orders – Issued.

INFORMATION TECHNOLOGY, ELECTRONICS and COMMUNICATIONS (PROMOTIONS) DEPARTMENT

G.O.MS.No. 6 **Dated: 16-07-2021.**

Read the following

1. G.O. Ms. No. 13, ITE&C Department, dated:20.07.2018
2. E-file vide ITC01-IT0PROM(ITPR)/47/2020-PROMOTIONS-IT Policy from ITE&C (Promotion Wing) Department, Government of Andhra Pradesh

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ORDER:

The adoption of Information Technology(IT) into the daily aspects of life is growing faster, with efficiencies derived from digitization driving the economy worldwide. With more than half a billion internet users in India, the youth graduating out of the universities are more educated, skilled, and innovative. Such a vibrant ecosystem is rapidly transforming the Indian IT industry.

The Indian market for IT/ IT Enabled Services stood at USD 191 Billion (INR 14.3 Lakh Cr.) in the year 2019-20 and is expected to increase to USD 350 Billion (INR 26.2 Lakh Cr.) by 2025, driven by growth from tier-2 and tier-3 cities. IT services, Business Process Management (BPM), software products and engineering services are some of the major sub-sectors in IT with growth potential in India.

In view of this potential for fast growth and generation of large-scale employment in the sector, the Government of Andhra Pradesh evolved a holistic policy framework for IT/ IT Enabled Services sector, in Andhra Pradesh to compete with other States which have an existing IT/ IT Enabled Services ecosystem and attractive incentives. In order to take advantage of this opportunity and create large scale employment, and to foster a culture of entrepreneurship, the Government of Andhra Pradesh hereby notifies the "Andhra Pradesh IT Policy 2021-24" addressing the current needs of the industry.

AP IT Policy 2021-24:

1. Definitions

i. ***A foreign IT company*** is a company with its headquarters outside India.

ii. ***A multinational corporation(MNC)*** has facilities and assets in at least one country other than its home country.

iii. ***Advanced technologies*** refer to latest industry 4.0 technologies and applications such as Internet

of Things (IoT), Animation, Visual Effects, Gaming and Comics (AVGC), Cyber Security, Block chain, Cloud computing, Augmented Reality (AR)/ Virtual Reality (VR), Artificial Intelligence (AI), Machine Learning (ML) etc.

iv. ***An Indian IT com*pany** is defined as a company registered under the Companies Act, 1956 and its amendments, in India with headquarters in India. "IT firms" and "IT enterprises" mentioned in this policy have the same meaning as "IT company" and are interchangeable.

v. ***BC enterprise*** is an enterprise promoted by backward class community entrepreneurs as sole Proprietor or invariably having 100 percent share in Partnership/Private Limited Companies. BC entrepreneur refers to a person hailing from Andhra Pradesh and belonging to BC Category as notified by the Government of Andhra Pradesh.

vi. ***Business Process Management (BPM)*** refers to functionalities including process modeling, generation of applications, performance monitoring, Enterprise Application Integration (EAI), Business Process Outsourcing (BPO), Knowledge Process Outsourcing (KPO) etc.

vii. ***CCITEI*** is an empowered 'Consultative Committee for the IT and Electronics Industry' constituted by the Government of Andhra Pradesh with the representatives of the Government and the industry.

viii. ***Date of commencement of commercial operations*** is the date on which commercial operations are started, subject to furnishing of the first sale bill/ invoice.

ix. ***Entry level IT professional/ job*** is defined as an employee whose annual Cost To Company (CTC) is up to INR 5 lakh per annum.

x. ***Gig economy*** involves large number of people performing freelance work in the IT industry as opposed to permanent jobs and involves connecting with clients or customers or delivery of services through an online platform.

xi. ***High-end IT professional/ job*** is defined as an employee whose annual CTC is more than INR 10 lakh per annum.

xii. ***Industrial Area Local Authority (IALA)*** is a body to promote local self-governance of industrial areas involving the tax payers community in the notified industrial areas in the management/ maintenance of such industrial areas.

xiii. ***IT Campus*** refers to a physically contiguous association of locations such as several adjacent office buildings. Such campuses house multiple IT business units of a single organization.

xiv. ***IT Industry/ IT Projects*** refers to IT product development firms, IT services, IT component of back office operations such as accounts and financial services, IT support centers, website

services, business process outsourcing, knowledge process outsourcing, data processing, call enters, engineering and design elements of IT infrastructure, medical transcription, legal database processing, digital content development, digital technology component of media and entertainment industry, offsite IT support, geographic information services, IT/ IT Enabled Services components of Human Resources (HR) services, insurance claim processing, payroll processing, revenue accounting, Animation Visual effects, Gaming, Comics (AVGC), data centers, Social, Mobile, Analytics, and Cloud (SMAC), technology aspects of e-Commerce, digital content creation, digital management and technology, natural language computing, telecom, Internet of Things (IoT) and emerging technologies such as Cyber Security, Blockchain, Artificial Intelligence, Machine Learning, etc. This does not include companies engaged in manufacturing of IT/ telecom hardware.

xv. ***IT Park*** is a dedicated area comprising of multiple IT industries/ units.

xvi. ***IT Park Developer*** means the real estate infrastructure developer or a builder constructing IT space for sale/ lease or lease-cum-sale for the IT industry.

xvii. ***IT Space*** refers to the total building space with super built-up area excluding covered parking.

xviii. ***Micro, Small, and Medium Enterprises*** *is* defined as per the Micro, Small and Medium Enterprises (MSME) Act of Government of India, and its amendments from time to time.

xix. ***Mid-level IT professional/ job*** is defined as an employee whose annual CTC is in between INR 5 to 10 lakh per annum.

xx. ***Product development*** refers to the development of software products (out of box piece of software or application).

xxi. ***Product engineering services*** refers to engineering consulting activity, by way of using hardware, embedded software and IT services solutions for the designing and development of products across different phases of product engineering from inception to the end of the lifecycle of a product.

xxii. ***SC/ ST enterprise*** is an enterprise with 100 percent Scheduled Caste (SC)/ Scheduled Tribe (ST) entrepreneurs. SC/ ST entrepreneur refers to a person belonging to SC/ ST Category as notified by the Government of Andhra Pradesh. All non-statutory concessions granted to S.C. (Hindus) by the State Government including economic support schemes sanctioned by A.P. Scheduled Castes Cooperative Finance Corporation have been extended to Scheduled Caste converts to Christianity and Buddhism as per orders issued in the G.O.Ms.No.341, Social Welfare (PR) Dept. dated 30.8.1977.

xxiii. ***Startup:*** will be as defined by Government of India from time to time.

xxiv. ***Telecommunications*** service provider includes basic telecom service providers (fixed), cellular (mobile) companies, telecom infrastructure companies, Internet Service Providers (ISP) and any other value-added services licensed by Ministry of Electronics and Information Technology (MeitY), Government of India.

xxv. ***Women enterprise*** is an enterprise with 100 percent ownership by women entrepreneurs, wherein the entrepreneur hailing from Andhra Pradesh would be eligible.

2. Advantage Andhra Pradesh

The Andhra Pradesh State is strategically located along the Southeast coast of India and is a natural gateway to East and Southeast Asia. The State has a population of 49.3 million, accounting for 4 percent of India's population. The State has five operational ports, with another three ports under development. Andhra Pradesh also has six airports (3 international, 3 domestic), with an additional three airports under development. An international airport at Bhogapuram near Visakhapatnam is also being developed at a fast pace. The State has 40,000 acres of land bank and provides 24X7 reliable, quality power and water to the industry.

Currently, the State is home to more than 45,000 employees in the IT sector, and a large portion of the IT workforce in the country and even globally hail from the State. Andhra Pradesh is also home to highly skilled technical resources with a host of premier Government Institutes such as Indian Institute of Technology (IIT), Indian Institute of Information Technology (IIIT), Indian Institute of Management (IIM), Indian Institute of Science Education and Research (IISER), Jawaharlal Nehru Technological University (JNTU), Sri Venkateshwara University(SVU), Andhra University (AU) and International Institute of Digital Technologies (IIDT) in addition to multiple reputed private universities and colleges. Many of the IT engineers graduating from the State have gone on to work at and lead some of the best IT firms in the world.

Andhra Pradesh is the easiest State to do business and has been ranked first in the World Bank's and Government of India's Ease of Doing Business ranking in the previous three ranking editions. The cost of living across all existing Indian IT hubs is increasing rapidly while the quality of life is dropping at a fast pace, leading to a reduced attractiveness of such cities. In this context, cities such as Visakhapatnam, Vijayawada, Tirupati and Anantapur are ideal locations for IT firms to either expand or shift their operations.

3. Vision

The vision of the Policy is to *"transform the ITE&C department into a revenue center to achieve self-sustenance and to generate large scale local employment in IT/ IT Enabled*

Services sector, with specific focus on innovation and emerging technologies, and ensure public data security."

The policy aims to achieve this through the following levers:

i. Investment promotion

a) Bridge existing employability gaps to ensure availability of qualified manpower for the IT industry
b) Promote niche and advanced technologies to leverage technology integration across industries and segments
c) Encourage innovation and startup culture
d) Encourage global trends such as "Work from Home"
e) Preferential market access to local IT firms
f) Information security of public data through appropriate architecture in the State Data Center (SDC)

ii. Revenue generation

a) Adopt a Service-based model wherein the ITE&C department would provide services to Government departments and private users on chargeable basis
b) Aggregation of hardware and software procured for Government departments and private users
c) Development of IT parks/ office spaces/ concept cities/ any other IT infrastructure, including lease of land and infrastructure to the IT industry
d) Providing technical manpower to Government departments

4. Objectives

The policy aims to achieve the following objectives.

i. Transform the ITE&C department into a self-sustainable department through revenue generation.
ii. Creating an industry-ready talent pool and fulfill the demand for skilled IT manpower.
iii. Facilitating the creation of co-working space and satellite centers to enable seamless start of operations for IT units.
iv. Promoting innovation and startups through appropriate incentives and interventions.
v. Promoting cutting-edge and emerging technologies such as quantum computing, Artificial Intelligence (AI)/Machine Learning (ML), Data Analytics, Blockchain, Augmented Reality (AR)/ Virtual Reality (VR), Fintech etc.
vi. Encourage the adoption of latest global trends in IT business models such as "Work from

Home".

vii. Provide a boost to "Gig economy" by supporting freelancers in the IT space.

viii. Enable quick approval for investment proposals and reduce the time taken to commence operations.

ix. Engage with the State's formidable global diaspora to invest in Andhra Pradesh and contribute to its talent pool.

5. Policy validity

The policy will be valid retrospectively from 1st April 2021 till 31st March 2024, unless superseded by a new policy or by a modification to this policy. The policy supersedes the previous IT/ IT Enabled Services policies and other sub-sector specific policies.

6. Infrastructure development for enabling the growth of IT/ IT Enabled Services sector

The ITE&C department will develop three State-of-the-art concept cities, that offer a significant cost advantage and speed of execution. The department also endeavors to establish an "Integrated Technology Park" in Visakhapatnam, consisting of an Emerging Technologies Research University, Incubation centers, Centers of Excellence (CoE), labs, co-working spaces, State Data Center (SDC), and supporting offices of the ITE&C department. Such infrastructure developed shall be owned and managed by the ITE&C department.

i. Concept cities

The department shall develop IT concept cities in 3 locations close to major existing IT ecosystems, as a specially designated area in the State exclusively meant for development of a holistic industrial ecosystem. The aim of developing the concept cities is to ensure speed of execution and reduction of cost for the IT industry, to offer quick approvals to reduce time to start operations, to enable seamless connectivity to airports and highways, to ensure availability of skilled manpower, to develop world class IT driven common and social infrastructure, to enable walk to work, and to propagate plug and play IT office space, and co-working spaces. These concept cities will be developed as futuristic living spaces which would improve the quality of life of the citizens.

ii. IT Emerging Technologies Research University

The Government will establish an IT Emerging Technologies Research University in Visakhapatnam to sustain and advance the position of the State as a leading contributor to the national talent pool in IT and cutting-edge emerging technologies. The aim is to foster and combine innovation, entrepreneurship, and industry growth. The university will be positioned to attract top academicians and IT majors. It will build collaborations with

leading national and global institutions and have a curriculum that serves industry needs. The university will offer full-time and part-time degree/ diploma programs for fresh graduates and working executives. Further, it will support the Skills University in the design and deployment of suitable skill development courses in the areas of IT and emerging technologies, offering pathways to an advanced formal degree for those who wish to pursue that option. The primary focus of the Emerging Technologies Research University would be on applied research i.e., use of IT and emerging technologies in priority areas of interest to the State and its governance.

iii. Short-term employability enhancement measures

The department will offer courses under Massive Online Open Classrooms (MOOCs) in collaboration with leading e-Learning platforms. Additionally, Andhra Pradesh Information Technology Academy (APITA) which is tasked with organizing technical trainings for workforce in the State, will leverage the infrastructure of the skill colleges to be established by the Government and existing colleges to conduct training programs and courses. Further, Andhra Pradesh Electronics and Information Technology Agency (APEITA) will empanel manpower agencies to provide the industry with access to a database of skilled workforce.

iv. Incubation centers, satellite centers, Center of Excellence (CoEs), and laboratories for promoting emerging technologies

The department shall work towards promoting adoption of niche and emerging technologies such as cloud, Blockchain, IoT, cyber security, data analytics etc. in the State, for improved e-Governance, citizen centric service delivery, and attract IT industry working on latest technologies. Centers of Excellence and prototyping laboratories will be created to focus on co-creating futuristic ideas into business propositions in collaboration with the private sector, partner incubators/ accelerators for IT startups, in cloud computing, AI/ ML, AVGC, and technology platforms for e-Commerce. Satellite centers (plug and play office space for housing satellite offices of IT firms) shall be co-located in the skill colleges or any other suitable locations as decided by the Government.

v. Development of co-working space and IT Towers

The department will strive to create shared plug and play working space, meant for IT industry, in a transparent Public Private Partnership (PPP) mode wherever possible or on its own, and provide a basic set of common amenities expected in a professional work environment where enterprises can lease office space on flexible terms.

vi. Aggregation of office space

The department will create a platform to aggregate the plug and play and warm shell IT office space available in the State so as to make it easier for IT/ IT Enabled Services firms to find suitable office space for commencing operations.

vii. State Data Center (SDC)

The department will establish its SDC, with a primary site and a Disaster Recovery (DR) site in suitable locations with an installed capacity of about10 Mega Watt to ensure information security of all the confidential data and information pertaining to the Government through appropriate measures.

viii. Offices of ITE&C Department

The offices pertaining to the ITE&C Department, its societies and corporations shall be developed to enable the societies and corporations to work cohesively and achieve a sustainable ecosystem development of the IT/ IT Enabled Services sector. This will enable easy access of the IT/ IT Enabled Services sector to the department and thereby enable faster redressal of grievances for the industry.

ix. Digital libraries/ workplaces

The department envisions to create digital libraries/ workplaces in each Gram Panchayat, with each digital library/ workplace offering six computer systems with access to high-speed internet, essential software, video conferencing facility, and provide a secure workspace for IT professionals working remotely. The libraries/ workplaces will also offer printing/ scanning services on chargeable basis and access to free of cost knowledge databases such as research and industry magazines, open source interactive coding and development environment, and access to public datasets.

7. Business process reforms

i. Deemed Industrial Area Local Authority (IALA) approval for IT concept cities and IT parks

A deemed IALA approval would be given to the IT concept cities, Integrated Technology Park and IT parks developed by the department or its agencies or through a private developer so that IT units/ developers within these areas can commence operations immediately after getting an online acknowledgement by submitting a 'declaration of intent' with a condition to formalize the approvals within three years from the date of such deemed approval.

ii. Approval reforms

The department aims to cut down the complexity for the industry in moving from the

initial planning phase to the operationalization phase by bringing various reforms in land allotment, incentives approval, provision of infrastructure, permissions for commencement of operations and processing of incentive claims, through a dedicated investment portal. For this purpose, the Policy outlines the following measures:

a) Comprehensive investment portal to handle all project applications, permissions and incentive claims.
b) All land/ space allotments and incentive approvals within the framework of policy will be under the purview of ITE&C Dept. for those firms under the IT industry. The allotment of land shall be made by a designated agency, only on the recommendation of CCITEI.
c) IT concept cities, integrated technology park and IT parks developed by the Government or its agencies or through private developers will be provided critical infrastructure till the boundary of the site.
d) Designated agencies will provide internal/ external infrastructure wherever applicable in land sites within 60 days from the purchase of land.
e) Floor Space Index (FSI) norms would be relaxed within the IT Concept Cities, Integrated Technology Park, IT parks developed by the Government or its agencies or through private developers, subject to payment of a prescribed premium.
f) Investors seeking incentives beyond the scope of Policy must apply through the Government route.

iii. Statutory exemptions

a. IT companies/ IT parks/ Integrated Technology Park would be exempt from the purview of the AP Pollution Control Act, except in respect of power generation sets.
b. IT parks/ IT companies would be exempt from inspections under the following Acts and the Rules framed there under, barring inspections arising out of specific complaints.
    1. The Factories Act 1948
    2. The Maternity Benefit Act1961
    3. The AP Shops and Establishments Act1988
    4. The Payment of Wages Act, 1936
    5. The Minimum Wages Act 1948
    6. The Employment Exchanges (Compulsory Notification of Vacancies) Act 1959
    7. AP Employment of Local Candidates Act 2019
c. General permission shall be available for 3-shift operations with women working in

the night for IT parks/ IT companies, subject to the IT units taking the prescribed precautions in respect of safety and security of employees.

d. IT industry is declared as essential services under AP Essential Services Maintenance Act.
e. The IT units are permitted to file self-certifications, in the prescribed formats.

iv. Infrastructure for IT industry

a. ITE&C department shall strive to offer infrastructure such as land and plug and play office space to industry as per the norms of the land allotment agency.
b. The extent of land allotment/ plug and play space to IT industry and their cost and rentals respectively shall be as approved by CCITEI as per the existing guidelines.
c. The land allotment agency shall adhere to such approvals of CCITEI with respect to IT office spaces/ IT parks developed by the Government or its agencies.

8. Fiscal incentives for attracting IT industry

i. Employment creation incentive

a) A one-time incentive of 10 percent of annual salary capped as below:
   1) INR 1,00,000 per local employment position for high-end IT jobs created in the State.
   2) INR 75,000 per local employment position for mid-level IT jobs created in the State.
   3) INR 50,000 per local employment position for entry-level jobs created in the State.

b) Women/ SC/ ST/ BC enterprises shall be eligible for a one-time incentive of 15 percent of annual salary capped as below:
   1) INR 1,50,000 per local employment position for high-end IT jobs created in the State.
   2) INR 1,12,500 per local employment position for mid-level IT jobs created in the State.
   3) INR 75,000 per local employment position for entry-level IT jobs created in the State.

c) The criteria for availing the eligible employment incentives in three tranches will be defined in the operating guidelines.

ii. 'Work from Home' incentives

'Work from Home' is fast emerging as a trend in the IT sector, with some companies willing to allow their employees to work remotely for an indefinite period. In this aspect, Andhra Pradesh has the advantage as majority of IT workforce hails from the State. Hence, the Government is offering the following incentives to encourage IT firms to allow their employees to work from a location in Andhra Pradesh:

A one-time incentive of up to INR 20,000 per employment position to cover

expenses related to remote working hardware, software, bandwidth costs etc. for IT firms in Andhra Pradesh with remotely working employees within the State. To qualify for this subsidy, minimum employment criteria would be applicable as Stated in the guidelines.

iii. Boost to gig economy

The COVID-19 pandemic has caused disruption in employment opportunities globally, in the form of job cuts, furloughs, and reduced new hiring. In this context, working professionals and fresh graduates are increasingly turning to a freelance/ gig based work model that offers flexibility in working hours and financial stability. The Government is providing a boost to a gig economy through the following incentives:

a) ITE&C department will create an exchange/ platform for Andhra Pradesh based freelance workers, for such workers to register.
b) Reimbursement of 50 percent of cost of buying IT hardware such as laptop, internet dongle, furniture, up to INR 20,000 per gig worker, subject to proof of executing gigs worth at least INR 3 lakhs from Andhra Pradesh in the financial year.

iv. Quality Certification

50 percent reimbursement on quality certification charges up to INR 5 lakhs per firm will be provided to IT firms.

v. Measures for startup ecosystem development

The following measures are envisaged for assisting startups:

a) Training programs for entrepreneurs with business ideas, to address knowledge gaps in understanding target market, business plan, tax laws, insurance, financial planning, promoting business, sales, service etc. would be imparted
b) Access to market reports and surveys for early stage startups would be provided.
c) Government shall launch a flagship startup promotion scheme for early stage startups, 'Accelerate Startups in Andhra Pradesh (ASAP)', offering plug and play office space, access to a network of investors, mentors and the State's trained talent pool. These provisions and other common shared services shall be offered to startups on reasonable charges.
d) A fund of funds of INR 100 Cr. shall be co-created in partnership with a consortium of Venture Capitals and Private Equity firms and universities, for funding startups in the State.
e) Incubation centers shall be set up in areas notified by the Government from time to

time.

f) The department will strive to conduct hackathons and workshops for startups based in the State, in collaboration with Universities and colleges, to ensure continuous innovation, and to encourage the development of innovative solutions for Government to Citizen (G2C), and Government to Business (G2B) services and other Government use cases.

g) The startups which work on the application of emerging digital technologies such as AR/ VR, AI/ ML, IoT, Data Science, Robotics, 5th generation (5G) cellular network, Serverless Computing, Natural Language Processing, Blockchain etc., and those which address the primary sectors will be provided priority in allotment of plug and play space, access to talent pool, incubation centers, Centers of Excellence, prototyping labs etc.

vi. Power tariff

All IT companies operating in Andhra Pradesh shall be eligible for industrial tariff towards their power consumption.

vii. Transport subsidy

A transport subsidy of INR 500/- per employment position per month shall be provided for a period of 2 years, capped to a maximum of INR 10 lakhs per firm.

viii. Incentives to training institutes

Training institutes registered in the State and having a physical premises in the State shall be offered a one-time incentive of INR 10,000/- per local full-time direct employment position facilitated in the State.

ix. Land allotment for IT industry

Allotment of Government land or land held by any authorized land allotment agency/ corporation of the Government to the IT companies/ or IT Parks would be based on the recommendation of CCITEI and shall be governed by the following principles:

a) IT firms

1) IT units with IT employee strength of 250 and minimum annual turnover of INR 15 Cr. over the past 3 financial years will be eligible to be considered for allotment of land.

2) It is the responsibility of the company to ensure employment of at least 500 entry-level IT professionals or equivalent per acre within 3 years of date of allotment of land.

b) IT campuses

1) Allocation of land to Indian IT companies to develop their own IT campus will be based on the condition that the company has a current headcount of minimum 10,000 people globally or a turnover of INR 500 Cr. in the past 3 financial years.
2) Allocation of land to foreign IT companies to develop their own IT campus will be based on the condition that the company is either a Fortune 1,000 company or has a market capitalization of at least USD 50 Million (Approx. INR 350 Cr.).
3) It is the responsibility of the company to ensure employment of at least 500 entry-level IT professionals or equivalent per acre within 3 years of date of allotment of land.

c) IT parks

Allocation of land to any IT park developer will be based on the condition that the developer has prior experience of developing IT Park(s) with cumulative built up space of minimum 10,00,000 sft. and minimum annual revenue of INR 25 Cr. over the past 3 financial years. The IT park developer must ensure an employment of at least 500 entry-level IT professionals or equivalent per acre in the IT park within 6 years of date of allotment of land. Proposals for development of IT parks with a minimum of 5,00,000 sft. built-up space (excluding parking) will be considered under this category.

d) Land usage

1) Mixed purpose land usage will be allowed up to 30 percent of the developed land allotted, towards commercial activities including employee housing/ recreation. Only the IT companies/ developers eligible for a minimum 10 acres of land shall be permitted to avail this provision.
2) The mode of land allotment to IT industry shall be based on the prevailing allotment rules of the land allotment agency. Any exemptions shall be considered on a case to case basis.
3) Notwithstanding the above clause, the ITE&C department will issue separate guidelines for concept cities.

x. Land Cost Incentive for IT Parks

A one-time incentive of INR 50,000 per employment created capped at 60 percent of the land value will be granted to the developer as a reimbursement on land cost, provided the IT park developer creates at least 5,000 entry-level jobs or equivalent within the park.

xi. Customized incentive package

The Government may in its discretion approve a customized package of incentives for the

IT industry/ IT developers and may relax any of the conditions mentioned in the policy, to mega projects, based on the scale of investment, employment, high value addition and potential for attracting further investments. **Mega projects** are those projects generating employment of a minimum 5,000 entry-level IT professionals or equivalent or an investment of at least INR 500 Cr. The companies which are approved under the customized package of incentives shall be eligible to claim only such approved incentives.

9. ITE&C Department as a Service Provider to all GoAP Departments

The total budget outlay of Government of Andhra Pradesh is about INR 2.24 lakh Cr. for the year 2020-21. The Government's IT spend (services, software and hardware) is more than 1 percent of its total annual budget outlay. Such a significant IT spend presents a strong case for centralized procurement of IT across Government departments.

The ITE&C Department also plays the role of facilitating and attracting investments into the State in IT/ IT Enabled Services sector, generating employment and economic development within the State. Centralized procurement of IT services, software, and hardware enables the Government to use levers such as preferential market access for all IT and hardware procurements by the Government, and thus provide an impetus for attracting IT firms into the State. Centralization of procurement of IT requirements is expected to bring about several benefits to the State including significant improvements in the quality of IT services, ensure compliance to common standards, guidelines, and compliance matrices through various stages of procurement reduce security risks, reduce effort and time, lesser duplication of work, and enable cost savings related to IT software and hardware procurement.

The following mechanism shall be adopted for achieving convergence in achieving Government to Government (G2G) service provision:

i. Government should strictly enforce, by suitable orders, that the concerned departments/ bodies should avail the services for IT software and hardware procurement from ITE&C Dept., ensure the compliance of common standards, and implement data security measures.
ii. ITE&C Dept. through its authorized agency, Andhra Pradesh Technology Services (APTS), shall be mandated for IT and hardware procurement in the State to realize economies of scale and ensure quality.
iii. Procurement of Hardware, Software, Networking products and services where the value of procurement in each case exceeds INR 10 lakhs, shall be mandatorily

implemented through APTS.

iv. APTS will establish rate contract for commonly procured IT hardware devices and software services to enable departments to procure the same directly from the rate contract portal (maintained by APTS), where the value of procurement in each case is less than INR 10 lakhs.

v. The ITE&C department through its agency shall levy applicable service charges for procurements covered under paras 9(iii) and 9(iv).

vi. APTS shall adopt a service based model such as Infrastructure as a Service (IaaS), Software as a Service (SaaS), Platform as a Service (PaaS), Communication as a Service (CaaS), Monitoring as a Service (MaaS), cyber security as a service, payment gateway services etc. for the above procurement purposes.

10. Local procurement preference

i. The department shall develop a portal that shall act as an interface between Government departments and industry, to enable market access to local IT firms.

ii. For any IT requirements up to a value of INR 1 Cr., the Government shall procure 100 percent value of procurement from IT companies/ startups operating in Andhra Pradesh as long as the quality of product/ service is found to be comparable with similar offering from other IT firms. Firms with at least 50 employees in the State and having a registered office in the State shall be eligible for such preferential market access.

iii. For any IT requirements above a value of INR 1 Cr., the Government shall give preference to IT companies operating in Andhra Pradesh by way of adding 5 percent additional marks in the technical evaluation, as long as the quality of product/ service is found to be comparable with similar offering from other IT firms. The detailed procedures shall be outlined in the operating guidelines to be released separately.

11. General provision relating to incentives

i. The incentives in the policy are intended to incentivize and encourage new investments and activities in the IT space that would otherwise have not materialized.

ii. The incentives listed herein would be available to IT companies setting up its operations in Andhra Pradesh for the first time and for the expansion activities of existing IT companies, unless the same has been claimed earlier. The detailed criteria for eligibility for incentives

is outlined in the operational guidelines.

iii. The incentives to the eligible IT enterprises shall be disbursed within 6 (six) months from the date of issue of the order.

12. Governance

i. Andhra Pradesh Electronics and Information Technology Agency (APEITA) will be the nodal agency for implementing the Policy.

ii. Further, CCITEI shall be responsible for the following aspects of implementing the Policy:
   a) Incentive approvals and administration
   b) Land, and plug and play space allotment including land extent
   c) Resolving ambiguity in interpretation of the policy
   d) Other aspects as approved by the department

iii. The detailed operating guidelines for the Policy shall be issued separately.

The ITE&C Department shall issue appropriate operational guidelines for the implementation of the Policy with prescribed procedure for claiming the incentives.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

G.JAYA LAKSHMI
PRINCIPAL SECRETARY TO GOVERNMENT

To:
All the Departments of Secretariat
The Spl. CS, Industries and Commerce Department, Government of Andhra Pradesh
The Commissioner and I.G., Stamps and Registration
The Director, Industries and Commerce, Andhra Pradesh
The Vice Chairman and Managing Director, APIIC,
The Commissioner, Information and Public Relations, Andhra Pradesh
The Member Secretary, A.P. Pollution Control Board, Andhra Pradesh
The Chairman and MD, AP TRANSCO
The Managing Director, APCPDCL/EPCPDCL /SPCPDCL/NPCPDCL
The Commissioner, Labour, Andhra Pradesh
The Vice Chairman, VUDA/TUDA/VGTMUDA
All the District Collectors and Magistrates, Andhra Pradesh
All the Municipal Commissioners, Andhra Pradesh

The Managing Director, APTS, Vijayawada
The Group CEO, APEITA
The Development Commissioner, VSEZ, Visakhapatnam
The Director, STPI, Andhra Pradesh

Copy to:
The Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India
The Chief Minister's Office, Government of Andhra Pradesh
PS to Chief Secretary to Government of Andhra Pradesh
PS to Prl. Finance Secretary, Government of Andhra Pradesh
OSD to Minister for III and C, ITE&C, SD and T, Government of Andhra Pradesh
PS to Minister for Finance, Government of Andhra Pradesh
PS to Minister for Revenue, Government of Andhra Pradesh
PS to Minister for MA and UD, Government of Andhra Pradesh
PS to Minister for Energy, Government of Andhra Pradesh
PS to Minister for Labour, Government of Andhra Pradesh
PS to Secretary Planning Department, Government of Andhra Pradesh

//FORWARDED :: BY ORDER//

SECTION OFFICER

Annexure No. 4

सत्यमेव जयते

GOVERNMENT OF MAHARASHTRA

INDUSTRIES DEPARTMENT

IT/ITES Policy 2015

Maharashtra's Information Technology/InformationTechnology Enabled Services (IT / ITES) Policy - 2015

1. Introduction

The Government of Maharashtra announced its 1st IT Policy in 1998. It was followed by the Information Technology and Information Technology Enabled Services (IT/ITES) Policy-2003 and IT/ITES Policy-2009 to generate employment, increase efficiency and to improve the quality of life. The IT/ITES Policy-2009 came into force from 29th August 2009.

Due to the policy initiative, IT sector in the State has grown by leaps & bounds during the last decade. The employment in IT sector across India in FY-2004 was 8,30,000 nos. and this has increased to 31,32,000 i.e. an increase of 4 times by FY-2014. According to data of Software Technology Parks of India (STPI), the export by IT sector in Maharashtra was Rs. 5,508 Crores in FY-2003 which has reached to Rs.49,796 Crores in FY-2013, recording an increase of 800 percent. The share of IT export from the State of Maharashtra is 20 % of IT export from the country. The State ranks 2nd in IT in the country based on overall performance according to STPI data. The statistics of exports from leading States as per STPI data is as under -

State / Year	2007- 08	2008 - 09	2009-10	2010-11	2011-12	2012-13
Karnataka	56000	70375	67100	70241	82110	95048
Maharashtra	35704	42980	45709	49874	46262	49796
Tamil Nadu	28426	36680	26363	28290	29082	29183
Andhra Pradesh	26122	32509	27666	28675	28948	34492
India	180155	202580	205505	215264	226712	251498

Since 2001, the concept of private IT parks has come into existence. During the IT/ITES – 2003 policy period 253 private IT parks have obtained Letter of Intent with a built-up space of 3.90 million square metres. During the IT/ITES - 2009 policy period 212 private IT parks have obtained Letter of Intent with a built-up space of 8.93 million square metres. In totality, in 465 private IT parks a built-up space of 12.83 million square metres will be available for setting-up IT/ITES units.

Based on the experience gained while implementing the earlier policies and based on the recent developments in IT/ITES sector an urgent need was felt to formulate a new policy to keep pace with the global developments and give a fillip to the IT/ITES industry in the State.

For preparing this policy document several rounds of discussion were held with various stakeholders. Based on the outcome of these discussions and based on the experience of the department in implementing earlier IT/ITES policies, following policy has been framed.

2. Vision, Mission, Objectives and Targets

i) Vision: "Maharashtra - a globally competitive Information Technology / Information Technology Enabled Services destination that promotes inclusive growth and to establish Maharashtra as an intellectual and knowledge capital of India".

ii) Mission: To place Maharashtra amongst the most preferred investment destinations for global investors through promotional strategies combined with developing a competitive and sustainable investment environment, thereby making Maharashtra as one of the most favoured economic magnet and centre of attraction.

iii) Policy Objectives:

The objectives of the IT/ITES policy - 2015 are as follows:

- To retain Maharashtra's leadership position in IT/ITES Sector.
- To further accelerate investment flow to industrially underdeveloped regions of the state.
- To create more employment opportunities for educated youths of all sections of the society across all regions.
- Achieving higher level of export turnover resulting in enhanced productivity and augmentation of Gross State Domestic Product (GSDP).
- Leveraging Information Technology as a tool for the socio-economical development of the state.
- To promote Intellectual Property creation along with original content creation for new product and unique services offering for B to B & B to C.

iv) Policy Targets:

In line with the policy objectives, the government has set the following targets for the policy period

- To attract an investment of Rs. 50,000 crores by the private IT parks and the IT / ITES / AVGC units in the State
- To create new jobs for 1 million persons
- To raise annual exports from IT / ITES / AVGC sector from the State upto Rs. 1,00,000 crores

3. Strategic Drivers of the Policy

i) Dispersal of IT industry to all parts of the State: To attract IT investments across the State, and incentivize IT industry at all district headquarters in the State by providing additional incentives and continue to provide usual incentives as per the IT / ITES Policy - 2009 .

ii) Promotion of Focus Sectors: To promote the development of special fields such as AVGC (Animation, Visual effects, Gaming and Comics) in which the State has particular strengths. Adhaar Card based applications / public service delivery systems and Engineering Research and Development to be promoted.

iii) Promotion of 'Green IT': To ensure growth of the IT sector in an environmentally sustainable and responsible manner.

iv) Promotion of Entrepreneurship and Innovation: To promote the establishment of Knowledge / Resource Centres and Incubation Centres across the State.

v) Promotion of Brand Maharashtra: To position Maharashtra as a rewarding destination for IT investment.

vi) Promotion of BPOs in Rural and Semi-urban Areas: Business Process Outsourcing (BPO) ventures have a vast employment potential. To enhance penetration of IT / ITES to hinterland of the State and to provide employment to computer literate manpower in the area of their residence.

vii) Promotion of Data Centres : Mumbai is rightly poised to be the fastest growing Data Centre services market in the Asia Pacific Region (APAC). Service providers are gearing up to address a strong demand for co-location and hosting services as well as preparing their as-a-service offerings. It has good investment potential and job opportunity for trained manpower.

4. Definitions

In the context of this Policy, the Information Technology industry consists of IT Software, IT hardware, and IT Enabled services as defined below:

i) IT Software: IT Software is defined as any representation of instruction, data, sound or image, including source code or object code, recorded in machine readable form and capable of being manipulated to providing interactivity to a user with the means of a computer.

ii) IT Hardware: IT Hardware covers products as notified by Directorate of Industries from time to time. An indicative list is at Schedule A.

iii) IT enabled Services (ITES): IT enabled services will be as specified by the Central Board of Direct Taxes (CBDT) under section 10A of the Income Tax Act from time to time and are as below.

- Back-office Operations
- Call Centres
- Content Development or Animation
- Data Processing
- Engineering and Design
- Geographic Information System Services
- Human Resource Services
- Insurance Claim Processing
- Legal Databases
- Medical Transcription
- Payroll
- Remote Maintenance
- Revenue Accounting
- Support Centres
- Website Services

The State Government will take a decision to make necessary changes in the list of services if there are any changes in the Income Tax Act. In cases where the Directorate of Industries or its field offices have issued Letter of Intent or registration to an IT / ITES unit, IT Park / IT SEZ / AVGC Park, the incentives sanctioned will continue for the eligible period even if there are changes in the policy period. The ITES units carrying out activity as per above definition also will be allowed to occupy space in existing IT parks.

iv) Support services / facilities: Support services means services provided in relation to conduct of IT / ITES business, which shall exclude -

- Malls
- Cinema theatres, public auditoriums and multiplexes
- Residential apartments for sale to public
- Showrooms for all types of merchandize except computers and IT related hardware and software
- Hospitals, nursing homes more than 10 beds
- Schools, colleges, training institutes(except IT/ITES training institutes) and hostels related to them

The support services admissibility defined above will also be applicable to existing IT parks.

v) Animation, Visual effects, Gaming and Comics(AVGC):

- Animation is a way of making a film by using a series of drawings, computer graphics, or photographs of two and three dimensional objects (such as puppets, clay models or paper cutouts) that are slightly different from one another and that when viewed quickly one after another create the appearance of movement. Animation shall include 2D Animation, 3D Animation, claymation, paper animation, stop motion, shadow animation, hard surface animation etc,.

  Animations can be recorded on either analogue media, or on digital media.
- Visual effects are the processes by which imagery is created and / or manipulated outside the context of a live action shot. Visual effects involve the integration of live-action footage and generated imagery to create environments which look realistic, but would be dangerous, expensive, impractical, or simply impossible to capture on film. Visual effects include computer generated imagery using the affordable and user friendly animation and compositing software.

  Visual Effects shall include rotoscopy, digital cleanup, VFX paint, morphing, DMP - (Digital Matte Painting), chroma key, compositing, tracking, pre-visualization, prep-wire removal, beauty pass, face & body replacement, modelling, shedders, texturing, lighting, animation, rigging, match move, FX (cloud, liquid, rain, water, dust, smoke, wind, fire, flame, blast, snow, ice, etc.), particle simulation, simulation - (fur, hair, cloth, crowd, destruction, etc.), background & set creation and extension, digital environment creation, miniatures for VFX, image processing, Digital Imaging (DI), colour correction etc..

- A game is an electronic game that involves human interaction with a user interface to generate visual feedback and immersive experience on a device which shall include 2D, 3D, video, hand held devices, mobile, virtual, console etc. .
- Comics is a visual medium used to express ideas via images, often combined with text, voice, sound or visual information. Comics shall include hand drawing, digital, 2D, 3D, motion graphics, motion comics.
- Stereo conversion is a specialised process in animation post production where the normal 2D or live action films are converted to stereoscopic form for an immersive experience. Stereo conversion shall include rotoscopy, layer painting, depth grading, tracking, element compositing, finalling, edging, particles etc..

  Virtual reality, augmented reality, motion capture, facial capture & performance capture, 3D printing, 3D mapping, simulation, digital streaming & content dissemination, rendering etc. shall be a part of AVGC.

vi) Data Centre :

A Data Centre is a facility used to house computer systems and associated components, such as telecommunication and storage systems. It also includes power supplies, data communication connections, environmental controls (eg. air conditioning, fire suppression) and security devices. The value chain comprises of a mix of segments including real estate and construction, hardware equipment, utilities (power, water, cooling), networking and software and services.

IT Units are defined to include IT hardware and telecom hardware manufacturing units, IT enabled Services (ITES), and software industries including services. AVGC units shall be classified as ITES.

5. Policy Initiatives

The strategic drivers for the IT & ITES Policy provide direction to the State's commitment to create long term assets through an expanding talent pool, extensive IT infrastructure and a thriving culture of innovation and entrepreneurship. These drivers are to be implemented through following specific initiatives and incentives.

- A Incentives & provisions for IT Parks / IT SEZs / AVGC Parks
- B Incentives & provisions for IT / ITES Units
- C Promotion of Audio-Visuals-Gaming and Comics (AVGC)
- D Promotion of Business Process Outsourcing (BPO) ventures in rural and semi-urban areas
- E Promotion of Data Centres
- F IT Incubation Facility
- G Promotion of green IT
- H Promotion of Brand Maharashtra
- I Initiatives related to Laws for ease of doing business
- J Human Resource Development
- K Administrative Measures.

A. Incentives & Provisions for IT Parks/ IT SEZs / AVGC Parks

IT Park has proved to be an effective tool to develop IT sector by providing adequate quality infrastructure to cluster of IT / ITES units. Government of Maharashtra encourages Public as well as Private IT Parks throughout the state. This policy will continue with following incentives & provisions.

i) Additional FSI and space utilization of IT Parks:

The availability of land is decreasing and the cost of land is constantly increasing which is leading to high cost of built up space. The high cost of space is proving to be a hindrance to the growth of IT Industry. To provide built up space at affordable rates to the entrepreneurs more additional FSI over the base FSI shall be admissible.

a) Upto 100% additional FSI to all registered Public and Private IT/ITES Parks / AVGC Parks, IT SEZs or IT Parks in SEZs and to stand-alone IT/ITES units in public IT Park which have been approved by the Directorate of Industries, set up under present and previous IT / ITES policies, shall be made available with or without premium as follows:

- With a premium of 10% of the prevailing ready reckoner rate for all areas in the State other than areas in Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council and in No Industry Districts and Naxalism affected areas of the State (as defined in the Package Scheme of Incentives - 2013 of the State).
- With a premium of 30% of the prevailing ready reckoner rate in Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council areas.

b) Above 100 % and upto 200% additional FSI to all registered Public and Private IT Parks, AVGC Parks, IT SEZs or IT Parks in SEZs and to stand-alone units in public IT Park which have been approved by the Directorate of Industries, set up under present and previous IT / ITES policies, and which have an access road of minimum 15 metres width, shall be made available with or without premium as follows:

- With a premium of 10% of the prevailing ready reckoner rate for all areas in the State other than areas in Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council and in No Industry Districts and Naxalism affected areas of the State (as defined in the Package Scheme of Incentives - 2013 of the State).
- With a premium of 30% of the prevailing ready reckoner rate in Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council areas.

c) However, no premium shall be charged for grant of additional FSI as in paragraph 5 (A) (i) (a) & (b) for Public and Private IT Park in No Industry Districts and Naxalism affected areas of the State (as defined in the Package Scheme of Incentives - 2013 of the State).

d) Maximum 20% Builtup area (excluding parking area) will be permitted for

support services in IT Parks and additional FSI shall be made available for support facilities in Public and Private IT Parks / AVGC Parks in Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council as mentioned in paragraph 5(A) (i) (a) and (b) .

e) Maximum 40% Builtup area (excluding parking area) will be permitted for support services in IT Parks and additional FSI shall be made available for support facilities for areas other than those in para 5(A) (i) (d).

The above mentioned provisions in respect of additional FSI, premium and space utilization will also be applicable to existing IT parks.

ii) Establishment of Integrated IT Township (IITT):
To meet the needs of the IT industry and the workforce there in to provide necessary amenities and accommodation in the vicinity of the IT units, promotion of Integrated IT Townships (IITT) is being introduced in this Policy. (The criteria for setting up IITT are described in greater detail in Schedule-B of this policy). Considering the global trend, the IITTs shall be developed as 'Smart Cities".

The benefits / incentives admissible to IT / ITES units therein shall be same as in para 5 (B). The rates of premium to be charged shall be same as in para 5(A) (i) (a), (b) and (c). However, for IITTs set up in Pune Metropolitan Region (PMR) and Mumbai Metropolitan Region (MMR) areas that are outside corporation limits of Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council, the premium of 20% of the prevailing ready reckoner rate will be applicable. The IITT can be set up in any part of the State.

iii) Electricity Tariff:
Power consumed will be charged at industrial rate for the common facilities in the IT Park (such as lobbies, central air conditioning, lifts, escalators, effluent treatment plant, wash rooms etc.) which are used by the units, excluding support service areas, after the registration is granted to the IT park by the Directorate of Industries and Development Commissioner of the SEZ for an IT SEZ. A separate meter will have to be provided by the developer to the individual IT / ITES units in the IT parks for leased or purchased premises.

iv) Electricity Power / Sub Station:
Provision of electric power / substation at minimum 6 watt per sq. ft. of total BUA of IT Park will be essential. This provision will also be applicable to existing IT parks.

v) Incentives for Development of Infrastructure - Creation of Critical Infrastructure Fund for IT/ITES Industries:
State Government & Planning Authorities shall create a seperate fund viz. "Critical Infrastructure Fund for IT/ITES Industries" from the premium paid for availing additional FSI by the Developers of the Private IT Parks as envisaged in para 5 (A) (i) & (ii) of the this policy. And this fund shall be utilized only for creation of Critical Infrastructure for IT/ITES Industries.

To supplement investments by the State Government and Urban Local Bodies, developers of private IT parks will be permitted to establish high quality road connectivity to the highways. Upon completion, such roads will be transferred by the developers to the urban local bodies or State PWD, Zilla Parishad or other agency to which the road belongs.

The estimates for such roads shall be vetted by the concerned urban local bodies or State PWD, Zilla Parishad or other agency and the investments made by the developers would be refunded from the available funds from "Critical Infrastructure Fund for IT/ITES Industries" subject to a ceiling of premium paid for availing additional FSI.

A sub-committee under the Empowered Committee shall be formed comprising of :

1) Principal Secretary / Secretary - Urban Development Department 1 and 2
2) Principal Secretary, Industries Department
3) Principal Secretary, Rural Development Department
4) Secretary, PWD, Roads
5) Commissioner / Chief Officer of concerned Urban Local Body
6) Development Commissioner (Industries)

The Committee shall take decisions in respect of such road projects for speedy clearance, execution and other related issues.

The Urban Development Department of the State shall publish the enabling notification in respect of the process and time-period for this.

This provision will also be applicable to existing IT parks.

vi) Penalty for use of built-up space for non-IT use in the IT Park:

The Directorate of Industries will develop a web portal on which the developer of every IT park will be bound to provide / update detailed information about names of the units in the park, utilization of built-up area and activities being carried out, manpower employed in the IT Park for IT / ITES and support services on yearly basis.

If a private IT park has availed additional FSI as per the provisions of IT/ITES policy and subsequently it is found that the built-up space in the park is being used for non-IT/ITES / commercial activities / any other activity not permitted as per the IT/ITES policy under which the said park was approved, a penal action as below will be taken; the payment will be made to the concerned planning authority and government in the ratio of 3:1.

a) The misuse shall be ascertained by physical site verification of the said private IT park by a team of officers from the Directorate of Industries and the Planning Authority which has approved the building plans of the said private IT park.

b) A per day penalty equal to 0.3% (a thirteeth of a percent) of the prevailing ready reckoner value of the built-up area that has been found to be used for non-IT/ITES activities.

c) The penalty will be recovered from the date of issue of Occupancy Certificate till the day non-IT use continues.

After payment of the penalty to the concerned Planning Authority which had sanctioned the building plans of the concerned private IT park, the said

private IT Park will restore the use of premises to the orginal purpose for which LOI / Registration was granted. If the private IT park fails to pay penalty and / or restore the use to its original intended use, the concerned Planning Authority will take suitable action under the MRTP Act against the erring private IT park under intimation to the Directorate of Industries. This provision will also be applicable to existing IT parks.

B. Fiscal Incentives for IT / ITES Units

All the fiscal incentives proposed in this policy will be provided through a provision under separate budgetary head (non - plan) for this purpose.

i) Stamp Duty Exemption:
IT / ITES units, including IT Hardware and Telecom Hardware manufacturing units will be entitled to Stamp Duty exemption as follows:

a) 100% Stamp Duty exemption for the following transactions to new IT/ITES units and expansions of the existing units in C, D, D+, No Industry district areas and Naxalism affected areas of the State: hypothecation, pawn, pledge, deposit of title deeds, conveyance, charge on mortgage property, lease, mortgage deed and security bond on mortgage deed.

b) 100% Stamp Duty exemption for the following transactions to new IT/ITES units and expansions of the existing units in public IT

parks(including IT hardware and Telecom hardware manufacturing units),in A and B areas: hypothecation, pawn, pledge, deeds, conveyance and lease.

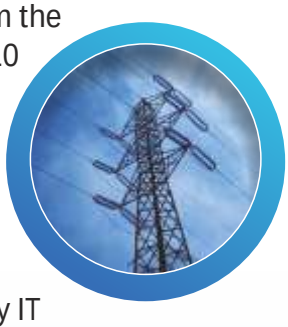
c) 75% Stamp Duty exemption for the following transactions to new IT/ITES units and expansions of the existing units in private IT parks (including IT hardware and Telecom hardware manufacturing units), in A and B areas: hypothecation, pawn, pledge, deeds, conveyance, lease and public assignment lease.

d) 100% Stamp Duty exemption for the following transactions to new IT/ITES units and expansions of the existing units in IT parks in SEZs, IT SEZs (including IT hardware and Telecom hardware manufacturing units), and STPI approved registered units in IT parks of A and B areas: hypothecation, pawn, pledge, deeds, conveyance, lease and public assignment lease.

e) 75 % Stamp Duty exemption to assignment leases of IT / ITES units under section 60 and leave and licenses of IT / ITES under section 36 A of the Bombay Stamp Act 1958 (to be read with a, b and c above).

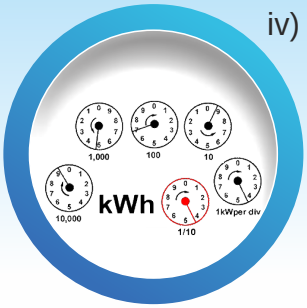
f) 75% Stamp Duty exemption on merger, de-merger and reconstruction of registered IT / ITES units throughout the State.

ii) Electricity Duty : New IT / ITES units registered with the Directorate of Industries will be exempt from payment of Electricity Duty from the date of commencement of production / activity for a period of 10 years for units in IT parks (including IT hardware and Telecom hardware manufacturing units), in A and B areas and for 15 years in other areas of the State classified as per the prevailing Package Scheme of Incentives at the time of commencement of production / activity of the unit.



The Electricity Duty would be exempt for IT parks developed by IT companies for their own use, ie, single unit parks for the period mentioned above except for the support services. The new IT / ITES units in IT SEZs, new IT / ITES units in IT parks in SEZs, and 100 % exporting IT/ITES units under registration of STPI or other designated competent authority shall be exempted permanently from paying Electricity Duty.

iii) Electricity Tariff: IT/ITES units registered with the Directorate of Industries will be supplied power at industrial rates applicable under Maharashtra Electricity Regulatory Commission's (MERC's) tariff orders.



iv) Power Tariff Subsidy: New IT/ITES units located in areas other than A and B areas classified as per the Package Scheme of Incentives and established in registered IT Park will be eligible to get power tariff subsidy for 3 years @ Rs. 1/- per unit consumed from the date of registration of the IT units with the Directorate of Industries after commencement of IT/ITES activity or equal to the investment made in IT Hardware on the date of registration of the unit with the Directorate of Industries, whichever is lower. The units in IT SEZs and IT parks in SEZs in these areas shall also be entitled for this subsidy.

v) Property Tax: Property tax shall be levied on IT / ITES units registered with the Directorate of Industries at par with residential rates as applicable in the relevant jurisdictions. Government will issue necessary advisory to the local bodies to give this benefit to the IT / ITES units

vi) Entry Tax: Registered IT / ITES units shall be exempt from octroi / Local Body Tax (LBT) / entry tax / escort tax or other cess or any tax levied in lieu of these for the import of capital goods and raw material for self consumption by the unit. Government will issue necessary advisory to the local bodies to give this benefit to the IT / ITES units.

vii) Works Contract Tax: Works contract tax on annual maintenance agreements of IT / ITES units shall generally be charged at the minimum rates recommended by the relevant Empowered Committee, at the centre, barring certain exceptions.

viii) Setting-up IT/ITES units in any zone: IT / ITES units (except IT hardware and Telecom Hardware Manufacturing Units) will be allowed to be set up in any zone (including residential and no-development zones, etc.).

ix) VAT at floor rate: VAT on sale of IT products will be charged generally at the minimum floor rate recommended by the concerned Empowered Committee at the Centre, with some exceptions.

x) Continuous Industry Status: The IT / ITES Industry services clients across the globe and in different time zones. This requires the Industry to work on 24x7x365 mode. Increasingly the work done by IT / ITES industry is mission critical for global clients it serves and very tight deadlines are required to be adhered to. Considering this a continuous industry status shall be granted to the registered IT / ITES units. The IT / ITES Industry will be permitted to work 24x7x365 days without any close down (except some exigencies arising wherein the State / Central Government thinks it fit to keep the the operation in suspension).

C. Promotion of Animation, Visual Effects, Gaming and Comics (AVGC)

1. The AVGC is a sunrise sector having vast potential for wealth creation and employment generation. It is a healthy medium of education and entertainment. As per the existing trend, India's AVGC market share is estimated to grow to $ 1.5 billion, which is less than 2% of the global market. Maharashtra has always been a leading state in industrial growth. It has a rich and diverse heritage of art and culture and strong presence of Information Technology and Entertainment Industry which can help to make it an AVGC hub.

2. So far, science and technical streams were preferred avenues for employment but AVGC will create better employment opportunities for the arts stream. Entry of artists into the AVGC industry is regardless of cultural and language backgrounds. Since there is a requirement of nearly 70% of creative and artistic employees in this industry, it will lead to economic up-liftment of large strata of economically backward sections of the society.

3. The policy will address the gap in qualified trainers through a train-the-trainer program based on industry's needs. This policy focuses on bridging the demand-supply gap for people in this sector, attracting global companies in the field, capturing a larger share of outsourced international AVGC work, and facilitating a legal framework for Intellectual Property creation and protection. In addition, the policy envisages an environment that promotes growth of indigenous digital content, education and entertainment for masses, and the setting up of a Center of Excellence with state-of-the-art facilities. These efforts will act as a catalyst for the AVGC industry.

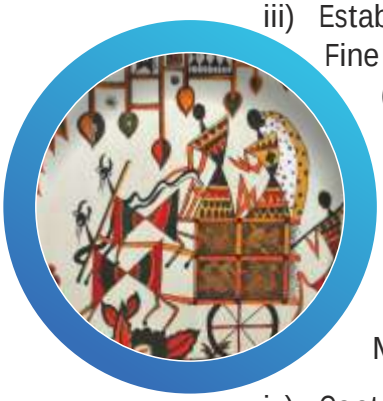
4. AVGC is essentially an ITES activity and shall be eligible for the benefits admissible to ITES:

   i) Establishment of Private AVGC Park in Maharashtra:
   Key initiative for promotion of AVGC sector is through infrastructure development. The policy envisages promotion of private AVGC parks in the State. All the incentives admissible to the private IT parks shall be admissible to these private AVGC Parks. Also, the units setup in these parks will be eligible for all the incentives at par with those admissible to the IT / ITES units as envisaged in this policy.

   ii) Establishment of AVGC Centers :
   The Government will facilitate the establishment of common facilities etc. through the promotion of AVGC centers in the State. An AVGC Centre would be an integrated facility including production facilities, AVGC

studios and space for performing arts, exhibition galleries and workplace requirement for the artist. A Committee under the chairmanship of the Development Commissioner (Industries) for this will work out the infrastructural requirements, revenue and operating model (such as PPP), location, facilities etc. for the AVGC Centre in consultation with the industry. Maharashtra Industrial Development Corporation (MIDC) / City and Industrial Development Corporation (CIDCO) will take initiative in this aspect.

iii) Establishment of Fine Art School / College i.e. Digital Art Centre :



Fine art schools across the state will be identified as Digital Art Centre (DAC) to implement digital art & animation curriculum in collaboration with universities. DACs to be run on PPP model with 25% Govt. funding and private (promoter's) funding of 75% of total cost subject to a cap of Rs 10 crore from the State Government.

A pool of AVGC industry professionals will be developed through collaboration among universities, the industry and agencies such as Maharashtra State Skill Development Corporation.

iv) Centre of Excellence:

Centre of AVGC excellence would be set up on public private partnership (PPP) mode in Mumbai/Pune for which Govt. will provide financial assistance towards capital expenditure and purchase of equipment.

The centre of excellence will have 1) Finishing academy–cum-incubation centre 2) Post-production & digital intermediary facility. MIDC will take an initiative in this aspect.

v) Venture Capital Fund:

Animation, Visual Effects, Gaming & Comic industry is a capital intensive industry. The risk capital is based on blend of service segment and intellectual property creation. So, there is a need of venture capital fund to meet growing demands of domestic as well as international market.

A venture capital fund for AVGC sector would be set up with a fund of Rs. 50 crores. This Rs. 50 crores fund will be invested through other professionally managed funds for AVGC equity in companies/ studio's as well as professional content development funds focused on AVGC original content creation in Maharashtra. The Empowered Committee under the Chairmanship of the Chief Secretary will decide on the funding on case to case basis based on merit.

vi) Fiscal Incentives & Concessions for AVGC units:

AVGC units will have following concessions in addition to those in para 5 A above;

a) Refund of certification charges:

All AVGC Export Oriented Units (EOUs) will get refund of expenses incurred for compulsory marking like Conformity European (CE), China Compulsory Certificate (CCC) etc. to the extent of 50% expenses subject to maximum of Rs. 2 lacs per unit.

b) Capital Subsidy:

- Investment promotion subsidy as per industrial policy of the State.
- Anchor unit subsidy equal to 25% of the fixed capital investment for an AVGC unit with a minimum investment of Rs 50 crores & creating a minimum employment for 100 people. The fixed capital investment shall include investment in land, building, machinery, equipments, electrification, pre-operative expenses capitalized. One Anchor Unit per district will be assisted.

c) Exemption from Payment of Entertainment Tax in the State for animation films:

1) The animation films produced in Maharashtra and released in the cinema halls / multiplexes in the State will be exempted from payment of entertainment tax.

2) The films fully converted in Maharashtra from 2D to 3D in stereoscopy and released in the cinema halls/ multiplexes in the state will be refunded 50 % of the entertainment tax paid or Rs. 2.5 crores whichever is lower.

3) The live action films with its final edited length without the opening and end credits having a minimum of 50% duration of running length created with the help of animation or visual effects & all the said work of animation as well as visual effects if completed in Maharashtra and the film is released in the cinema halls multiplexes in the state will be refunded 50 % of the entertainment tax paid or Rs. 2.5 crores whichever is lower. DI & colour correction will not be considered as a part of visual effects or animation for this minimum of 50% duration of running length qualification criteria.

d) Capital Subsidy for production of animation films:

The animation films produced in the State will be given a capital subsidy equal to 50 % of the cost of production of the film subject to a ceiling of Rs. 30 lakhs for creative art films, educational, scientific, mythological and children's films.

e) Maharashtra Government will be a host state for the following annual events and will sponsor Rs.10 lakhs for each event every year for the next 5 years and the events shall be exempted from paying the entertainment tax:

[1] FICCI FRAMES & Best Animated Frames Awards-Mumbai,
[2] NASSCOM - Game Developers Conference-Pune,
[3] The Animation Society of India- Aniefest, Mumbai,
[4] ASIFA- World Animation Day - 28th Oct every year – all India
[5] MCCIA- Digital Content Conference, Pune &
[6] NILF – NASSCOM India's Leadership Forum

f) Non – Fiscal Support:

- State Government will encourage Joint Ventures between Indian & Foreign entities.
- Support will be provided for international events related to AVGC in Maharashtra.
- Intellectual Property (IP) will be protected through legal framework.

D.Promotion of Business Process Outsourcing (BPOs) in Rural and Semi-urban Areas

This policy will leverage Information Technology as a tool for the socio-economic development of the state and encourage existing BPO units/entrepreneurs to set up their branches/BPOs in rural / semi-urban areas.

The subsidy would be provided only for business processing units that are located in rural / semi-urban areas (village panchayat, A,B and C class municipalities) and its details are as follows.

i) Capital Subsidy: Capital subsidy of 20% would be provided on capital investments such as cost of hardware, equipment etc., subject to a maximum of Rs. 25 lakhs (Rupees twenty five lakhs only) to any Rural BPO unit that has been directly employing a minimum of 50(fifty) trained seats in the unit. This capital subsidy will be back ended in three equal instalments at the end of each year. The capital investment for the purpose of subsidy constitutes purchase of new hardware and equipment's similar to plant and machinery in MSME sector.

ii) Training Subsidy: New BPOs require to invest in training in order to ensure that the employees do not lack in quality of work, timely execution and so on. More so, in a rural / semi-urban area, some financial assistance is required to support new BPOs in training employees.

Training subsidy would be shared by the company and the Government. An amount of Rs. 1500/- per month per person for three months would be provided as training subsidy by the Government (as the normal period of skill building training for BPO is three months). Thus, a unit engaging 50 persons will benefit from Rs. 2.25 lakhs (Rupees two lakhs and twenty five thousand only) as training subsidy for the period of three months. This subsidy also will be back ended, to be disbursed to the BPO unit after one year i.e. three months training + nine months of continuous employment.

iii) Training content to be developed by recognized institutions:

Training contents for the above programs should be developed by recognized institutes like Yashwantrao Chavan Academy for Development Administration (YASHDA), Maharashtra Centre for Entrepreneurship Development (MCED), Maharashtra Industrial and Technical Consultancy Organisation (MITCON), NASSCOM and Media & Entertainment Skills Council (MESC), etc.

iv) Transport Facility: The Government shall ensure that necessary public transport is made available for the Rural - Semi-urban BPO units.

v) Exemption from Payments of Security Deposit / Earnest Money Deposit: The Government shall provide exemption from payment of SD/ EMD as available now to the SME Sector.

E. Promotion of Data Centres

Data Centres are premises offering committed uptime of over 99.95% certified by independent agencies like Uptime Institute, EPI and other similar international independent agencies. Data centres are the basic infrastructure for the new digital economy. Reliable data center offering over 99.95% uptime are necessary for the growth of the digital world services.

Government of Maharashtra is keen to promote Data Centres with special focus on Mumbai. The vision is to position Mumbai as the Data Centre Hub not only for India but also for Asia Pacific region.

Mumbai with its highly reliable power supply, large number of under-sea cables landing into Mumbai and availability of trained technical manpower is rightly poised to become APACs hub thus encouraging investment, both Indian and Foreign, which will global companies and service providers to bring their servers hosted outside India into Mumbai.

Data Centers of a certain minimum size are very efficient and Government wishes to encourage energy efficient and highly reliable Data Centres. So, Data Centres with minimum 10,000 sq ft white / raised space and 750 KVA power, within 2 yrs of operation, and designed for Tier 2 and above level certification by an independent agency would be considered under this policy.

The Data Centres located anywhere in the State will be eligible for following incentives / previleges as specified in para 5 B (i), 5 B(ii), 5 B (iii), 5 B (v), 5 B (vi), 5 B (viii) - (only for import of specified goods) and 5 B (x).

The Data Centres will be covered under Essential Services and Maintenance Act (ESMA) as an essential service considering the nature and importance of operations involved which cannot be interrupted.

F. Promotion of Entrepreneurship, Innovation and IT Incubation Facility

i) The Government will facilitate the establishment of a common platform for exchange and dissemination of knowledge resources between academic and research institutions and the IT industry and the setting up of incubation centers particularly for small enterprises. A committee under the chairmanship of the Development Commissioner (Industries) will define a model and framework for setting up such a platform and for incubation centres across the state in Information Communication Technology (ICT) field such as embedded software, chip, telecom technology etc.

ii) New IT Parks will be required to allocate at least 2% of the built-up area for providing incubation facilities for new units. This area would be treated as a part of the Park to be used for IT activities, and eligible for additional FSI benefits accordingly.

iii) Recruitment assistance of Rs. 2.5 lakh for 50 employing local students in Business Incubation Laboratory/R&D Centre/ IT/ITES operation within 2 years.

iv) A registered IT/ITES MSME unit will be eligible for reimbursement of 50% exhibition participation fee (space cost/rent) for exhibitions approved or organized by NASSCOM & ITPO subject to a ceiling of Rs. 3 lakhs per unit and limited to two such events during the lifetime of the unit/company.

v) 50 % of the cost of filing patents will be reimbursed to micro, small and medium IT units, subject to a maximum of Rs. 5 lakhs during the lifetime of the unit/company.

G. Promotion of Green IT

i) Awards will be instituted for demonstrated, efficient natural resource management by IT units.

ii) The development of comprehensive e-waste collection and recycling systems and their use by the State as well as private agencies for the disposal of IT products, will be promoted.

H. Promotion of Brand Maharashtra

i) The Government will facilitate and support International and national - level professional conferences, exhibitions and other activities in Maharashtra related to IT Sector generally, and to AVGC in particular.

ii) 50% of the expenditure incurred for certification of CMM Level 2 upwards, ISO 27001 for security & COPC and eSCM certification, limited to a maximum of Rs. 5 lakh, will be reimbursed to micro and small scale IT units under Package Scheme of Incentives.

iii) 50% of the expenditure incurred for the promotion of AVGC international and national - markets, conferences & events in the fiscal year will be reimbursed to the AVGC companies registered in Maharashtra on registration fee and travel costs limited to Rs. 3 lakhs per annum and a maximum of Rs. 10 lakhs.

iv) The State's Information Technology Day will continue to be celebrated on 20th August of every year, when awards will be presented to IT / ITES units for outstanding contribution and performance.

I. Initiatives related to Laws for Ease of Doing Business

i) IT / ITES Units will continue to benefit from:

a) Relaxation under the Shops and Establishment Act with regard to working hours, work shifts and employment of women.

b) Exemption from maintaining physical records for attendance and salary.

c) Option for self-certification and filing of consolidated annual returns under 13 Acts administered by the Labour Department.

ii) Provision for IT / ITES units to maintain employee-related records required under various labour laws in electronic form, and acceptance of returns in electronic form will be made in line with the progress of computerization in the Labour Department.

iii) IT/ITES units not discharging process effluent and employing less than 100 employees will be exempt from obtaining consent from MPCB. Such unit will be required to submit annual statement to MPCB on disposal of wastes including electronic wastes, used batteries, and used oil. The registration of such units by the Directorate of Industries Department will incorporate specific conditions for this purpose. These units will also have to be connected to local sewage network.

iv) Relaxations under the Contract Labour Act which have been approved for units in SEZs will be considered for all IT / ITES units outside also.

v) IT/ITES units (other than IT hardware and Telecom hardware manufacturing units) will be treated as continuous process units for the purposes of power supply.

vi) The Development Control Regulation (DCR) including of MIDC and other guidelines for establishment of IT parks including in MIDC area shall be in consonance with the IT / ITES policy.

J. Human Resources Development

i) Special emphasis has been given to the development of human resources for the IT industry, particularly in new area of high potential.

ii) The Maharashtra State Board of Technical Education (MSBTE) and other agencies will institute training-based certification and placement programmes. They would collaborate with NASSCOM and other associations as well as the local IT / ITES industry to understand their human resource requirements. Based on these requirements, a merit based, defined certification and placement procedure shall be instituted so that appropriate manpower is created for the industry. This is particularly important for small IT / ITES units which are not in a position to impart the required training in-house

iii) Based on an assessment of feasibility and other details by the task force constituted under the empowered committee, proposal will be prepared for the establishment of centre of excellence and research and development centres, finishing schools and other employment oriented centers.

K. Administrative Measures

Applications for permission for Right of Way for laying of cables and for erection of towers and antennae would be approved within 30 working days provided the application is in the prescribed format and contains required documentation.

6. Management Framework for Policy Implementation

An Empowered Committee will be constituted at the State level to monitor the implementation of this Policy, and develop procedures and modalities where required. The composition of the Empowered Committee will be as follows:

i) Chief Secretary - Chairperson
ii) Principal Secretary (Finance) - Member
iii) Principal Secretary (Industries) - Member
iv) Principal Secretary (Urban Development I)- Member
v) Principal Secretary (Higher & Technical Education) – Member
vi) Principal Secretary (Planning) – Member
vii) Principal Secretary (Skill Development) - Member
viii) Secretary (Information Technology) – Member
ix) Secretary (Urban Development II)- Member
x) Director, Software Technology Parks of India (STPI)- Member
xi) Nominee of NASSCOM - Member
xii) Development Commissioner (Industries)- Member Secretary
xiii) Nominee of MCHI-CREDAI - Member

The Empowered Committee may invite any Department/Organisation / representative of Association or a person for its meeting as it may deem necessary.

Charter of the Empowered Committee:

i) The Empowered Committee will constitute a Task Force for coordinating and implementing the instruments in respect of the following key areas of the policy:-
   A) Incentives & provisions for IT Parks / IT SEZs / AVGC Parks
   B) Incentives & provisions for IT / ITES Units
   C) Promotion of Audio-Visuals-Gaming and Comics
   D) Promotion of Rural Business Process Outsourcing ventures
   E) Promotion of Data Centres
   F) IT Incubation Facility
   G) Promotion of green IT
   H) Promotion of Brand Maharashtra
   I) Initiatives related to Laws for ease of doing business
   J) Human Resource Development
   K) Administrative Measures

ii) Monitor and ensure timely release of relevant Orders / Government Resolutions / Government Notifications and amendments required.

iii) a) Approve the framework / modalities of implementation proposed by the Task Force.
b) Set timelines and targets for each initiative proposed by the Task Force.
c) Bring about inter-departmental co-ordination in respect of matters related to this Policy.

iv) Institute effective analysis and evaluation of IT Policy implementation on the basis of data on key indicators.

v) Establish norms in consultation with Environment Department so as to facilitate Green IT Parks and the units in such park to obtain permissions relating to environment and other benefits.

vi) Resolve implementation issues at all levels.

vii) Review the list of ITES, as well as support services / facilities permitted in IT Parks and approve the amendments as may be appropriate.

viii) Determine the premium and other terms and conditions for grant of additional FSI within the guidelines laid down in the Policy and harmonize the practices followed in this respect by local bodies and public bodies such as MIDC and special planning authorities.

ix) Determine the premium and other terms and conditions for grant of exit to the private IT park / IT / ITES unit from the obligations of the incentives availed by it.

x) Review the best practices.

xi) The Empowered Committee shall review the implementation and effectiveness of the policy every six months and corrective measures / changes / amendments if required shall be done.

7. Policy Applicability and Validity

The parks / units which have been sanctioned benefits / incentives under this policy, shall continue to enjoy the benefits for a period for which the benefits / incentives are sanctioned even if the policy period is over. The policy will be valid for FIVE years.

Schedule -A PRIMARY PRODUCTS (IT Hardware)

Sr.No.	H.S.No.		Description of products
1	85.23	11)	Magnetic tapes of a width not exceeding 4 m.m.
		12)	Magnetic tapes of a width exceeding 4 m.m. but not exceeding 6.5. m.m.
		13)	Magnetic tapes of a width exceeding 6.5 m.m.
		20)	Magnetic discs
		90)	Other
2	85.31		Electrical capacitors, fixed, variables or adjustable (Preset)
		10)	Fixed capacitors designed for use on 50/60 Hz Circuits and having a reactive power h. capacity of not less than 0.5 kvar (Power capacitors)
		21)	Tantalum fixed capacitors
		22)	Aluminum electrolytic fixed capacitors
		23)	Ceramic dielectric, single laxer fixed capacitors
		24)	Ceramic dielectric, multilayer fixed capacitors
		25)	Dielectric fixed capacitors of paper or plastic
		29)	Other fixed capacitors
		30)	Variable or adjustable (Pre-set) capacitors
		90)	Other
3	85.33		Electrical resisters (including rheostats and potentiometer) other than leading resisters.
		10)	Fixed carbon resisters, composition or film types
		21)	Other fixed resisters for a power handling capacity not exceeding 20 w.
		30)	Wire wound variable resistors including rheostats and potentiometers for a power handling not exceeding 20 W.
		39)	Wire wound variable resitors including rheostats and potentiometers for a power handling exceeding 20 w or more
		40)	Other variable resistors, including rheostats and potentiometers
		90)	Parts
4	85.36	50)	Electronic AC switches consisting of optically coupled input and output circuits.(AC Switches)
		50)	Electronic switches including temperature protected electronic switches consisting of and a logic chip (Chip on Chip technology) for a voltage not exceeding 1000 volts
		50)	Electromechanically snafaction switches for a current not exceeding 11 amps.
		69)	Plugs and Sockets for co-axial cables and printed circuits.
		90)	Connection and contact elements for Wires and Cables

Sr.No.	H.S.No.	Description of products	
5	85.41	10)	Diodes, transistors and similar semiconductor devices, photosensitive semi-conductor, including photo voltaic cells whether or not assembled in modules or made up into panel light emitting diodes, mounted piezo electric crystals.
		22)	Diodes, other than photosensitive or light emitting liodes. Transistors other than photosensitive transistors with a dissipation rule of less than 1 w.
		29)	Transistors other than photosensitive transistors, with a
6	85.42	12)	Electronic integrated circuits and micro assembles. Cards incorporating an electronic integrated circuit (Smart Cards)
		13)	Metal oxide semiconductors (Mos Technology)
		14)	Circuits obtained by bipolar technology.
		19)	Other monholithic integrated circuits, including circuits obtained by a combination and Mos Technology (Bionos technology)
		31)	Other monolithic integrated circuits
		40)	Hybrid integrated circuits
		41)	Electronic Micro assemblies
		90)	Parts
7	85.44	41)	Other electric conductors for a voltage not exceeding 80 V, fitted with connectors of for telecommunication
		49)	Other electric conductors for a voltage not exceeding 80 V, fitted with connectors of for telecommunication
		50)	Other electric conductors for a voltage exceeding 80 V but not exceeding 1000 V, fitted with connectors of a kind used for telecommunication
		70)	Optical fiber cables

Schedule I (A)
PRIORITY INTERMEDIATE PRODUCTS

1. Input – Output Units including All computer peripherals: HSN 8471.60
2. Computer Keyboard: HSN 8471.60.10
3. Computer Monitors: HSN 8471.60.19.20 HSN: 8471.90.07
4. Populated PCB'SSI (All Categories): HSN 8473.10 HSN 8473.30 HSN 8473.40 HSN 8473.90 HSN 8473.90 HSN 8473.90 HSN 8473.90 HSN 8473.90
5. Smart Cards & Accessories: HSN 8542.12
6. UPS for Data Processing HSN 8504.40 Equipment: HSN 8543.80 HSN 8471.05

7. Set-up box with communication function and accessories: HSN 8517.80
8. Internet – Box with user interface and network interface: HSN 8517.80
9. Modems and ISIN Terminals: HSN 8517.50
10. Router & Technical Services: HSN 8517.50
11. VSAT Terminals: HSN 8525.20
12. Radio Communication
13. Equipment: HSN 8525.20
14. Electronic Private Automatic Branch Exchange. (EPABX)
15. Digital Image Recorders (HSN No. 9010).
16. Adapters, Jacks & Plugs, Relays, Switches, Terminals & terminal blocks, Sockets, Heat Sinks, Bases and Folders useful for electronics equipments only (HSN No. 8335).
17. Video Conferencing Equipments.
18. Mobile Handsets (GPRS & CDMA) (HSN No. 8413).
19. 84.69 Word Processing Machines & Electronic Typewriters.
20. 84.70 Electronics Calculators.
21. 84.71 Computer Systems & Peripherals, Electronic Diaries.
22. 84.73 Parts & Accessories of HSN 84.69, 84.70 & 84.71 for items listed above.
23. 85.01 DC Micro Motors / Stepper motors of an output not exceeding 37.5 Watts.
24. 85.03 Parts of HSN 85.01 for items listed above.
25. 85.04 Uninterrupted Power Supplies (UPS) and their parts.
26. 85.05 Permanent magnets and articles intended to become permanent magnets (Ferrites).
27. 85.17 Electrical apparatus for the Telephony or line telegraphy, including linetelephone sets with cordless handsets and telecommunication apparatus for carries-current line systems or for digital line systems; videophones.
28. 85.18 Microphones, Multimedia Speakers, Headphones, Earphones & Combined Microphones / Speaker Sets & their parts.
29. 85.20 Telephone Answering Machines.
30. 85.22 Parts of Telephone Answering Machines.
31. 85.23 Prepared unrecorded Media for Sound Recording or Similar Recording of other phenomena.
32. 85.24 IT Software on any Media.
33. 85.25 Transmission apparatus other than apparatus for radio broadcasting or TV broadcasting, transmission apparatus incorporating reception apparatus, digital still image video cameras.
34. 85.27 Radio communication receivers, Radio pagers.
35. 85.29 (i) Aerials, Antennas and theirs parts.
    (ii) Parts of Items at 85.25 and 85.27 listed above.

36. 85.31 LCD Panels, LED Panels & Parts thereof.
37. 85.32 Electrical Capacitors, Fixed, Variable or adjustable (Pre-set) and parts thereof.
38. 85.34 Printed Circuits.
39. 85.36 Switches, Connectors & Relays for upto 5 Amps at voltage not exceeding 250 Volts, Electronics Fuses.
40. 85.40 Data / Graphic Display Tubes, other than TV pictures tubes and parts thereof.
41 85.43 Signal Generators and parts thereof.
42. 90.01 Optical Fiber and Optical Fiber Bundles and Cables.
43. 90.13 Liquid Crystal Devices, Flat Panel display devices and parts thereof.
44. 90.30 Cathode ray oscilloscopes, Spectrum Anlysers, Cross-talk meters, Gain measuring instruments, distortion factor meters, Psophometers, Network & Logic analyser and Signal analyzer

Schedule - B
Policy for Development of Integrated IT Township

(i)	Applicant	Application for developing Integrated IT Township can be made by the concerned Land Owners or by their appointed Developer or a Joint Venture Company formed by the Land Owners with any Developer.
(ii)	Area Requirement	To be eligible for being declared as "Integrated IT Township", the area to be developed shall have minimum 15 meters wide access road. The area to be notified as "Integrated IT Township", shall be free, contiguous and not be less than 10 hectares (25 acres).
(iii)	Manner of Notification	On private lands and lands acquired by the MIDC under MID Act 1961, Integrated IT Township shall be notified by the MIDC after receiving a proposal from the applicant. Notwithstanding anything contained in the Development Plan or the Regional plan, upon such notification, such area shall be developed as per the DCRs framed by the MIDC for this purpose. For this purpose, procedure under Section 20 read with section 18 of the Maharashtra Regional and Town Planning Act, 1966 shall not be necessary.
(iv)	Permissible land-uses	Minimum 60% of the total area notified as "Integrated IT Township" shall be used for IT / ITES activities and upto remaining 40% area for the development of support services, service apartments on leave and license basis

		and commercial activities including malls, cinema theaters, public auditorium and multiplexes, showrooms for all types of merchandise, hospitals, nursing homes, schools and colleges, training institutes and hostels related to them, hotels. The development of entire township, ie, 60% area for IT/ITES and 40% other area can take place simultaneously but the developer will have to ensure that sale / lease of both areas (and only lease of service apartments); is proportionate. To ensure this occupation certificate for commercial, residential and support services shall be given only after the development of infrastructure facilities on the area earmarked for IT / ITES activities and occupation certificate is granted by the concerned planning authority and after 1/3 rd area kept for IT / ITES activity is occupied.
(v)	F.S.I. for Integrated IT Township	The maximum permissible FSI on the gross area of the notified Integrated IT Township shall vary as follows: For IITT located in Pune, Pimpri-Chinchwad, Greater Mumbai, Thane, Navi Mumbai, Kalyan-Dombivali, Mira-Bhayandar, Ulhasnagar municipal corporations and Ambernath municipal council limits the permissible FSI shall be 2.5. For rest of the areas in the State, the permissible FSI shall be 2.00. The premium chargeable shall be as in para 5 A (ii) of the policy. Floating of FSI shall not be permissible from the area of IT / IT use to the area of Support Activities or vice versa, but floating of FSI shall be permitted within the respective areas of IT / ITES and Support Activities separately.
(vi)	Planning Authority:	i) The MIDC shall be declared as the Special Planning Authority under section 40 (1) (b) of the MRTP, Act 1966 for the Integrated IT Township on private lands and under section 40 (1) (a) on the lands acquired by the MIDC under MID Act 1961 ii) The CIDCO shall be declared as the Special Planning Authority under section 40 (1)(b) of the MRTP, Act 1966 for the Integrated IT Township on lands acquired by the CIDCO under Land Acquisition Act, 1894.
(vii)	DCR	Prevailing Development Control Regulations of MIDC/CIDCO shall be applicable mutatis mutandis to the areas for which MIDC/CIDCO are declared as special planning authority, excepting those expressly provided in the Special Development Control Regulations framed for the Integrated IT Township.

(viii)	Final approval/ Approval of Master Plan	Planning proposal of the entire Integrated IT Township, shall be approved by the Director of Town Planning, Maharashtra State, Pune u/s 115, after following the procedure as per the section 40 (3) & 115 of MRTP Act, 1966.
(ix)	Approval of Building Plans	The Special Planning Authority shall approve the detailed building plans
(x)	Appeal	Anyone aggrieved by an order passed by the Special Planning Authority may within forty days of the date of communication of the order, prefer an appeal to the Government in the Urban Development Department.
(xi)	Special Concessions:	Non-agriculture permission- will be automatic and no separate NA permission shall be required following notification of any area as Integrated IT Township.
(xii)	Implementation and Completion:	Development of any notified Integrated IT Township shall be completed within 5 years from the date of final sanction to the layout plan of the Area.
(xiii)	Infrastructure Facilities	All the onsite infrastructure in the Integrated IT Township and access road if it does not exist, shall be provided and maintained by the Developer. However, it would be obligatory on the part of the Developer to provide all basic infrastructure on at least 75% area under the Integrated IT Township within 3 years from the date of sanction of development proposals by the Director of Town Planning, Maharashtra State, Pune; otherwise the declaration made by MIDC as Integrated IT Township shall lapse.
(xiv)	Interpretation:	If any question or dispute arises with regard to interpretation of the regulations regarding Integrated IT Township the matter shall be referred to the State Government.

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GOVERNMENT OF MAHARASHTRA
INDUSTRIES DEPARTMENT

Before the
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CASE No. 322 of 2019

Case of Maharashtra State Electricity Distribution Company Limited for Truing-up of Aggregate Revenue Requirement (ARR) of FY 2017-18 and FY 2018-19, Provisional Truing-up of ARR of FY 2019-20 and Projections of ARR and determination for the 4th Multi Year Tariff Control Period FY 2020-21 to FY 2024-25

Coram

I. M. Bohari, Member
Mukesh Khullar, Member

ORDER

Date: 30 March, 2020

Maharashtra State Electricity Distribution Company Limited (MSEDCL or Petitioner), "Prakashgad", Anant Kanekar Marg, Bandra (East), Mumbai has filed has filed a Petition on 27 November, 2019 for Truing-up of ARR for FY 2017-18 and FY 2018-19, Provisional Truing-up of ARR for FY 2019-20 and ARR and Tariff for Multi Year Tariff (MYT) 4th Control Period from FY 2020-21 to FY 2024-25.

The Petition has been submitted in accordance with the MERC (Multi Year Tariff) Regulations 2015 ("MYT Regulations, 2015"), for Truing-up of ARR for FY 2017-18, FY 2018-19 , Provisional Truing-up of ARR for FY 2019-20 and in accordance with MERC (Multi Year Tariff) Regulations 2019 ("MYT Regulations, 2019") for ARR of Control Period FY 2020-21 and FY 2024-25.

The Commission, in exercise of the powers vested in it under Sections 61, 62 and 86 of the Electricity Act, 2003 (EA, 2003) and all other powers enabling it in this behalf, and after taking into consideration all the submissions made by MSEDCL , and in the public consultation process, and all other relevant material, has approved the Truing-up of ARR for FY 2017-18 and FY 2018-19, Provisional Truing-up of ARR for FY 2019-20 and ARR and Tariff of Control Period FY 2020-21 to FY 2024-25 in this Order.

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List of Abbreviations

Abbreviation	Expansion
A&G	Administration and General
ABR	Average Billing Rate
ABT	Availability Based Tariff
ACoS	Average Cost of Supply
AAD	Advance Against Depreciation
AFC	Annual Fixed Cost
AG	Agriculture
AMR	Automated Meter Reading
APDRP	Accelerated Power Development and Reforms Programme
APPC	Average Power Purchase Cost
ARR	Aggregate Revenue Requirement
AS	Accounting Standard
ASC	Additional Supply Charge
AT&C	Aggregate Technical and Commercial
ATE/APTEL	Appellate Tribunal for Electricity
BEST	Brihan-Mumbai Electric Supply & Transport Undertaking
BPL	Below Poverty Line
BSC	Base Station Controllers
CAG	Comptroller and Auditor General
CAGR	Compounded Annual Growth Rate
Capex	Capital Expenditures
CBA	CBA
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Stations
CGPL	Coastal Gujarat Power Limited
CGRF	Consumer Grievances Redressal Forum
CIL	Coal India Ltd.
COD	Commercial Operation Date
Commission/MERC	Maharashtra Electricity Regulatory Commission
COS	Cost of Supply
CPI	Consumer Price Index
CPP	Captive Power Plant
CPPA	Captive Power Producers Association
CR	Consumer Representative
CSD	Consumer Security Deposit
CSS	Cross-subsidy Surcharge
CT	Current Transformer
CWIP	Capital Work in Progress
CUF	Capacity Utilisation Factor
DA	Dearness Allowance
DCL	Distribution Commercial Loss

Abbreviation	Expansion
DDUGJY	Deen Dayal Upadhyay Gram Jyoti Yojana
DF	Distribution Franchisee
DIC	Directorate of Industries and Commerce
DPC	Delay Payment Charges
DPR	Detailed Project Report
DSM	Demand Side Management
DTC	Distribution Transformer Centre
DTL	Deferred Tax Liability
EA2003/Act	Electricity Act, 2003
ED	Electricity Duty
EDP	Embedded Display Port
EHV	Extra High Voltage
ERP	Enterprise Resource Planning
FAC	Fuel Adjustment Charge
FBSM	Final Balance Settlement Mechanism
FSA	Fuel Supply Agreement
FY	Financial Year
GC	Generation Charge
GEC	Gross Energy Consumption
GFA	Gross Fixed Assets
GFSS	Gaothan Feeder Separation Scheme
GOI	Government of India
GoM	Government of Maharashtra
GSA	Gas Supply Agreement
HP	Horse Power
HT	High Tension
HVDS	High Voltage Distribution System
IBSM	Interim Balancing Settlement Mechanism
IC	Interim Charge
IDC	Interest During Construction
IIT	Indian Institute of Technology
InSTS	Intra-State Transmission System
IoWC	Interest on Working Capital
IPDS	Integrated Power Development Scheme
IPP	Independent Power Producer
IT/ITES	Information Technology/ Information Technology Enabled Services
kVA	Kilo-Volt Ampere
kVAh	Kilo-Volt Ampere Hour
kW	Kilo Watt
kWh	Kilo Watt Hour / Unit
LF	Load Factor
LT	Low Tension
LV	Low Voltage

Abbreviation	Expansion
MGP	Mumbai Grahak Panchayat
MIDC	Maharashtra Industrial Development Corporation
MIS	Management Information System
MoD	Merit Order Desptach
MOEF	Ministry of Environment and Forest
MOP	Ministry of Power
MoU	Memorandum of Understanding
MPECS	Mula Pravara Electric Cooperative Society Limited
MSEB	Maharashtra State Electricity Board
MSEBHCL	Maharashtra State Electricity Board Holding Co. Ltd.
MSEDCL	Maharashtra State Electricity Distribution Co. Ltd.
MSETCL	Maharashtra State Electricity Transmission Co. Ltd.
MSLDC	Maharashtra State Load Despatch Centre
MSPGCL	Maharashtra State Power Generation Co. Ltd.
MTR	Mid Term Review
MU	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
NCDP	New Coal Distribution Policy
NLDC	National Load Despatch Centre
NPCIL	Nuclear Power Corporation of India Limited
NTP	National Tariff Policy
NTPC	National Thermal Power Corporation Limited
O&M	Operation and Maintenance
OA	Open Access
Opex	Operational Expenditure
P&L	Profit and Loss
PD	Permanent Disconnected
PF	Power Factor
PFC	Power Finance Corporation
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
PoC	Point of Connection
PPA	Power Purchase Agreement
P:SI	Project for System Improvement
P:IE	Project for Intensive Electrification
PWW	Public Water Works
PXIL	Power Exchange India Limited
R&M	Repair and Maintenance
RBI	Reserve Bank of India
RE	Renewable Energy
REC	Renewable Energy Certificates
RECL	Rural Electrification Corporation Ltd.

Abbreviation	Expansion
RGGVY	Rajeev Gandhi Grameen Vidyutikaran Yojana
RGPPL	Ratnagiri Gas and Power Pvt. Ltd.
RInfra	Reliance Infrastructure Limited
RLC	Regulatory Liability Charge
RLDC	Regional Load Desptach Centre
RoE	Return on Equity
RPO	Renewable Purchase Obligation
RTC	Round The Clock
RSD	Reserve Shutdown
Rs.	Indian Rupees
SBAR	State Bank Advance Rate
SBI	State Bank of India
SBLC	Stand By Letter of Credit
SCADA	Supervisory Control and Data Acquisition
SD	Security Deposit
SERC	State Electricity Regulatory Commission
SEZ	Special Economic Zone
SLDC	State Load Despatch Centre
SMD	Simultaneous Maximum Demand
SOP	Standards of Performance
SSP	Sardar Sarovar Project
STP	Sewage Treatment Plant
STU	State Transmission Utility
T&D	Transmission and Distribution
TBIA	Thane Belapur Industries Association
TC	Transmission Charge
ToD	Time-of-Day
TOSE	Tax on Sale of Electricity
TPC	The Tata Power Company Ltd.
TSO	Temporary Supply Others
TSR	Temporary Supply Religious
TSSIA	Thane Small Scale Industries Association
TSU	Transmission System User
TTSC	Total Transmission System Cost
TVS	Technical Validation Session
UI	Unscheduled Interchange
ULDC	Unified Load Dispatch & Communication
UMPP	Ultra-Mega Power Projects
USO	Universal Service Obligation
VIA	Vidarbha Industries Association
VRS	Voluntary Retirement Scheme
V-CoS	Voltage-wise Cost of Supply
Wef	With effect from

Abbreviation	Expansion
WPI	Wholesale Price Index
WRLDC	Western Regional Load Despatch Centre
WRPC	Western Region Power Committee
y-o-y	Year on Year

1 BACKGROUND AND SALIENT FEATURES OF THE ORDER

1.1 Background

1.1.1 MSEDCL is a Company formed under Government of Maharashtra (GoM) Resolution No. ELA – 1003/P.K.8588/Bhag-2/Urja-5 dated 24 January, 2005 from 6 June, 2005 according to the provisions of Part XIII of the EA, 2003. The provisional Transfer Scheme was notified under Section 131(5)(g) of the EA, 2003 on 6 June, 2005, which resulted in the creation of the following four successor Companies from out of the erstwhile Maharashtra State Electricity Board (MSEB), namely,

- MSEB Holding Co. Ltd.;
- Maharashtra State Power Generation Co. Ltd. (MSPGCL);
- Maharashtra State Electricity Transmission Co. Ltd. (MSETCL); and
- Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL)

1.1.2 **Multi Year Tariff Regulations, 2015:** On 8 December, 2015, the Commission notified the MYT Regulations, 2015. These are applicable for determination of Tariff 3rd control period, from 1 April, 2016 up to 31 March, 2020.

1.1.3 **Mid Term Review (MTR) Order (**Case No. 195 of 2017): MSEDCL filed its Petition for Final Truing-Up of Aggregate Revenue Requirement (ARR) for FY 2015-16 and FY 2016-17, Provisional Truing-Up of ARR for FY 2017-18 and revised estimates of ARR and Tariff for FY 2018-19 and FY 2019-20 on which the Commission passed its Order dated 12 September 2018.

1.1.4 **Review petition before the Commission and Appeal No.280 of 2019 before the APTEL, New Delhi:** MSEDCL submitted that on 29 October, 2018, it has filed Petition for review of certain aspects of the MTR Order. The Commission disposed of the said Petition vide its Order No.321 of 2018 dated 24 December, 2018 and partly allowed the certain contentions of MSEDCL. However, aggrieved by the rulings of the Commission, MSEDCL appealed before the APTEL, New Delhi (Appeal No.280 of 2019) on following grounds:

- Non-consideration of MSEDCL proposal for revision in definition of Billing Demand;
- Capping Cross Subsidy Surcharge to 20% of Average Tariff
- Non-consideration of approved trajectory of distribution loss for computation of sharing of Gains & Losses for FY 2016-17;

- Non-consideration of MSEDCL's submission for mandatory standby arrangement for SEZ and Deemed Licensees;
- Difference in opening normative equity for FY 2015-16 as submitted in MTR Petition and as approved in the MTR Order

1.1.5 MSEDCL submitted the this MYT Petition is without prejudice to any of its rights and contentions in said Appeal and that MSEDCL reserves its right to again approach the Commission depending upon the final decision of the APTEL, New Delhi in the said Appeal.

1.1.6 **Multi Year Tariff Regulations, 2019:** On 1 August, 2019, the Commission notified the MYT Regulations, 2019. These are applicable for determination of Tariff for the 4th Control period, from 1 April, 2020 up to 31 March, 2025.

1.1.7 MSEDCL submitted its original MYT Petition on 27 November 2019 for Final True Up for FY 2017-18 & FY 2018-19, Provisional True Up of ARR for FY 2019-20 and approval for forecast of Multi Year Tariff for FY 2020-21 to FY 2024-25.

1.1.8 On 10 December, 2019, the Commission raised preliminary data gaps and sought certain information and subsequently data gaps were raised on 26 December, 2019 and 07 January, 2020.

1.1.9 Technical Validation Session (TVS) to discuss the data gaps/ deficiencies, was held on 26 December, 2019. The data gap in the petition were explained to MSEDCL and it were asked to submit the replies along with the revised Petition.

1.1.10 The Commission directed MSEDCL to address the further data gaps and other concerns raised. MSEDCL submitted its replies on 01 January, 2020. Since the same was found in Order, MSEDCL was asked to submit the revised petition incorporating replies to the data gaps.

1.1.11 MSEDCL submitted draft public notice for seeking objections/suggestions on its Petition vide email dated 12 January, 2020. Further, MSEDCL submitted soft copy of its revised Petition on 10 January, 2020 and hard copy of the Petition on 13 January, 2020.

1.2 Admission of the Petition and Regulatory Process

1.2.1 On 13 January, 2020, MSEDCL submitted its Petition with the following prayers:

- To admit the MYT Petition as per the provisions of the MERC (MYT) Regulations, 2019 and consider present Petition for further proceedings before the Hon'ble Commission;
- To approve the total recovery of Aggregate Revenue Requirement and revenue gap for FY 2017-19 to FY 2024-25 along with other claims including Regulatory Assets as proposed by MSEDCL;
- To allow the carrying cost on the proposed recovery required during the control period;
- To approve mechanism for recovery of computed revenue gap along with carrying cost and Tariff Schedule considering the Tariff Design principles and other suggestions proposed by MSEDCL;
- To allow to charge 60% of approved fixed charges for single shift HT Industrial consumers as approved by MSEDCL;
- To allow the revision in definition of Billing Demand as proposed by MSEDCL;
- To allow kVAh based billing for HT category consumers;
- To allow a rebate for incremental consumption to HT consumers for selected categories as proposed by MSEDCL;
- To consider the incentives/rebates proposed as part of ARR;
- To rationalise the incentives and penalties as proposed by MSEDCL;
- To approve the revision in Load Factor formula as proposed by MSEDCL;
- To approve the revision in the Load Factor incentive with a ceiling of 7.50%;
- To approve the revision in ToD charges as proposed by MSEDCL;
- To approve the levy of Grid Support charges on generated energy for Net Metering systems as proposed by MSEDCL;
- To approve the Additional Fixed/Demand Charges along with CSS for Grid Connected Renewable Energy Generating systems connected behind the consumer's meter, and not opting for either Net Metering Arrangement or Net Billing Arrangement as proposed by MSEDCL;
- To approve the kVA based Fixed Charges for 3 phase consumers having loads less than 20 kVA as proposed by MSEDCL;

- To allow the levy of slab wise charges for LT three phase consumers based on the actual demand recorded;
- To allow MSEDCL to retain the transmission charges collected from partial Open Access consumers;
- To approve levy of harmonics penalty through additional charge equivalent to 5% of Variable Charges (Wheeling Charges plus Energy Charges) for HT Industrial and HT Commercial consumers;
- To approve Cross Subsidy Surcharge and all such other charges including wheeling charges and wheeling losses for Open Access consumers as proposed for the Control Period;
- To approve the Additional Surcharge for Open Access consumers irrespective of source i.e. Captive Power Plants, IPPs, RE based power plants, etc. in addition to the conventional open access consumers but exempting CPPs existing prior to FY 15-16, originally set up the plant for self-consumption and still continuing the same arrangement of captive use as proposed by MSEDCL;
- To allow revision in Standby Charges for consumers having CPP;
- To make provision for mandatory Standby arrangement by SEZ and other Deemed Licensees;
- To allow the slab wise fixed charges for Residential category consumers as proposed by MSEDCL;
- To approve the suggested categorisation for different type of activities as proposed by MSEDCL;
- To approve the schedule of charges as proposed by MSEDCL;
- To approve the CAPEX and Capitalisation as submitted by MSEDCL;
- To approve the OPEX as proposed by MSEDCL;
- To grant any other relief as the Commission may consider appropriate;
- To pass any other order as the Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice;
- To condone any error/omission and to give opportunity to rectify the same;
- To permit MSEDCL to make further submissions, addition and alteration to this Petition as may be necessary from time to time.

1.2.2 The Commission admitted the revised MYT Petition on 13 January, 2020. As required

under the Section 64 of the EA, 2003, MSEDCL issued Public Notices in two English Newspapers (Free Press Journal and The Hitwada) and two Marathi (Lokmat and Punyanagari) newspapers on 15 January, 2020 inviting suggestions and objections on its Petition. The Petition and Executive Summary (in English and Marathi) were made available for inspection or purchase at MSEDCL's offices. The Petition was also available on MSEDCL's website (www.mahadiscom.in) free of cost in downloadable format. The Executive Summary of the Petition and the Public Notice were also made available on the websites of the Commission (www.mercindia.org.in) / (www.merc.gov.in) in downloadable format.

1.2.3 The Commission held Public Hearings at Pune, Navi Mumbai, Amravati, Nagpur, Aurangabad and Nashik from 6 February, 2020 to 15 February, 2020 as per the schedule given in the Table below, during which several Public Representatives, Consumer Representatives, other stakeholders and members of the public were heard. The Commission also received several written suggestions and objections. The list of persons who submitted written suggestions and objections and/or attended the Public Hearings is at Appendix-3.

***Table 1-1:*Schedule of Public Hearings**

Sr. No.	Place / Venue of Public Hearing	Date of Hearing
1	Pune – Council Hall, Pune	Thursday, 06 February, 2020
2	Navi Mumbai – CIDCO Bhavan, CBD Belapur, Navi Mumbai	Saturday, 08 February, 2020
3	Amravati – DPDC Hall, Amravati	Monday, 10 February, 2020
4	Nagpur – Vanamati Hall, V.I.P. Road, Dharampeth, Nagpur	Tuesday, 11 February, 2020
5	Aurangabad – Meeting Hall, Divisional Commissioner, Aurangabad	Thursday, 13 February, 2020
6	Nashik – Niyojan Bhavan, Collector Office, Nashik	Saturday, 15 February, 2020

1.2.4 The Commission has ensured that the due process contemplated under law was followed at every stage to ensure transparency and public participation. Adequate opportunities were given to all to present their responses. Various suggestions and objections raised on the Petition, both orally at the Public Hearings and in writing, along

with MSEDCL's responses and the Commission's Rulings have been summarised in Section 2 of this Order.

1.3 Organisation of the Order

1.3.1 This Order includes the following Sections:

- Section 1 – provides a brief background of the process undertaken by the Commission;
- Section 2 – summarises the written and oral suggestions and objections raised. These are followed by the responses of MSEDCL and the rulings of the Commission;
- Section 3 – covers the impact of reconciliation of past GFA
- Section 4 – covers the final true-up of ARR for FY 2017-18 and FY 2018-19
- Section 5 – covers the provisional true-up of ARR for FY 2019-20
- Section 6 – covers the revised forecast of ARR for FY 2020-21 and FY 2024-25
- Section 7 – covers the certain additional claim amounts by MSEDCL on account of impact of Review Order, other Orders passed by the Commission, and computation of the impact of carrying and holding costs and their effect on the net Revenue Gap;
- Section 8 – sets out the Commission's Tariff Philosophy and the category-wise tariffs applicable for the 4th Control Period over FY 2020-21 to FY 2024-25, including determination of Wheeling Charges and Cross-Subsidy Surcharge and applicable conditions thereof;
- Section 9 – covers the Schedule of Charges, followed by the Schedule of Revenue at the revised tariffs at Annexure I to II and the approved Tariff Schedule at Annexure III and IV.

2 SUGGESTIONS/OBJECTIONS, MSEDCL'S RESPONSE AND COMMISSION'S RULINGS

2.1 TVS and Public Consultation Process

Objections/Suggestions

2.1.1 Shri. R. B. Goenka of Vidarbha Industries Association and Shri. Hemant Kapadia stated that the Commission should undertake Technical Validation Session (TVS) before admitting MYT Petition and Consumer Representative be called for such TVS, so that any error in the Petition can be corrected before making it Public.

2.1.2 Shri. Abhijit Shukla of MegaPower Solar and Shri. Raosaheb Rakibe stated that, MSEDCL should have a short version of their petition in simple language for common man to understand better.

2.1.3 Shri. Ravindra Chavan, MLA has suggested that post publication of public notice, MSEDCL should arrange workshops at local levels to explain its Petition to general public so that awareness can be created amongst the stakeholders and public can participate in public hearing process.

2.1.4 Adv. Shri. Anil Chauhan stated that, MSEDCL does not consider the ARR approved by Commission and always demands higher ARR while Truing-up with revenue gap based on Audited book of Accounts more than sanctioned by the Commission. The Commission had approved the projections for FY 2018-19 and FY 2019-20 with zero revenue gap but still MSEDCL is claiming revenue gap of Rs. 2835.21 and Rs. 2288.19 Cr. which indicates that there is no correlation between the tariff proposal and ARR of MSEDCL. Further, MSEDCL projected power purchase and energy consumption for various consumer categories based on 3-year CAGR except the revenue collection consumer categories with commercial losses and collection efficiency and total revenue losses year-wise.

2.1.5 Shri. Prasad Vikhe stated that, more emphasis should be given to TVS proceedings instead of Public Hearing as consumer can raise objections in TVS and accordingly, final petition can be submitted by MSEDCL.

2.1.6 Shri. N. Ponrathnam suggested that for creating awareness amongst the consumers, MSEDCL should circulate Public Notice along with the electricity bill.

MSEDCL's Replies

2.1.7 MSEDCL states that it has submitted the Petition after following due Regulatory

Process.

Commission's Analysis & Replies

2.1.8 The TVS is intended to weed out discrepancies in the Petition and help ensure that adequate data, etc. are incorporated for more informed public consultation and for consideration by Commission in the tariff determination process. In the present Case, the TVS was held on 26 December 2019. And only after satisfying that data gaps has been complied, the Commission has admitted the MYT Petition.

2.1.9 As Tariff Petition runs into several pages, the Commission directs all Licensees to prepare executive summary of their Petition make it available to stakeholder free of cost. In case of MSEDCL also, executive summary was prepared in Marathi and English. Same was also made available on MERC website in addition to MSEDCL's website. Also detailed Public Notice was published in two Marathi Newspapers (Lokmat and Punyanagari) and two English Newspapers (Free Press Journal and The Hitwada) on 15 January, 2020. Thus, the Commission is taking due care of informing the stakeholder about proposed Tariff revision proposal.

2.1.10 On the suggestion of taking workshops on Tariff Revision proposals by MSEDCL, the Commission is of the view that it is up to MSEDCL to decide on it as such workshops may help them to explain compelling reasons for Tariff revisions and at the same time communicating various consumer friendly initiative taken by them. The Commission would not like to issue any direction on this issue. At the same time, the Commission would like to take on record that Consumer and Consumers Associations in Maharashtra are well aware / informed about tariff revision proposals and hence the Commission has received thousands of suggestions and objections as a part of public Consultation process.

2.2 Agricultural Tariff and Sales, Power Supply to Agriculture and Distribution loss

Objections/Suggestions

2.2.1 Shri. N. D. Patil of Maharashtra State Irrigation Federation, Shri. Pratap Hogade and many others stated that, MSEDCL should use feeder input meters and connected load on AG feeders for the billing purpose as per the methodology employed by Agricultural Study Working Group of MERC for appropriate AG sales estimation and proper billing.

2.2.2 Shri. N. D. Patil, Shri. Babasaheb Patil of Bhuyekar Shetkari Sahakari Sangha, Shri. R.G. Tambe, and other individuals stated that, metering of AG unmetered consumers should be completed to improve billing efficiency, collection efficiency and estimation of actual loss in the system. MSEDCL has been directed for 100% metering of AG

consumers for more than a decade but still there is no significant progress and present meters are also not in well operating conditions. Many of the consumers in rural areas and water pumps are unmetered. Many of the meters are faulty and because of this, many times it is seen that wrong bills are raised for AG consumers or although consumer is not using pump, still bill is raised. Hence, requested Commission to direct MSEDCL to take steps for 100% metering of AG consumers, replace faulty meters and ensure correct billing mechanism for agricultural consumers.

2.2.3 Shri. N. D. Patil and others stated that, increase in fixed charges for HT Agricultural Consumers and Upsa Irrigation Scheme as per the proposed rates is around 26% to 72.5% in the Control Period which is too high. This tariff will increase further due to kVAh billing mechanism. Energy charges for this consumer category is proposed to increase from 3.5% to 14% at the end of the Control period. Present tariff rates including wheeling charges for this consumer category is Rs. 5.12 / kWh which is already high. Further increase in tariff will be unbearable for these consumers. Similarly, proposed tariff increase for LT AG consumers is 5.3% to 26% in this control period. Already tariff rates of this consumer category are highest in the Country. Hence, further increase in tariff should not be allowed.

2.2.4 Shri. Anil Baburav Kadam of Shree Naikba Sahakari Pani Purvtha Sanstha Maryadit and many other Agricultural Consumers and water supply associations stated that, the proposed increase in tariff by MSEDCL should not be accepted as it will lead to financial crisis among farmers and Associations which are supplying water to the agricultural sector, who are already affected by flood in Kolhapur District.

2.2.5 Shri. Rajendra Patil of Yashwantrao Mohite Krishna Sahakari Sakhar Karkhana Ltd, Water Supply Associations and other individuals stated that, power supply in rural areas is poor with low voltage profile and interruptions. Further, hours of power supply in rural areas are also very less. As tariff is increasing Y-O-Y basis, quality of power supply and number of supply hours should also be improved. Hence, it is suggested that, tariff rates should be linked with the hours of power supply and quality of supply.

2.2.6 Water supply association stated that, it is required to harness solar energy for the electricity use in rural areas to reduce dependency of agricultural consumers on MSEDCL's power supply during daytime. Hence, installations of solar water pumps should be promoted. Subsidies should be given to farmers for installation of solar water pumps to promote it.

2.2.7 Many Sahakari Pani Puravtha Sanstha and other individuals stated that, tariff in Maharashtra is very high comparing to other States in the Country. It is requested that,

tariff for agriculture should be made at par with the other states. Further. Fuel Adjustment charges are not applicable to Agricultural Consumers in many other States in the Country. AG consumers are not able to pay the bills of electricity as it is a subsidised consumer category. So, levying FAC on AG consumers is unjust. Hence, Commission is requested to remove applicability of FAC on AG consumer category.

2.2.8 Shri. Pratap Hogade of Maharashtra Veej Grahak Sanghatana (MVGS) stated that although Commission has done the Agricultural Consumption Study by forming a Working group and report of the study is published, it was the duty of MSEDCL to submit a copy of Committee report along with field survey report of IIT Bombay to the Commission as per its own submission in MYT Petition. But MSEDCL has still not submitted the report and it is important to check the results of the study mentioned in the report for the final decision of the Commission regarding approval of AG sales submitted by MSEDCL in the present petition. Hence, MSEDCL should be directed to submit the report. Further, increase in distribution loss of LT feeders is around 13.7% as per their analysis whereas, MSEDCL claimed it as 8% which is much lower. Actual electricity consumption of agricultural pumps is only 16% whereas, MSEDCL submitted it as 32%. Due to double consumption shown by MSEDCL, subsidy amount for State Government also increases and Government loses money for false estimated consumption. Further, MSEDCL always shows higher revenue loss around Rs. 33,595 Crores on account of AG consumers. If actual share of AG consumption is considered, the revenue loss will be accounted as zero as MSEDCL always collected higher subsidy on account of higher consumption shown by MSEDCL. For actual estimation of all these factors on account of AG consumers, Commission is requested to estimate AG sales from FY 2013-14 to FY 2019-20.

2.2.9 Shri. Ashok Pendse of Thane Belapur Industries Association stated that, report of "Agricultural Study Working Group" should be accepted by Commission. Based on the report of Working Group on Agricultural consumption study, all the figure of AG sales starting from FY 2014-15 needs to be changed. This will have impact on all parameters such as power purchase, O&M, interest burden etc. for all the previous years. Also, carrying cost will have to be given. Change in future projections for FY 2020-21 to FY 2024-25 is also necessary.

2.2.10 Shri. Imtiaz Jaleel, Member of Parliament from Aurangabad expressed serious concern over assessment of AG consumption and its overall impact on the amount of subsidy to be disbursed by the Government.

2.2.11 Shri. Ashok Chandak further stated that, Commission is requested to approve the sales estimated by Agricultural Study Working Group as the sample size of feeders taken by

working group is diversified covering all the regions and zones in the State and appropriate sample size is taken for the study. Accordingly, AG sales should be approved by the Commission. Further, it is necessary to monitor and assess the power requirement, power purchase, power consumption, recovery of bills and paying capacity of agricultural consumers by segregating O&M Regions/ Zones/Divisions for AG and Non-AG consumers.

2.2.12 Shri. Hemant Kapadia stated that, AG sales contribution in total sales mix is around 25-30% whereas, MSEDCL always shown excessive AG sales. The report submitted by Working Group clearly confirms that for so many years MSEDCL has been misleading Commission and submitting false figures of Ag. consumption as well as distribution losses. In such circumstances, Commission is requested to direct MSEDCL to submit revised petition on the basis of report submitted by the committees appointed by Commission Mohini. R. Dhande and other agricultural consumers stated that, agricultural consumers should get 24*7 power supply.

2.2.13 Shri. N. D. Patil stated that, extra revenue or subsidy collected by MSEDCL as against excessive AG sales should be taken back from MSEDCL. AG Study done by Working Group is appreciated and it should be considered while approving AG sales.

2.2.14 Shri. R. B. Goenka of Vidarbha Industries Association stated that, Commission should make suggestion to Govt. of Maharashtra under section 86 & 87 of Electricity Act 2003 to form a separate company for agriculture consumers which shall help in evenly distributing the cross subsidies paid to agriculture consumers to all the licensees in the State.

2.2.15 Shri. Ashok Chandak of CREDAI Nagpur Metro Corporation Ltd. stated that, for the last 17 years metering of unmetered AG consumers has not been completed although provisions are made in the Electricity Act 2003, several directives were given by Commission, and objections were taken by consumers. The Commission has also not taken any serious action against MSEDCL on this issue. It is requested that, Commission should give strict directives to MSEDCL to complete 100% metering of unmetered AG consumer. MSEDCL is not taking any action towards metering as it can increase sales of unmetered consumers due to lack of meters. Further, connected load of AG unmetered consumers is going on increasing every year which needs to be verified by the Commission. He questioned the increasing connected load of unmetered AG consumers even when unmetered connections are not given by MSEDCL.

2.2.16 Shri. Dharmaraj Jagdani stated that in rural regions voltage level is very poor resulting into huge loss on account of failure of motors, pumps, lighting bulbs, fuse wire and

starters. Actual voltage ranges in 150-160 V where practically it should be in the range of 220-230 V. These AG consumers are losing money due to low voltage as they have to pay money in case of failure of equipment. Further proposed tariff is very high for AG consumers as these consumers do not get good quality power supply and still have to pay high electricity charges. Power supply hours are very less in some of the regions still fixed charges, FAC charges are levied of AG consumers. Commission is requested to take necessary actions and direct MSEDCL on the above mentioned issues.

MSEDCL's Reply

2.2.17 **Agricultural Sales:** Regarding determination of AG consumption, Commission in the MTR order (Case No. 195 of 2017) dated 12th September 2018 decided to conduct an independent study for assessment of Ag consumption. Accordingly, a Working Group was constituted, and the Working Group has published its interim report on MERC website and comments/suggestions on the Interim Report were invited. MSEDCL has submitted its comments vide its Letters dated 16th January 2020 and 1st February 2020. The Final Report of the AG Working Group is awaited.

2.2.18 **Power Supply to Agriculture:** MSEDCL states that it strives to provide quality and reliable power supply to all its consumers. The power supply to Agriculture consumers is being provided as per the MERC Orders and Government of Maharashtra directives issued from time to time.

2.2.19 **Agricultural Metering:** MSEDCL stated that no unmetered agriculture connection is being issued anymore. MSEDCL takes appropriate precautions/measures to limit the rise in tariff rates by reducing Distribution losses, accurate billing by proper meter reading of utilized energy, increasing collection efficiency, limiting operations and maintenance expenses and implementing latest technology for efficient Management schemes. With concentrated efforts for reduction of distribution losses, MSEDCL has been able to keep its distribution losses within the distribution loss targets given by Commission.

2.2.20 It is a well-known fact that Issue of metering AG consumers is faced by almost all States in India and not just by MSEDCL. 100% metering has not been done by any State in India. It is also pertinent to note that the number of AG Consumers in Maharashtra are one of the highest in India. However, MSEDCL shall strive hard to provide the meters to unmetered AG Consumers. In order to provide day time power, MSEDCL has been implementing following two Schemes.

2.2.21 Mukhyamantri Saur KrishiVahiniYojana (MSKVY): MSEDCL is implementing Mukhyamantri Saur KrishiVahini Yojana (MSKVY) announced by Govt. of

Maharashtra vide G.R. 14.6.2017 by installing decentralized Grid connected solar power projects for giving day time power to farmers. GoM vid its GR dated 17.03.2018 nominated MSEDCL as an implementing agency for the scheme. MSEDCL is implementing scheme by developing 0.3 to 10 MW solar projects in 5 KM area of AG dominated sub-stations and directly connecting at 11 kV bus of AG dominated substation through private solar projects developers, EESL & MSPGCL. The scheme has multiple benefits such as good quality day time power supply to farmers, reduced peak energy demand, increase in consumer satisfaction, reduction in T&D losses, reduction in MSEDCL's total power purchase cost and RPO fulfilment.

2.2.22 Solar Projects Developed by EESL: The Scheme is being implemented in two phases viz. Phase-I of 200 MW and Phase-II of 300 MW through MoU route with Tariff of Rs. 3.00 per unit and projects are developed on spare substation or Govt. Land. The PPAs for these two projects are executed on 20.01.2018 & 30.10.2019 respectively.

2.2.23 Phase-I (200 MW) : MSEDCL will make available spare substation land or Govt. Land for these decentralized solar projects. M/s EESL will execute these projects of 0.3 MW to 10 MW capacity on the land made available by MSEDCL. MERC has given in principle approval for this scheme vide Order dated 29.01.2019. The civil & evacuation work for these projects will be carried out by MSEDCL at its own cost and reimbursement will be given by Govt. of Maharashtra through Green cess fund. Phase-I of the project is under implementation and as on date total 64 nos of sites are commissioned having total capacity of 56.97 MW. These projects are to be executed within 13 months from handing over of sites by MSEDCL. All these projects are to be completed by March-2021.

2.2.24 Phase-II (300 MW): PPAs are signed and 0.3 to 10 MW projects are to be executed on substation, Gram panchayat & Govt. lands. Site identification & survey is being carried out by M/s EESL. These projects are to be executed within 13 months from handing over of sites by MSEDCL. Target for completion of project is March 2021.

2.2.25 Solar Projects developed through Private Developers: MSEDCL has carried out competitive bidding for 2 to 10 MW solar projects in 5 KM area of AG dominated sub-stations connected at 11 kV Bus of the Sub Station for which land procurement, evacuation expenses etc. will be done by Project Developer. Total 235 MW projects capacity have been contracted at tariff of Rs. 3.15 per unit. Further, Tendering is being done for developing such projects near AG dominated sub-stations. However, there is inadequate response from developers.

2.2.26 Solar Projects Developed by M/s. MSPGCL: MSPGCL will execute PPA with the grid

connected solar projects developer and PSA with MSEDCL. MSEDCL will purchase the power from MSPGCL at the tariff rate decided through competitive bidding and approved by MERC. Total 600 MW Solar projects under MSKVY are planned to be executed by MSPGCL.

2.2.27 MSEDCL is further planning to create land bank on lease rent near AG dominated substation within 5 KM range and increase tariff for these decentralized project to add decentralized solar capacity aggressively. MSEDCL is targeting to develop around 3500 MW decentralized solar project in next 5 years.

2.2.28 Mukhyamantri Saur Krushi Pump Yojana (MSKPY).: Under ATAL AG Solar Scheme, MSEDCL has installed 5662 Nos. of AG Solar pumps. MSEDCL has already initiated the Mukhyamantri Saur Krushi Pump Yojana (MSKPY). In order to facilitate day time irrigation to the farmers & to promote use of renewable source of energy, the Govt. of Maharashtra has declared 'Mukhyamantri Saur Krushi Pump Yojana' (MSKPY) to install 1,00,000 Off-Grid 3 HP & 5 HP Solar Photovoltaic Water Pumping Systems in phased manner. With implementation of MSKPY, farmers will get day time Solar power to agriculture pumps, further due to no Electrical network, interruptions due to breakdown/ transformer failure etc. shall not be faced by the farmers. Further, there will not be any electricity bills to farmers.

2.2.29 Letter of Empanelment (LoE) are issued to vendors on dtd. 07.03.2019 for installation of 25,000 Solar AG pump of 3 HP & 5 HP capacity under Phase I. Letter of Empanelment (LoE) are issued to vendors on dtd. 18.09.2019 for installation of 67,500 Nos. of solar pumps of 3 HP & 5 HP capacity under Phase II and III. In addition to the approved MSKPY, MSEDCL is planning to install 67500 Solar Pumps per year from FY 2020-21. The proposal for the same will be submitted to the GoM.

2.2.30 MSEDCL stated that no unmetered agriculture connection is being issued anymore. MSEDCL takes appropriate precautions/measures to limit the rise in tariff rates by reducing Distribution losses, accurate billing by proper meter reading of utilized energy, increasing collection efficiency, limiting operations and maintenance expenses and implementing latest technology for efficient Management schemes. With concentrated efforts for reduction of distribution losses, MSEDCL has been able to keep its distribution losses within the distribution loss targets given by Commission

Commission's Analysis & Ruling

2.2.31 Issue of Energy Accounting related to AG Consumption and Tariff applicable to Agriculture category is dealt with in Section 4.2.24 and Section 8.1.30 and 8.1.31 of this Order. The Commission recognises that Agriculture sector requires support and hence over the period, the Commission has kept Agriculture tariff below ACoS. In 4th

MYT Control Period, Agriculture tariff is still around 50%-52% of ACoS.

2.2.32 Working Group on Agriculture Consumption Study has submitted its final Report to the Commission. Said Final Report is now made available on MERC website. Based on such Report, the Commission has ruled on the issue of Agriculture sales estimation in Section 4.2 of this Order. As far as contention that MSEDCL has taken higher Subsidy from the GoM by estimating higher Agricultural sales, WG in its Final Report has observed as follows:

> *"……Government of Maharashtra also provides subsidy to reduce agricultural tariff. This subsidy is based on connected load (HP) of un-metered AG consumers and sales to metered consumers. This subsidy is provided on the basis of gross numbers and not to any specific individual. Restatement of AG sales to 70% of earlier estimates implies that on per unit basis Government subsidy towards agricultural consumption was in fact more. In the absence of such subsidy, entire burden of additional losses (except loss reduction target of typically 1% to 2% points) would have fallen on MSEDCL consumers and average tariff would have increased.* ***Thus, even though AG sales are restated, government subsidy calculated on the basis of earlier estimates, has helped reduce burden of excess losses, cross-subsidy as well as tariff for all consumers of MSEDCL. Being regulated entity MSEDCL cannot make any profit out of such subsidy amount."***

2.2.33 The Commission agrees with above observations of AGWG. As observed by AGWG as a result of additional losses in previous period, possibly the Government would have increased the per unit subsidy and the tariffs for other consumer categories would have been maintained at the present levels.

2.2.34 On the issue of Agriculture Metering, based on field survey, WG in its Report has pointed out deficiencies in the Agriculture metering, beside large number of un-metered connections. It has shown challenges and difficulties in individual consumer metering. As an alternative, WG as well as stakeholder during public consultation process have suggested implementation of Feeder input based billing system. The Commission in principle agrees with this suggestion, however due to practical difficulties allows starting of such billing initially to 502 feeder selected by WG for survey. Detailed ruling on this issue is in Section 4.2 of this Order.

2.2.35 The Commission will deal with request of advising the GoM for forming separate company for supplying electricity to Agriculture consumer separately as it is not part of Tariff proceeding.

2.3 Increase in Fixed / Demand Charges

Objections/Suggestions

2.3.1 Shri. Gopikishan Kabra stated that, MSEDCL justified proposed increase in fixed charges by comparing charges of other States where fixed charges are more than Maharashtra. But in Karnataka, fixed charges are lower than all other states which is not considered by MSEDCL. Further, increase in fixed charges of LT industries by comparing it with the fixed charges applicable for HT industries in other states is not logical.

2.3.2 Shri. R. B. Goenka of Vidarbha Industries Association stated that, industrial consumers are not reducing the contract demand even after installation of solar generation system and are paying the demand charges for that demand which is not used by them during the period of solar generation. Hence recovery proposed by MSEDCL is totally misleading and should not be approved. Furthermore, MSEDCL claims that consumers underutilize the transmission and distribution network. For such underutilization, consumers cannot be charged since the transmission distribution network cost has already been recovered from consumers through ARR.

2.3.3 Shri. A. A. Bugdani of Garware Polysters Ltd. stated that, fixed Charges and Variable Charges both should be compared with other States while demanding increase in FC.

2.3.4 Shri. S. M. Gadgil of Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA), Shri. S. K. Shivraj and many other industrial consumers stated that, increase in demand charges with revision in definition of billing demand result into double impact with more increase in tariff rates.

2.3.5 Shri. Bharat Agrawal, Member of Khandesh Industrial Association and many other industrial consumers from steel industries and power-loom industries stated that, proposed increase in fixed charges will impose huge financial burden on industrial consumers. Already tariff rates in Maharashtra are highest in the Country.

2.3.6 Shri. Suresh Sancheti stated that, for industries which are operating in single shift, increase in fixed charges will impose additional financial burden although power will be consumed for 8-12 hours only in a day. It will result into 60% increase into electricity bills for the industries which are operating in single shift.

2.3.7 Prayas Energy Group stated that, MSEDCL has proposed a 10% increase in fixed charges for HT consumers for the 4th Control Period. Such a tariff increase would not prevent sales migration as more and more consumers would be incentivised to invest in captive options. Based on MSEDCL's proposed tariffs, the annual per MW fixed charge payment for an HT consumer in FY 2025 would be comparable to 19% of the per MW capital costs required for a solar captive system. However, with increase in sales migration from DISCOMs to captive options, MSEDCL also needs to ensure recovery

of costs, especially from consumers who have reduced their dependence on the DISCOMs using various options. Therefore, Prayas Energy Group support the increase in fixed charges sought by MSEDCL in the control period. However, such an increase should only be allowed if:

- Grid support, charges, additional fixed charges, cross subsidy surcharge and other applicable charges are estimated on a rational basis
- Cross-subsidy surcharge, additional surcharges are not levied on captive consumers renewable energy onsite captive consumers are treated the same as other captive consumers.

2.3.8 Prayas Energy Group also suggested that in order to avoid adverse effect of increased fixed charges on consumers especially for those whose consumption is at the margin of two slabs fixed charges for consumers using more than 300 units per month are revised based on the average consumption in the previous year.

- **Increase in fixed charges based on past years consumption:** It is suggested that residential fixed charges be rationalised but on the basis of a reference year's consumption.
- **Need to track slab-wise consumption and instances of meter tampering, splitting:** It is suggested to MSEDCL to report slab-wise actual data of consumption in the residential category. Such information could help to track trends in slab-wise consumption changes after the change in fixed charges.

2.3.9 Shri. Namdev Rabade of Maharashtra Metro Rail Corp. Ltd. stated that, demand charges payable for Maha Metro are already high in Country and increasing it further will impose huge burden on Maha Metro. Hence, it is requested not to increase demand charges of the HT III category of consumers.

2.3.10 Shri. Nitin Subhash Tarlekar stated that, the unaffordable power in the state of Maharashtra compelled many consumers to reconfigure their sanction load / contract demand as an attempt of their survival and they surrender their excess load if any due to huge demand charges in addition to higher electricity tariff. MSEDCL has proposed to redefine the category from 20 kW to 20 kVA and reducing the permissible load limit by about 25%. Also, for three phase consumers, MSEDCL has proposed excessive demand charges. For example, if any consumer is availing 20 kW load and using it entirely i.e. 25 kVA then the earlier monthly rent was about Rs. 391/ Rs per month which will now come to Rs.5175/- per month. This is increase of 1323% in terms of demand charges.

MSEDCL's Reply

2.3.11 MSEDCL has proposed increasing the Fixed/Demand Charges for various categories of consumers for each year of the Control Period as a step towards gradual balancing of the fixed charges recovery with fixed charges obligation. The Commission in its Order dated 5 May 2000, while determining the fixed charge component of the tariff ruled that the recovery of fixed costs of MSEDCL should come from fixed charges and has also observed that the fixed charge component of tariff needs to be gradually increased in due course to cover the actual fixed costs incurred by MSEDCL. In the June 2008 tariff Order, the Commission unilaterally decided to reduce the fixed charges applicable to different categories of consumers citing the reasons of reduced availability of power. At that point of time also, the power supplied to certain categories of consumers was maintained without any reduced supply. As such, MSEDCL feels that the said reduction was unwarranted. Further, in the Tariff Order dated September 12th, 2010, Commission has observed that "*.... once sufficient power is available and contracted by the licensees, the fixed/demand charges can again be increased*……." The Demand Supply Gap has been reduced drastically from 4,000+ MW to surplus power and at present, due to sufficient availability of power, there is no Load Shedding in the State.

2.3.12 Fixed charges are primarily billed against the infrastructure already created and generation capacity already tied up for 24X7 Supply. The fixed charges are recovered against the costs for serving such infrastructure and keeping the generation capacity ready all the times. Therefore, the fixed charges need to be levied even in case of shut down, breakdown, faults or even in force majeure situations etc.

2.3.13 The Commission in the last MTR Order dated 12 September 2018, had allowed recovery of only 18% through fixed charges as against 55% of recovery that should have been allowed then. Even after increasing the Fixed Charges, the total recovery of fixed costs from fixed charges will reach only to 22% by FY 2024-25. The recovery from fixed charges as approved by the Commission is also not happening due to restriction in definition of billing demand.

2.3.14 The Commission in the tariff order dated 26 June 2015 also observed that "Levy of Fixed Charges and Demand Charges do not result in any windfall gain to MSEDCL, since it is recovering only a part of the Fixed Costs through such Charges". In the last MTR order dated 12 September 2018, the Commission has also accepted the recovery of Fixed Costs through Fixed Charges as a gradual approach so as to ensure proper recovery process for MSEDCL.

2.3.15 Therefore, MSEDCL has proposed increasing the Fixed/Demand Charges for various categories of consumers for each year of the Control Period as a step towards gradual

balancing of the fixed charges recovery with fixed charges obligation.

2.3.16 Further, to reduce the burden on single shift operating consumers, MSEDCL has proposed that all HT-Industrial consumers who are running single shift operation shall be levied 60% of applicable demand charges. Additionally, Steel Plant operating with electric arc furnaces shall be charged with 75% of applicable demand charge for HT Industries considering the peculiarity of their load variation requirement of process.

2.3.17 The increase in Fixed/Demand Charges has been also proposed in line with the recommendations/discussions at various committees formed by Ministry of Power such as Committee on Simplification & Rationalization of Tariff formed on the advice of Ministry of Power (MoP), Government of India to examine issues relating to amendments in the Electricity Rules, 2005 as well as in Consultation Paper on issues pertaining to Open Access by MoP issued in August 2017.

Commission's Analysis & Ruling

2.3.18 Several consumers have objected to MSEDCL's proposal of steep increase in Fixed Charges in most of the categories. The Commission has elaborated the rationale for levy of Fixed Charges and Demand Charges in previous Tariff Orders, i.e. to the extent possible, recovery of fixed costs should come from the Fixed Charge component of Tariff. That is also in accordance with the EA, 2003 and the National Tariff Policy.

2.3.19 Recovery of fixed costs through fixed/demand charges at present is low. Only a part of the fixed costs is recovered through fixed/demand charges and the balance fixed costs are recovered through energy charges, which are linked to the actual energy sold to consumers. The Distribution Licensee is entitled to some level of assurance regarding the recovery of fixed costs. In consideration of consumers with low consumption levels the entire fixed costs are not recovered through fixed/demand charges, however such fixed costs are required to be recovered through fixed cost, to a reasonable extent.

2.3.20 Given the surplus situation of availability of power now in the State, the Commission has decided to rationalise and increase the Fixed/Demand Charges for all categories of consumers so as to gradually move towards the mandate of recovery of fixed assets through Fixed /Demand charges. Moreover, with the rationalization of Energy Charges elaborated in Chapter 8 of this Order, the revision in Fixed Charge is unlikely to burden consumers significantly. The fixed/demand charges for each category are determined keeping in view the existing fixed/demand charges, the Average Billing Rate (ABR), and the cross-subsidy ratio.

2.3.21 The Commission is rationalising the fixed/demand charges for all Distribution

Licensees in Maharashtra, including MSEDCL, keeping in view the share of fixed costs in the total ARR and the existing recovery of fixed costs through fixed/demand charges

2.3.22 Other issues relating to Tariff design have been dealt with in Chapter 8, in which the Tariff Philosophy and Tariff design-related aspects have been discussed in detail.

2.4 Wheeling charges

Objections/Suggestions

2.4.1 Shri. A. A. Bugdani of Garware Polysters Ltd. stated that, realistic voltage-wise cost of supply should be determined i.e. separate wheeling charges for consumers connected to EHV (66Kv and above), 33 kV, 22 kV, 11 kV and LT voltages and disallow uniform wheeling charges for High tension consumers irrespective of voltage level of respective consumers as proposed by MSEDCL. Such a proposal would be against the principles laid down by the APTEL in its judgment in Appeal No. 13 of 2010, Appeal No. 198 of 2010 and Appeal No. 42 of 2011 . From FY 2016-17, most of the industries have decided to upgrade their voltage network from 11 / 22 kV to 33 kV to avail low wheeling tariff rate. Hence sudden change in wheeling tariff design will impact on Industries as well as RE – Wind and solar since such projects are connected to 33 kV network of the MSEDCL.

2.4.2 Inox Air Products Ltd and others stated that, distribution losses are reduced to less than 15% but still MSEDCL has proposed the same wheeling charges as it has been earlier. So, it is requested to retain previous wheeling charges by MSEDCL without any increase in it.

2.4.3 Sohn Steel Pvt Ltd, other industrial consumers and many individuals stated that, Commission shall not implement Regulation No.73.2 of MERC MYT Regulations 2019 as it contravenes section 61(g) of Electricity Act 2003 and unbundle wheeling charges to 33 kV, 22 kV and 11 kV voltage levels as done in the MTR order in Case No.195 of 2017 dated 12.09.2018.

2.4.4 Prayas Energy Group stated that, MSEDCL has been Submitting the same value of wheeling losses since the Order 19 of 2012 despite Commission's repeated queries regarding actual value of voltage wise losses. To ensure the wheeling losses considered and levied on consumers is reflective of actual technical losses, the Commission should direct MSEDCL to conduct a study to review voltage-wise technical losses. The results of the study can be considered while reviewing the voltage-wise losses at the time of the Mid-Term Review of the 4th Control Period, failing which any cost due to recovery of wheeling losses should be disallowed.

2.4.5 Shri. N Ponrathnam stated that calculation (philosophy) of Wheeling charge and wheeling losses to be levied on open access consumers has not been spelt out in the petition.

MSEDCL's Replies

2.4.6 Wheeling Charges for the 4th Control Period, FY 2020-21 to FY 2024-25, have been proposed in accordance with Regulation 73.2 of the MYT Tariff Regulations, 2019 wherein it has been specified that the Wheeling Charges shall be determined separately for LT voltage, HT voltage, and EHT voltage, as applicable.

2.4.7 Wheeling Losses in the MYT Tariff Petition has been considered based on that approved by the Hon'ble Commission in the previous Tariff Orders only.

Commission's Analysis & Rulings

2.4.8 The Commission in its Explanatory Memorandum to the draft MYT Regulations, 2019 has stated following rationale for determining Wheeling Charges for EHT, HT and LT level:

> *"The Commission in MYT Order and Mid Term Review Order of the past Control Period has determined the voltage-wise wheeling charges for Distribution Licensees in the State. However, it has been observed that wheeling charges have been determined for different voltage levels for different DISCOMs. For MSEDCL, wheeling charges are determined separately for 33 kV, 22 kV, 11 kV and LT level. In case of Distribution Licensees in Mumbai area, viz. AEML-D, TPC-D and BEST, the wheeling charges are determined separately for HT and LT level. Moreover, for MBPPL, the combined wheeling charges for HT and LT level have been determined. The Commission is of view that the methodology for determination of wheeling charges should be uniform across the State. Also, it has been observed that some Distribution Licensees are also maintaining the assets at EHT level. Hence, separate Wheeling Charges is also required to be determined for EHT level. In view of this, the Commission proposes to determine the separate Wheeling Charges for EHT, HT and LT level."*

2.4.9 MYT Regulations 2019 have been notified after process of previous publication as contemplated under the Electricity Act, 2003. Said Regulations include provision of determining separate Wheeling Charges for EHV, HT and LT level i.e. the Commission would be determined three different wheeling charges corresponding to their voltage level to reflect voltage wise cost of supply. Having further breakup of Wheeling Charges within HT level has practical difficulty. All voltage levels within HT (11 kV, 22 kV and 33 kV) are not available uniformly across the State. Therefore, even though consumer is eligible for getting supply at specified voltage level, due to historical construction practices, such voltage may not be available in its area. This was creating

discrimination amongst consumer and hence, the Commission has decided to have HT wheeling Charges. However, while determining charges, the Commission ensures that present variable charges (Wheeling + Energy Charges) does not increase to any of consumer. Hence, there is no adverse financial implication of having HT wheeling Charge.

2.4.10 The Commission is aware of the fact that all the EHV/HT levels (i.e. EHV, 11 KV, 22 KV and 33 KV) are not available in all the areas of MSEDCL. This fact necessitates the consumers to avail power on the voltage level other than those specified in the SoP Regulations. Considering the cost implication and also practical difficulties (RoW, Forest clearances etc.) it cannot be expected from any Distribution licensee to mandatorily have all the voltage levels and release loads strictly as per SoP Regulations and for this reason the SoP has a clause of technical feasibility. On the other side, the Commission feels that the individual consumer should not suffer by paying higher wheeling charges on account of this infrastructure limitation wherein the load is required to be availed at lower voltage due to non availability of the requisite voltage level. Thus, the Commission rules that in such cases only (non availability of EHV or requisite voltage level), the wheeling charges to the consumer shall be applicable as per the Billing Demand recorded. To avoid misuse of this concession, the applicability shall be subject to MSEDCL internally certifying the non availability of the requisite voltage level and further that the billing demand shall be as per the requisite voltage level is met by the consumer for at least 9 months in a financial year.

2.5 Power Purchase

Objections/Suggestions

2.5.1 Shri. Pratap Hogade of Maharashtra Veej Grahak Sanghatna stated that, major share of power required for MSEDCL is purchased from MAHAGENCO due to long term PPAs. Power purchase cost of MAHAGENCO is too high and as there is surplus power available, MSEDCL can reduce its Power Purchase Cost by purchasing power from other generators instead of MAHAGENCO..

2.5.2 Shri. R.G. Tambe of Shetkari Sahakari Sangh Ltd., Kolhapur, Water supply associations and many other individuals stated that, efficiency of power plants of MAHAGENCO should be increased so that power purchase from other costlier power plants from which MSEDCL needs to buy power shall be avoided. It will further reduce the revenue gap.

2.5.3 Shri. Ashok Pendse stated that, power purchase cost of MSEDCL is increasing Y-O-Y but revenue collection is not increasing with the same proportion. It is resulting into

higher revenue gap which MSEDCL is trying to cover by imposing additional surcharge on the consumers. Power purchase cost of other Distribution Licensees is lower than MSEDCL. Further, if power purchase cost of conventional power plants is higher, then MSEDCL shall purchase higher quantum of power from RE power plants having lower tariff rates.

2.5.4 Shri. Ashok Chandak stated that, power purchase cost for FY 2017-18 and FY 2018-19 are increased drastically although power purchase quantum was lesser than the quantum approved by Commission during MTR order. Further, MSEDCL has procured power from many other companies with very high power purchase cost. Commission is requested to disapprove the additional power purchase cost as submitted by MSEDCL as there is no proper justification is given by MSEDCL in the petition.

2.5.5 Shri. R. B. Goenka of Vidarbha Industries Association stated that, to reduce power purchase cost, new PPA should be signed based on competitive bidding, instead of Cost-plus Tariff system. Power purchase cost of MSPGCL is very high due to Cost plus Tariff system. MSEDCL should also procure Cheaper power from RE plants. It is further requested that, Expert committee shall be appointed to inspect and conduct audit of power purchase, procurement, transportation related documents of MSEDCL as power purchase cost impacts on variable cost in tariff and consumer have to bear such high cost.

2.5.6 Prayas Energy Group stated that, on page 299 of MSEDCL's petition, the utility has reported that in FY-17 and FY-18, of the total surplus energy reported, 30% to 40% was from capacity facing coal shortages. Interestingly this reduces to 4% of the total surplus energy in FY20. The reasons for such a reduction has not been made clear by MSEDCL, especially such reduction in coal shortages has not been highlighted by MSPGCL in its MYT petition for the 4th Control Period. MSEDCL needs to clarify. if further coal shortages or reduction in coal shortages is anticipated between FY-21 to FY-25 as it would have significant implications for MSEDCL power procurement planning and requirement for short-term purchase. This is especially crucial as MSPGCL has projected significant coal shortages for the 4th Control Period through various assumptions that are unclear. Further, Prayas Energy Group stated that, revenue on account of DSM pool shall be factored in the petition.

2.5.7 Shri. R. B. Goenka of Vidarbha Industrial Association stated that, MERC shall inspect the Biomass Plants, whether they are using fossil fuel within permissible limits or not.

2.5.8 Shri. Prasad Vikhe from Aurangabad stated that, hearing of MSPGCL should also be organised in 6 regions as major power purchase of MSEDCL is from MSEDCL and

hence, considering consumer participation, Commission shall consider the request.

MSEDCL's Reply

2.5.9 MSEDCL stated that out of total power purchase, almost entire power procurement is done at Approved Tariffs or Competitive Rate through transparent Competitive Bidding. The rates are either approved by CERC/MERC or adopted by the MERC for competitive bidding. MSEDCL further states that during the higher demand or shortage from regular sources due to various reasons including break downs, fuel shortage etc., MSEDCL purchases power from exchanges and through short term power purchase tenders throughout the year. This short-term power purchase is done only through DEEP e-bidding portal/ power exchange by way of transparent competitive bidding.

Regarding Power Sourced from MAHAGENCO

2.5.10 MSEDCL stated that it purchases power from MSPGCL at the rates approved by the Hon'ble Commission after scrutiny of their tariff Petition and fuel adjustment charges have also been are billed subject to vetting by Commission. The energy bills are settled as per the provisions of the applicable Tariff Regulations and actual performance of the each Station of MSPGCL.

2.5.11 For the Control Period, the operational parameters as well as variable charges for MSPGCL Stations as per the MYT Petition filed by MSPGCL in Case No. 296 of 2019 has been considered for projecting MSEDCL's power purchase cost from MSPGCL.

Power Procurement from Central Generating Stations

2.5.12 MSEDCL procures the power purchase from Central Generating Station as per the CERC approved tariffs. Variable charges for existing NTPC stations have been projected based on the CAGR of actual variable rate for last 4 financial years. For new NTPC stations like Lara, Gadarwara, Solapur Unit – II &Khargone, variable charges have been adopted as submitted by NTPC in its tariff petition with CERC and the same has been projected for FY 2020-21 to FY 2024-25 considering same CAGR of NTPC Solapur – I.

2.5.13 Projection of Capacity Charges for MYT Petition for 4th Control period from FY 2020-21 to FY 2024-25 is worked out based on CAGR considering the capacity charges of last 4 Financial Years on Normative basis.

Power Procurement from IPP

2.5.14 MSEDCL procures power from 5 Independent Power Producers (IPPs) though 9 long term Power Purchase Agreements (PPAs) whose tariff is determined through competitive bidding process. For the projection of variable charges for the MYT Control Period, CAGR of last four financial years with FY 2018-19 as a base has been considered.

2.5.15 For the computation of Capacity charges, MSEDCL has projected the escalable component of Capacity Charges considering CAGR of last four financial years with FY 2018-19 as a base. Non-escalable component of Capacity Charges has been considered as quoted in the PPA of respective IPPs.

Power Procurement from Renewable Energy Sources

2.5.16 MSEDCL has projected the generation from solar and non-solar energy sources based on estimated capacity addition and expected CUFs to meet the RPO Targets set by Hon'ble Commission. The Hon'ble Commission has notified MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2019. MSEDCL has taken due consideration of the revised RPO targets while estimating power purchases from renewable energy sources. More than 5500 MW RE capacity tied up at Rs. 4.56 to 6.84 per unit to meet the RPO targets. Last year, MSEDCL taking advantage of competitive bidding and Tenders finalised for 5500 MW and PPA signed for 4300 MW at around Rs.3.00 per unit after MERC approval.

MOD / Optimum Utilization for PP from Tied-Up Units

2.5.17 MSEDCL procures power from different sources on Merit Order Despatch Principle for optimum utilization of the sources at least cost. For projection of availability, MSEDCL has considered the entire power available from all the tied-up sources during this period to meet the demand. Upcoming projects as per expected CoD have also been considered for estimating the availability of tied-up power at these generating stations.

2.5.18 MSEDCL further stated that it constantly explores the possibility of purchase of cheaper power available from open market through power exchanges and other bilateral short term sources. In case, if the cheaper power is available, MSEDCL purchases the same and back down its costly contracted generators, strictly in accordance with MoD principle. Taking advantage of the power available in open market at competitive rates, MSEDCL during the period April'19 to December'19 has procured more than 900 MUs of power on a short term basis at competitive rates.

Impact of Change in Law in Power Purchase

2.5.19 Commission has allowed NCDP policy, SHAKTI policy, Cancellation of Lohara Coal Block as a Change in Law and has allowed relief to M/s. APML for past period from year 2013. Further, Commission has allowed the carrying cost on these claims up to the date of Order on the basis of the Hon'ble Supreme Court Judgement in Civil Appeal No. 10188 of 2018 dated 29th October 2018. The Orders related to the above policies are passed over a period of last one and half years. Subsequent to the Orders of Hon'ble Commission, M/s. APML has raised claims in the respective matters amounting to Rs. 12,917.24 Cr. There are pending cases before the APTEL with regards to some of the

above orders. As the above mentioned matters are sub-judice, at this stage exact amount of payment to be made against the above claims is not finalised. Further, APTEL has not granted any stay on these orders. Hence, at present MSEDCL is liable for payment

Commission's Ruling

2.5.20 MSEDCL has submitted sample power purchase bills and other relevant documents towards power purchase for scrutiny. The Commission has approved the power purchase expenses for FY 2017-18 and FY 2018-19 after prudence check, which included reconciliation of cost with MSPGCL Audited Accounts and verification of supplementary bills for various Generating Stations.

2.5.21 The Commission's observations and views on the power purchase cost and quantum for FY 2017-18 and FY 2018-19 are set out in Section 3.5 and Section 4.5 of this Order.

2.5.22 The Commission has also taken into consideration the optimal power procurement mix considering the MOD principles for least-cost procurement. For factoring the seasonal and monthly variations in demand and supply, the Commission has analysed the month-wise MOD. Availability from new Generating Stations has been taken considering realistic dates of commissioning. The Commission's views and analysis of MSEDCL's power purchase quantum and costs, including from RE sources, for 4th Control Period are set out in Chapter 6 of this Order.

2.5.23 On the issue of surplus energy, the Commission in section 6.6.54 of this Order has directed MSEDCL to aggressively explore possibilities of selling the surplus power through short-term/ medium-term bilateral contracts or through Power Exchanges in an optimal and efficient combination and manner, so that its net power procurement costs are reduced.

2.5.24 Regarding conducting Public Hearing on MSPGCL's Petition along with MSEDCL Petition, the Commission notes that in the past it has conducted common Public Hearings for MSETCL, MSPGCL and MSEDCL at six revenue headquarters. However, during that process very few suggestions and objections were raised in respect of MSETCL and MSPGCL, and therefore the Commission is conducting separate hearing on the Petition of MSETCL and MSPGCL at Mumbai. Interested stakeholders can participate in that Public Hearings.

2.6 Revenue Gap

Objections/Suggestions

2.6.1 Shri. Manish Tyagi of Hero Future Energies and other individuals stated that, considering actual ARR submitted by MSEDCL for truing-up years and revenue

collected in these years, there is an average revenue gap of Rs. 3000 Crores in these years. It shows that, revenues are not sufficient to meet the MSEDCL's actual expenses. Major amount in revenue gap is on account of pending dues from Government Offices and Agricultural Consumers. Pending dues shall be collected by MSEDCL form government offices. In case of agricultural consumers, it is suggested that, dues from large and medium scale landowners having land above 4 hectares shall be collected.

2.6.2 Shri. Raghunath Karparthi of Balaji Electrosmelters Pvt Ltd., Shri. Ajay Baheti of Bhagwati Steel Cast Pvt Ltd. and others stated that, MSEDCL has proposed net recovery of Rs. 60,313 in next control period. But while submitting the amount which is to be recovered, MSEDCL has not taken into account incremental revenue on the proposed introduction of kVAh billing, lowering of LF incentive, harmonic penalty, grid support charges, additional fixed charges on rooftop consumers without net-metering or net-billing arrangement, open access charges, standby charges for SEZs and increase in schedule of charges.

2.6.3 Shri. R. A. Chavan, MLA stated that, Revenue Gap submitted by MSEDCL which is the result of their low collection efficiency should be disallowed to prevent consumers from being burdened by tariff hike.

2.6.4 Shri. Manjit Deshmukh of Akhil Bhartiya Grahak Panchayat stated that, MSEDCL submitted revenue gap of Rs. 55,964.80 Crore which is proposed to be recovered in this control period along with the proposed ARR. In last control period, revenue gap was submitted as 40,356.29 Crores. Considering the increase in revenue gap as per the present submission, it can be said that, MSEDCL has not taken any sincere steps to collect pending dues and improve collection efficiency. Instead of improvement in collection efficiency, these dues are increased as submitted in the present petition. This results into increase in tariff rates for all consumers which need to be checked by Commission.

2.6.5 Shri. R. B. Goenka of Vidarbha Industries Association stated that, MSEDCL has proposed meter rent considering the cost of meter assuming 5 Year life. However, MSEDCL is also recovering metering cost through capital expenditure. Therefore, rent as proposed if approved will amount to double recovery. MSEDCL should either collect rent or capital cost. In case rent is allowed then the depreciated cost of all existing meters across the state must be deducted from ARR which is already recovered from ARR in past.

MSEDCL's Replies

2.6.6 MSEDCL has proposed a revision in fixed and energy charges for various categories in order to bridge the revenue gap. The tariff revision is necessary for meeting additional

costs due to increase in generation & transmission costs, regulatory assets and legitimate expenses of MSEDCL. The revenue gap has emerged due to additional costs, which are beyond the control of MSEDCL.

2.6.7 MSEDCL further stated that it has always been the constant endeavour of MSEDCL to collect its entire dues in time. MSEDCL has also taken several steps to control theft and recover arrears in due time. Owing to the persistent efforts of MSEDCL, the collection efficiency for Residential, Commercial and Industrial categories has been in the range of 98-100% while the overall collection efficiency of MSEDCL is around 96% due to inherent difficulties in collection from AG Consumers. However, efforts are being taken to improve the Collection Efficiency in agriculture category as well.

2.6.8 In case of additional revenue to be generated by introduction of KVAh billing, lowering of Load Factor Incentives, Harmonics penalty, Grid Support charges etc. MSEDCL stated that it has already considered the impact of kVAh billing in revenue from proposed tariff, further the impact of reduced load factor incentives is also considered in the incentives. However, considering the uncertainty over the exact quantum, MSEDCL has not computed the impact of harmonics penalty and grid support charges. However, the same can always be taken care of in the true up mechanism.

Commission's Analysis & Rulings

2.6.9 The Commission has analysed each head of expense and revenue claimed by MSEDCL and its proposed treatment, and accordingly determined the ARR, Revenue Gap / Surplus over the 4th Control Period in accordance with the MYT Regulations. The Commission's analysis of the Revenue Gap or Surplus is set out in Chapter 6 and 7 of this Order.

2.7 kVAh based Billing

Objections/Suggestions

2.7.1 TATA Motors, Textile mills and power-loom industries stated that, PF incentive cannot be availed if kVAh based billing is approved. Further, load factor incentive is proposed to be reduced by 50%. It will impact on benefits industries are getting and result into increase in tariff. Already tariff rates in the State are higher so consumer shall at least get such benefits as a relief based on performance. Hence, it is requested that, Commission should not accept the proposal of MSEDCL to adopt kVAh based billing.

2.7.2 Shri. Vikram Gaikwad of Vikram developers stated that, REC is applicable to energy based on kWh basis. Hence, billing in kVAh will hamper REC market.

2.7.3 Shri. Arvind Pradhan of Jawaharlal Nehru Port Trust stated that, consumers will not get PF incentive due to kVAh billing, although HT consumers are maintaining PF above 0.99.

2.7.4 Shri. Pratap Hogade of Maharashtra Veej Grahak Sanghatana, textile mills and other LT consumers stated that, as per present provisions, Consumers with 0-20 kW (or 0-27 HP) connected load are paying lower fixed charges. If billing unit is changed to kVA, consumers having connected load of 24-26 HP would shift to the slab of above 20 kW category if PF considered will be unity. These consumers will be required to pay higher charges that time. Hence if billing unit is changed from kW to kVA, slab of 0-20 kW should be changed to 0-22.5 kVA considering 0.9 PF.

2.7.5 Arshiya limited stated that, proposed kVAh calculation is based on the summation of lag and lead component of reactive energy. The existing meter calculate and display Apparent energy considering only lag component of reactive energy. Therefore, existing energy meter has to be replaced by new meter having feature of calculate Apparent Energy considering lag and lead components.

2.7.6 Mahindra Sanyo, ISMT Ltd and Shri. Prakash Bedekar stated that, Commission shall disapprove kVAh billing for Steel Industries and continue with kWh billing or provided extended incentives for installing such equipment as it will introduce financial burden on already loss-making steel industries in the state.

2.7.7 Shri. Vishwanath Patil, Inox Air Products Pvt Ltd and other industrial consumers stated that, the proposed kVAh billing in place of kWh billing would be cost at loss of PF incentive and PF incentives. Apart from this MSEDCL is purchasing the power in kWh, then there is no reason to charge consumers in kVAh.

2.7.8 Shri. R. B. Goenka of Vidarbha Industries Association stated that, kVAh is derived quantity and tariff cannot be billed on the basis of derived quantity. Poor power factor penalty (or demand overshoot) is more appropriate than kVAh based tariffs because penalties generally have two very fair components such as, a limit for which there is no penalty – a warning factor and a penalty for violations beyond the allowable limit – that is a penal component. kVAh tariff on the other hand does not give any allowable limit as a warning. In availability based tariffs (ABT), maintenance of MW drawal schedules, generation schedules, drawals from the grid etc. are to be paid based on pre-decided contracts which are in MW and kWh. The deviation from schedules is to be measured and charged at rates which are related to the incremental cost of generation in the system, such incremental cost being determined from the grid frequency. Hence, kWh based billing is always better option.

2.7.9 Shri. Sharad Tarade of Ajeet Seeds Ltd stated that, if kVAh based billing is adopted then Commission should consider energy charges at 0.96 lag power factor and reduce tariff by 3.5% so that consumers can avail the power factor incentive.

2.7.10 Shri. A. A. Bugdani of Garware Polysters stated that, most of the loss is due to agricultural consumers as capacitors are not installed on pump sets although directives had been given by Commission in previous orders. Hence, it is requested to levy kVAh tariff to agriculture consumers (who do not install capacitors) instead of penalizing the industrial consumers by levy of kVAh tariff.

2.7.11 Shri. Prakash Bedekar stated that, implementation of kVAh billing will have negative impact on consumers as it will be required to replace existing equipment. Hence, it is suggested that at-least 6 months' trial should be given to consumers.

MSEDCL's Replies

2.7.12 MSEDCL stated that the prime objective of kVAh based billing is to encourage the consumers to maintain near unity Power factor to achieve loss reduction, improve system stability, power quality and improve voltage profile. Additionally, due to improvement of Power Factor (nearer to unity), the consumer's demand may get reduced and also the kVAh bill will correspondingly reduce in turn due to improved system voltage. The improvement in Power Factor will further reduce the licensee's expenditure on Power Purchase and thereby the consumers will be benefited with lower tariff.

2.7.13 MSEDCL in its last MTR Petition had requested for implementation of kVAh billing and Commission in the MTR Order dated 12th September, 2018 (Case no.195 of 2017) had ruled that *"....MSEDCL may submit its proposal for kVAh billing in next control period. The Commission intends to implement kVAh billing to all HT consumer and LT consumers having load above 20 kW from 1 April, 2020…"* Further, the Commission in MYT Regulations, 2019 has provisioned for kVAh billing. Regulations 73.2 states that *"Wheeling Charges of the Distribution Licensee shall be determined….. Provided that the Wheeling Charges may be denominated in terms of Rupees/kWh or Rupees/kVAh or Rupees/kW/month or Rupees/kVA/month, for the purpose of recovery from the Distribution System User…*"

2.7.14 The Forum of Regulators (FoR) in its report on "Metering Issues" August, 2009, has also stated that kVAh billing is the new trend in electricity billing, which is adopted worldwide. In the report they have strongly advocated to adopt kVAh billing in India on account of following reasons.

- kVAh Metering is a check on power factor.

- It will encourage consumers to use reactive energy compensators to control the voltage at their intake point and maintain unity power factor.
- The accepted threshold limit of power factor is unity. There need not be any penalty exemption for power factor neither lagging nor leading. Thus, kVAh billing merits consideration over power factor penalty.

2.7.15 It is pertinent to note that the tariffs in kVAh are proposed after considering the impact of power factor penalty/incentives to consumers. There would be no separate impact of kVAh billing to the consumers. Rather, if kVAh based billing is not considered, the consumer tariffs would have increased further by 2%-3%. Thus, tariff proposed in kVAh is in fact lesser than kWh tariff by the average power factor. Following table provides the PF incentives availed by consumers for the period Apr-2019 to Dec-2019.

Table 2-1: PF incentives availed by consumers for the period Apr-2019 to Dec-2019

PF Range	% Incentive	No. of Consumers	Sales (MkWh)	PF Incentive (Rs. Cr.)	PF Penalty (Rs. Cr.)	Per Unit Incentive (Rs/kWh)	Per consumer Incentive (Rs)	Consumers	Incentive	Sales (MkVAh)
0.951 to 0.954	0%	406	312	-	-	-	-	3%	0%	322
0.955 to 0.964	0.50%	1,224	905	-4	-	-0.05	-35,547	10%	1%	933
0.965 to 0.974	1%	1,557	1,303	-13	-	-0.10	-80,650	13%	2%	1,344
0.975 to 0.984	1.50%	2,126	2,162	-31	-	-0.14	-1,45,002	18%	5%	2,229
0.985 to 0.994	2.5%	3,413	6,120	-139	-	-0.23	-4,07,925	28%	23%	6,309
0.995 to 1.000	3.50%	3,295	13,585	-411	-	-0.30	-12,48,331	27%	69%	14,006
Total		**12,020**	**24,388**	**-598**	-	**-0.25**	**-4,97,695**	**100%**	**100%**	**25,142.03**

2.7.16 From the table it is evident that 55% of consumers are availing incentive of about 92% of total incentive amount. MSEDCL also states that around 27% consumers were availing the maximum incentive of 3.5% and these consumers will have loss of 3.5%. Balance 73% consumers are availing benefits of 0.5% to 2.5%. Thus, average loss of 2% incentive may be faced by maximum consumers.

2.7.17 Further, presently tariff is categorised as per the Sanctioned Load in kW. For categories such as LT Commercial, LT Public Services and LT Industrial, the fixed charges for 0-20 kW are based on Rs./Connection/Month. The consumers above 20kW in these categories are billed on the contract demand basis (kVA) of the consumer i.e. Rs./kVA/Month. If consumer-1 having 20 kW sanctioned load, uses any load at 0.7 P.F. then demand of the consumer will be =20/0.7=28.57 kVA but another consumer-2 with 25kW sanctioned load using the same load at unity PF will have demand of 25/1=25 kVA. Thus consumer-1 will still pay only fixed charge of Rs./Connection/Month even though it uses more contract demand. Hence, correlation of slabs of tariff in kVA is necessary.

2.7.18 On a similar note, utilities in many states like West Bengal, Karnataka, Punjab, Delhi,

Rajasthan, MP etc. has been following Rs./kVA/Month billing for LT categories. Hence, MSEDCL has proposed kVA based sub slabs in 3 Phase LT Categories (wherever applicable).

2.7.19 Further, as per the provisions of the SOP Regulations 2014, loads up to 7.5 kW are released on single phase. It is expected that the loads above 7.5 kW shall be released with 3 phase supply.

2.7.20 Presently, there is an anomaly in the billing of consumers having less than 20 kW load and consumers having more than 20 kW load. Consumers having 0-20 kW are billed on Rs/Connection/Month whereas consumers >20kW are billed on the contract demand basis (kVA). Due to this, the consumers with load of say 19 kW are paying fixed charges on Rs./Connection/Month whereas consumers with slightly higher load of say 21 kW are paying fixed charges on demand basis. The same can be seen in following example for LT Commercial category considering the FY 19-20 tariff.

Particulars	Consumer 1	Consumer 2
Connected Load (kW)	19	21
Consumption in Units @65% Diversity Factor	8,892	9,828
Demand Charges	391	3,284*
Energy Charges	93,003	1,03,980
Total Charges (Rs.)	**93,394**	**1,07,265**

*40% of connected load

2.7.21 Thus, just for 2 kW additional load, the Consumer 2 has to pay demand charges 8.4 times of consumer 1. This anomaly needs to be addressed. Therefore, MSEDCL has proposed kVA based demand charges for <20 kW load of 3 phase consumers. Further, presently, ToD Benefits are optional for <20 kW categories. With kVA based demand charges, the principle of ToD can be made applicable for the benefit of all such consumers.

Commission's Analysis & Rulings

2.7.22 The Commission has noted the objection and also reply submitted by MSEDCL. The Commission is introducing kVAH billing for HT consumers from 1 April, 2020 and for LT consumers above 20 kW from MTR Order, The Commission has discussed on the issue of kVAh tariffs and billing in the Tariff Philosophy section of this Order.

2.8 Recording of Maximum Demand

Objections/Suggestions

2.8.1 Shri. Bipin Kumar Chaudhary of Sunflag Iron & Steel Pvt Ltd and many other steel industrial consumers stated that, MSEDCL has proposed installation of new meters

with sliding window of recording maximum demand in consecutive 30 minutes time block. Steel plants with Electric Arc Furnaces and rolling mills have high fluctuations in load pattern. This proposal is not suitable for fluctuating loads as it will increase maximum demand. The existing 30 minutes block / fixed window for recording MD is suitable and logical and is to be kept intact for steel plants with Arc Furnaces. Hence, Commission is requested to retain the existing mechanism of recording of MD for steel plants.

MSEDCL's Replies

2.8.2 As per the Regulation 2.1 (p) of the MERC (Electricity Supply Code and Other Conditions of Supply) Regulations 2005, the maximum demand (MD) means twice the largest number of kWh or kVAh supplied and taken during any consecutive 30 minutes blocks in that period. Same definition of 'Maximum Demand' is also provided by Commission in MTR order dated 12th September 2018 (case No 195 of 2017).

2.8.3 Certain consumers are taking the benefit of lacunae in system of block window method of Maximum Demand recording and thereby getting the benefit of lower MD recording. This is because in the block window method, the MD is integrated over a fixed block of time as per meter clock, i.e. from 10.00 to 10.30 hrs or 10.30 to 11.00 hrs. However, in this method, the consumer with higher demand can split his load in two consecutive time slots such that the demand is split in two blocks and MD recorded is less than the actual load on the system. This high split in load than sanctioned contract demand is harmful to the Grid. To address the said issue, sliding window method is incorporated in new meters to determine demand more accurately. The same is also in compliance with the MERC regulations, Tariff Order, IS and CBIP standards. In this methodology, the maximum demand is recorded in consecutive 30 minutes block. The 30 min demand integral period sliding consecutively with 10 min sub-interval has been used.

Commission's Analysis & Rulings

2.8.4 The Commission observes that per provisions under State Grid Code and IEGC, measurement period for the purpose of energy accounting, recording of the demand, scheduling and despatch of power is "time block" which is defined as "*time-block'means a time block of 15 minutes, for which specified electrical parameters and quantities are recorded by special energy meter, with first time block starting at 00.00 hrs*". There are 96 time-blocks in a day, starting from 00:00 hours with each time-block of consecutive 15-minute duration. Thus, 30 minute measurement for the purpose of energy accounting, scheduling and despatch comprise fixed duration from start of hour boundary to next half hourly boundary and does not envisage any sliding scale for measurement of any 30-minute duration, as proposed by MSEDCL for energy accounting/ deviation accounting/determination of Under-drawal/over-drawal or

under-injection/under-injection by participants.

2.8.5 Further, DSM Regulations notified by MERC and Central Commission as well as recent notification of the Regulations for Real time market operations has further emphasised on this aspect by recognising odd numbered time blocks and even numbered time blocks for the purpose of market operations, and trading on power exchange, along with introduction of concept of gate closure. Thus, entire timeframe for the purpose of energy accounting, scheduling and despatch, deviation accounting, congestion management etc. is aligned with the concept of "Time-Blocks" which are fixed duration time-block rather than sliding duration of the time-block. Generating Companies, Distribution Licensees and even Open Access consumers would be responsible for their energy accounting, deviation accounting on "time-block" concept of fixed duration as elaborated above. Under the circumstances, the Commission opines that recording of demand of Direct Consumers of Licensee on sliding scale of 30-minute duration would not be proper and would in fact tantamount to discrimination as against open access consumer.

2.8.6 Thus, the Commission rejects the MSEDCL proposal for introduction of sliding scale based measurement of Billing Demand and MSEDCL should continue with existing practice of recording of Billing Demand on fixed duration of 30-minutes around boundaries of hourly start and half-hourly start period (viz. 00:00 to 00:30 and 00:30 to 01:00 hrs and so on). As per General Conditions under Tariff schedule, the Distribution licensee may measure the Maximum Demand for any period shorter than 30 minute of maximum use, subject to conformity with the Commission's Supply Code Regulations, where it considers that there are considerable load fluctuations in operations. Accordingly, in such cases of repeated instances, MSEDCL may opt to install SEM for such cases and record their Demand on 15-minute Time-block basis and bill accordingly, instead of changing method of measurement to sliding scale.

2.9 Load Factor Incentive

Objections/Suggestions

2.9.1 Shri. Atul Shah of MITC Rolling Mills Pvt Ltd., Shri. Sachin Khoche of Sohn Steel Pvt. Ltd., Shri. Vikas Goyal of Bhuleshwar Steel & Alloys Pvt Ltd and other consumers from steel industries stated that, LF incentive is an important tool for boosting up power consumption by the industries. MSEDCL on one side proposing rebate on incremental power consumption and on other side decreasing the LF incentive. Comparing to tariff rates in other states, tariff in Maharashtra is high and industries get incentives and rebates based on these performance factors only. In other states, tariff rates are lower and hence, industries are earning more profits. Considering all these factors,

Commission is requested to revise and introduce load factor incentives of MSEDCL equivalent to Chhattisgarh with the range of load factor from 63% to 77% with ceiling of maximum 15% load factor rebates and approve same simple conditions following in Chhattisgarh leading to boost up power consumption.

2.9.2 Shri. Nitin Kabra stated that, although the LF incentive is availed by only about 350 consumers, but their consumption is almost 10% of the total. Then, why incentive should not be given?

2.9.3 Shri. Nitin Rajpurkar of Owens Corning India Pvt. Ltd., Shri. C. G. Ramakrishanan and other industrial consumers and individuals stated that, MSEDCL's proposal to reduce the LF incentive from 15% to 7.5% and to change the LF formula by including non-supply up to 60 hrs in the calculation of Maximum Consumption Possible in a month will hamper the consumer's interest. Hence, Commission is requested to retain LF incentive at 15% as per the existing mechanism.

2.9.4 Shri. Hemant Kapadia stated that, Load factor maintained by consumers contribute to grid stability and only a few consumers can maintain load factor at a constant level. Hence, for the contribution towards maintaining the grid stability incentives must be given to the respective consumers.

2.9.5 Shri. Pankaj Patil of Polygenta Technologies Ltd, M/s Owens Corning India Pvt Ltd. and others stated that, MSEDCL's proposal to reduce the LF incentive from 15% to 7.5% and to change the LF formula by including non-supply up to 60 hrs in the calculation of Maximum Consumption Possible in a month will hamper the consumer's interest and will also be contrary to the aims and objectives for which Electricity Act, 2003 has been enacted.

2.9.6 Shri. Bipin Kumar Chaudhary of Sunflag Iron & Steel Pvt Ltd stated that, Load factor incentive as provided by MSEDCL is not useful for ARC Furnace based steel plants. Due to inherent process requirement, the average demand of steel or EAF plants is much lower than contract demand. Hence, it is required that, Load Factor for EAF based Alloy Steel plants shall be reduced to a minimum level of 40% against the present level of 75%.

2.9.7 Shri. D. D. Bhattacharya of Steel Authority of India Ltd (SAIL) stated that, small number of consumers are getting LF incentive accounting to around Rs. 310 Crores as incentive whereas share of consumption of these consumers w.r.t. total consumption is more than 10%. Considering this fact, LF incentive should be given to such consumers.

MSEDCL's Replies

2.9.8 MSEDCL stated that the concept of Load Factor Incentive was introduced by Commission in Case No. 2 of 2003 i.e. nearly 16 years ago. The Commission in the last MTR Order dated 12th September 2018, had acknowledged the issue of willful violation of Contract Demand during 22:00 to 6:00 Hours to avail ToD benefits & Load Factor Incentive and ruled that the LF incentives shall not be available in case of exceeding Contract Demand during night also. Sometimes due to natural calamity such as floods or cyclones, there is non-supply for more than 60 hours or sometimes more than few days. However, lack of clarity on how to treat planned outages resulted into disputes and litigations before the CGRF or the Commission. In order to bring clarity and protect the consumer's interests as the consumers will not lose any incentive due to non-supply from MSEDCL/MSETCL, MSEDCL has proposed the revision in formula load factor calculation. The proposed revision will improve the Load Factor of the consumers will improve and many consumers presently not getting the load factor incentive may get the Incentives for Load Factor achievement. Since many more consumers may avail such benefits, the impact of LFI will increase and same will be again passed on to the consumers. To avoid the additional burden, MSEDCL has proposed that the maximum incentives shall be limited to 7.5%.

Commission's Analysis & Rulings

2.9.9 The Commission has not reduced Load Factor Incentive (up to 15% of energy charge). As far as demand of reducing threshold limit to earn Load factor Incentive is concerned, the Commission is of the opinion that lower threshold would be against basic principle of introducing Load Factor Incentive i.e. maintaining steady load near to the Contracted Capacity. Hence, same cannot be accepted.

2.9.10 The Commission has accepted MSEDCL's proposal to use actual hours of non-supply instead of fixed 60 hours in a billing month to reflect correct level of Load Factor achieved by the Consumer.

2.9.11 Detailed analysis and ruling on this issue is provided in Section 8.14 of this Order.

2.10 Power Factor Incentive

Objections/Suggestions

2.10.1 Shri. Bipin Kumar Chaudhari of Sunflag Iron & Steel Company Ltd. and other industrial consumers stated that, PF incentive shall be given to industrial consumers as consumers have already made investment for installing the equipment to improve PF. Now if incentive on PF is removed, investment made by industries will be waste. Hence, Commission is requested to continue with the existing mechanism of PF incentive.

MSEDCL's Replies

2.10.2 The APTEL has already ruled that "kVAh billing which provides inbuilt incentive for the Appellant's category, which will automatically take care of power factor incentive and disincentive for the high and low power factor respectively".

2.10.3 The kVAh based billing has an inbuilt incentive/penalty mechanism and therefore separate mechanism for the same is no more required. It will encourage the consumers to improve the power factor by way of reactive power compensation at the load point itself. With better power factor, the line loading shall be lower for the same kW requirement leading to lower transmission as well as distribution losses.

Commission's Analysis & Rulings

2.10.4 The Commission has introduced kVAh based billing for all HT consumers from 1 April, 2020. Once kVAh based billing is introduced, no separate incentive / penalty mechanism is required for Power Factor as recorded kVAh includes impact of Power Factor. In order to ensure that consumer continues to get some benefit of its efforts to improve Power Factor in the past, while determining tariff, the Commission has used category wise average power factor which is lower than Unit. Hence, resultant tariff determined is lower than that would have determined for kWh billing. Hence, if consumers maintained Unity Power factor, they will consume lower kVAh and hence the bill will be lower. For LT consumers, kVAh Tariff would be introduced from MTR Order and hence, Power Factor Incentive / Penalty mechanism is retained for LT consumers.

2.11 Prepaid Meter Rebate

Objections/Suggestions

2.11.1 Shri. Raghunath Karparthi of Balaji Electro Smelters Pvt Ltd., Shri. Ashish Mehta of Manan Cotsyn Ltd and other requested that the prepaid meters should be installed to improve efficiency in billing. To improve collection efficiency and reduce theft without reducing exiting rebate, installation of prepaid meters should be made compulsory.

2.11.2 Shri. Yusuf Shaikh and Shri. Ganesh Chavan mentioned that the Central Government had declared in their budget, the installation of smart meters and prepaid meters to all consumers in a time span of 3 years. It is to be noted that cost of prepaid meter and smart meter is much higher than RF meters. But the burden of these costs has been put on the shoulders of consumers which should not be the case.

2.11.3 Shri. Satish Shah stated that, although prepaid meters are commenced to be in operation from 1st April 2020, meters are not installed in many regions of the State yet.

2.11.4 Shri. Yusuf Shaikh stated that, cost of prepaid meters is so high. For residential consumers, this cost is unbearable. Hence, it is requested to reduce the cost of prepaid meters for at least residential consumer category.

MSEDCL's Replies

2.11.5 Since the introduction of prepaid meter rebate, several years have passed and many other avenues have been introduced to keep up the consumers to pay their bills within the stipulated time. Consumers paying regular bills within the timelines stipulated get prompt payment discount of 1%. Further, for normative working capital, Commission provides interest rate of about 8%-10% p.a. which is less than 1% per month. For Security Deposit the Commission provides interest at Bank Rate which is 6 to 6.50% p.a. Further, the interest rates provided for bank deposits are also in the range of 6%-8% per annum. In view of the same, the existing discount of 5% is much high which comes to 60% per annum which was initially given as promotional activity and there is a need to correct the same. The rebate appears to be quite high and considering saving in cost from implementation of prepaid meters, MSEDCL proposed to reduce the prepaid meter rebate as proposed in the Petition. Even after reduction to 2%, it is still attractive and higher than prompt payment discount.

Commission's Analysis & Rulings

2.11.6 The Commission notes that although cost of pre-paid meter is high it has number of advantages which reduces O&M expenses of Distribution Licensees and also it gets advance payment for electricity. Hence, prepaid meter needs to be promoted. Hence, the Commission is retaining existing rebate of 5% for pre-paid consumers.

2.12 Penalty on Contract Demand Violations

Objections/Suggestions

2.12.1 Shri. K. Durgarao of ISMT Ltd stated that, additional penalty for contract demand violation proposed by the MSEDCL is without any reasonable justification and any increase in penalty for contract demand violation would unnecessary increase burden on the consumers.

2.12.2 Shri. Raghunath Karparthi of Balaji Electrosmelters Pvt. Ltd. and other HT consumers stated that, it should be allowed to avail 120% contract demand without any penal charges as adopted by Chhattisgarh, MP and Orissa to boost up power consumption.

2.12.3 Shri. S. M. Gadgil of Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA) stated that, as MSEDCL has surplus power, MSEDCL should encourage

incremental consumption by way of discount as an efficient way to manage surplus power scenario instead of levying penalty on Contract Demand violations.

2.12.4 Alloy Steel Producers Association of India stated that, penalty on Contract Demand violations is not acceptable and Commission is requested not to approve the proposal of MSEDCL of levying penalty.

MSEDCL's Replies

2.12.5 In the last MTR Order dated 12th September 2018, the Commission had given directives for penalties for violations of maintaining contract demand and that such penal actions are to be governed by the Supply Code Regulations. However, MSEDCL faces difficulty to take appropriate action against the consumers for breach of contract demand. Further, the Commission in Order No. 60 of 2018 dated 1st January 2019 acknowledged MSEDCL's difficulty and ruled that "*Distribution Licensee can enhance the Contract Demand of the consumer when the consumers exceeds the contract demand on more than three occasions during a calendar year, irrespective whether the Consumer submits an application for the same or otherwise*…"

2.12.6 In line with the same, MSEDCL had issued Commercial Circular No. 312 for implementing the provisions of the said Order. MSEDCL further states that the consumer should be charged with the tariff applicable to the slab to which he actually belongs. i.e. If a consumer utilises demand for say more than 20 kVA, then he should be charged with the tariff applicable to the sub-slab of >20 kVA only and so on. However, it is observed that some consumers opt for demand up to 20 kVA and actually utilises demand more 20 kVA. Therefore, he should be charged with tariffs for more than 20 kVA slab only. Therefore, all such consumers should be charged with the tariffs applicable to the slabs in which its recorded demand falls. There is lack of clarity on this issue and due to which some of the LT consumers are raising disputes and approaching various Forums such as CGRF, Ombudsman etc. against charging such tariffs. In Order to bring clarity, MSEDCL has proposed revision in penalty for exceeding contract demand.

Commission's Analysis & Rulings

2.12.7 The Commission notes that MSEDCL's intention to revise Contract Demand Penalty is to bring clarity about how to treat the cases where consumer is below 20 kW for which no demand based charges are applicable and actual recorded demand is more than 20 kW for which demand based charges are applicable. The Commission has addressed this issue in Section8.17 of this Order while retaining Contract Demand Penalty to other consumers at existing level.

2.13 Harmonic Penalty

Objections/Suggestions

2.13.1 Shri. Prakash Bedekar has stated that it supports the levy of Harmonic Penalty, but its implementation will be a challenge. This is because there is no clarity on the concept and the mechanism with which the harmonics in the system can be controlled.

2.13.2 Shri Sharad Tarade of Ajeet Seeds Ltd. has stated that, power quality of MSEDCL in rural areas and AG pumps is very poor. It needs to be considered before levying harmonic penalty on HT consumers. Apart from that, overloading is also one of the factors that need to be considered before levying harmonic penalty. Hence, Commission is requested to disapprove the levy of harmonic penalty on HT consumers.

2.13.3 Shri. A. A. Bugdani of Garware Polyester Ltd. stated that there should be installation of ToD meters for the purpose of measurement of current harmonics induced in the system by MSEDCL Grid as well as voltage harmonics induced in the system from the consumers end. It was also stated that the above mentioned two distortions need to be evaluated and observed to comply with the provisions stipulated in IEEE 519-2014 Standard. It is requested that the Commission shall levy harmonic penalty considering referred standard guidelines. He further requested that Harmonic Distortion Penalty needs to be made applicable to MSEDCL for exceeding % total voltage harmonic distortion and % individual harmonic distortion as per procedure and recommendations in IEEE 519-2014.

2.13.4 Shri. Bipin Kumar Chaudhary of Sunflag Steel Pvt. Ltd and other steel industries stated that the alloy steel industry, being an energy intensive industry employs high power machinery like the Electric Arc Furnaces which are responsible for production of harmonics. As a result, huge amount of investment is required to control the harmonics produced by such power machinery. This creates a huge financial burden on the company as overall tariff for the steel industry consumers will increase greatly. Apart from different kinds of charges and penalties, change in billing to kVAh based billing will be having the most negative impact on the industry.

2.13.5 Shri. A. M. Kulkarni of Mukand Ltd., Shri. K. Durgarao of ISMT Ltd. and others stated that it is required to conduct a study of harmonics by selecting different set of consumers in order to implement the new concept. The focused study on raising awareness regarding harmonics among the consumers and regulate harmonics by installing different necessary equipment in the system is required to be done first before levying such penalty.

2.13.6 Shri. Suhas Ambade of Arshiya Ltd., Shri. Raghunath Karparthi of Balaji Electrosmelters, Shri C.G.Ramakrishnan, Shri Amit Kakkar and others stated that the proposed harmonic penalty is a one way mechanism. Penalties on harmonics should be accompanied by incentives as well. They also suggested that incentives should be given for installing equipment and regularly maintaining them to achieve desired harmonics level. It is also mentioned that no other state of India except Tamil Nadu has imposed Harmonic penalty.

2.13.7 Shri Pankaj Patil of Polygenta Ltd. stated that creating awareness about the IEEE standards is important before imposing the Harmonic penalty based on the standards. MSEDCL has only proposed penalty on excess harmonic levels. However, as per the Standard IEEE 519-1992, MSEDCL is also required to provide incentives for maintaining harmonics at prescribed levels as compliance with the Standard. Incentive mechanism will encourage consumers as they will make investment in maintaining harmonics at desired level. It is further stated that, power quality meters need to be provided by MSEDCL to consumers for the purpose of monitoring harmonic levels for the consumers who have installed filters for the purpose.

2.13.8 Shri. Dhananjay Behale stated that, before levying harmonic penalty on HT consumers, dedicated power supply shall be given by MSEDCL to all the consumers with good power quality.

2.13.9 Shri. Raosaheb Rakibe stated that, before levying harmonic penalty, consumers should be made aware of the power quality standards, factors involved in it and then provide rebate for maintaining harmonics at desired level. After creating awareness and encouraging consumers, MSEDCL may levy penalty on consumers.

2.13.10 Shri. Suresh Sancheti stated that, study should be conducted on harmonics. As it is observed that, power quality of MSEDCL itself is very poor with higher harmonics, how power quality from consumer end can be ensured?

2.13.11 M/s Mahindra Sanyo stated that, if harmonic penalty is made applicable for industries, then incentive shall also be given to industries for installing the necessary equipment and maintaining the same to achieve desired harmonics level. A study should be conducted by MSEDCL about harmonics and necessary actions to be taken by consumer as well as MSEDCL as a guideline and only then penalty be levied.

2.13.12 Shri. Nitin Lonkar of Butibori Manufacturer's Association stated that, concept of Harmonics is new to the Industrial/Commercial consumers and very few Electrical Contractors/Agencies know how to measure and suggest suitable equipment for maintaining required Harmonic Levels. Installing equipment requires investment and

expenditure for maintaining equipment. MSEDCL has proposed only penalty and not mentioned anything about incentive to the consumers who maintains required Harmonic Levels as per IEEE STD 519-1992. Instead of imposing penalty to the consumers for non-compliance of Harmonics level, it is suggested to offer incentive to those consumers who maintain required level of Harmonics. This will attract more and more HT consumers to invest in the harmonic filters and maintain the same for availing incentive benefit in energy bill. Since installation of meter & associated equipment is prime responsibility of licensee, hence Power quality meters required for monitoring harmonics levels needs to be provided by DISCOM to the consumers who opt for investing in harmonic filters. By improving power quality in the supply, DISCOM will be benefited substantially in the capacity addition in network by optimizing overloading due to reduction of Total Harmonic Distortion. This will result in cost saving for improvement of network & infrastructures. Hence, it is suggested to offer max. incentive up to 5% in Energy Charges & wheeling charges. And for levying penalty, it can be levied after 1-2 years when consumers will be aware of harmonics and response given by consumers to incentive mechanism.

MSEDCL's Replies

2.13.13 Central Electricity Authority on 6th February 2019 has notified amendment to the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007. As per the said amendment, Distribution Licensee and Bulk consumers are required to provide adequate reactive compensation to compensate reactive power requirement in their system. Further, the said amendment also mandates installation of power quality meter and sharing the recorded data thereof.

2.13.14 MSEDCL stated that industrial systems have been moving towards non-linear load equipment, which further results in higher Harmonics in the system. Such currents cause overheating of transformers, cables, switchgears and results in insulation deterioration and nuisance tripping in control circuits. Excessive current harmonics results into voltage harmonics and poor power quality. It is pertinent to mention here that higher harmonics in the system leads to increased iron and copper losses in upstream electrical equipment in distribution systems, which does not get metered to that particular consumer who is feeding higher harmonics. Thus, the impact of the same is passed on to other consumers of MSEDCL at no fault of theirs. In such instance, a neighboring industry feeding higher harmonics to the grid can potentially damage equipment of a consumer maintaining the harmonics. Hence, it is necessary to control system harmonics right at the consumer premises. The consumer has presumed that all consumers won't maintain harmonics and pay penalty. Penalty shall be levied to only those consumers not maintaining the harmonics. It should be noted that the impact of

harmonics penalty cannot be considered for all consumers as the levy of harmonics penalty is limited to the consumers who violate harmonic levels. MSEDCL also states that it is the responsibility of the consumer to maintain the harmonics as per the Standard IEEE519-2014 and Other Regulations framed by the various Quasi-Judicial bodies. As provided in the Regulations, MSEDCL has proposed the penalty for not maintaining the Harmonics at specified levels.

2.13.15 Regulation 12.2 MERC Supply Code Regulations 2005 provides for the minimum time period given to the consumer to make necessary changes in their system so as to control harmonics (or) improve the system's power factor. Further, the said Regulations also set provisions for penalizing the neglecter for failing to do so.

2.13.16 As per the Study conducted by M/s. SAS, Pune, out of 100 HT consumers, 31 consumers were exceeding the permissible limits of TDD compliance, 10 consumers had their TDD at border level. Further, 4 consumers were found exceeding voltage harmonic compliance. Considering the various Regulatory provisions and impact of Harmonics on system, MSEDCL has proposed the penalty for not maintaining the Harmonics at specified levels. It is pertinent to note that States like Tamil Nadu has also permitted the distribution utility to levy harmonic compensation of 15% of respective tariff for HT consumers.

Commission's Analysis & Rulings

2.13.17 The Commission noted the suggestions and objections from various stakeholder on the issue of Harmonic Penalty. Although most of the stakeholders have opposed imposing penalty, all desired to get quality power supply from MSEDCL. The Commission notes that Consumers and Distribution Licensee are jointly responsible for Harmonics. Distribution Licensees are responsible for Voltage Harmonics whereas Consumers are responsible for Current Harmonics. However, to fix accountability of Harmonics, it is important to have power quality meter which can measure and record continuous data of power harmonics. Such meter should also be capable of differentiating and recording harmonics being injected from both direction i.e. for consumer, injection from Distribution System and injection into Distribution System. Without having such data based on continuous monitoring and its analysis, the Commission would not be able to impose any incentive or penalty for Harmonics.

2.13.18 Having said that the Commission is cognizant of the issue of power quality. Hence, in order to ensure that requisite data is available before next tariff determination process, the Commission in Section 8.25 of this Order has laid down time frame for installation of power quality meter as per mandate of CEA Regulations. Accordingly, all Bulk

Consumers with Contract Demand above 20 MVA shall install power quality meter by March 2021 (and above 10 MVA by March 2022) and share monthly data with Distribution Licensee. Also, Distribution Licensee needs to install power quality meter at their selected substations and share the data from these meters on its website.

2.14 Metering Faults, Meter Readings and Billing Issues

Objections/Suggestions

2.14.1 Shri. Pratap Hogade of Maharashtra Veej Grahak Sanghatana, Buldhana, Shri Rupesh Bhagvat, Shri Nadeem Ahmed and others stated that the errors in billing that arise due to installation and operation of faulty meters still remains an un-tackled issue although the same issue has been raised many times. It is stated that the billing mechanism has to be improved since consumers have to pay excess amount due to false billing caused due to defective meters even though the actual power consumption is much less. Further, MSEDCL has stopped using the "Flash and Rolex meters" but there are a lot of consumers who have faulty meters installed and are billed falsely. Hence, it is requested that faulty meters should be replaced and MSEDCL should be directed to improve billing mechanism so that consumers do not suffer from the causes of false billing.

2.14.2 Shri. Manjit Deshmukh and Shri. Hemant Jakate of Akhil Bharatiya Grahak Panchayat stated that the process of taking readings from the meters has been outsourced to private agencies. This step has increased the difficulty in communication and co-ordination between the consumer in-charge and the consumers. As a result, payment related issues are not solved by MSEDCL and consumers are suffering from it.

2.14.3 M/s Juhala Power-loom Conference, Shri Ganesh Chavan and others stated that new connections are not given by MSEDCL for the last one year in Malegaon city of Nashik district without any justified reason or clarification. This is a violation of consumers' rights. It was also mentioned that, on similar lines, consumers must have full liberty to choose the scheme of work (as per schemes of MSEDCL) while applying for new connection.

2.14.4 Shri Santosh Raghu Suryawanshi stated that there have been installation of new meters without the request by the consumers, consent and/or any prior intimation to the consumer. Hence, the action carried out by MSEDCL is unjust, illegal and arbitrary. The sudden increase in the consumption after installation of new meters noticed by almost all consumers leads to the perception that the newly installed meters are faulty and defective which should be replaced by MSEDCL.

2.14.5 Shri. R. B. Goenka of Vidharbha Industries Association stated that MSEDCL allows incentives on the electricity bill only in case when the payment is made before the due date. There have been cases when the consumers have opted to pay the bill using the RTGS payment facility to MSEDCL. The consumers have made the payment within due date and amount of was debited from consumer's account before the due date. But due to delay from bank to process the payment towards MSEDCL's account after due date, incentives were not provided to consumers although delay is not caused from consumer end. Considering these issues, necessary improvements should be done by MSEDCL.

2.14.6 Shri. Kishor Potdar of Khandesh MASMA Association, Dhule stated that, MSEDCL staff members have to get energy meters from head office located at Airoli although single consumer requests for energy meters, which increases additional expenses for travel, purchase etc. The burden of the same falls on consumer. Hence, it is suggested that, energy meters should be made available at regional offices in bulk to avoid additional expenses towards its procurement. He further stated that, meter testing is done by MSEDCL while purchasing it from vendor. Still MSEDCL staff members force to conduct testing of meters again and consumers have to bear that additional expenses. Meter once tested does not need to be tested again and meter testing fees is an integral part of O&M expenses of MSEDCL.

2.14.7 Shri. Sajid Ansari of Malegaon Power-loom stated that, the meter readings of small-scale industrial consumers having connected load up to 20 kW (<=27 HP) load should be taken manually but instead MSEDCL is taking meter readings based on MRI. He further stated that, during night hours, consumption of his power-loom exceeds 20 kW (or 27 HP) i.e. contract demand. This does not occur due to any fault at consumer end but is occurring due to power supply variations in MSEDCL's power supply itself. Also, it occurs for short time span during night hours only. But due to such excess consumption for which consumer is not responsible, consumer has to pay electricity bill as per the tariff applicable for consumers having contract demand above 20 kW (>27 HP). Accordingly, electricity bill goes to nearly Rs. 60,000/- which should be Rs. 25,000/- as per the actual contract demand up to 20 kW (<= 27 HP).

MSEDCL's Replies

2.14.8 MSEDCL replied that it is taking necessary measures to sort out metering and billing issues faced by the consumers.

2.14.9 MSEDCL has been continuously improving its metering technology. It has moved from electro-mechanical meters to Radio Frequency (RF) meters and Pre-paid meters.

2.14.10MSEDCL submitted that it has carried out meter replacement drives to replace old, faulty meters. If the consumer specifically brings out specific cases where electro-mechanical meters are not replaced, corrective action can be taken.

2.14.11With regard to the objection regarding online payment issues, MSEDCL stated that, it has issued necessary Circulars from time to time for collection of consumer's energy bills through RTGS/NEFT and issued the necessary procedure to be followed in case there is delay due to non-availability of servers, lack of proper MIS, manual mistakes by staff etc.

Commission's Rulings

2.14.12The Commission has taken note of the deficiencies pointed out in the customer related processes and service delivery related issues, which not only affect the consumers but also result in Commercial loss for the Distribution Utility. Addressing the billing process /Billing disputes of consumers is critical and should be taken up on priority, as improving billing and collection cycle efficiency would ease the liquidity position for MSEDCL as well.

2.14.13The Commission appreciates the efforts and results taken by MSEDCL for improving billing and taking many consumer centric and innovative steps towards automation.

2.14.14The Commission notes MSEDCL's submission during the hearings regarding the initiatives it has recently taken for mobile alerts and the introduction of a mobile- based application. MSEDCL should explore further expansion of its mobile applications to enhance other customer outreach and awareness activities.

2.14.15MSEDCL should review its billing related processes, identify current limitations/gaps and areas for improvement and take corrective steps and monitor the implementation of necessary actions at the highest level. MSEDCL may also conduct a third-party process audit of its billing processes, including audit of its billing software/system.

2.14.16As far as issue of delay in depositing payment of electricity bill made by consumer through RTGS by Bank to the MSEDCL, the Commission is of the opinion that prompt payment rebate is for sharing of savings which Distribution Licensee will have on account of receiving payment of electricity bill early. If Distribution Licensee does not get such early payment on account of delay by bank, no benefit accrues to the Distribution Licensee and hence consumer cannot get any prompt payment from Distribution Licensee. Consumer should either take up this issue with their bank or make early payment in advance after providing margin for possible delay by the bank or due to any other reason.

2.14.17 Issue of billing of consumer with contract demand below 20 kW but actual recorded demand is more than 20 kW is addressed by the Commission in Section 8.19 of this Order.

2.15 Capital Expenditure and Capitalisation

Objections/Suggestions

2.15.1 Prayas (Energy Group) submitted that MSEDCL has planned capitalisation to the tune of Rs. 17,600 Crores under various capital investment schemes over and above the capitalisation which has placed between FY18 and FY20. Despite repeated queries raised by Commission in the present tariff proceedings, the details of the capital investment schemes are not provided by MSEDCL. Commission asked MSEDCL to submit scheme-wise information on cost overrun and time overrun, and interest incurred during construction incurred due to time overruns. On the raised queries, MSEDCL's submission indicate that cost overrun for ongoing projects are to the tune of Rs. 10,000 Crores which is as high as 25% of the original cost and reason given is mainly due to delays in project execution. However, MSEDCL has not submitted any details on time overruns as asked for by the Commission. It is suggested that MSEDCL in compliance with Commission's queries, also share details of time overruns and the interest during construction incurred due to the same. Given the nature and the scale of these projects such information is crucial to assess the operational efficiency and systematic issues being faced by MSEDCL which delays critical works. The Commission should also consider disallowance of any IDC which could have been avoided by MSEDCL. As part of the tariff proceedings Commission also raised a query regarding cost-benefit analysis for the various DPR schemes approved by the Commission. MSEDCL has not submitted this information and stated that it will be submitted at a later date. It is suggested that the Commission direct MSEDCL to submit this information which should also be publicly available.

2.15.2 Adv. Shri Anil Chavan stated that there is no transparency regarding capital expenditure investment made by MSEDCL and asset capitalised in actual. Hence, it is difficult to verify MSEDCL's claim of inability to reduce the losses due to old infrastructure. It has been proposed that the information of circle-wise capital expenditure schemes of MSEDCL should be made available to public and should be open for suggestions and comments during public hearing.

MSEDCL's Replies

2.15.3 Regarding some queries with respect to capital expenditure, MSEDCL stated that the basic need/objective of incurring the capital expenditure is to upgrade the existing

distribution network to desirable standards so as to provide better network reliability and sustainable performance. It has been therefore felt essential to take necessary measures, in order to meet the challenges thrown by the Electricity Act 2003 and rules made there under like Standard of Performance (SoP) Regulations framed by Commission. The Capital Expenditure also envisaged re-enforcement of the system to provide quality, security and availability of power supply to the consumers, to undertake system development to meet the load growth, achieving the targeted reduction in system losses, undertake automation and other improvement works to enhance customer service and fulfill social obligation such as electrification of un-served areas.

2.15.4 MSEDCL initially conducts internal audit of accounts including all expenditures related to infrastructure projects. These accounts are further audited by a statutory auditor appointed by MSEDCL and empaneled with Comptroller and Auditor General of India (CAG). In addition to this, annual accounts are also audited by CAG as a part of supplementary audit. Further, while scrutinizing the Tariff Petitions the Commission also does prudence check of all such expenditures. Therefore, all expenditures are duly scrutinised at various levels and are legitimate expenses. Therefore, MSEDCL requested the Commission to approve the capitalisation as submitted.

Commission's Rulings

2.15.5 For capital expenditure and capitalisation, the Commission has considered only those schemes which it has approved in-principle based on the DPRs submitted by MSEDCL. For FY 2017-18 and FY 2018-19, the Commission has also carried out scrutiny of the actual capitalisation.

2.15.6 Capitalisation towards non-DPR schemes has been allowed only up to the threshold limit of 20% of the capitalisation towards DPR schemes. The Commission has disallowed 100% of the IDC of those schemes whose capitalisation has exceeded the in-principle approval. The Commission's observations regarding the capitalisation in excess of the costs approved in principle are elaborated in subsequent chapters dealing with True-up and ARR components

2.16 Schedule of Charges

Objections/Suggestions

2.16.1 Shri. Ashok Chandak stated that the infrastructure cost and development of infrastructure is an integral part of MSEDCL functioning and that such costs are to be incorporated in ARR. Hence, the Commission is requested to reject entire proposal of

revision of schedule of charges.

2.16.2 Shri R. B. Goenka of Vidharbha Industries Association commented on following points in case of schedule of charges:

1. Vide schedule of charges, MSEDCL has attempted to propose recovery of infrastructure cost under the name premium service. As per the provisions of section 42, 43 and proviso of section 43, only those consumers are subjected to recovery of infra cost who are seeking separate supply and consumers having separate supply are termed as DDF consumers. The matter of unlawful recovery despite ruling from Commission itself followed by Hon'ble APTEL and Hon'ble Supreme Court is still continued merely by changing name from ORC to DDF and now from DDF to premium services.
2. **Recovery of extra GST:** MSEDCL has proposed to recover GST extra in its schedule of charges. However. it has not been explained as to whether the raw material rates proposed for use of service connection are including GST or otherwise? If it is including GST, then as per the provisions of GST, such costs cannot be passed upon consumers. MSEDCL must take into account the cost before GST for arriving such calculations and then GST can be recovered separately.
3. The service connection is defined under the term distribution system in EA 2003 which does not include meter and the attempt to add meter cost first and then deduct is an attempt to recover the centages of meter unlawfully from its consumers. When meter cost is to be borne by MSEDCL, obviously the allied expenditure of meter like transportation will part of Meter cost.
4. The proposal of MSEDCL to take over the DDF asset by providing depreciated cost refund is against the provisions of EA 2003.
5. MSEDCL has proposed meter rent considering the cost of meter assuming 5 Year life. However, MSEDCL is also recovering metering cost through capital expenditure. Therefore, rent as proposed if approved will amount to double recovery. MSEDCL should either collect rent or capital cost. In case rent is allowed then the depreciated cost of all existing meters across the state must be deducted from ARR which is already recovered from ARR in past.
6. Proposed Reconnection Charges are justified.
7. MSEDCL has proposed the transformer testing charges which is already rejected in schedule of charges petition registered as case No 70 of 2005 order dated 08.09.06. The same is rejected by APTEL and Supreme Court as well. Proposing it again will create unnecessary complications.

8. For the proposed Underground cable testing and fault detection charges, objector is of the opinion that, MSEDCL has deployed various staff and infrastructure and the cost of the same is recovered through tariff by adding it to power purchase cost before arriving at ABR. If such unwarranted charges are allowed for work of operation and maintenance, it will amount the double recovery from consumers.

2.16.3 Shri. Ganesh Chavan and Shri. Yusuf Shaikh stated that the schedule of charges proposed by MSEDCL is almost the same as the one in existence and hence, the Commission should approve the existing charges in the order.

2.16.4 Shri. Vikram Gaikwad of Vikram Developers Pvt Ltd stated that, MSEDCL has proposed schedule of charges for "processing fees per application and operating charges per transaction" for non-consumers of MSEDCL. MSEDCL proposed these charges during MTR order and considering the need and request of MSEDCL, Commission had approved the demanded charges towards open access consumers. Now, MSEDCL submitted that, applications for open access have increased so in proportion processing fees collected by MSEDCL must also have increased. Still MSEDCL proposed further increase in processing fees per application. Further, for RE Open Access, operating charges are to be paid on monthly basis for the facilities such as meter readings of generators, credit report preparations and adjustment of the same in OA bill. For noting meter reading of WTG, RE Generator installed AMR to meter at own cost. Further, AMR is fully automatic and improving. Hence approving such higher cost every ARR / MTR petition is killing OA transaction. Considering the low PLF of RE generators, cost of operating charges will be 52 paisa / unit for RE wind power generators with 35% PLF whereas for 1 MW conventional plant, it will be 18 paisa/unit. This is unfair to RE Generators and hence Commission is requested not to approve the increase in schedule of charges as proposed by MSEDCL.

2.16.5 Shri. Rakhshpal Abrol of Bharatiya Udhami Evam Upbhokta Sangh (BUEUS) stated that, schedule of charges as proposed by MSEDCL for new connection charges and re-connection should not be approved by Commission as there is no progress and development done by MSEDCL so far in terms of infrastructure development, service lines. The Consumers have already paid the Security Deposit under Section 47 of the Electricity Act,2003 to MSEDCL as additionally demanded, which they indicate in each and every Electricity Bill raised monthly. The said amount can be utilized for New Service Connection Charges. The MSEDCL has failed to provide the Service-Lines, even after filing the Complaints under Internal Consumer Grievance Redressal (ICGR) forum.

MSEDCL's Replies

2.16.6 The Commission notified MERC (Electricity Supply Code and Other Condition of Supply), Regulation 2005 as per the provisions of Section 46 of EA 2003. As per provisions of Supply Code Regulations, various charges are permitted to be recovered from consumers subject to approval from the Commission. In line with the same, MSEDCL has proposed revision in Schedule of Charges.

2.16.7 Around 40% of consumers in LT category do not pay on time or don't pay resulting in blocking of revenue. Further cost and expense have to be incurred to take necessary steps to realize the unpaid dues of the electricity bill from the defaulting consumers. At least ~10% of the consumers are such that they are paying electricity bill during notice period. Thus, MSEDCL has to incur the administrative charges and expenses for serving notice on such consumers.

2.16.8 Due to lower collection efficiency, administrative costs, its financial position is getting worse day by day and interest on working capital is increasing. Therefore, recovery on arrears is a prime concern for MSEDCL and hence, higher disconnection/reconnection charges are required to ensure timely payments by the consumers. Higher reconnection charges may encourage the consumer to pay the electricity bills in time and discourage the consumer from becoming a defaulter.

2.16.9 The reconnection charges approved by the Commission are meagre and do not cover the actual cost incurred by MSEDCL for reconnection.

2.16.10 Reconnection activity involves administrative cost including man-power, transportation and time. In case of HT category consumer, for disconnecting supply, it is required to take outage & disconnect the supply from sub-station. During this period of disconnection, there is revenue loss for MSEDCL. Further, two persons (line staff + Helper) are required to reconnect the electricity supply.

2.16.11 In order to encourage timely payments by defaulting consumers avoiding disconnection reconnection activities, it is necessary to have higher reconnections charges. Thus it is necessitated the need for revision of reconnection charges. Considering the practice followed by MSEDCL for disconnection of supply on payment default, MSEDCL has proposed to increase reconnection charges based on nature of supply.

2.16.12 Considering the cost data FY 2019-20 and cent-ages, the normative charges to be recovered are proposed. MSEDCL states that the raw material rates proposed for use of service connection are excluding GST. Therefore, MSEDCL has proposed to recover GST extra in its schedule of charges.

2.16.13 The cheque bouncing charges are proposed as per the existing provisions. MSEDCL has already provided various avenues to consumers for online payments. The consumers can always use them for online and prompt payment.

2.16.14 MSEDCL has proposed the charges for activities such as hire/rent charges, testing of Distribution Transformers, under-ground cable testing and fault detection charges; only in eventuality of it being charged.

2.16.15 Section 45 (3) (b) of the Electricity Act, 2003 allows MSEDCL to recover a rent or other charge in respect of any electric meter or electrical plant provided by it. Accordingly, MSEDCL is entitled to recover the following charges related to meters:

- Cost of the meter in case the meter is purchased from the Distribution Licensee;
- Replacement in case of lost/burnt meter;
- Hire charges for the meter.

2.16.16 It is submitted that considering the provisions of the Regulation 14.1.3 of Supply Code 2005 and provisions of the EA 2003, MSEDCL has proposed the cost of meter and hiring charges.

2.16.17 MSEDCL stated that to sustain the operations of the Company, it is necessary to ensure recovery of full cost of service from the consumers. MSEDCL requested the Commission to approve the Schedule of Charges as proposed by MSEDCL.

Commission's Analysis & Rulings

2.16.18 The Commission has dealt with MSEDCL's proposal of revision in Schedule of Charges under Chapter 9 of this Order.

2.17 Applicability of Standby Charges for SEZs/Railways

Objections/Suggestions

2.17.1 Shri. Nitin Chunarkar of Mindspace Business Parks Private Limited (MBPPL) requested the Commission to disapprove the proposed standby charges for SEZs as in case with MBPPL, it has 200% power backup present and is in no need of standby from MSEDCL. Further, the proposed standby charges will financially burden the SEZs. It is stated that MSEDCL needs to clarify legal provisions which mandate SEZs from availing backup/ standby from MSEDCL only. If it is mandatory for SEZs to make standby arrangement from MSEDCL, then MSEDCL needs to provide details about the existing standby arrangement for MSEDCL itself. It should also clarify the instances

when MSEDCL itself deviated from schedule and percentage of deviation and why Final Balancing and Settlement Mechanism (FBSM) is not strengthened for efficient and timely deviation settlement.

2.17.2 Shri Sunil Gupta of Yotta Infrastructure Solutions LLP stated that the company has made arrangement of diesel generator setup for its full capacity as backup. It has been mentioned that MSEDCL has proposed standby charges for SEZs at the rate of applicable demand charges for HT industrial category but since Yotta has standby arrangement, the proposed standby charges should not be applicable to Yotta.

2.17.3 Shri. Suhas Ambade of Arshiya Ltd. stated that, proposal for standby charges was rejected by Commission in MTR Order Case No. 195 of 2017 and should not be reintroduced again. Proposed standby charges should not be approved for SEZs as SEZs have standby facilities of their own in place and not depend for the same on MSEDCL. It is stated that SLDC shall promptly communicate the SEZs about failure of its power source so that backup power supply can be activated.

MSEDCL's Replies

2.17.4 MSEDCL stated that in its MYT Petition, it has proposed the Standby Charges for SEZs and Deemed Licensees and not for the consumers of such SEZs. MSEDCL had already submitted the number of instances during which certain SEZs resorted to over-drawal from the grid. Details of which are provided in the Petition. MSEDCL reiterated that such instances are not only detrimental to the stability of the grid but the undue financial burden of such instances is also getting passed onto the consumers of MSEDCL for no fault on their part and therefore SEZs/ deemed license and Indian Railways must have standby arrangement.

2.17.5 MSEDCL stated that as per information obtained from MSLDC, only the following three SEZs are scheduling power presently and the rest of them are either taking power from MSEDCL or other utilities.

1. Serene Properties Private Ltd. (Mind space Business Parks Private Ltd.)
2. Gigaplex Estate Private Ltd.
3. M/s. KRC Infrastructure and Projects Private Ltd.

2.17.6 At present the above three SEZs are state pool participants for FBSM mechanism; wherein M/s. KRC Infrastructure and Projects Private Ltd became a pool participant lately in May 2019. The SLDC has issued FBSM bills only up to Feb-2018 as of now. Based on the FBSM bills till date, MSEDCL has already given over-drawal instances by Serene Properties and Gigaplex Estate. M/S Gigaplex has submitted that they have

installed DG set as a standby power supply. The availability of DG set and standby power are altogether different. DG set is used to feed load if normal power from grid is not available either due to planned or forced outage of line supplying power. Whereas, standby supply is hot standby where generation capacity is connected to grid 24x7 like in case of MSEDCL, where all thermal as well hydro generation capacity is connected to the grid. In case of tripping of any unit, immediate control of over-drawal from grid can be made by standby generation (Hydro as well as Thermal).

2.17.7 Out of above SEZs, Serene & Gigaplex are scheduling power from generators located outside Maharashtra and in the event of tripping of those generators, the scheduled power with these SEZs becomes either zero or reduced. Under such instances, the DG set cannot supply power on its own unless these SEZs themselves disconnect power supply from the grid and start using the DG set to meet their demand. From the instances communicated in the present MYT Petition (based on FBSM bills issued up to Feb-18), it is clear that these SEZs continue to draw power from the grid even when scheduled power becomes zero or reduces drastically.

2.17.8 The Hon'ble Commission has notified MERC DSM Regulations' 2019 on 1st March 2019. The provision in Regulation 10.B (ii) stated that:

- Licensees having demand less than 10 MW, are allowed deviation of 1MW when their frequency is within IEGC band. This is applicable in case of Gigaplex having peak demand of about 5.8MW.
- Licensees having demand between 10 MW & 20MW are allowed deviation of 2MW.

2.17.9 Such deviation limit has been exceeded by M/s. Serene in 686 time blocks and by M/s. Gigaplex in 663 time blocks during FY2017-18. Such instances may also be happening or could happen in case of other SEZ's including KRC Infrastructure and Projects Private Limited. In view of above violations, it is clear that even though the above SEZs might have installed DG sets, it cannot be considered as Hot Standby and if it is assumed that both M/s. Serene & M/s. Gigaplex have DG sets as standby power to control over-drawal from the grid, the said arrangement is not sufficient to control their over-drawal from the grid within the deviation volume limit allowed in the DSM Regulations. Thus, it is necessary that the SEZs should be mandated to make arrangement of hot standby. In the event, standby arrangement is opted from MSEDCL, allow recovery of standby charges from SEZs or Deemed Licensees at the rate of applicable demand charges for HT Industrial Category.

Commission's Rulings

2.17.10 The Commission notes the submission of the SEZs and MSEDCL. There is no legal mandate on SEZ for the Standby arrangement. In the ordinary course, in pursuance of its obligations under Section 33 of the EA, 2003, MSLDC would have been expected to ask the Distribution Licensees including SEZ's to curtail its load to match the reduced availability of its contracted Generator. SEZs are at liberty to source stand-by power through a Diesel Generator Set or a separate arrangement with any other Generator or entity which it considers to be more financially beneficial to it. Therefore, the Commission does not see any reason to apply the standby charges on SEZs.

2.18 Accountability of Distribution Franchisees

Objections/Suggestions

2.18.1 Prayas Energy Group stated that most franchisees find it a challenge to operate the franchisee business and to ensure timely payment. Therefore, MSEDCL should report to the Commission, the status of dues and receivables for the terminated franchisee agreements, especially with M/s SNDL in Nagpur. MSEDCL should also clearly mention the cost and impact because of these pending dues, if any. MSEDCL should also report the status of termination with SNDL as well as the additional impact due to the disputes regarding termination.

2.18.2 Prayas Energy Group further stated that MSEDCL has issued a LoI to Torrent Power Limited (TPL) for appointment of franchisee in Shil, Mumbra and Kalwa. It has also been mentioned that CESC Ltd. is appointed as a franchisee for Malegaon. If the appointment of these franchisees is in the final stages, it is unclear as to why the sales to consumers in these potential franchisee areas and the input energy to these consumers have not been projected by MSEDCL. Therefore, MSEDCL should report the current status of distribution licensees in Malegaon, Shil, Mumbra and Kalwa and any other franchisees planned during the control period. It should also report the status of distribution franchisee agreement and details of any disputes, if any, along with details of litigation in the matter. MSEDCL should also report the sales, losses and energy input projections of the franchisees appointed in the control period.

2.18.3 Further, despite limited success with franchisees, MSEDCL seems to be appointing franchisees in new areas. Given the past experience with pending dues and limited loss reduction, it is suggested that MSEDCL report the following on its website:

- Category wise number of consumers, energy input, energy billed, revenue billed and collection efficiency.
- Loss reduction trajectory as per the franchise agreement and its actual performance.

- Annual capitalisation by the franchisee versus the target
- Quarterly report on pending dues from franchisees
- Standards of Performance reporting as per MERC SoP Regulations and Section 59(2) of the Electricity Act 2003 for the franchisee area.

2.18.4 It has been mentioned that this information should be submitted to the Commission annually as it will ensure better tracking of franchisee operations and increased accountability for supply and service quality in the franchisee areas.

MSEDCL's Replies

2.18.5 With regard to the queries of accountability of Distribution Franchisees, MSEDCL submitted the details of each Distribution Franchise as below:

Bhiwandi DF

2.18.6 M/s Torrent Power Ltd (TPL) has been appointed as Distribution Franchisee for Bhiwandi circle and Distribution Franchise Agreement (DFA) was signed between MSEDCL & M/s TPL on 20.12.2006. Distribution operations of Bhiwandi circle were handed over to M/s TPL on 26th January 2007. The term of agreement was ten years and got expired on 26.01.2017. As per article 3.2 of DFA, the said agreement has been renewed and extended for 10 Years i.e. up to 25th January 2027. Distribution Franchisee Renewal Agreement was signed on 02.12.2016.

Jalgaon DF

2.18.7 M/s. Crompton Greaves Limited (CGL) was appointed as Distribution Franchisee for the designated distribution franchisee area of Jalgaon Urban Cum Rural division comprising of Jalgaon Urban-I, Jalgaon Urban-II, Jalgaon Rural and Nashirabad Subdivisions.

2.18.8 Distribution Franchisee Agreement (DFA) was signed between MSEDCL and M/s. CGL on 01/06/2011. The designated DF area was handed over to M/s. CGL on 01/11/2011. The term of agreement was ten years. Due to payment default by M/s. CGL, the appropriate notices were served on M/s. CGL as per provision of DFA & finally DFA has been terminated on 10/08/2015 and the Jalgaon DF area had been taken over by MSEDCL on 12th August 2015. MSEDCL settled all claims of M/s. CGL on 28th March 2018.

Aurangabad DF

2.18.9 The Distribution Franchisee agreement was signed by MSEDCL and M/s GTL and Electricity Distribution Operations for Aurangabad Urban Division I & II was handed over to M/s GTL Ltd. on 1st May 2011.

2.18.10During the operations of Aurangabad Distribution Franchisee business by M/s GTL, it could not make in time the payment of invoices raised by MSEDCL. As per provisions of Distribution Franchise Agreement (DFA), the agreement with GTL has been terminated on 10.11.2014 and distribution operations have been taken over by MSEDCL w.e.f. 15.11.2014. M/s GTL has invoked the article of the Arbitration as per the provision Distribution Franchisee Agreement (article 17.2 of DFA). Both the parties appointed Arbitral Tribunal and further proceedings are in process.

Nagpur DF

2.18.11The Distribution Franchisee Operations for Nagpur area comprising Civil lines, Mahal and Gandhibag Divisions was handed over to M/s. Spanco Ltd. on 1st May 2011.

2.18.12MSEDCL has invested Rs 12 Cr/annum for first five years of operations as Capex plan in the Nagpur DF area in consultation with the Distribution Franchisee. Accordingly, Rs.58.5 Cr has been invested by MSEDCL for first five years of operations. In addition to this, SNDL has invested Rs.240 Cr in franchise area for system improvement.

2.18.13Due to precarious financial condition of parent company M/s Essel Group (EUDCL), M/s SNDL had shown unwillingness to continue the franchisee business in Nagpur DF Area. Accordingly, the Franchisee area of Nagpur DF was taken over by MSEDCL on 09.09.2019 at 00:00 Hrs. The settlement of final termination account of M/s SND Ltd is in progress.

Commission's Analysis & Rulings

2.18.14The Commission noted that MSEDCL in its projection for 4th Control Period has only considered Bhiwandi Franchisee. Although MSEDCL is in advance step to introduced franchisee in other areas, it has not factored it in MYT projection. As MSEDCL itself has not projected any data except Bhiwandi, the Commission has not factored in the impact of other franchisees. Same can be done at MTR stage based on actual details.

2.18.15Regarding, Prayas suggestions of making operational details of franchisee in public domain, the Commission is of the opinion that it will help in monitoring performance of franchisee as well as to analyse whether the intended purpose of introducing franchisee is being meet. Hence, the Commission directs MSEDCL to host on the lines indicated by Prayas Energy Group, the periodic performance details of franchisee area on its website.

2.19 Rebate on Incremental Power Consumption

Objections/Suggestions

2.19.1 Prayas Energy Group mentioned that MSEDCL has proposed the levy of a Re.1/kWh rebate on incremental consumption for 5 years. This proposal of MSEDCL will enable better utilisation of contracted capacity. However, the rationale for restricting the rebate only to the consumers who source their entire power from MSEDCL only is not clear because incremental consumption from such consumers who procure power from captive and open access sources as well will also increase the utilisation of MSEDCL's backed down capacity. Therefore, MSEDCL should clarify the rationale behind restricting the scheme for consumers who source entire power from MSEDCL and the Commission, thus, should consider extending the scheme to open access and captive consumers who have contracted demand with MSEDCL.

2.19.2 Shri Sharad Tarade of Ajeet Seeds Ltd., Shri Hemant Kapadia and others stated that the proposal of MSEDCL to grant rebate on incremental consumption of power by its consumers is beneficial for consumers as well as MSEDCL. Hence, the Commission should approve the proposal and thus protect the consumers' interest.

2.19.3 Shri. Vipin G Jain of Mahindra Sanyo, Shri. K. Durgarao of ISMT Ltd. and Shri. A. M. Kulkarni of Mukand Ltd. has stated that while the rebate proposed for incremental consumption is a win-win situation for MSEDCL and the consumers, it has been requested that the rebate of Re.1/kVA be provided for incremental consumption for all consumers without discrimination.

2.19.4 Shri. Arvind Pradhan of Jawaharlal Nehru Port Trust (JNPT) stated that the rebate for incremental consumption of power is to be allowed to the consumers who consume power above a certain threshold limit. It is also suggested that the total consumption in FY 2018-19 by the consumer should be considered as the baseline consumption.

2.19.5 M/s Omsairam steel and Alloy Ltd., M/s Bhagyalakshmi Rolling Mills Ltd., Ambika Waste Management Pvt. Ltd. and others stated that many consumers have shifted from HT category to EHV category to avail the rebate of 2% provided by MSEDCL to the EHV consumers. If the rebate is increased, it will attract more consumers to switch on the EHV category. MSEDCL will get a lot of benefit if more and more consumers shift to EHV category. However, this shift requires huge investment in infrastructure. Thus, to make this shift viable for the consumers, MSEDCL is requested to provide a rebate of 5% to the EHV consumers.

2.19.6 M/s Kalika Steel Ltd. requested that the Commission should provide a night-time rebate of at least 5% to promote night-time usage during non-peak hours against the currently proposed tariff which on maximum demand exceeded even during night hours. This will help MSEDCL to control consumption of excess generation during non-peak

hours.

MSEDCL's Replies

2.19.7 MSEDCL faces surplus power situation due to many reasons. Encouraging incremental consumption by way of discount is an efficient way to manage surplus power scenario. The Commission in MTR Order dated 12th September 2018 had also acknowledged the necessity of this methodology and ruled the same can be considered along with next filing for new Control Period. Such incremental consumption rebate is also available in other states such as Madhya Pradesh where the rebate is provided for Industrial, Non-Industrial and Shopping Malls categories

Commission's Analysis & Rulings

2.19.8 The Commission has noted the Objection and submission of MSEDCL in the matter of Rebate on Incremental Power Consumption. The proviso of section 62(3) of Electricity Act provides for differentiation according to the total consumption of electricity during any specified period. There is a surplus power available with MSEDCL and therefore there is a need to implement innovative schemes for boosting power demand. As a result, any benefit of increase in sales due to such innovative measures will get passed on to all its consumers by way of reduction in tariff in future. Thus, the Commission allows Incremental Consumption Rebate and the same is discussed in detail in Section 8.15 of this Order.

2.19.9 As discussed in Section 8.15, the Commission has also allowed incremental consumption rebate to all consumers including partial Open Access consumers.

2.20 Additional Surcharge

Objections/Suggestions

2.20.1 Prayas Energy Group stated that in the methodology of MSEDCL for estimation of additional surcharge, the weighted average fixed cost per unit of availability for all the thermal generating sources is estimated as the additional fixed charge for the year. Ideally, additional surcharge is determined on the basis of average fixed cost of the capacity backed down due to open access instead of average fixed cost of MSEDCL as a whole. Further, MSEDCL assumed that open access consumption contributes 15% of the total backed down generation for the control period based on half year information for FY20. Hence, it is suggested that the estimation also consider information from FY19, a year for which actuals are available and similar additional surcharge was levied. With increase in sales, reduction in migration to open access with alternate

available options and rebates and incentives offered by MSEDCL, increase in renewable energy procurement it is likely that backing down, especially due to open access could reduce in the future. It is suggested that additional surcharges be fixed at Re.1/unit for FY21 with the 3% reduction in charge per year over the control period.

2.20.2 Shri. Sagar Durgavale of Green Energy Association and Shri S. K. Shivraj requested the Commission to consider concessional additional surcharges for RE Open Access transactions in the view of the Commission's statutory mandate under the section 86(1)(e) of the Electricity Act 2003 to promote RE generation.

2.20.3 Shri Siddhivinayak Cotspin Pvt. Ltd. (SSCPL), Shri Rakesh Baweja of TATA Motors and others requested the Commission that the increase in proposed Additional Surcharge for Open Access and Captive Power Consumers by MSEDCL should not be approved. Although, the number of open access consumers is currently less, the additional surcharges should be kept at a minimum in case the Commission approves the levy of additional surcharges.

2.20.4 Shri. Vikram Gaikwad of Vikram Developers Pvt Ltd. stated that, MSEDCL's claim to levy Additional Surcharge on captive power projects is not maintainable and without any basis. This issue has been categorically settled by the APTEL by its judgment dated 27 March 2019 in JSW Steel Vs MERC, where the Hon'ble APTEL set aside the commission's decision to extend the applicability of AS to captive power projects in the MTR Order.

2.20.5 Shri. Nitin Ghorpade Reliance Industries Ltd., Shri. Anand Bindal of Ultratech Cement Ltd., Shri. Pravin Joshi of MetalMan Auto Pvt. Ltd. and others stated that the additional surcharge should not be levied on Captive Power Plants (CPPs) as agree by the Forum of Regulators and also rejected by the Commission in MTR Order 195 of 2017 as it is not in line with the provisions made in Electricity Act 2003. Additional surcharges on Captive Open access transactions should not be accepted as RE open access transactions are already burdened due to increased open access charges as per the first amendment in Open Access Regulations.

2.20.6 M/s Vidyut Urja Equipments stated that when the stranded capacity goes down, the additional surcharge collected should be refunded to the open access consumers in order to conserve consumers interests.

MSEDCL's Replies

2.20.7 MSEDCL stated that Regulation 14.8 of the MERC Distribution OA Regulations, 2016 outlines the principles for determination and levy of Additional Surcharge. In line with

the provisions of OA Regulations 2016, MSEDCL has proposed the Additional Surcharge.

2.20.8 Under USO, MSEDCL is obligated to supply power on demand/application. Accordingly, in order to cater to the consumer demand, MSEDCL purchases power on long term basis from Mahagenco, NTPC under MOU route and from IPPs through competitive bidding process. Capacity addition was done by signing the PPAs with generating companies after due approval of the Commission and based on estimated demand as per the projections published in 16th Electric Power Survey (EPS) published by CEA. However, there is a variation in projected and actual demand due to various reasons such as increase in Open Access, RE capacity addition to fulfil RPO Target, RE capacity addition by CPP because of low tariff and Net Metering etc. This is resulting into surplus power availability.

2.20.9 Further, due to the recent trends in the prices of solar energy and MERC Net Metering Regulations 2019, various consumers are now converting to captive power plants (CPP) by installing solar projects through Developers. Due to this, the surplus power is also likely to increase further.

2.20.10 To manage the surplus power, MSEDCL gives zero schedule/ backdown the high variable cost thermal generation as per Merit Order Despatch or sell in energy market depending upon market rates thereby reducing the burden of energy charges. However whenever such surplus capacity remains available, MSEDCL has to pay fixed/capacity charges irrespective of the scheduling or non-scheduling of power from the units which declares its availability.

2.20.11 Whenever there is unavailability of generation due to the forced outage/coal shortage, there is requirement of additional power during certain blocks of the day, sometimes the duration of shortfall during the day is so small that to cater the demand for such small period, it is unviable to take a generation unit on bar to cater the demand for small period. In such cases, MSEDCL forecast the demand, availability and shortfall on day-ahead basis and procures power from Short Tern Markets such as Energy Exchanges. In addition to this, MSEDCL also explores the option of optimization of power purchase cost by backing down of costly generation unit as per MoD and procuring the cheaper power available in Short Term Market/Exchange. MSEDCL has to pay Fixed Charges to the Generators as per the terms and conditions of the PPAs irrespective of utilization of generation capacity and thus the surplus capacity adds the fixed cost burden on MSEDCL. From the estimations submitted in the MYT Petition, it is clear that MSEDCL is in power surplus and will continue to be in surplus for Control Period. However, short term power is purchased for cost optimization or to meet demand during

coal shortage scenario and hence, additional surcharge is justifiable & needs to be made applicable to all OA consumers.

2.20.12 MSEDCL has tied up sufficient quantum of power, after approval of the Hon'ble Commission, by considering the overall growth in the State. However, on the other hand, large number of consumers are buying power under Open Access instead of availing supply from MSEDCL. As a result, the generation capacity tied up by MSEDCL remains idle.

2.20.13 In this situation, MSEDCL needs to back down the generation and also required to pay Fixed Charges (or Capacity Charges) to the Generators irrespective of actual purchase. Thus, the need for recovery of the part of fixed cost towards the stranded capacity arising from the power purchase obligation through levy of Additional Surcharge from OA consumers has been underlined by Hon'ble Commission in the MYT Order.

Commission's Analysis and Rulings

2.20.14 The Commission has carefully examined the submissions of MSEDCL, as well as the objections filed by stake-holders and MSEDCL's replies with regard to the applicability of Additional Surcharge for Open Access Consumers sourcing power through Group Captive Power Plants (GCPP). The Commission has examined the relevant provisions of EA, 2003, and Regulation 14.8 of the DOA Regulations, 2016 on which MSEDCL has relied. Upon careful examination of the facts and the relevant provisions, the Commission holds that Additional Surcharge shall be applicable to Captive Users of Group Captive Power Plants; in addition to Open Access consumers. The Commission has further elaborated on this issue separately in section 8.30 of this Order.

2.21 Power Supply and Distribution

Objections/Suggestions

2.21.1 MLA Shri. R. A. Chavan and Shri. Anand Vaman Kulkarni stated that the power supply provided to the consumers should be continuous even during rains and storms. Since MSEDCL is permitted to shut-down its power supply during the weekly maintenance period, all the issues and faults should be taken care of so that the distribution network is resistant to regular rains and small storms. These cannot be the reasons for MSEDCL to cut off power supply to the consumers of the affected area. Hence, there is a need to appoint a team to study the problems faced by people due to unscheduled power outages, voltage fluctuations and interrupted power supply due to various reasons so that solutions or remedies for the reasons can be found to reduce the consumers' problems.

2.21.2 Yashwantrao Mohite Krishna Sahakari Sakhar Karkhana Ltd and others stated that, MSEDCL should work to provide continuous power supply as there is frequent load shedding.

2.21.3 Shri N. G. Rambhad stated that bad quality of distribution transformer of MSEDCL is the main reason for increased losses. These losses at DTs are easier to locate and reduce and hence should be done under the maintenance procedure by the MSEDCL. Reducing losses will be reflected in the tariff and hence, it is suggested that tariff can be brought down by replacing all old and malfunctioning distribution transformers with new and improved ones.

2.21.4 M/s Malegaon Powerloom Action Committee stated that electricity network and wiring in Malegaon is so poor and faulty and even after several complaints, no action has been taken by MSEDCL. The Commission is requested to note the issue and direct MSEDCL accordingly.

2.21.5 Shri. Abaji Hari Ware and many other individuals stated that, power supply is very poor in rural areas. Further, there are various issues in infrastructure of MSEDCL as poles are constructed but lines are not charged, safety measures are not taken properly.

2.21.6 Shri. Suresh Sancheti stated that, all HT supply should be through 33 KV uniformly. This would reduce overall cost because of standardization.

MSEDCL's Replies

2.21.7 Regarding Load Shedding, MSEDCL has been following load shedding as per the Principles and Protocols of Load Shedding approved by the Hon'ble Commission in case there is shortfall. However, considering power surplus scenario MSEDCL states that it has sufficient power and has contracted enough power to meet the ever-increasing demand of the State in future. MSEDCL shall strive to supply power on continuous basis.

Commission's Analysis and Rulings

2.21.8 The Commission has provided its Standard of Performance Regulations and stipulated the norms for restoration of supply. The Commission has also provided the compensation for default of any such services by MSEDCL.

2.22 Increase in Tariff

Objections/Suggestions

LT & HT Industries

2.22.1 Shri. Dhairyashil Bhosale of Manufacturer's Association of Satara, Shri. Shashikant Taralekar, Shri. Sachin Shirgaonkar, Shri. Gopikishan Kabra and many other industrial consumers stated that, as per the proposed fixed and energy charges for LT 5A consumer category, the proposed tariff rates result into 40 to 73% increase in tariff for consumers with connected load up to 20 kVA and 4 to 26% increase in tariff for the consumers with connected load above 20 kVA. These rates will increase further if proposed ToD charges and billing demand charges are approved by Commission. If the proposed increase in tariff is approved by the Commission for consumers with connected load up to 20 kVA, tariff rates for this consumer category will be highest in the Country. Tariff rates of consumers with connected load above 20 kVA are already highest in the Country. Considering the financial situation of industries in present situation, further increase in tariff will impose huge burden on these industries resulting into shutdown of many of the industries and unemployment caused due to it. Hence, Commission is requested not to approve the proposed increase in tariff and continue with the present tariff structure for LT industries.

2.22.2 Shri. Abhay Bhide of Mohite Industries Pvt Ltd. stated that, manufacturing industries are greatly affected by increasing tariff rates as it results in increase in cost of production while the costs cannot be effectively recovered from end consumers. Industries in Maharashtra are not being able to compete on National level as tariff in Maharashtra is higher than other states. Hence, Commission is requested to keep tariff in Maharashtra at par with those of other states in India.

2.22.3 Shri. A. B. Kotwal of The Ichalkaranji Co-Op. Spinning Mills Ltd., Shri. Tanaji Kamate of Kolhapur Oxygen & Acetylene Pvt. Ltd. and other industrial consumers stated that, overall increase in tariff due to increase in Demand Charges, wheeling charges, energy charges, ToD tariff due to change in methodology, power factor incentive, load factor incentive and electricity duty is Rs. 1.71 in FY 2020-21 and it will increase more in future years. Such high increase in tariff will be unbearable for small scale industries.

2.22.4 Shri. Prakash Bedekar stated that, increase in tariff and subsequent increase in taxes and surcharges will lead the existing EHV/HV consumers to refrain from either expanding their business or setting new plants in Maharashtra. Further, he stated that, tariff structure proposed for LT non-residential consumers using less than 20 kW power will result in closing down of more than 70% small scale industries.

2.22.5 Shri. Nitin Bang and many other individuals stated that, tariff rates in Maharashtra are much higher compared to neighboring states. It is unfair for all the consumers in State

as it is difficult to compete with the industries in other States due to higher production cost.

2.22.6 Shri. Namdev Rabade of Maharashtra Metro Rail Corp. Ltd. stated that, metro rails are energy intensive in nature with 40% of O&M expense on energy bills. Hence, proposed tariff hike along with grid support charges are bound to affect metro business significantly which is discouraging towards use of renewable power. Demand charges paid by Mahametro are highest among the metro rail projects among states in India. Hence, Commission is requested to give necessary relaxation to the tariff category of public transport utilities.

2.22.7 Shri. Ashok Chandak of Confederation of Real Estate Developers' Association of India (CREDAI) - Nagpur Metro stated that, the National Tariff Commission has been insisting to limit the subsidy and the cross subsidy up to 20% of the base tariff. The base tariff needs to be frozen first and each consumer should know the cost of power being supplied to him. The electricity bill will clearly indicate the cost of electricity and the subsidy being given to him. He further stated that, the proposed rise has an impact on tariff of HT consumers from 10% to 35% and for LT consumers 2% to 77% depending on load factor and power factor.

2.22.8 Shri. Ashok Swami stated that, Fuel Adjustment Cost and tariff proposed for HT consumers is quite high.

2.22.9 Thyssenkrupp Electrical Steel India Private Limited stated that, proposed tariff rates for HT industries are so high and electricity intensive industries will suffer from huge financial burden

2.22.10 M/S Rubicon Research Pvt Ltd. stated that, tariff applicable for R&D Units of Industries should be same as that of applicable Tariff category of parent company irrespective of the location of parent company.

Steel / Ferro Alloy Industries

2.22.11 Shri. Suresh Sancheti of Meenakshi Ferro Steel Industries, Shri. Ajit Patil of Grasim Steel Ltd and other Steel Industrial consumers stated that, increase in proposed tariff for 33 kV voltage level consumers is steep and unbearable. Commission is requested to disapprove the proposed increase in tariff.

2.22.12 Shri. A. M. Kulkarni of Mukand Ltd., Shri. K. Durgarao of ISMT Ltd. Shri. Vipin Jain of Mahindra Sanyo and others stated that, Steel industry is facing competition not only from neighboring states but also from but also from the international market. The hike in Industrial Tariff of Maharashtra which is much higher as compared to other states

will reduce the edge of steel industry in the state to compete with other states as power cost constitutes about 40% of the total cost of a Steel Industry. Despite Electricity being supplied by MSEDCL being one of the costliest in the country MSEDCL is proposing further hike and is also proposing to increase the complications in procuring power through Open Access route.

2.22.13 Shri. Ajay Baheti of Bhagwati Steel Casting Pvt Ltd stated that, tariff proposed for industries is very high and it shall not be approved by Commission. Further, in various regions of State, amount of subsidy given to consumer varies hence, it is requested that, all the consumers of the state shall get same subsidy

2.22.14 Alloy Steel Producers Association, Mahindra Sanyo and other steel industries further stated that, as per Regulation 91.5 of MYT Regulations, 2019, Commission shall determine tariff based on cost of supply depending on the voltage level at which supply is given the consumer and avoid tariff shock. Whereas, MSEDCL in the petition submitted tariff based on cost of supply only. Hence, Commission is requested to determine voltage wise cost of supply.

2.22.15 Shri. Ajay Baheti of Bhagwati Steel Cast Pvt Ltd stated that, tariff proposed for industries is very high and it shall not be approved by Commission. Further, in various regions of the State, amount of subsidy given to consumer varies. Hence, it is requested that, all the consumers of the State shall get same subsidy without any discrimination. Consumers or industries in Marathwada and Vidarbha gets higher subsidy. Further, it is suggested that, region-wise different distribution licensees can be formed as it is adopted in Gujarat.

Grinding Mills

2.22.16 Kolhapur Jilha Dalap-Kandap Girni Malak Sangh and other grinding mill consumers stated that, For Cereal Grinding mills in State, tariff hike will affect adversely as charges for grinding cannot be commensurately increased with increased electricity tariff rates. Many a times power supply is not available for required hours in rural areas still consumers have to pay such higher demand charges which is unfair. If tariff rates are increasing each year, power supply quality and supply hours also need to be improved.

Textile & Power-loom Industries

2.22.17 Sangareshwar Sahakari Soot Girni Ltd. and many other textile mill and power-loom consumers stated that, Tariff rates in Maharashtra are 1.5 times higher compared to other states. Hence rates for industrial consumers should be made as Rs. 5/ Unit as per the other States. FAC charges charged by MSEDCL are too high. If tariff hike as proposed is to be approved by Commission, then Commission should not approve the

FAC charges claimed by MSEDCL for at-least next one year.

2.22.18 Shri. Satish Koshti of Ichalkaranji Weaver's Co-Op. Association stated that, Energy charges should not be increased for next 5 years. Further, it is requested that, other category of consumers consuming electricity up to 300 units should be charged with residential tariff rates.

2.22.19 Shri. U. N. Nagane stated that, increase in cost of electricity has made textile business unviable. Hence, tariff should be fixed, and incentives should be given in ToD zone.

2.22.20 Many consumers of Power-loom industries stated that, instead of charging power-loom industry lower than normal industry, tariff charged is higher with no appropriate reason.

2.22.21 Maharashtra Rajya Kapus Sahakari Panan Mahasangh stated that, tariff hike has increased the production cost of Textile industries from 15% to 20%. The existing recession in the Textile Industry and such increase in Tariff, will lead to closure of Textile industries. Hence, Commission is requested to disapprove the higher increase in tariff.

Cold Storage Industries

2.22.22 Shri. Bipin Revankar of Maha Cold Storage Association stated that, MSEDCL proposed increase in fixed charges to increase recovery of revenue of fixed expenses. Further, MSEDCL proposed increase in energy charges of HT V(B): Agriculture – Others and LT IV(C): Agriculture Metered – Others. But for increase in energy charges, no justification or logic is given in the petition. The supply charges for these two categories are already higher than the Average Power Purchase Cost of MSEDCL. Hence, it cannot be stated that attempt to increase energy charges is for reducing the cross subsidy. Proposed increase in tariff will impose huge burden on consumers of these categories and will result into shutdown of the cold storage plants. Hence, Commission is requested to disapprove the increase in tariff for cold storage plants.

2.22.23 Vaishvik Foods Pvt Ltd stated that electricity tariffs as proposed by the MSEDCL are on higher side because of high generation cost of generation companies, abnormally high capital expenditure, inefficient management of MSEDCL and high distribution losses, etc. It should be improved to reduce the incremental tariff rates imposing burden on consumers. Further, it is submitted that, certain percentage of load should be allowed for allied use in pre-cooling plants and cold storage units for agricultural products processed or otherwise with allied activities.

Residential and other consumers

2.22.24 Shri. Pratap Hogade of Maharashtra Veej Grahak Sanghatana stated that, proposed

revenue gap is due to in-efficiency of MSEDCL. AEML-D has proposed reduction in tariff whereas, MSEDCL proposed increase in tariff rates. As both the licensees are in same State, the proposals of both these licensees are contradictory and confusing as well. Commission should compare the relative factors and accordingly direct MSEDCL.

2.22.25 Shri. Anand Vaman Kulkarni stated that, proposed increase in tariff is a burden on consumers. Hence, Commission is requested to disallow the proposed increase in tariff rates.

2.22.26 Prayas Energy Group stated that, out of the 15% increase in Revenue of Rs. 60,359 Crore proposed by MSEDCL about 8% is revenue to meet pending dues and past gaps with carrying cost, 4% is revenue to adjust costs due to increased sales and 3% is revenue due to increase in costs. Thus, the revenue to meet the past gaps has the largest share of the tariff increase required. Without this requirement, the tariff increase required for the control period is limited to 3% over 5 years as the rest of the additional revenue sought is to adjust revenue recovery to current levels due to increase in sales. Suggestion for a joint strategy to reduce cost and tariff impact is as follows:

2.22.27 **Issue of bonds or concessional loans for recovery of pending dues and regulatory assets:** MSEDCL should adjust the revenue from existing tariff with the Fuel surcharges recovered in the Last six months of FY20.

2.22.28 Levying of Pending dues and Regulatory Asset surcharge for recovery from consumers.

2.22.29 No requirement for further tariff increases beyond recovery of past dues: By reducing or saving the remaining cost excluding the revenue due to increased sales by efficiency measures such as reduction in distribution losses, reduction in proposed MSETCL Transmission costs etc.

2.22.30 Thus, a one-time increase of tariff of 5% for the first year on the control period would enable MSEDCL to recover the revenue.

2.22.31 Member of Janta Dal Palghar stated that, free power supply up to 200 units should be given, as given by Delhi Government.

2.22.32 Shri. Kiran Chavan and many others stated that, electricity tariff should be lowest for ZP schools in rural areas as funds given to these schools are already too less. Or free electricity supply should be given to these Schools.

2.22.33 Shri. Milind Kamble stated that, instead of tariff hike, MSEDCL should plan for increasing operational efficiency of the Company and revenue collection with proper

billing arrangements and reduction in excessive capital expenditures.

2.22.34 Adv. Shri. Anil Chavan of Grahak Panchayat Maharashtra stated that, fixed tariff should be made applicable for residential consumers in line with the Agricultural and Industrial consumers instead of slab-wise tariff rates.

Commercial

2.22.35 Shri. Mahendra Jichkar stated that, comparing to applicable tariff for non-domestic or commercial consumer category from FY 2014-15, it was observed that, tariff hike proposed for non-domestic consumers consuming electricity up to 300 Units per Month is very high whereas consumers like malls, large commercial complexes which consumes more power will get relief as tariff hike is lower. It is unfair with commercial consumers which are consuming power upto 300 units like small shops, daily need stores etc.

MSEDCL's Replies

2.22.36 MSEDCL states that the present Petition also includes the Regulatory Assets of Rs. 12,382 Cr. pertaining to previous period from FY 15-16. The Commissions while determining the tariff for FY 18-19 and FY 19-20 during Mid Term Review allowed gap of Rs. 20,651 Cr. However, recovery of only Rs. 8,268 Cr. was allowed over a period of two years and created Regulatory Assets of Rs. 12,382 Cr. which is to be recovered in future years. Thus effectively, the Tariff Petition covers 10 years of recovery. Further, the impact of the carrying cost arose due to delay in recovery of legitimate expenses is also included in the revenue gap. The Revenue Gap includes following:

Table 2-2: Revenue Gap Submitted by MSEDCL

Sr. No.	Particulars	Amount (Rs. Crs)
1	Previous Year Gaps FY 17-18 to FY 19-20	3,447
2	Impact of Change in Law and Review Order	5,015
3	Regulatory Assets	12,382
4	Carrying Cost	7,027
5	Future Years Gap (FY 20-21 to FY 24-25)	32,442
6	Total	60,313

2.22.37 In the above table, the revenue gap of future years i.e. Rs. 32,442 Cr. has emerged because of additional costs due to increase in cost of generation & transmission and are legitimate costs of MSEDCL. The increase in such costs is beyond the control of MSEDCL.

2.22.38 MSEDCL has also proposed a gradual increase in the fixed/demand charges.

Considering the period of five years of Control Period, demand charges for HT Industries will increase from Rs. 431/kVA/Month in FY 20-21 to Rs. 634 /kVA/Month in FY 24-25. The rise is around 50 paise per unit over a period of 5 years which is reasonable (around 10 paise per unit per annum). This recovery through tariff is as per the philosophy followed by the Commission that recovery of fixed costs should be done through fixed charges. Further for Single shift HT Industrial consumers MSEDCL has proposed fixed/demand charges at 60% of approved fixed/demand charges. Hence for such single shift consumers, in fact there is a reduction in fixed/demand charges. The increase in Fixed/Demand Charges has been proposed in line with the recommendations/discussions of various committees formed by Ministry of Power such as Committee on Simplification & Rationalization of Tariff formed on the advice of Ministry of Power (MoP), Government of India to examine issues relating to amendments in the Electricity Rules, 2005 as well as in Consultation Paper on issues pertaining to Open Access by MoP issued in August 2017.

2.22.39 MSEDCL further states that tariffs in most states are determined yearly whereas MERC follows the Multi-Year Tariff consisting of 5 years of control period. If the year on year tariff hike for other States is considered, then MSEDCL's year-on-year tariff hike may be reasonable and not steep. In some States like Gujarat, the tariff does not constitute FAC (Fuel Adjustment Charge) which is around Rs.1.61/kWh (for FY19-20). Considering the revision of tariffs every year in such States the overall tariff hike proposed by MSEDCL for the entire Control Period may become at par.

2.22.40 The standalone tariff proposed by MSEDCL for certain categories may appear to be higher than other states. But while doing so it is necessary to consider regulatory and economic framework of the Licensee in a State, consumer mix, quality of supply which affects the tariff considerably.

2.22.41 While comparing tariff of neighboring states following contributing factors need to be considered:

- Differences in power generation and power purchase expenses considering the diversity in power generation sources and available power resources (thermal /Hydro /nuclear /NCE).
- Variation in power purchase cost due to fuel sources and fuel availability (pit-head Stations).
- MSEDCL distributes electricity in the largest geographical area in India as compared to other Distribution Utilities.
- Higher Agriculture consumer base with highly cross subsidised tariff

- Incentive Structure followed by the DISCOM/Commission.
- Geographical diversity of the State.
- Diversity in consumer mix and consumption pattern.

2.22.42Considering the above, it is not appropriate to compare the stand-alone Tariff of MSEDCL with the Tariffs of other State Distribution Utilities.

2.22.43MSEDCL further states that the tariffs are proposed after considering the impact of kVAh. There would be no separate impact of kVAh billing to the consumers. Rather, if kVAh based billing is not considered, the consumer tariffs would have increased further by 2%-3%. Thus, tariff determined in kVAh is in fact lesser than kWh tariff by the average power factor.

Commission's Analysis & Rulings

2.22.44The Commission has analysed in detail MSEDCL's proposal for power purchase and other costs before determining the Tariff revision in this Order. It has allowed prudent power purchase and O&M expenses as against those proposed, which has helped to maintain the level of Tariff increase over the 4th Control Period.

2.22.45The Commission verifies the consumer mix of each Distribution Licensees and tries to follow the Tariff philosophy of ACoS ± 20%, to the extent possible, while determining cross subsidy for various consumer categories and accordingly notifies Tariff accordingly.

2.22.46As suggested by Prayas, the Commission has included revenue from FAC while projecting revenue from existing Tariff. The Commission has dealt with category-wise tariff in Section 8.11 of this Order.

2.22.47As far as Prayas Suggestions of issuing Bonds, the Commission notes that issuing Bonds may have certain saving of interest cost depending upon the market conditions, but MSEDCL would be still eligible for claiming working capital at interest rate specified under the MYT Regulations. Hence, it is up to MSEDCL to take this issue further if it is beneficial.

2.23 Fuel Adjustment Cost

Objections/Suggestions

2.23.1 Shri. R. B. Goenka of Vidarbha Industries Association (VIA) stated that, present practice of recovery of FAC is to collect the FAC "n"th month based on computation of FAC amount of "n-2th" Month but charged on the unit consumed on "n" Month.

This Methodology is creating a big uncertainty in recovery amount. There is always over recovery or under recovery due to change in consumption in "n"th Month and the over recovery or Under Recovery is again carry forward for future months FAC along with carrying cost if any for under recovery. Again, there is possibility of carry forward recovery in "n-2th" Month because it is based on the computation of n-4th Month with carrying cost. Such Methodology is giving rise to uncertainty and large variation in FAC charges ranging from Rs. 0.10 to 1.00 per kWh. VIA suggested that FAC for N-2th month should be calculated and billed in Nth Month but should be based on consumption of N-2th Month.

2.23.2 Shri. R. A. Chavan, MLA of Mumbai Region stated that FAC are so high resulting into increase in tariff. It should be reduced.

MSEDCL's Replies

2.23.3 MSEDCL stated that the computation methodology of Fuel Adjustment Charges and levy of the same is in accordance with the MERC Tariff Regulations as issued by the Commission from time to time. The relevant extract of MERC Tariff Regulations 2019 is reproduced below as:

2.23.4 "10.2 The aggregate gain or loss to a Distribution Licensee on account of variation in cost of fuel, power purchase, and inter-State Transmission Charges, covered under Regulation 9.1, shall be passed through under the Fuel Adjustment Charge (FAC) component of the Z-factor Charge (ZFAC), as an adjustment in its Tariff on a monthly basis, as specified in these Regulations and as may be determined in orders of the Commission passed under these Regulations, and shall be subject to ex-post facto approval by the Commission on a quarterly basis……."

2.23.5 MSEDCL levies the FAC as per the methodology provided by Commission in its MYT Regulations which get vetted by the Commission on monthly basis.

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Commission's Analysis & Rulings

2.23.6 Issue of allowing billing of FAC determined for the "n^{th}" month on the consumption of the "n-2^{th}"month has been addressed by the Commission in its MYT Order dated 3 November, 2016 in Case No. 48 of 2016 as follows:

> *"Regarding changing the current methodology and allowing billing of FAC determined for the "n^{th}" month on the consumption of the "n-2^{th}"month, electricity supply being an ongoing business, consumers are regularly both added and exit from the system. Under the principles of ongoing business in the electricity sector, the impact of truing up and associated carrying costs as well as FAC is recovered only from consumers who are receiving supply at the time of such recovery, and is not recovered on a one to-one basis from the same*

consumers as were receiving supply at the time the costs were incurred. Therefore, such change in the methodology for billing FAC is not tenable."

2.23.7 FAC mechanism envisages levy / refund of charges if power purchase cost undergoes a change from that approved in the Tariff Order. Per unit rate of power purchase is dependent on power purchase quantum, source mix and rate of each source. The Commission is scrutinising all FAC computation of Distribution Licensee on post facto basis. FAC mechanism allows pass through of variation in power purchase cost without waiting for next tariff revision. This minimises the impact of annual tariff revision. However, the Commission notes that the impact of frequent variation in rate on account of FAC needs to be minimised to the extent possible. Multiyear tariff frame work is also a method for achieving a consistency in Tariff. In Order to address this issue to the extent possible, the Commission has slightly modified FAC mechanism as explained in Section 8.5.9 to 8.5.15 of this Order.

2.24 Tariff for EV Charging Stations

Objections/Suggestions

2.24.1 Shri. Prakash Bedekar stated that increase in tariff for HV/LV electric vehicle charging stations will result in increase in cost of recharging the electric vehicle batteries and thus discourage the consumers interest to move towards EVs.

2.24.2 Shri. Sujit Jain stated that the revenue projected and allocated to HT and LT Electric Vehicle (EV) Charging Station sector is almost constant. The revenue projection EV Charging Station for the sector should be on an increasing trend rather than a constant trend.

2.24.3 Shri. Sachin More stated that there should be clear distinction made between public charging points and private charging points and the same should be treated differently while being evaluated for allocation of tariff.

MSEDCL's Replies

2.24.4 For proposed tariff for EV charging stations, MSEDCL stated that, India is looking towards an all-electric car fleet by 2030 with an express objective of lowering the fuel import bill, running cost and reducing the carbon footprint. The government vision of having "All Electric Vehicle By 2030" is an ambitious and humungous task, and is going to have an immense impact on the economy as well as the welfare of the citizen of this country. On similar lines, Maharashtra being one of the progressive states, an upsurge is expected in the usage of Electric vehicles.

2.24.5 In light of the expected growth in EV ownership, unique charging attributes, and resulting effects on electricity demand, very soon EV charging shall become significant type of load to warrant special tariffs. Considering very low penetration in Electrical/Hybrid vehicles, it is necessary to provide incentives in tariffs to kick start this nascent technology and boost environment friendly electric and hybrid vehicles.

2.24.6 The tariffs for Electric Vehicle Charging Station is being proposed by considering the revenue requirement and recovery of revenue gap. It is pertinent to note that the proposed revision in EV Charging Stations is in the range of 3-6% which is bare minimum requirement for covering the inflationary changes and proposed revenue gap. Even after proposed revision, tariffs of Electric Vehicle (EV) Charging Stations will remain close to average cost of supply (ACOS).

2.24.7 Considering the actual growth of the Electric Vehicle Charging Stations and their consumption, MSEDCL shall review the tariffs for Electric Vehicle Charging Stations during the next Mid Term Review

Commission's Analysis and Rulings

2.24.8 The Commission notes that the Government of Maharashtra (GoM) has notified the Maharashtra Electric Vehicle Policy, 2018, with an objective to promote sustainable transport system along with other policy objectives. One of the strategic drivers for the Policy is promotion of creation of dedicated infrastructure for charging of EVs through subsidization of investment.

2.24.9 Details of applicability of this Category is provided in the Tariff Schedule for the respective years. It is further clarified that consumers are allowed to charge their own Electric Vehicle at their premises with the Tariff applicable to such premises falling under the respective consumer category. Further, the Commission has clarified that Tariff of EV Charging Stations shall also be applicable to Battery Swapping Stations for Electrical Vehicles.

2.25 Time of Day tariff

Objections/Suggestions

2.25.1 Prayas Energy Group – Institutional Consumer Representative stated that MSEDCL's proposal does not adequately capture the impact of load variation due to renewable energy. To account for such changes, it is suggested that:

- Neither an incentive nor penalty is levied for day-time consumption from 0900 hours to 1700 hours (solar hours)

- The dis-incentive for consumption in the evening peak should be higher than the night-time incentive

Considering this, suggested ToD proposals are as follows:

Table 2-3: Suggested ToD Tariff by Prayas

Existing consumption slab (kWh)	Existing ToD charge (Rs./kWh)	ToD charges (Rs./kWh) proposed by MSEDCL	Proposed consumption slab (kWh)	PEG proposal
2200hrs – 0600hrs	-1.5	-1.5	2200hrs – 0600hrs	-1.5
0600hrs – 0900hrs & 1200hrs – 1800hrs	0	0	0600hrs – 0900hrs	0.75
0900hrs – 1200hrs	0.8	0.6	0900hrs – 1700hrs	0
1800hrs – 2200hrs	1.1	1.5	1700hrs – 2200hrs	1.75

2.25.2 It is further stated that the Commission has already acknowledged stress months as April, May, October and November since these were the months when un-banking of energy was not allowed for RE based open access as per the MERC Distribution Open Access Regulations 2016. For the stress months, it has been suggested that an additional charge of 50 paise/kWh be levied for consumption in the ToD slots of 0600hrs-0900hrs and 1700hrs-2200hrs. Also, given the low load in monsoon and higher availability of wind energy in the same period, an additional incentive of Rs.0.25/kWh is suggested in the night-time ToD slot of 2200hrs-0600hrs for the months of July and August.

The proposed seasonal variation in ToD rates is as follows:

Consumption slab (kWh)	January to March, June, September, December	April, May, October, November	July, August
2200hrs – 0600hrs	-1.5	-1.5	-1.25
0600hrs – 0900hrs	0.75	1.25	0.75
0900hrs – 1700hrs	0	0	0
1700hrs – 2200hrs	1.75	2.25	1.75

2.25.3 The seasonal variations in ToD rates can be revised based on implementation experience and insights from advanced power system modelling tools which can

simulate system operation. It is preferred to introduce seasonal variation as part of MYT process over the MTR as considering the significant increase in RE generation in control period, introduction of such a tariff could facilitate better load-supply management, generate savings in power procurement cost of MSEDCL and fuel surcharge for its consumers. Further, such tariff design helps consumers in better load management to avail incentives.

2.25.4 Commission is requested to direct MSEDCL to propose a plan for adoption of ToD metering for all consumers (except agricultural consumers) with connected load above 10 kW as it will be crucial, in the coming years, to manage early morning and evening peaks and to provide proper tariff signals.

2.25.5 Shri. Dhairyashil Bhosale of Manufacturer's Association of Satara (MAS), Shri Gopikishan Kabra and others stated that the overall increase in ToD charges being unjust, the ToD charges levied on the time slot of 1800 hours to 2200 hours, which has been increased from Rs.1.1/kWh to Rs.1.5/kWh should not be allowed. Instead of the proposed, it should be reduced to Rs.1.15/kWh and then gradually increased over the next few years.

2.25.6 M/s Haranai Sahakari Soot Girni Ltd. and other textile industries requested the Commission not to increase the overall ToD tariff as it will put additional burden on the textile industries. It has also been stated that in case of power outage, the consumption should be charged as per the incentivised rate of ToD system.

2.25.7 Shri U. N. Nagane stated that, the textile industry is already suffering from higher losses due to increased electricity tariff rates and variable rates of raw material. Increase in ToD charges will further aid in making the textile business unviable to operate. Hence, it is requested not to levy ToD charges but instead, incentives should be provided.

2.25.8 M/s Maharashtra Veej Grahak Sanghatna Ltd., Shri Sanjay Prahakar Patil and others stated that as the billing unit is proposed to be changed from kWh to kVA, the dimension of the existing tariff slab of 0 – 20 units consumption should be changed accordingly to 0–22.5 kVA as the new tariff slab. And hence, the consumers belonging to 0-22.5 kVA slab (i.e. new consumer slab) shall be exempted from ToD charges.

2.25.9 Shri. Arvind Pradhan of Jawaharlal Nehru Port Trust (JNPT) stated that there should be clarity given by MSEDCL regarding applicability of ToD charges as the billing unit is proposed to be changed to kVAh basis from kWh basis, resulting into removal of PF incentive. Further, clarity is required as to whether any reprogramming would be necessary in ABT meters for measuring the consumption.

2.25.10 Shri. Bipin Kumar Chaudhary of Sunflag Iron & Steel Ltd., INOX Air products Pvt. Ltd., Shri Vishwanath Patil and others stated that MSEDCL has power in surplus as claimed by the latter. In order to regulate the excess power generation during the night-time, MSEDCL is encouraging increased consumption during night-time. In line with the same, MSEDCL should offer ToD incentive at night for the time slot 2200 hours to 0600 hours. It is stated that this incentive should be at least made available to HT industries like the steel industries so that off-peak demand can be utilised. It has been requested that the ToD incentive for the said time slot should be increased from Rs.1.5/unit to Rs.2.5/unit. This will also be beneficial for MSEDCL.

2.25.11 Shri Pankaj Patil from Polygenta, Shri C. G. Ramakrishnan, Shri Amit Kakkar and others stated that if the proposed ToD charges are approved, the net ToD rebate will get reduced from 22 paise/unit to 18 paise/unit which is not justified. It has been further stated that while MSEDCL is trying to justify revision in ToD tariff on account of rise in RE generation, it has failed to provide any justified rationale for increasing the ToD tariff.

2.25.12 Shri. Ashok Patil of Cold Storage Welfare Association stated that the ToD tariff should be made applicable for HT 5B consumer category as well.

2.25.13 M/s Maha Cold Storage Association stated that, ToD tariff is designed to promote Demand Side Management (DSM) by increasing consumption during off-peak hours and reduce it during peak hours. But it is not made applicable to Agriculture- Others category of consumers. Hence, Commission is requested to make ToD tariff applicable for Agriculture – Others consumer category as well.

2.25.14 M/s Mahindra Sanyo stated that, existing level of ToD rate for D zone be continued and existing incentive for A zone shall be increased from Rs. 1.5/Unit to Rs. 2.5/Unit as steel industries are operating for 24 hours continuously and in a way helping MSEDCL to consume power in off-peak hours.

MSEDCL's Replies

2.25.15 MSEDCL stated that the existing TOD tariff concept, rebate or penalty is same in all months irrespective of load pattern, surplus & shortfall in availability. Further, due to various Govt. of India policies to promote RE generation and as per the RPO Targets set for Utilities by Commission, tremendous rise in RE generation particularly in solar is expected during day-time. The solar generation has typical shape of inverted hyperbola. There is no or very less generation during specific time period of a day; particularly during 06:00 to 09:00 and during 15:00 to 19:00 Hrs. It is thus necessary to incentivize consumers to shift the demand pattern by relooking the TOD tariffs.

Considering the demand pattern and expected Solar Generation, MSEDCL has proposed revision in ToD tariff /rates.

2.25.16MSEDCL also stated that objective of increasing the ToD Rebate, as approved in Case No. 19 of 2012, from 100 paise/kWh to 250 paise/kWh on shifting of day consumption to night had not been achieved as envisaged. The additional benefit was being enjoyed by a few consumers, and its burden was spread on the other consumers. Considering this, Commission in its MYT Order in Case No. 121 of 2014 had approved the ToD Rebate as Rs. 1.50 per unit. MSEDCL has proposed the same in the present Petition based on historical experiences of day consumption not shifting of night.

Commission's Analysis & Rulings

2.25.17The Commission apricates suggestion of Prayas and MSEDCL's justification for needs of changing ToD Tariff Structure. The Commission has analysed this issue further in Section 8.24 of the Order. The Commission at present is retaining the existing ToD tariff structure but may make changes at the time of MTR when more data is available. At that time the Commission may introduce seasonal ToD Tariff also.

2.25.18The Commission also suggests to Distribution Licensees to include ToD features in three phase meters so that all new connection would have these facilities and need not be replaced if in future, depending upon feasibility, it is decided to introduce ToD tariff structure to 10 kW and above consumers.

2.26 Tariff Re-categorisation

Objections/Suggestions

2.26.1 Woodland Harmony Society Electrical Committee, Shri Prakash Bodus and Shri Uttam Patil stated that all not-for-profit entities (residential houses, co-operative societies, Govt. run schools, ZP schools, Govt. run healthcare centres, community centres like ashram shala, anganwadi, connections for farm pumps, etc.) must be categorised as Residential consumer.

2.26.2 Pimpri-Chinchwad Co-Op. Housing Societies, Shri Sarvesh Javadekar and many other members of housing societies of Pune stated that treating STP plants under Commercial Tariff category will impose huge burden on housing societies which are running STPs in their premises with the intent of preserving environment and not with the intent of generation of revenue. Hence, applying commercial tariff for STPs will be unfair. It is requested that, these plants shall be treated under LT X (B) consumer category.

2.26.3 Shri. A. M. Kulkarni of Mukand Ltd., Shri. K. Durgarao of ISMT Ltd. Shri. Vipin Jain

of Mahindra Sanyo and others steel industry consumers requested the Commission to introduce a separate category for Electric Arc Furnaces i.e. EHV industries and to determine lower Tariffs as compared to other Industrial Categories from existing Tariff because by design the load is highly fluctuating in an arc furnace. The load factor of steel industries is low, and it is required to keep demand 50 to 70% of the higher than actual requirement. Hence increase in demand will adversely impact steel industry, and 40% process cost is required for electricity. Hence, it is requested to create a separate category for steel and alloy industries with lower tariff rates as in other states like Chhattisgarh, Madhya Pradesh, Andhra Pradesh, Telangana, etc. which have defined steel Industry as a separate category with lower tariff rates.

2.26.4 Shri. Ansar Bangi of Milk Producers Welfare Association and cattle farm consumers stated that, in Tariff Order 121 of 2014 dated 26th June 2015, the dairy farmers were denied the application of agricultural tariff due to strict interpretation of the meaning of Cattle Breeding and consequently, LT-II commercial category tariff was applied to these consumers. As dairy or cattle farming is dependent and related to agricultural sector, it is requested that consumers of Dairy Farm/ Cattle farm shall be included in the LT-IV(C): LT-Agriculture metered - Others consumer category.

2.26.5 Shri B. R. Mantry stated that in housing complexes, residential tariff is applicable for water pumping and lighting of the passages and foyers. It has been requested that the same should be converted into commercial category or Public Service – Residential or PWW.

2.26.6 Shri R. K. Rajendran of Jawahar Sahakari Soot Girni Ltd. stated that a separate tariff category should be established for Soot Girni consumers as it is a business that operates round the clock and provides mass employment.

2.26.7 Shri. Omprakash Daga of Parbhani Jilha Ginning Pressing Association requested the Commission to introduce a separate category for Agriculture based industries as their immediate raw material is from the agricultural fields. If this category is introduced as a separate consumer category with lower tariff rates, it will result into lower process cost and farmers can get more profits for the raw material.

2.26.8 M/s Rubicon Research Pvt Ltd. and Shri Hemant Kapadia stated that MSEDCL has proposed to include all R&D units under the commercial tariff category. This might serve as a penalty levied on R&D units for carrying out its activity. Hence, Commission is requested to categorise all R&D units into a new category. It is suggested that tariff applicable for R&D units of industries should be same as that of applicable tariff category of parent company irrespective of the location of parent company.

2.26.9 Secretary of Kolhapur Jilha Dalap-Kandap Girni Malak Sangha Ltd. and many other grinding mill consumers stated that the flour mills or grinding mills situated in rural areas do not get un-interrupted power supply. Also, these mills operate in single shift for 8-12 hours in a day, hence fixed charges/demand charges are too high. In line with increasing electricity tariff rates, tariff for grinding cannot be increased in proportion as it will impose burden on poor or middle-class consumers. Hence, it is requested that the grinding mills shall be categorised separately with lower tariff rates and if not, the same should be considered in the AG category of tariff structure.

2.26.10 Seafood Exporter Association of India stated that, seafood/meat processing industries need to be considered as Agriculture sector and cold storage industries should not be considered as processing industries.

2.26.11 Shri. Mahavir Kumar Jain, Shri. Vinay Waze and others stated that students' hostels should be categorised under public services / residential tariff category as tariff rates for hostel are made for residential purpose only where students or working men/ women can stay.

2.26.12 Shri. Avinash Chauhan stated that the religious places like temples, mosques, churches, etc. should be given a fixed slab of tariff instead of temporary supply contracts of 2 years.

2.26.13 MLA Shri R. A. Chavan stated that vagueness in consumer tariff category is causing prejudice to the consumers and hence, directions should be given to MSEDCL to improve the applicability and scope of various categories.

2.26.14 Shri Shirish Thakkar of Gurudev Siddha Peeth stated that Commission has created a separate category for educational institutes, hospitals and spiritual organizations as HT IX A Public Service (Govt.) and HT IX B Public Service (Others). Creating tariff categories based on ownership i.e. government owned and private owned is not a fair practice as tariff applicable for the sub-categories based on ownership are different. So, it is requested to set consumer categories purely considering consumers instead of ownership.

2.26.15 Shri. Suhas Ambade of Arshiya Ltd stated that, there are many ware houses and godowns for which tariff applicable is as per Non-residential category. As per SEZ Act of Central Government, Ware houses and Godowns are categorised as FREE TRADE WARE HOUSING ZONES (FTWZ). Further, GoM has notified a directive for applying FTWZ as per industrial tariff. Hence, Commission is requested to apply tariff of HT Industrial tariff to Ware houses and Godowns.

MSEDCL's Replies

2.26.16 For re-categorisation of tariff, MSEDCL stated that, it strictly follows the tariff structure approved by the Commission with regard to applicability of tariff to different consumer categories. MSEDCL reiterates that it has taken necessary steps to simply the tariff structures over the years. As the number of consumers have increased, the type of activities have also become diverse and hence the categorization of tariff has become vast in nature. Further, as per the Ministry of Power's Committee for Tariff Simplification and Tariff Rationalization, MSEDCL has already suggested measures in the present petition to reduce number of tariff sub-categories and improve transparency so as to possibly enhance operational performance.

2.26.17 Commission in its past tariff Orders has explicitly spelt tariff applicability to various usages. With growth in economy, new usages pattern have emerged, which require clarification and confirmation of Commission. Though the applicability specified by the Commission is representative, MSEDCL in its Petition has prayed for confirmation on categorisation of specific usage such as Day Care Centre for senior Citizens under residential category, Water ATM (RO/UV/UF) Water Purifier Plants operated by Gram panchayat or local body under Public services otherwise Non-residential tariff, Godowns & Warehouses in Non-Residential category, Common facility Centre established under the cluster development programme of Central/ State Government under industrial category, Packaged drinking water plants under industrial category, Lighting for religious exhibitions & gatherings etc. under Temporary Supply Religious category with detailed justification.

2.26.18 Additionally, MSEDCL has proposed Modification in Tariff Applicability. It is proposed that for large Construction projects, initially supply will be provided under Temporary Supply Others (TSO), after 2 years the supply will be regularized under Non- Residential category. Further, Only Sewage Treatment Plants and common effluent treatment plants of commercial establishments and of individual industry within its premises will be charged at respective tariff category, others shall be categorised under Public Water Works and Sewage Treatment Plants category. MSEDCL also mandated validity of Certificate for IT & ITES units as a basis of application of industrial tariff. Public Sanitary Conveniences are proposed to be categorised under Public services (Other) category.

2.26.19 Hence, MSEDCL requested the Commission to approve the tariff categorization /modification as proposed by MSEDCL.

2.26.20 In case of separate category for steel/ ferro alloy industries, MSEDCL stated that in the MTR Order, Commission had ruled that the Steel Plant operating with electric arc furnaces shall be charged with 75% of applicable demand charge for HT Industries.

Therefore, there is no need to provide a separate category for power intensive ferro alloys and steel industries.

2.26.21 Regarding R & D units, MSEDCL stated that in the MTR Order, Commission has observed that the applicability of Standalone Research and Development units has already been covered under 'LT II Commercial' and 'HT II: Commercial' Category in the Tariff Schedule, which covers all class of Labs or Units. Further, Research and Development units are covered in LT - Industry – General provided such facilities are situated within the same industrial premises and supplied power from the same point of supply. Therefore, MSEDCL stated that the R&D Units/Slabs are rightly covered and there is no need to change the category for R&D Units/Labs.

2.26.22 Regarding the consumer's query for re-categorization of warehouses and godowns to Non-Residential category, MSEDCL stated that presently Commission has not explicitly mentioned usages for godowns and warehouses in any category. Warehousing means art of storage goods, making maximum use of available space for storage of goods (Raw and Finished). Godowns and warehouses are third party logistic providers and meant for temporary storage of goods. The facilities of godowns and warehouses are leased by owner to any company, who intend to store the goods near to its demand centre. Hence, it will be appropriate to levy Non-Residential/commercial tariff to warehouses and godowns

Commission's Analysis & Rulings

2.26.23 Issue of Tariff categorisations has been dealt with in Section 8.11 of this Order.

2.27 Cross Subsidy and Cross Subsidy surcharge

Objections/Suggestions

2.27.1 Prayas Energy Group stated that MSEDCL has used the formula prescribed in the National Tariff Policy, 2016 to arrive at the applicable CSS. However, MSEDCL has not levied the ceiling of 20% of the applicable tariff which is also prescribed in the tariff policy and should be prohibited. The Commission, in Case No.195 of 2017 has dismissed MSEDCL's proposal of approving CSS based on National Tariff Policy formula without the proposed ceiling. Similarly, MERC Distribution Open Access Regulations 2019 also do not specify any alternate methodology for estimation of CSS. Considering the past treatment given by Commission for estimation of CSS, MSEDCL's proposal regarding determination of CSS should be rejected. In order to provide certainty of CSS to consumers and to ensure incentives to increase efficiency for MSEDCL, it is proposed that:

- CSS should be fixed in nominal terms at Rs.3/unit for FY21 and the same should be constant for the entire MYT duration
- A progressive reducing trajectory for CSS can be defined for 3 – 5 years

2.27.2 Adv. Shri. Anil Chavan of Grahak Panchayat Nashik, Shri. Gautam Banerjee, Shri. Arun Bhargave and others stated that some of the consumer categories are subsidised by the MSEDCL due to which additional burden is imposed on remaining consumer categories in the form of Cross Subsidy Surcharge. It has been stated that such surcharges should not be imposed on other consumers and the burden of the subsidy should be taken care by MSEDCL itself. It is suggested that MSEDCL should be directed to conduct a financial audit and provide the profit-loss statement for the subsidy and CSS.

2.27.3 M/s Vidyut Urja Equipments, Shri Shantaram Kadam of Sangareshwar Sahakari Soot Girni Ltd. and others stated that while the Commission is requested to reject the proposed increase in Cross Subsidy Surcharge by MSEDCL, most of the consumers are requesting to completely remove the levy of cross subsidy surcharge on different categories of consumers. If removal of CSS is not approved by the Commission, at least Commission should reduce the surcharge gradually over the next few years. It was suggested to prepare a roadmap for reduction in CSS.

2.27.4 M/s Owens Corning (India) Pvt. Ltd. stated that considering the provisions of the Electricity Act 2003 for development of power market and competition in electricity sector, CSS should be brought to such a level that adverse effect of competition in electricity sector is avoided.

2.27.5 Shri. Pravin Joshi of MetalMan Auto Pvt. Ltd., Shri. Manish Tyagi of Hero Future Energies Pvt Ltd. and others stated that the Commission should approve CSS with the progressive reduction in CSS as per the provisions in Electricity Act 2003 under Section 42(2). Further proposal of MSEDCL of removal of 20% capping for CSS should be rejected by the Commission and the CSS should be levied as per the principle followed by Commission in MTR Order. Commission is requested to direct MSEDCL to prepare a roadmap for reduction in CSS.

2.27.6 Shri. Anand Prakash Bindal of Ultratech Cement Ltd. stated that the CSS proposed for the category of consumers should not be higher than 20% of the applicable base tariff.

2.27.7 Shri. R. B. Goenka of Vidharbha Industries Association stated that cross subsidy reduction trajectory is not yet proposed even though the issue has been raised multiple times. Also, cross subsidy calculation by MSEDCL for open access consumers is totally

misplaced and computation of ABR should be based on actual revenue from the respective category. Proposed tariff has increased cross subsidies to unsustainable limits instead of reducing the same. Hence, it is requested to decrease the CSS with the trajectory of reduction in CSS in the control period.

2.27.8 Shri. Ashok Chandak stated that the burden of cross subsidy for subsidizing the consumers of AG category falls on the consumers under the jurisdiction of MSEDCL only which is a clear discrimination. The subsidy burden needs to be proportionately shared with other distribution licensees with respect to the quantum of energy input.

2.27.9 Shri. Manish Tyagi of Hero Future Energies stated that the proposed increase in CSS is 63% for HT consumers and 80% for EHV consumers which is too steep resulting into tariff shock. The APTEL has decried any exorbitant hike in tariff and charges by licensees as mentioned in the rulings of Appeal of Shankarbhai Dhavlu Waghmare Vs JERC for UT Goa in APTEL 41, 2012 and electricity department vs JERC in APTEL 111, 2012 and Kashi Vishwanath Steel vs UERC in APTEL 52, 2006. This steep increases in the Open Access landed cost for wind power consumers will result into under cutting competition among wind power generators and eliminate the ability of wind power generators to earn the minimum tariff to do open access. Further, MSEDCL's proposal to allow computation of CSS using the formula specified in National Tariff Policy without applying any ceiling shall be rejected by Commission and the Commission should continue the principle it followed in the previous tariff orders by taking the minimum of actual CSS and 20% of the tariff applicable to the category.

2.27.10 Shri. Sagar Durgavale of Green Energy Association (GEA) requested the Commission to consider restoring concessional CSS for RE open access transactions in view of the significant changes introduced by the amendments to MERC(DOA) Regulations, 2016 and MERC(TOA) Regulations, 2016 by which the open access charges have been significantly increased and banking facility has been effectively withdrawn from RE open access consumers. Hence, the Commission is urged to determine and approve the CSS in such a manner that it reflects a progressive reduction in cross subsidies as mandated under the Act.

MSEDCL's Replies

2.27.11 Regarding applicability of Cross Subsidy Surcharge. MSEDCL submits that as per the provision of Section 42 (2) of the Electricity Act 2003, the cross-subsidy surcharge needs to be based on the current level of cross subsidy. Accordingly, the consumers who opted for Open Access need to be charged for the compensation of current level

of cross subsidy which prevailed during that period and in order to avoid the burden of the same getting passed on other consumers who are with the Distribution Licensee.

2.27.12 Further, under sub – section (2) of Section 42 of the Act, National Electricity Policy as stipulated by the Central Government provides the formula for calculating surcharge. The Central Government notified the revised National Tariff Policy on 28th January, 2016 and has revised the "Surcharge Formula". The CSS computed in accordance with the NTP Formula represents the current level of cross subsidy. However, The Tariff Policy 2016 restricts Cross Subsidy Surcharge at 20% of the consumer tariff. The Hon'ble Commission in MTR Order dated 12th September 2018, has approved the CSS equal to minimum of the two values: Computed CSS and 20% of tariff. This has resulted in lower CSS applicable than current level of cross subsidy leading to incomplete recovery of Cross Subsidy from Open Access consumers. For last 3-4 years, ceiling on CSS resulted in additional financial burden of ~Rs. 1,600 Cr.

2.27.13 Such revenue deficit due to lower CSS approved is being passed on to the consumers of the MSEDCL during true up exercise resulting in substantial delay in revenue realisation which comes only after true up exercise and also further increase in tariff of MSEDCL's consumers at large, despite not being at any fault. In the process, OA consumers unduly get benefited due to less cross subsidy surcharge. As Industrial consumers are subsidizing consumers, the more impact gets loaded onto the Industrial category, raising its tariff further.

2.27.14 Consultation paper by MoP on issues pertaining to OA on 24th August 2017 also advocates the levy of ceiling on CSS only when the tariffs are within ±20% of ACoS. Therefore, in order to avoid burden on other consumers of MSEDCL, it has requested to consider the current level of cross subsidy as cross subsidy surcharge without any ceiling.

Commission's Analysis & Rulings

2.27.15 The Commission has determined Cross Subsidy Surcharge as per Tariff Policy formula with 20% ceiling. Detailed computation is in Section 8.29 of this Order.

2.28 Open Access

Objections/Suggestions

2.28.1 Shri. Pravin Joshi of MetalMan Auto Pvt. Ltd., Shri. Gaffar Khan of R.M. Dhariwal HUF and many others stated that processing fees and operating charges should be reduced considering the lower Capacity Utilization Factor (CUF) of RE power plants

as it results in high impact of such charges on per kWh basis on RE open access transactions.

2.28.2 Shri. Sagar Durgavale of Green Energy Association (GEA), Shri S. K. Shivraj and others requested the Commission to consider the fact that costs incurred by MSEDCL in digitalisation and automation of the systems are one-time costs and on account of such digitisation and automation, MSEDCL's operating costs have in fact reduced significantly. Hence, MSEDCL should not be permitted to seek an increase in administrative charges as the benefit of reduced operating charges must be passed on to the consumers.

2.28.3 Adv. Shri Anil Chavan stated that clear and supportive regulatory framework should be made for open access consumers and consumers using captive power plants for the self-consumption without imposing additional charges on them resulting into financial burden.

2.28.4 Shri. Vinayak Salunke of Thyssenkrupp Electrical Steel (India) Pvt. Ltd. stated that energy intensive industries are availing power from open access due to lower tariff than the tariff by MSEDCL. To eliminate the possibility of open access power purchase in Maharashtra, tariff proposal for increase in additional surcharge by 6.4% and increase in CSS by 80% on quantum of power purchased from open access will make open access unviable and will compel consumers to buy power only from MSEDCL. Further, cross subsidy also needs to be eliminated. Penalizing open access by way of additional surcharge disrupts healthy competition.

2.28.5 Shri Sharad Tarade from Ajeet Seeds requested Commission to define electricity duty calculation method for open access and demand charges to be calculated using saved demand instead of maximum recorded demand of generator and also include ToD tariff.

2.28.6 Shri. Atul Shah of MITC Rolling Mill Ltd. stated that regulatory provisions are stringent for open access which should not be the case and the procurement of power from open access should be promoted to avail lower power procurement cost. It has also been stated that application fees for OA for RE should be lower than that for conventional sources as this will greatly boost the renewable sector.

2.28.7 Shri. Lalit K. Dwivedi of Pudumjee Paper Products Ltd stated that, open access charges proposed by MSEDCL are nearly equal to the power purchase cost of MSEDCL. Such high OA charges for conventional and RE OA transactions will kill the Open Access mechanism. Hence, Commission is requested to retain the present applicable provisions for Open Access.

2.28.8 M/s. K. Shivraj. Shri. Gaffar Khan of Dhariwal Industries Pvt Ltd and many other Open Access consumers stated that, increase in processing fees for Open Access is not justified by MSEDCL. MSEDCL cannot be permitted to have an increase in administrative charges since benefits obtained from reduced operating charges should be passed on to consumers. Further, Open Access charges proposed by MSEDCL are very high which are not affordable for OA consumers. Already Open Access charges are increased almost 3 times comparing to FY 2014-15. Further increase in OA charges will impose huge burden on consumers and it will violate provisions made in EA 2003.

2.28.9 M/s Mahindra Sanyo stated that, MSEDCL accepted that its capacity is stranded not only due to OA but due to increased RE power as well. Hence, it is necessary to analyse that up to what extent MSEDCLs capacity is stranded due to OA. Before analysing the actual effect, it is unfair to levy additional surcharge on OA with the said justification as mentioned in petition.

MSEDCL's Replies

2.28.10 With regard to levy of additional surcharge on Open Access Consumers, MSEDCL stated that, Regulation 14.8 of the MERC Distribution OA Regulations, 2016 outlines the principles for determination and levy of Additional Surcharge. In line with the provisions of OA Regulations 2016, MSEDCL has proposed the Additional Surcharge.

2.28.11 Under USO, MSEDCL is obligated to supply power on demand/application. Accordingly, in order to cater the consumer demand, MSEDCL purchases power on long term basis from Mahagenco, NTPC under MOU route and from IPPs through competitive bidding process. Capacity addition was done by signing the PPAs with generating companies after due approval of Commission and based on estimated demand as per the projections published in 16th Electric Power Survey (EPS) published by CEA. However, there is a variation in projected and actual demand due to various reasons such as increase in Open Access, RE capacity addition to fulfil RPO Target, RE capacity addition by CPP because of low tariff and Net Metering etc. This is resulting into surplus power availability.

2.28.12 Further, due to the recent trends in the prices of solar energy and MERC Net Metering Regulations 2019, various consumers are now converting to captive power plants (CPP) by installing solar projects through Developers. Due to this, the surplus power is also likely to increase further.

2.28.13 To manage the surplus power, MSEDCL gives zero schedule/ backdown the high variable cost thermal generation as per Merit Order Despatch or sell in energy market depending upon market rates thereby reducing the burden of energy charges. However

whenever such surplus capacity remains available, MSEDCL has to pay fixed/capacity charges irrespective of the scheduling or non-scheduling of power from the units which declares its availability.

2.28.14 Whenever there is unavailability of generation due to the forced outage/coal shortage, there is requirement of additional power during certain blocks of the day, sometimes the duration of shortfall during the day is so small that to cater the demand for such small period, it is unviable to take a generation unit on bar to cater the demand for small period. In such cases, MSEDCL forecast the demand, availability and shortfall on day-ahead basis and procures power from Short Tern Markets such as Energy Exchanges.

2.28.15 In addition to this, MSEDCL also explores the option of optimization of power purchase cost by backing down of costly generation unit as per MoD and procuring the cheaper power available in Short Term Market/Exchange. MSEDCL has to pay Fixed Charges to the Generators as per the terms and conditions of the PPAs irrespective of utilization of generation capacity and thus the surplus capacity adds the fixed cost burden on MSEDCL. From the estimations submitted in the MYT Petition, it is clear that MSEDCL is in power surplus and will continue to be in surplus for Control Period. However, short term power is purchased for cost optimization or to meet demand during coal shortage scenario and hence, additional surcharge is justifiable & needs to be made applicable to all OA consumers. MSEDCL has tied up sufficient quantum of power, after approval of the Hon'ble Commission, by considering the overall growth in the State. However, on the other hand, a large number of consumers are buying power under Open Access instead of availing supply from MSEDCL. As a result, the generation capacity tied up by MSEDCL remains idle.

2.28.16 In this situation, MSEDCL needs to back down the generation and is also required to pay Fixed Charges (or Capacity Charges) to the Generators irrespective of actual purchase. Thus, the need for recovery of the part of fixed cost towards the stranded capacity arising from the power purchase obligation through levy of Additional Surcharge from OA consumers has been underlined by Commission in the MYT Order.

Commission's Analysis & Rulings

2.28.17 The Commission has made its observations relating to Open Access Charges and revised the same in Section8.28 to 8.30 of this Order

2.29 Revision in definition of Billing Demand

Objections/Suggestions

2.29.1 Shri. A. A. Bugdani of Garware Polyester Ltd. stated that while considering the change

in definition of Billing Demand as proposed by MSEDCL, following points need to be considered:

- During the time of repair and maintenance for more than a month, industries have to pay more demand charges and incur production loss
- It will lead to increment in fixed/demand charges being charged to the HT consumers
- There is no proof provided by MSEDCL to support its submission where some consumers exceeded demand during night time.
- The present provisions provide for demand penalty if the Contract Demand is breached.
- The factories having single shift operations or seasonal operations would be badly affected with such mechanism
- It may create tariff shock for few consumers

2.29.2 Hence, the proposal of MSEDCL to change the definition of Billing Demand should be rejected by the Commission.

2.29.3 Shri. Suketu Shah of Alloy Steel Producers Association of India, Shri. Bipin Kumar Chaudhari of Sunflag Steel Ltd., Shri Sharad Tarade of Ajeet Seeds stated that proposed change in definition of billing demand should not be accepted by Commission.

2.29.4 INOX Air Products Pvt. Ltd., Shri Vishwanath Patil and others stated that the definition of billing demand proposed by MSEDCL would lead to increment in fixed/demand charges to HT consumers who are already impacted due to high power cost in the state. As HT industries are already suffering from economic crisis, Commission is requested not to approve the proposed change in definition of Billing Demand.

2.29.5 Shri. Dhairyashil Bhosale of Manufacturers Association of Satara, Shri Shashikant Taralekar and other industrial consumers stated that it is not clear that, whether change in definition of billing demand will have impact on consumers in 0-20 kW category or not. Imposing additional charges on small scale industrial consumers by changing definition of billing demand will impose financial burden on consumers and Commission is requested not to approve the proposed change in definition at least for consumers having load of 0-20 kW.

2.29.6 Shri C. G. Ramakrishnan, Shri Amit Kakkar of Satish Shah Galaxy Surfactants Pvt Ltd and other industrial consumers stated that the Billing Demand is proposed to be increased to 85% of the Contract Demand from 50% of contract demand as per existing

definition. It will make industries financially unviable as this change will substantially increase the cost of production as plant cannot be run continuously at a load factor of 85% and above.

2.29.7 Shri. Lalit K. Dwivedi of Pudumjee Paper Products Ltd and many other industries stated that, industries mostly operate the plant in 50-90% of their contract demand. Plant operation depends on various situations such as, production demand, O&M schedule of the plant etc. Hence, considering all these scenarios with which industries have to deal with, it is non-practicable for industries to operate plants within 85 to 100 % Contract Demand. Hence, Commission is requested to retain with the existing definition of billing demand.

MSEDCL's Replies

2.29.8 Recovery from fixed charges as approved by the Commission is not happening due to restriction on billing demand. This is because of the fact that the existing actual billing demand is much lower than the contract demand (around 50%) and due to lower utilization of contract demand, recovery of fixed charges remains low. Moreover, most of the Open Access consumers opt for partial open access and do not reduce the Contract Demand. As a result, owing to Universal Service Obligation, MSEDCL has to be ready with the requisite power including the Contract Demand of the Open Access consumers resulting in payment of fixed charges for the contracted power.

2.29.9 With higher contract demand and lower billing demand, the infrastructure is not utilized properly, many times it gets blocked for few consumers and optimum utilization of assets doesn't take place. In some case even with lower billing demand, additional infrastructure is required due to contract demand. If the consumers keep billing demand as close as possible to the contract demand, proper utilization will occur and thereby reducing the overall tariff. MSEDCL thus finds it necessary to revise the definition of Billing Demand. It is pertinent to note that MSEDCL's minimum demand as per the billing demand criteria is low as compared to most of the other States which is summarised below.

Table 2-4: MSEDCL billing demand compared to other States

	MSEDCL	**TN**	**MP**	**Gujarat**	**AP**	**Karnataka (BESCOM)**	**Chhattisgarh**
HT Category							
Highest of	Actual Demand recorded during 0600	Actual Demand	Actual Demand	Actual Demand	Actual Demand	Actual Demand	Actual Demand

	MSEDCL	TN	MP	Gujarat	AP	Karnataka (BESCOM)	Chhattisgarh
	hours to 2200 hours						
	75% of max billing demand during last 11 month	90% of Contract demand	90% of Contract Demand	85% of CD	80% of Contract Demand	85% of Contract Demand	75% of CD
	50% of CD			100 kVA			60 kVA
LT Category							
Highest of	65% of the Actual Maximum Demand recorded during 0600 hours to 2200 hours	Contracted demand	Actual Maximum Demand	Actual Maximum Demand	Actual Demand	Maximum Demand recorded	Actual Maximum Demand
	40% of CD		90% of CD	85% of CD	Contract demand	Sanctioned load	75% of CD
				6kW			

Commission's Analysis & Rulings

2.29.10 The Commission sought additional data from MSEDCL and noted that almost 35% of HT consumers are being billed at 50% of contract demand which indicates that these consumers have been unnecessarily contracting higher capacity which is being underutilised. Further, most of the other States have much higher threshold of minimum Billing Demand. Hence, the Commission has decided to gradually increase the minimum threshold of Billing Demand over the Control Period. Details of the same is in Section 8.8 of this Order.

2.29.11 The Commission has not made any changes in Billing Demand for LT consumers.

2.30 Standard of Performance and Efficiency of Administration

Objections/Suggestions

2.30.1 Shri Abhijit Shukla of MegaPower Solar Ltd. requested the Commission to set

benchmark for the performance of MSEDCL for efficient operation and take strict action for underperformance of MSEDCL. The process of assessing the performance of MSEDCL can also be outsourced to efficient and trustworthy agencies.

2.30.2 Shri Santosh Raghu Suryawanshi and others stated that there is a need to introduce a strong competition to MSEDCL in its field of operations in order to regulate the increasing tariff and prices which in turn increases the cost of goods and services for the consumers. Introduction of competition will facilitate competitive pricing as well as greatly enhance the quality and efficiency of services provided by MSEDCL.

2.30.3 Shri Anand Vaman Kulkarni stated that in case of power outage, the Discom should observe prompt response to the consumers to set the services back to normal again.

2.30.4 M/s Parbhani Jilha Ginning Pressing Association stated that infrastructure development in Parbhani district is zero and hence it should be developed by MSEDCL as tariff rates are same in all regions of State then development should also be done in all the regions.

2.30.5 Shri. Hasmukh Popat stated that non availability of material at field for various works reflects the inefficiency in the operations of MSEDCL. Also, there is not enough manpower with the contractors of MSEDCL to carry out the operations efficiently on the field.

2.30.6 Shri. Pratap Hogade of Maharashtra Veej Grahak Sanghatana stated that no Grahak Seva Kendra is available in many of the regions in State. It is required to initiate the same as there is no concrete platform where consumers can raise issues and complain legally. Commission had given directives in earlier orders but MSEDCL has not followed the directives given by Commission.

2.30.7 Shri. Kishor Potdar of Khandesh MASMA, Dhule stated that new lines are constructed but not charged since many years in Dhule district thus showing the laid-back attitude of MSEDCL and unnecessary expenses done.

2.30.8 Many Industrial Consumers Stated that guidelines for ease of doing business are not followed by MSEDCL. Further, industrial policy of Maharashtra is not taken into consideration while proposing tariff.

MSEDCL's Replies

Regarding Standardization of performance:

2.30.9 MSEDCL stated that, it is keenly taking up internal controls to safeguard assets and prevent fraudulent activity to ensure integrity in its business functions. A separate Billing & Revenue section has been established in order to ensure day to day monitoring

of the centralized billing activity and figure out irregularities if any to prevent revenue leakage. The Centralized Collection and Processing Department (CCPD) has also been established along with Online Cash Collection System (OCCS) in order to avoid revenue blockage in the system.

Regarding Administration

2.30.10 MSEDCL has implemented integrated SAP ERP (Enterprise Resource Planning) solution for its core functions for improvement in operation efficiencies with respect to the finance, project functions and integrating with existing systems viz. Billing, HRMS etc.

2.30.11 The existing Financial Accounting System was standalone system and needs to be re-engineered to a latest platform. It was also required to integrate the new system to all the existing system. Further, the existing billing system is distributed and client server architecture based. It was required to re-engineer this system to N tier architecture.

2.30.12 Further for the management of different projects running at MSEDCL like Infra, RGGVY, GFSS, R-APDRP etc., an off the shelf project management tool was required. This tool helps in managing and monitoring the projects. There was need to keep track of all the materials in stock and accordingly manage the procurement activity.

2.30.13 The implementation of ERP provides following benefits to MSEDCL.

- Enable MSEDCL to improve operational and financial efficiencies;
- Reduces the workload pressure and provides accurate, timely information for taking appropriate business decisions;
- Adopt best practices, standardization and automate many of the business activities.

Commission's Analysis & Rulings

2.30.14 The Commission has taken serious note of the views expressed by the objectors/consumers during public hearing regarding the interruptions, performance on reliability indices and service quality standards suffered by consumers particularly in the rural area. Even the reliability indices (SAIFI/SAIDI/CAIDI) for Urban and Rural Areas vary significantly. The Commission has directed MSEDCL to initiate corrective actions in expeditious way particularly, where performance on reliability indices is reported to be consistently poor. Further, the Commission has dealt with this issue in more detail as elaborated under Section 8.1 of this Order.

2.31 Financial Management

Objections/Suggestions

2.31.1 Shri. Mahaveer Kumar Jain Stated that potential improvement is possible on account of reduction of interest cost for Rs.100 Crores per annum on OC/CC use by shifting bank balance in current accounts which has gone up from around Rs.500 crores to Rs.1100 crores. Loss is due to mismanagement. Hence, Commission is requested to direct MSEDCL to work on proper financial management which will benefit consumers by reduction in cost of tariff.

2.31.2 Prayas Energy Group stated that, Commission can consider the receivables from the latest audited accounts for estimating the provision for bad and doubtful debts for the 4th Control Period.

2.31.3 Adv. Shri. Anil Chavan stated that, bad and doubtful debts should not be calculated on a normative basis but should be based on actual bad and doubtful debts and should be published in the Tariff Petition. There is no provision for write-off of bad and debt on Electricity Act, 2003 and if the write offs are allowed to continue then tariff problem of high tariff will become a common phenomenon.

2.31.4 Shri. Mahendra Jichkar stated that, MSEDCL claimed income tax of Rs. 215.08 Crores for FY 2018-19 from the audited accounts. It shows that, MSEDCL made profit in the respective year and hence, it is suggested that, MSEDCL can pass on the profit amount towards consumers by lowering the consumer tariff.

MSEDCL's Replies

2.31.5 MSEDCL stated that the Accounts are prepared as per the requirements specified in the Applicable Laws and rules/regulations specified therein. The audited Accounts are available on MSEDCL's website for reference.

2.31.6 MSEDCL stated that the Internal Audit Reports are standardized and a dashboard has been developed for tracking the Internal Audit activities. Personal monitoring of Internal Audit activities is done through this dashboard.

2.31.7 A fresh empanelment of Internal Auditor is made every 3 years. The selection of Firms is done on the basis of zone wise ranking of empaneled Internal Audit firms. The marks are given as per qualifying criteria and audit firms were allotted at competitive rates. The scope of Internal Audit for Head office and field office already includes major areas such as overall control, review, analysis, taxation, statutory compliance, financial improvement. Moreover, there are different firms engaged for Tax Audit, Cost Audit, GST Consultation, Income tax consultation, IFC and Concurrent Audit. Appointment

for each activity has separate procedure and there is no interlink of Internal Audit firms and the firms appointed for these departmental activities. The scope and coverage of Internal Audit is decided considering the ICAI guidelines for Internal Audit which is reviewed further during half year.

2.31.8 MSEDCL further stated that during FY 2017-18, the company had appointed consultant & initiated the exercise for identification of Internal Financial Controls (IFC) existing in the system, as per Guidance Note issued by ICAI. The company has identified Risk Control Matrix (RCMs) in core areas like Entity Level Controls, Power Purchase, Corporate Accounts, Corporate Finance, Revenue (HT & LT), Capital Expenditure, Information Technology General Controls(ITGC), Human Resource and Operations & Maintenance. In FY 2018-19, the company has reviewed the RCMs and there have been no weaknesses observed.

Commission's Analysis & Rulings

2.31.9 The Commission noted the suggestions of Shri. Jain for financial management which can create saving through interest to be earned. MSEDCL is directed to look into this suggestion and implement it if feasible.

2.31.10 Regarding provisions for Bad Debt, the Commission has not considered MSEDCL's projection of increasing Bad Debt amount. Detailed computation is at Section 6. 16 of this Order.

2.32 Differentiation in Tariff

Objections/Suggestions

2.32.1 MLA Shri R. A. Chavan stated that distribution losses in Dombivali are minimum and also collection efficiency is almost 100%. Such area should be treated differently from area having huge losses and low collection efficiency.

MSEDCL's Replies

2.32.2 MSEDCL has not submitted any response for the same

Commission's Analysis & Rulings

2.32.3 The Commission has dealt with this issue in Section 8.1 of this Order.

2.33 Grid Support Charges

Objections/Suggestions

2.33.1 Shri. Sagar Jadhav of Aeos Energiea and other Solar Power Developers and Users stated that, grid support charges are not made applicable in any other States of the Country. If Distribution Company is facing revenue loss due to rooftop solar power plants with net-meters, then Commission should find other ways to reduce the impact. Levying such huge grid support charges could not be the solution to reduce revenue loss of MSEDCL.

2.33.2 Shri. S. M. Gadgil of Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA), Shri. Hemant Jakate of Akhil Bharatiya Grahak Panchayat, Reliance Industries Ltd. and other individuals of residential, commercial and industrial consumer category stated that, levying grid support charges will make solar rooftop systems financially unviable. It is also stated that, proposed charges are more than solar energy tariff rates.

2.33.3 Maharashtra Solar Manufacturers Association (MASMA), Federation of Industrial Association and other individuals stated that, MSEDCL may levy charges on banked energy in terms of units and not monetary terms which may be 8-10% of banked units or around Rs.0.5/- to Rs. 1/- per unit in a month. Claim of MSEDCL of revenue loss due to net-metering arrangement of solar rooftop cannot be true in all the cases as MSEDCL is taking RPO benefits from the same systems. Hence, the Commission is requested to evaluate the RPO accounts of MSEDCL before approving Grid Support Charges.

2.33.4 Thyssenkrupp Electrical Steel India Private Limited, Shri. Pankaj Pandit and other individuals stated that, levying Grid Support Charges will increase the payback period of rooftop solar power plant system resulting into reduction in financial gains for net-metered consumers. This will also have a negative impact on job opportunities and employment for many students and professionals working in RE Sector.

2.33.5 Maharashtra Solar Manufacturers Association (MASMA), Shri. Prashant Sasane and others stated that, Grid Support Charges were neither mentioned in Draft MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 published on 26th October, 2019 nor in Electricity Act, 2003. As Grid Support Charges was not part of pre-publication process, it violates requirement of section 181 of the Act. Hence, Commission is requested to continue with the provisions made in MERC (Net Metering for Roof-top Solar Photo Voltaic Systems) Regulations, 2015.

2.33.6 Shri. Manish Tyagi of Hero Future Energies Ltd. stated that, MSEDCL has not provided detailed calculation of proposed Grid Support Charges in the present petition. Further, it is not as per the guidelines given in MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019. Considering the provisions made in regulations, grid support charges should be calculated based on banking, balancing and wheeling cost. As per the mentioned factors, Grid Support Charges works out to be Rs. 1.67/- considering banking charges as Rs. 0.17/-, balancing charges as Rs. 0.73/- and wheeling charges as Rs. 0.77/- per unit. Hence, the proposed GSC are too high without any baseline of calculations. It is suggested that, MSEDCL should file a separate petition for proposing grid support charges with the detail calculations along with the clarification and benefits consumers can avail although GSC is levied.

2.33.7 Shri. Rohan Upasani and Shri. Vedant Rathi stated that, total installed rooftop solar plant capacity connected to the grid in State is only 0.58% of the total generation capacity which is minor. Hence, 0.58% rooftop solar plants cannot have a huge impact on rest 99.42%. Further, it is stated that, if as per the proposed GSC, average GSC is taken around Rs. 4.08/ kWh, only Rs. 450 Crores revenue will be collected through GSC. Considering the total revenue loss of MSEDCL, Rs. 450 Crores will not make a huge difference for recovering revenue loss of MSEDCL. Hence, considering the financial analysis of GSC, it is requested that, Grid Support Charges should not be approved.

2.33.8 Shri. Rohan Upasani further stated that, Solar Rooftop Plants with 450 MW capacity are installed in Maharashtra as per the latest data as against the target of 4500 MW set by the Government of India. Hence, it is required to focus on the target and its achievement by 2022 and promote solar energy. But instead of it, levying GSC will discourage the consumers to opt for Solar Power Plant installation. Also, as per the MSEDCL's petition, GSC will be considered while truing up. There is no clarity in the said matter. MSEDCL is requested to provide clarity on it.

2.33.9 Shri. Vedant Rathi stated that, if GSC are levied on rooftop solar plants, consumers will shift to off-grid solar power plants with battery storage systems. In this case, loss will be of MSEDCL only as MSEDCL will lose consumers due to it.

2.33.10 Shri. Arun Jalan of 7 Parallel Ltd stated that, as per Regulation 11.5 of the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019, Grid Support Charges shall cover: (1) Balancing, (2) Banking, (3) Wheeling Costs. These costs shall be adjusted for (a) RPO benefits, (b) Avoided distribution losses, and (c) Other benefits accruing to the Distribution Licensee, MSEDCL, in this case. Hence, Commission is requested to direct MSEDCL to provide break up of proposed Grid

Support Charges under the above heads defined in its Regulation 11.5. It shows that, the proposed GSC is an attempt to render Net Metering same as Net Billing with a net Benefit to the Customer as Rs. 3.03 per unit or less. For HT I, HT I(B), HT II and HT III categories, the net benefit to the Net Metering consumer works to be exactly Rs. 3.03/unit. This clearly proves that the proposed GSC is based on backward calculations and not on any solid justification as demanded by Regulation 11.5. This itself is a clear ground to dismiss this Petition. Further, the benefit to a Net Metering consumer for LT I(B), LT II and LT VII consumers is negative. This is so because the Grid Support Charges are higher than the tariff itself.

2.33.11 Shri. Arun Jalan of 7 Parallel Ltd further suggested that, in order to safeguard distribution licensees' interests, may introduce an 'Energy Banking Fee' instead of 'Grid Support Charges' which may be in the range of 5% to 10% of the applicable tariff for a given category. This fee will apply to any and all 'banked energy units' as defined as per the Current Net Metering Regulations. This will be a win-win formula and provide necessary support and compensation to distribution licensees to be a key partner in the National Solar Mission of 100GW by 2022 as well as incentivize Consumers to adopt rooftop solar to its maximum potential.

2.33.12 Prayas Energy Group stated that, the methodology followed by MSEDCL to compute GSC has no relation to the one noted by the Commission in the Grid Interactive Rooftop Renewable Energy Generating Systems Regulations, 2019. Further the proposed charge is so high as to completely make rooftop system unviable and goes against the spirit mentioned by the Commission in the statement of reasons, which is that these charges 'would not significantly affect their savings/payback period'. As per the analysis done by Prayas Energy Group for residential consumers in Pune suggests that they typically bank 65% of their energy on an annual basis. This will certainly vary by locations across Maharashtra. Further, industrial and commercial consumers may end up hardly banking any energy given the low contribution of rooftop solar to their overall demand. Considering these calculations based on banking, balancing and wheeling charges as per the regulations, the overall GSC charge should be Rs. 0.9-1.25/kWh to be charged on all units of solar generation and an additional charge of Rs 1.75/kWh for each unit of banked energy. This will provide incentive for appropriate system sizing and adoption of efficiency and load management measures to reduce banking requirement. Power Purchase Cost and Transmission Charges.

2.33.13 Shri. Avinash Rana of Cosmos Bank stated that, unviable solar business will result as a risk in banking sector as solar will be categorised as Non-Performing Assets (NPA) in the Power sector.

2.33.14 Prayas Energy Group and other individuals stated that, levy of Cross Subsidy Surcharge (CSS) on rooftop systems is unfair for rooftop grid connected systems and captive consumers as consumers made investments in such systems to reduce their dependence on MSEDCL for power. Further unlike open access consumers, such consumers do not opportunistically switch between MSEDCL and alternate supply options. As such investments provide certainty to the DISCOM for planning investments and managing costs, levy of CSS on such consumers is untenable and should be rejected. MSEDCL's proposal should be rejected considering ruling of Appellate Tribunal for Electricity in its judgement in Appeal No. 311 of 2018 & IA Nos. 1531, 1468 & 1467 of 2018 dated 27th March 2019 and Commission's ruling in order 195 of 2017.

2.33.15 Shri. Prashant Bhagwat stated that, utility driven solar PV installation to be promoted as it is promoted in other states

2.33.16 Shri. Pradeep Kulkarni of MASMA stated that, MSEDCL should be directed to use Central Finance Assistance (CFA) under MNRE scheme and made this subsidy available to small consumers.

2.33.17 One of the objector stated that, under Net-billing, power purchase rate is made equal to APPC which will undergo change in each year. APPC should be fixed for a project for the entire agreement term so that a considered decision can be taken by the consumer/investor.

2.33.18 Shri. Girish Dohane of Maha Solar Sangathan stated that, Commission has given a balanced formula to calculate GSC and if it is calculated with that formula, GSC comes out to be negative considering balancing cost, wheeling cost, banking cost, RPO benefit, and benefit in T&D loss. MSEDCL has calculated GSC by reverse mechanism by subtracting power purchase cost from the effective tariff. Hence, Commission is requested to direct MSEDCL to calculate GSC as per the orders and full facts along with the supporting proofs for all the numbers.

2.33.19 Shri. Girish Dohane further stated that, Average Power Purchase Cost of MSEDCL is Rs. 4.47 / Unit as proposed for FY 2020-21 and Average Cost of Supply is Rs. 7.24 / Unit. This means that complete cost of MSEDCL including profit, infrastructure development, losses etc. is Rs. 2.77 / unit and REC benefit from solar is Rs. 2.44 / Unit then why GSC proposed is so high? MSEDCL should give clarification about it.

2.33.20 Shri. Narendra Rao of Madhukosh Housing Society stated that, GSC will impose financial burden on housing societies which installed rooftop solar plants for their essential services as lift, water pumping and lighting in corridors of buildings. These societies opted for RSPV as an initiative towards green energy instead of DG sets.

Hence, Commission is requested to at least increase the margin of non-applicability of GSC upto 20 kW instead of 10 kW as per the existing regulatory provisions.

2.33.21 Radiance Renewables Pvt ltd stated that, before levying such high GSC, MSEDCL should conduct a study for the claim made by MSEDCL for loss occurring due to rooftop solar PV systems. MSEDCL had not calculated the proposed GSC as it is mentioned in regulations. Hence, it is inappropriate to propose such high charges and hence, a detailed study should be conducted by MSEDCL.

2.33.22 Chief Energy Manager of Maharashtra Metro Rail Corp Ltd stated that, as per Regulation 12.6 of MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 specifying 'Net-billing Energy Accounting and settlement' under Net-billing Arrangement, Distribution Licensee should raise the bill in accordance with the following equation:

Energy Bill of Consumer = Fixed Charges + other applicable charges and levies + (EDL * TRST) – (ERE * TPPA) – Billing Credit

2.33.23 This equation implies that, gross billing of RE is actually penalising consumers as consumer will be getting paid for the total RE power generated in his premises with the generic tariff and for his own consumption, licensee will raise the bill as per the tariff applicable for the respective consumer category. There is a difference of Rs. 6.5 / Unit between the generic tariff applicable for RE and consumer category-wise tariff of DISCOM. It is nothing but penalty on consumer although consumer is consuming power generated in his own premises.

2.33.24 Metro systems are energy intensive and hence, Maha Metro installed solar plant as 40% of the O&M cost is for electricity. Considering the consumer category of Maha Metro as Public Transport Utilities, Commission is requested to provide necessary relaxation to Public Transport Utilities with certain changes in MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019.

MSEDCL's Replies

2.33.25 MSEDCL has always supported the development of renewable energy including Rooftop RE Generating Systems. The total installed capacity of Rooftop Solar is highest in Maharashtra. The net metering does help MSEDCL in meeting the RPO targets and cost for purchase of solar energy gets saved. However, the resultant impact of such net metering is much more on other consumers of MSEDCL due to under recovery of infrastructure costs, Cross subsidy from such Net metering systems etc.

2.33.26 After self-consumption by a consumer, the balance solar energy generated during

daytime is fed into the grid. Due to the combined impact of this additional solar energy injection, MSEDCL has to back down thermal generation but is obligated to pay the same fixed cost to generators. At the time of no solar generation (evening, seasonal change, technical problem in system etc.), the consumer draws full power as per requirement from the grid and MSEDCL has to keep network and generators on bar ready to feed this demand. Thus, these consumers using the grid as a storage system in this manner adds undue burden of generator's fixed cost, unrecovered infrastructure cost, Cross Subsidy etc. to other consumers of MSEDCL

2.33.27 Due to Net Metering arrangement opted by consumers, the fixed cost component of its cost gets recovered partially through demand/fixed charges. However, the variable charges along with the fixed cost component built into it remains unrecovered. In case of MSEDCL, the Fixed Charges are designed to recover only part of the Fixed Costs of MSEDCL. Hence, any reduction in units billed due to Net Metering, would lead to lower revenue from energy charges, further leading to increased under-recovery of fixed costs of MSEDCL.

2.33.28 Also, due to the consumer opting for Net Metering arrangement, MSEDCL shall save only variable component of power purchase cost and T&D losses thereon. Accordingly, as per the provisions of the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 and considering the category wise variable charges, marginal variable cost of power purchase, applicable wheeling and intra state transmission losses, MSEDCL has proposed the Grid Support Charges for Rooftop Net Metering Arrangements.

2.33.29 The Commission in the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019, has provided for levy of Grid Support Charges on the generated energy under Net Metering systems. As per the said Regulations, the charges are proposed to recover balancing, banking and wheeling cost after adjusting RPO benefits, avoided distribution losses and any other benefits accruing to the Licensee.

2.33.30 It is pertinent to note that MSEDCL is revenue neutral. Any under-recovery of approved revenue will be recovered in future years through revision in retail supply tariff. The revenue loss on account of implementation of Net Metering arrangement will be socialized through ARR gap and will be levied on other consumers. Levy of such Grid Support Charges will not add benefit to Licensee; however, it will reduce the future burden on other consumers on account of implementation of Net Metering Arrangement.

2.33.31In order to encourage net billing, MSEDCL has proposed that for rooftop RE systems under net billing arrangements, grid support charges shall not be applicable. Further, as per the Net Metering Regulations 2019, majority of the consumer base (consumers having load up to 10 kW) of all the categories are exempted from these Grid Support Charges. The details of computation and adjustment of Grid Support Charges are provided in the Petition.

Commission's Analysis & Rulings

2.33.32The Commission notes the objections that Grid Support Charge was not part of draft Regulations and hence cannot be part of final notified Regulations. In this regard, the Commission notes that the Electricity Act, 2003 stipulates process of previous publication wherein draft Regulations needs to be published seeking comments from stakeholders and the Commission needs to consider all these comments before finally notifying the Regulations. The Commission has duly followed the process of previous publication wherein numbers of suggestions and objections have been received by the Commission. While finalising the draft Regulations, based on suggestions received during the previous publication process the Commission has made certain changes in the draft Regulations which includes allowing option of net-metering or net-billing to the consumer below 1 MW, increasing cumulative RE capacity on DT to 70%, making Regulations applicable for application received from date of notification of Regulations, levy of Grid Support Charge in net-metering framework with exemption to consumer up to 10 kW etc. All these provisions was not there in the draft Regulations but introduced in final Regulations based on comments and suggestions received during previous publication process.

2.33.33On the issue of introducing Grid Support Charge, the Commission in its Statement of Reasons has stated as follows:

> " *Under the Net Metering Arrangement, there is saving to consumer equal to applicable energy charges for every unit generated from the rooftop RE System. The saving increases with the increase in applicable tariff, i.e., the level of cross-subsidy. In other words, the Return on Investment in rooftop RE systems is artificially higher because of the cross-subsidy element present in the tariff for the respective category. The Commission has been reducing the cross-subsidy over the years, and will be continuing in its efforts to do so over the future tariff determination exercises. Therefore, the Return on Investment will reduce as the tariff reduces.*
>
> *On the other side, there is revenue loss equal to applicable tariff for every unit generated from the rooftop RE System. Further, the Aggregate Revenue Requirement (ARR) of the Wires Business of the Distribution Licensee is entirely fixed cost in nature. However, the recovery of Wheeling Charges in the State of Maharashtra is entirely variable in nature, as the Wheeling Charges are recovered in Rs/kWh terms. As the quantum of energy billed to the*

consumers is reduced under the Net Metering Arrangement, the Wheeling Charges will also be under-recovered to that extent. Similarly, a major part of the fixed cost of the Distribution Licensee is recovered through energy charges levied by the Distribution Licensee. In case of MSEDCL, the Fixed Charges are designed to recover only one-third of the Fixed Costs of MSEDCL. Hence, any reduction in units billed due to Net Metering, would lead to lower revenue from energy charges, further leading to increased under-recovery of fixed costs of the Distribution Licensee.

At the same time, Net Metering is not entirely disadvantageous to the Distribution Licensee. The Distribution Licensee is able to meet its RPO targets on account of the units deemed to have been purchased from RE sources, for all units adjusted against the consumers' bills due to Net Metering. Further, reduction of every unit of sale leads to lower power purchase requirement to that extent, which will result in corresponding savings in variable cost of power purchase. It has to also be noted that this saving in power purchase quantum is at consumption end, thereby leading to increased saving in power purchase quantum at the Generator busbar, after factoring in the Transmission Losses and Distribution Losses. Further, due to the very nature of distributed generation located at consumption end, the Distribution Losses would also reduce, though it could be difficult to quantify the exact benefits in this regard.

From the above, it can be seen that the role of the Distribution Licensee is crucial in facilitating the operation of the Net Metering Arrangement. Hence, it is required to balance the interest of both consumers as well as the Distribution Licensee.

The Commission notes that some Stakeholders have suggested and supported the introduction of additional charges for RE systems under the Net Metering Arrangement, to offset part of the revenue loss to the Distribution Licensee.

Hence, the Commission has decided to introduce Grid Support Charges under the Net Metering Arrangement. It is proposed that these Grid Support Charges shall be levied on the quantum of gross generation from RE sources during the billing period. These Grid Support Charges are pricing signals and will help to partly recover the cost of network, banking facility, standby arrangement, and distribution grid balancing provided by the Distribution Licensee and mitigation of risks associated with operating of Net Metering Arrangement after adjusting RPO benefits, avoided distribution losses and any other benefits accruing to the Distribution Licensee. However, at present, the Commission has decided to exempt majority of the consumer base (number of consumers) of all the categories from these Grid Support Charges.

The Commission shall determine consumer category wise Grid Support Charges under Section 62 of the Act through the public consultation process. The Distribution Licensee shall propose Grid Support Charges in their respective Multi Year Tariff /Mid Term Review Petition. The Commission shall determine the consumer category wise Grid Support Charges in the respective Tariff Order, after following the due public consultation process.

Further, it is noted that Government of India has increased the focus on Residential category and announced Central Financial Assistance (CFA) to the Residential category and has stated that CFA will not be available for other categories, i.e., institutional, educational, social, government, commercial and industrial sectors as the beneficiaries in these sectors are high tariff paying consumers. Also, additional incentives are provided to Distribution Licensees for achieving the capacity targets for residential category up to 10 kW load. Distribution Licensees can mitigate part of the cost of above-mentioned facilities provided under Net Metering Arrangement to Residential category under this scheme.

Hence, with the intention of encouraging and promoting Rooftop RE installations under Net metering arrangement by low load consumers, it is proposed not to levy Grid Support Charges to consumers having load up to 10 kW.

2.33.34 It is also noted that the Distribution Licensee is revenue neutral. Any under-recovery of approved revenue will be recovered in future years through revision in retail supply tariff. The revenue loss on account of implementation of Net Metering arrangement will be socialized through ARR gap and will be levied on other consumers. Levy of such Grid Support Charges will not add benefit to Licensee; however, it will reduce the future burden on other consumers on account of implementation of Net Metering Arrangement. However, for consumers opting for Net Metering Arrangement, levy of Grid Support Charges would not significantly affect their savings/payback period."

2.33.35 Hence, the Commission has introduced Grid Support Charge based on suggestion received during previous publication process. Hence, in the opinion of the Commission there is no violation of previous publication process. In fact if the arguments are accepted that with having provision in Draft Regulations, final Regulations cannot be notified, then previous publication itself will be required to be notified and will defeat the purpose of public consultation process. It will be incorrect if necessary and corrective action based on the comments and suggestions received through Public Process is not taken while finalising the Regulations. In the opinion of the Commission, this cannot be intent of legislation making process.

2.33.36 Computation of Grid Support Charge and its applicability is covered in Section 8.20 of this Order.

2.34 Implementation issues in Net Metering

Objections/Suggestions

2.34.1 Shri. Bhushan Tare and others stated that, net meters are not installed within stipulated

time as mentioned in the regulations. MSEDCL should be directed to follow the timelines. Further, many of the individuals stated that, MSEDCL does not provide net meters many a time although applications are submitted several times in the respective regions. As per the regulations, net meters should be provided by MSEDCL. It is also observed that, many of the MSEDCL staff members are not aware of the provisions of net metering and net billing. It is suggested that, all the staff members of MSEDCL should be made aware of the regulatory provisions and technical details regarding net metering and net billing arrangements.

2.34.2 M/s Sunsolar Harvest and other solar developers alleged that, MSEDCL's employees are acting as contractors for rooftop installations which is creating hurdle for new entrepreneurs to establish the business.

2.34.3 Shri. Girish Donahe stated that, details of transformer loading, and cumulative capacity of Rooftop Solar system connected to such transformer is not available on website.

2.34.4 Shri. Rohan Upasani and other solar rooftop developers stated that, although solar rooftop system is installed and comes in operation, consumer do not get updated bills as per the installed net meters. Hence, Commission is requested to direct MSEDCL to improve the present billing system. Due to improper billing mechanism, readings of net meters are not taken by MSEDCL and it is loss for MSEDCL as MSEDCL cannot take RPO benefit for the respective energy units. Also, it is suggested to establish a separate cell at Division level for handling rooftop related issues where consumer can apply, complain and get guidance related to the provisions or policies applicable for rooftop solar systems.

2.34.5 Shri. Pradeep Kulkarni of MASMA and other solar developers stated that, each office of MSEDCL has different practice for net-metering procedure. Hence, it is suggested that, Single Window System is to be adopted for net-metering procedure to have uniformity**.**

MSEDCL's Replies

2.34.6 MSEDCL has not submitted any response for the same

Commission's Analysis & Rulings

2.34.7 The Commission directs MSEDCL to comply with the process and the timelines specified under the Regulations for completing various activities.

2.35 Additional Demand Charges for RE Rooftop Power Plants

Objections/Suggestions

2.35.1 Shri. Kedar Paranjape of Persistent Systems Ltd. and other individuals stated that, levy of additional demand charges on RE rooftop plants not opting for net-metering or net-billing is unfair for the consumers as consumers are installing plants with their own investment and it is not connected to the grid. Further, Even, if the reason/rationale is to make up the revenue loss for MSEDCL, it is completely unfair. The rooftop solar systems are not in any way reason for or are not contributing to any losses or costs of MSEDCL. Hence, Commission is requested not to approve the proposed charges for rooftop power plants.

2.35.2 Shri. Rakesh Baweja of Tata Motors stated that, levying additional demand charges on RE plants without net-metering or net billing arrangements is unfair with those consumers. Further, these consumers are helping MSEDCL in a way of demand side management as demand is reduced due to captive plants. Hence, these charges should not be imposed on RE Rooftop Power Plants.

2.35.3 Captive Power Producers Association and many other industries stated that, proposed demand charges on RE Rooftop Plants should not be approved by Commission.

2.35.4 Shri. Pravin Chikankar, Shri. Vivek Paldiwal and Many Rooftop Solar Developers and users stated that, justification should be provided for the proposed charges of Rs. 645/kW/ month as this will discourage use of solar and increase the price of electricity in effect affecting the pricing of other products leading to inflation.

2.35.5 Shri. Girish Dohane of Mahasolar Sangathan stated that, if fixed charges are levied on captive power plants as Rs. 645 / kW/ Month as proposed by MSEDCL, consumer who install solar system on its own cost has to pay Rs. 10 / unit considering levied fixed charges, CSS and additional surcharge. It is unfair to the consumer who is not even connected with the MSEDCL's grid or network. Hence, these charges should not be levied on CPPs.

2.35.6 Shri. Farooque Akbani of CIAT, Nagpur stated that, cost of hybrid systems comprising solar PV along with battery storage is higher due to higher cost of lithium iron batteries. Due to higher cost, consumers are opting for captive power plants or grid connected rooftop plants. If Additional fixed /Demand charges for RE rooftop plants and GSC for net-metered rooftop plants are levied, Hybrid PV solar / Zero Export PV system become economically unviable and return on investment will not be possible even in next 25 years , Therefore Commission is requested to waive off such charges.

MSEDCL's Replies

2.35.7 The Commission, in the MERC Grid Interactive Rooftop Renewable Energy Generating Systems Regulations, 2019, has provided for the additional Fixed Charges or Demand Charges and any other Charges for consumers of Rooftop Grid Connected RE Systems connected behind the consumer's meter but not opting for Net Metering or Net Billing Arrangement. Such charges are required to compensate the Distribution Licensee, which may incur certain additional expenses on account of such systems, and because of such systems, though connected behind the Consumer's meter, do benefit from being connected to the network of the Distribution Licensee.

2.35.8 Certain consumers connected at EHV/HT Level are installing rooftop RE Projects without informing Distribution Licensee. Such Rooftop RE systems, though connected behind the Consumer's meter, take support of Grid and the network of the Distribution Licensee. Further, installation of such facility reduces the utilisation of Transmission/Distribution Network and thereby such consumer pay lower charges for such network setup earlier for it. MSEDCL being a revenue neutral entity, such unrecovered part of expenses is then loaded on other consumers of the Distribution Licensee. To avoid such burden on common consumers of MSEDCL, the levy of Additional fixed/Demand charges for Grid Connected Renewable Energy Generating Systems connected behind the Consumer's meter and not opting for either Net Metering Arrangement or Net Billing Arrangement is justifiable.

2.35.9 In view of the above, as per the provisions of the Net Metering Regulations 2019, MSEDCL has proposed Additional Fixed/Demand Charges for Grid Connected Renewable Energy Generating Systems connected behind the Consumer's meter and not opting for either Net Metering Arrangement or Net Billing Arrangement.

Commission's Analysis & Rulings

2.35.10 The issue of additional Fixed Charges is dealt with in Section 8.21 of this Order

2.36 Renewable Purchase Obligations (RPO)

Objections/Suggestions

2.36.1 Prayas Energy Group stated that, as per projections MSEDCL complies with its solar RPO however fails to comply with its non-solar RPO consistently in all five years. Data provided in MSEDCL filings suggests that MSEDCL may not meet their total RPO in 2020-21 and 2024-25. As per wind EPS of July 2018 and Aug-Nov 2018 and recent solar EPAs commissioned in 2019 and as the prices in Solar-Feeder program and 1000 MW bid in Dec 2018 it is seen that maximising the use of solar and wind power will have a significant benefit of lowering the power purchase cost, which is the single

largest cost for MSEDCL. Thus, it appears that not only is MSEDCL failing to meet the minimum RPO in certain years but is for going a great opportunity to lower its APPC (and thus consumer tariffs) while earning an incentive to do a least cost power procurement plan. Thus. MSEDCL should revise its renewable energy procurement plans and plan to maximise RE penetration, mainly to reduce power procurement costs.

MSEDCL's Replies

2.36.2 MSEDCL states that it has always taken the benefit of falling solar Power Tariffs in the market by contracting Solar Power through competitive bidding route. MSEDCL has tied up total 10,795 MW capacity of Renewable Energy as on 31st October 2019 of which 7,654 MW capacity is commissioned. This includes Wind Generation of 3,999 MW, Solar of 4017 MW, Bagasse based cogeneration of 2,406 MW, Biomass capacity of 236 MW, Small Hydro of 121 MW & Municipal solid waste of 16 MW capacity. Further, by the end of FY 2024-25 to meet the RPO target of 13.5% solar, MSEDCL has planned to increase the solar capacity accordingly. The details of power procurement from Solar and Non-Solar sources is already provided in the Petition. In Last 2 years, MSEDCL taken competitive bidding advantages and Tenders finalised for 5500 MW and PPA signed for 4300 MW at around Rs.3.00 per unit after MERC approval.

Commission's Analysis & Rulings

2.36.3 The Commission has extensively dealt with the issue of projection of renewable energy power procurement and compliance of RE target during 4th Control period under Section 6.6 of this Order and issued necessary directions in the matter.

2.37 Opex Scheme

Objections/ Suggestion

2.37.1 Shri. R. B. Goenka of Vidarbha Industrial Association stated that, MSEDCL proposed customer care centre with the defined objective. But the actual position is far away from the set objective. Most of the call centers does not reply for consumers calls or complaints. There is no single window procedure for sanction of applications of consumer, but he has to run pillar to post and to comply requirement of every table of officers. A number of tables are around 20 for getting the load sanction. MSEDCL did not leave any officers table in the chain of sanction. Hence, it is suggested that, MSEDCL is equipped with all the data regarding loading of lines and networks hence there is no need that consumers application should move so many number of tables. Sanctions can be provided immediately after getting technical feasibility from the available software. Laying of new lines should be avoided because of ROW issues and

farmers unrest, existing lines should be strengthened, LILO arrangement with proper metering and SCADA system may be allowed and installed for sanction of loads.

2.37.2 Prayas Energy Group stated that, Passthrough due to opex schemes needs to be further evaluated and closely monitored. MSEDCL has not adequately stated the potential benefits and cost savings possible with the operationalization of these schemes. It is suggested that the Commission allow these costs once the potential benefits from these schemes are stated. Further, actual performance and savings versus potential benefits should also be tracked by the Commission over the control period. This would also help assess the efficacy of allowing opex expenses over and above norm based approval for operation and maintenance expenditure. Further, the benefits realized from opex schemes in terms of reduction of operation and maintenance expenses should also be passed onto consumers.

MSEDCL's Replies

2.37.3 MSEDCL has not submitted any response for the same

Commission's Analysis & Rulings

2.37.4 The Commission has noted the views expressed as regards opex scheme and concurs with the same that outcome /benefits out of opex schemes should be monitored and reported as such. The Commission has dealt with the issue of allowance of opex related schemes and expected benefits of such schemes proposed during 4th Control period under Section 6.9 and Section 8.1 of this Order and issued necessary directions in the matter

3 IMPACT RECONCILIATION OF OPENING GFA

3.1 Background

3.1.1 MSEDCL in MTR Petition had requested to approve restatement of GFA by an additional/difference amount of Rs. 1135 Crore in the opening GFA of FY 2015-16 which was approved by the Commission in the past but not added in to the GFA. On scrutiny of MSEDCL's claim, the Commission in the MTR Order dated 12 September 2018 has approved Rs. 927 Crore against Rs. 1135 Crore claimed by MSEDCL and added that amount of Rs. 927 crore in opening GFA of FY 2015-16.

3.1.2 In the said Order, the Commission had noted that any consequent changes on account such addition of Rs. 927 core in opening GFA of FY 2015-16 in future years cannot be allowed as no such computation or workings has been provided by MSEDCL.

3.1.3 Now through present MYT Petition, MSEDCL has computed the impact and claimed it along with carrying cost.

MSEDCL Submission

3.1.4 MSEDCL submitted that out of the 927 Crore added to the GFA, the addition of 815 Crore was in FY 2007-08 and Rs. 112 Crore in FY 2011-12.

3.1.5 Rs. 815 Crore has been added to the Capitalization of FY 2007-08 in which the amount of grant is considered the same as that approved by the Commission. Consumer contribution is considered as per Audited Account of FY 2007-08. Similarly, Debt : Equity ratio as approved by the Commission in that Order is considered.

3.1.6 Accordingly the comparison of Capitalization approved by the Commission for FY 2007-08 in the Order in Case No. 116 of 2008 and that computed by MSEDCL in accordance with the revised capitalization is as shown in the table below:

Table 3-1: Comparison of the capitalization and funding of the capitalization for FY 2007-08 as submitted by MSEDCL

Particulars	Case No. 116 of 2008	Revised
Total Capitalization	463.16	1,278.16
Less: Grant	59.03	59.03
Less: Consumer Contribution	153.13	366.24
Fund Requirement	251	852.89
Equity %	9.84%	9.84%
Debt %	90.16%	90.16%
Equity	24.7	83.92

Particulars	Case No. 116 of 2008	Revised
Debt	226.3	768.97

3.1.7 The Commission had already approved the resultant impact due to difference on Capex related expenses for FY 2007-08 in Case No. 121 of 2014 and hence MSEDCL has not claimed the same in this petition. However, impact for all subsequent years has been claimed.

3.1.8 Accordingly GFA revised by MSEDCL is as given in the table below:

Table 3-2: Reinstatement of GFA as submitted by MSEDCL (Rs. Crore)

Financial Year	Opening GFA	Addition	Retirement	Closing GFA
FY 2007-08	10,370.51	1,278.16	-2.54	11,646.13
FY 2008-09	11,646.13	1,634.76	-2.05	13,278.84
FY 2009-10	13,278.84	2,064.97	-25	15,318.81
FY 2010-11	15,318.81	4,814.22	-1.61	20,131.42
FY 2011-12	20,131.42	6,770.54	-0.47	26,901.49
FY 2012-13	26,901.49	6,005.00	-5	32,901.49
FY 2013-14	32,901.49	4,530.90	-0.89	37,431.50
FY 2014-15	37,431.50	4,015.50	-10	41,437.00
FY 2015-16	41,437.00	3,907.81		45,344.82
FY 2016-17	45,344.82	3,097.27		48,442.09

3.1.9 Considering the above restatement of GFA for year FY 2007-08 onwards, MSEDCL has computed impact on Depreciation, Interest on Loan and Return on Equity of above years. Summary of impact of reinstatement of GFA equal to Rs. 927 Crore as submitted by MSEDCL is as given in the table below:

Table 3-3: Summary of Impact of reinstatement of GFA as submitted by MSEDCL

Financial Year	Depreciation	Interest on Loan	Return on Equity	Total
FY 2008-09	32.36	55.94	9.48	97.78
FY 2009-10	33.41	51.60	9.42	94.44
FY 2010-11	34.66	48.10	9.43	92.19
FY 2011-12	-	46.51	9.43	55.95
FY 2012-13	-	44.71	9.46	54.17
FY 2013-14	46.71	41.06	9.30	97.07
FY 2014-15	18.39	37.00	9.06	64.45
FY 2015-16	-	35.88	-12.02	23.86
FY 2016-17	18.39	39.18	-12.56	26.65
Total	**165.57**	**399.99**	**40.99**	**606.55**

3.1.10 MSEDCL has claimed above impact of restatement of GFA with carrying cost.

Commission's Analysis and Ruling

3.1.11 The Commission notes that in its MTR Petition, MSEDCL had requested for restatement of GFA by adding Rs. 1135 crore in opening GFA of FY 2015-16. Specific submissions of MSEDCL in this regard in MTR petition is reproduced below:

> "*In view of the submissions in foregoing paragraphs, MSEDCL most humbly requests Hon'ble Commission to reconcile the GFA and accordingly opening GFA for FY 2015-16 may be reinstated as claimed by MSEDCL*."

As can be seen form above submissions of MSEDCL, relief sought by it was limited to restatement of GFA of FY 2015-16 and no where it is mentioned that impact of previous years i.e. FY 2007-08 to FY 2014-15 be allowed.

3.1.12 The Commission in the MTR Order dated 12 September 2018 in Case No 195 of 2017 has allowed restatement of capitalization of Rs. 927 Crore as against Rs. 1135 Crore claimed by MSEDCL. Said capitalization was added into the opening GFA of FY 2015-16. However, details such as debt, equity of such restated GFA was not available in the MTR Petition, the Commission has only provided impact on depreciation and was not able to give any impact of such increased GFA on interest on loan and returns on equity. Same has been noted by the Commission in the MTR Order as follows:

> *"Moreover, as stated above any consequent changes on account of the same in future years is still not allowed as no detail submission or computation on the account has been provided by MSEDCL".*

3.1.13 Based on the above finding of the Commission, MSEDCL in present Petition has claimed the impact of restatement of GFA since FY 2007-08. In the opinion of the Commission such relief cannot be granted as original Petition i.e. MTR Petition did not have such prayer. Once MSEDCL itself has restricted its claim of restatement of GFA from FY 2015-16 onward in MTR Petition, it cannot come with fresh prayer in subsequent Petition for granting relief from earlier years esp. for the years that have been trued up. Further, if the Commission grants such relief then there would be no sanctity to trueing-up process and utility can claim impact for past period (in present case after 10+ years) at any point of time. The Commission also notes here that during the MTR petition the Commission was neither aware nor was it made aware by MSEDCL about this issue was before any other superior court. Hence, the Commission in not inclined to grant any relief to MSEDCL on account of restatement of GFA of Rs. 927 crore for the period prior to FY 2015-16.

3.1.14 However, considering the fact that MSEDCL has now submitted detailed break-up of Rs. 927 crore i.e. debt, equity, source of funding etc., the Commission is considering allowing impact on interest on loan and return on equity for the period of FY 2015-16 onward. Impact of depreciation has already allowed in MTR Order for the period of FY

2015-16 onwards.

3.1.15 Accordingly, computation of impact on interest on loan and return on equity for FY 2015-16 and FY 2016-17 is given below:

Table 3-4: Impact of reinstatement of GFA on Interest Expenses as approved by the Commission

Financial year	Approved interest expenses	Approved value of revised opening balance	Approved Addition to loan	Approved value of revised Repayment	Approved value of revised closing balance	Approved interest rate	Revised interest expenses (approved)	Approved difference
2015-16	1,701.00	14,759.49	1,800.00	1,856.00	14,703.49	11.79%	1,736.88	35.88
2016-17	1,588.03	14,703.49	1,239.24	2,023.29	13,919.44	11.37%	1,627.20	39.17

Table 3-5: Impact of reinstatement of GFA on Return on Equity as approved by Commission

Financial year	Approved Return on Equity	Approved value of revised opening balance	addition during the year	Equity portion of Retirement of assets	Approved value of revised closing balance	Rate of RoE	Revised Return on Equity (Approved)	Approved difference
Wires								
2015-16	1,396.90	8,643.04	598.50	-	9,241.54	15.50%	1,386.05	-10.84
2016-17	1,480.87	9,241.54	477.99	-	9,719.53	15.50%	1,469.48	-11.39
Supply								
2015-16	175.22	960.79	66.50	-	1,027.29	17.50%	173.96	-1.26
2016-17	185.76	1,027.29	53.11	-	1,080.40	17.50%	184.42	-1.34

Table 3-6: Summary of Impact of reinstatement of GFA as approved by Commission (Rs. Crore)

Financial Year	Interest on Loan	Return on Equity	Total
2015-16	35.88	-12.11	23.78
2016-17	39.17	-12.73	26.47
Total	**75.05**	**-24.83**	**50.21**

**Impact for subsequent years is considered in subsequent chapter*

MSEDCL has also claimed the carrying cost for delayed recovery of such impact of reinstatement of GFA. In this regard, the Commission notes that delay in allowing impact of reinstatement of GFA is on account of MSEDCL's delay in pointing out such discrepancies and also on account of delay in providing detailed computation of such impact. If MSEDCL would have submitted requisite details at relevant time itself then such correction would have been allowed at that point of time only. Hence, the Commission is not inclined to allow any carrying cost on such impact of reinstatement of GFA which has been allowed belatedly on account MSEDCL's delay in submission of justification / computation. Accordingly, the

Commission in the present order has allowed the impact on account of reinstatement of GFA without any carrying cost.

4 TRUE-UP OF FY 2017-18 AND FY 2018-19

4.1 Background

4.1.1 MSEDCL has sought Truing-up of the ARR for FY 2017-18 and FY 2018-19 considering actual expenditure and revenue as per the Audited Accounts and in accordance with the MYT Regulation, 2015. It has submitted reasons for differences between the actual expenses for FY 2017-18 and FY 2018-19 as compared to those approved in MTR Order in Case No. 195 of 2017 dated 12September 2018.

4.1.2 The analysis underlying the Commission's approval for true-up of FY 2017-18 and FY 2018-19 is set out in the following sections.

4.2 Sales in FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.2.1 MSEDCL has submitted category wise actual sales for FY 2017-18 and FY 2018-19 excluding all distribution franchisee in the following table:

Table 4-1: Category wise sales for FY 2017-18 and FY 2018-19 as submitted by MSEDCL

Category	FY 2017-18			FY 2018-19		
	MTR Order (MU)	Actual (MU)	Deviation (MU)	MTR Order (MU)	Actual (MU)	Deviation (MU)
Residential	18,825.66	18,997.48	171.82	19,564.23	19,718.85	154.62
Commercial	6,922.78	6,968.61	45.83	7,418.70	7,276.70	(142.00)
HT-Industries	28,110.25	28,118.42	8.17	28,647.64	31,025.59	2,377.95
LT-Industries	6,488.27	6,403.84	(84.43)	6,849.84	6,763.16	(86.68)
PWW	2,236.92	2,227.85	(9.07)	2,330.36	2,329.59	(0.77)
Streetlight	1,761.78	1,788.24	26.46	1,883.04	1,958.44	75.4
Agriculture	29,502.64	30,678.01	1,175.37	30,137.30	33,853.32	3,716.02
Public Services	1,383.59	1,388.23	4.64	1,445.99	1,456.10	10.11
Railways	59.25	59.25	-	59.25	67.08	7.83
Others	659.65	670.20	10.55	702.42	686.98	(15.44)
Total Excl. DF	**95,950.79**	**97,300.14**	**1,349.35**	**99,038.77**	**1,05,135.81**	**6,097.04**

4.2.2 MSEDCL has submitted that the Commission approved sales (excl. DF) of 95,950.79 MUs for FY 2017-18 and 99,038.77 MUs for FY 2018-19 in MTR Order (Case no. 195 of 2017). The actual sales (excl. DF) are 97,300.14 MUs and 1,05,135.81 MUs, i.e., additional sale of 1,34.35 MUs and 6,097.04 MUs for FY 2017-18 and FY 2018-19 respectively.

4.2.3 MSEDCL has highlighted its study of AG dominated EHV Feeders, for justifying increase in sales in the Agriculture Category in FY 2018-19 as compared to FY 2017-18.

MSEDCL's Study of AG Dominated EHV Feeders:

4.2.4 The data of 734 EHV feeders feeding to MSEDCL AG dominated Substations were considered for study. These selected EHV feeders feeding Distribution Substations having AG feeder input more than 50 % of total input. MSEDCL submitted that the trend of the parameters under study have been analysed in the below tables.

Table 4-2: Increase in AG Sales in FY 2018-19 (Half yearly) as submitted by MSEDCL

All units are in MUs	734 EHV feeders				MSEDCL			
	H1 (Apr to Sept)		H2 (Oct to Mar)		H1 (Apr to Sept)		H2 (Oct to Mar)	
	EHV input	AG Sale	EHV input	AG Sale	Total I/P	Total Ag sales	Total I/P	Total Ag sales
FY 16-17	7,829	5,135	12,556	8,340	55,291	10,720	61,503	16,687
FY 17-18	9,954	6,459	12,281	8,217	60,927	12,813	62,945	16,992
FY 18-19	11,564	7,499	13,014	8,417	65,804	15,316	66,637	17,240
Year-on-Year trend (%)								
FY 17-18/FY 16-17	27.14	25.78	-2.19	-1.48	10.19	19.52	2.35	1.83
FY 18-19/FY 17-18	16.18	16.1	5.97	2.44	8.01	19.53	5.86	1.46

Table 4-3: Increase in AG Sales in FY 2018-19 (Yearly) as submitted by MSEDCL

All units are in MUs	734 EHV feeders		MSEDCL	
	EHV input	AG Sale	Total I/P	Total Ag sales
FY 16-17	20,385.00	13,475.00	1,16,794.00	27,407.00
FY 17-18	22,235.00	14,675.00	1,23,872.00	29,805.00
FY 18-19	24,578.00	15,916.00	1,32,441.00	32,556.00
Year-on-Year trend (%)				
FY 17-18/FY 16-17	9.07	8.91	6.06	8.75
FY 18-19/FY 17-18	10.54	8.45	6.92	9.23

Observation for EHV feeder Data:

4.2.5 MSEDCL has submitted following observations for change in sale for FY 17-18 compared to FY 16-17:

- In H1 of FY 17-18, an increase of around 19.52% is observed in Actual AG sales.
- This aforementioned increase in MSEDCL AG Sales is substantiated with the input rise & AG Sales of EHV feeders feeding to MSEDCL Substations. The EHV feeder AG Sale rise of 25.78% is in line with Input rise of 27.14% of EHV feeders.

- In similar manner for H2 of FY 17-18, drop in EHV input (-2.19%) is reflected in drop in AG Sale (-1.48%).
- The above data for FY 2017-18 in comparison to FY 2016-17 shows rise of 8.91% in AG Sale of EHV feeder and rise of 8.75% in AG Sale of MSEDCL is in similar lines with the rise in EHV Input of 9.07%.

4.2.6 MSEDCL has submitted following observations for change in sale for FY 18-19 compared to FY 17-18:

- In H1 of FY 18-19, an increase of around 19.53% is observed in Actual AG sales.
- This aforementioned increase in MSEDCL AG Sales is substantiated with the input rise & AG Sales of EHV feeders feeding to MSEDCL Substations. The EHV feeder AG Sale rise of 16.10% is in line with Input rise of 16.18% of EHV feeders.
- In similar manner for H2 of FY 18-19, Rise in EHV input (5.97%) is reflected in rise in AG Sale (2.44%).
- The above data for FY 2018-19 in comparison to FY 2017-18 shows rise of 8.45% in AG Sale of EHV feeder & rise of 9.23% in AG Sale of MSEDCL is on similar lines with the rise in EHV Input of 10.54%
- The similar pattern displayed in the above figure strongly affirms the relationship between EHV Input and AG sales

Commission's Analysis and Rulings

True-up of Non-AG Sales for FY 2017-18:

4.2.7 For true-up of sales for FY 2017-18, the Commission has reviewed the actual sales reported by MSEDCL for FY 2017-18 in its Petition. There is no significant variation in actual sales vis-à-vis that approved under MTR Order except for claim for AG sales. Out of total variation in sales of 1349 MU, variation in AG Sales amounts to 1175 MU as compared to that provisionally approved under MTR Order. For the purpose of true-up of Non-AG sales for FY 2017-18, the Commission has verified actual Non-AG Sales as claimed by MSEDCL vis-à-vis its audited annual accounts and month-wise sales submitted as per the formats submitted under MYT petition and found it to be in order. As regards true-up of AG Sales for FY 2017-18, the Commission has elaborated its approach in subsequent sections upon detailed scrutiny of MSEDCL's submissions and suggestions on estimation of AG sales as covered under final report submitted by AG Working Group.

True-up of Non-AG Sales for FY 2018-19:

4.2.8 For true-up of sales for FY 2018-19, the Commission has reviewed the actual sales reported by MSEDCL for FY 2018-19 in its Petition. There is a variation of 6097 MU in actual sales vis-à-vis that approved under MTR Order. Two consumer categories, namely, LT-AG and HT-Industry contribute to such large variation in total sales as compared to that provisionally approved at the time of MTR Order. Out of total variation in sales of 6097 MU, variation in AG Sales amounts to 3716 MU and variation in HT-Industry amounts to 2378 MU as compared to that provisionally approved under MTR Order. While only a part of increase in sales of HT-Industry can be attributed to reduction in Open Access sales (conventional OA sales reduced by around 336 MU from FY2017-18 to FY2018-19), significant yr-to-yr increase in HT-Industry sales at growth rate of around 10% p.a. has been observed since beginning of control period. The measures initiated by MSEDCL in terms of improvement in availability and quality of supply, reliability and investment in IT infrastructure could also be the contributing factors that have catered to this growing industrial demand. However, such yr-to-yr high growth rate regime may not be tenable as observed with lower growth rate in FY 2019-20 vis-à-vis FY 2018-19, as elaborated in subsequent section on provisional true-up for FY 2019-20. Accordingly, the Commission has considered moderate growth rate for projection of sales of HT-Industry over 4th Control Period in line with projections made by MSEDCL as elaborated under subsequent sections.

4.2.9 Further, for the purpose of true-up of Non-AG sales for FY 2018-19, the Commission has verified actual Non-AG Sales as claimed by MSEDCL vis-à-vis its audited annual accounts and month-wise sales submitted as per the formats submitted under MYT petition and found it to be in order. As regards true-up of AG Sales for FY 2018-19, the Commission has elaborated its approach in subsequent sections upon detailed scrutiny of MSEDCL's submissions and suggestions on estimation of AG sales as covered under final report submitted by AG Working Group.

True-up and Estimation of AG Sales for FY 2017-18 and FY 2018-19:

4.2.10 As regards estimation of AG Sales, MSEDCL has supported its claim for estimated AG sales based on the EHV input directly from the incoming EHV feeder of MSETCL. At the time of MTR petition as well MSEDCL had made similar submissions in support of the claim made for increase in AG Sales, and yet the Commission had decided to undertake independent study through analysis of feeder input data and field survey.

4.2.11 As per observations made under its MTR Order and in the absence of the AG Fact Finding Committee Report, the Commission decided to continue with the Circle-wise AG consumption indices to approve AG Sales, and thus, the Commission estimated

lower AG sales as compared to the AG Sales estimated by MSEDCL. In addition, since the Committee Report was not made available to the Commission, the Commission decided to conduct independent study for assessment on AG Sales which would form the basis of establishment of Ag sales from FY 2014-15 and in subsequent years. The relevant extract of the Commission's rulings is provided as under:

> *"3.2.32. In the previous MYT order, the Commission had disallowed 2,414 MUs of AG sales in FY 2014-15 and 3,400 MUs of AG sales in FY 2015-16. In the MTR Petition, MSEDCL has requested the Commission to approve the AG sales for FY 2014-15 and FY 2015-16 without any disallowances. In the review order Case No. 176 of 2016, the Commission had decided to revisit the disallowances in the MTR Petition on the basis of statement by MSEDCL that the Committee report is expected by March, 2017. However, the Commission notes that MSEDCL has not yet submitted the report as elaborated earlier in this section.* ***Hence, the Commission now shall conduct an independent study through an agency for assessment of Ag sales, which shall form the basis of establishment of Ag sales from FY 2014-15 and in subsequent years. The Commission shall appoint an independent 3rd party agency to undertake such study. Further the Commission shall define a detail ToR in due course of time and would be published on website." (****Emphasis added)*

4.2.12 In this context, the Commission constituted a Working Group for Agricultural Consumption study (AGWG). Upon the its constitution, AGWG carried out detailed deliberations on the contours and approach for the study and conducted field surveys through appointed Survey Agencies and carried out extensive analysis of data obtained through field survey as well as from MSEDCL. In January, 2020, WG submitted Interim Report of its findings to the Commission, which was then published on the MERC website inviting public comments on the same.

4.2.13 Post consideration of the comments received on the Interim Report, the Final Report was submitted by the AGWG to the Commission on 11 March 2020. This report covers the findings on metered AG consumption, the AG consumption norms and validation of total AG consumption, based on the Feeder meter input of 502 Feeders, covering around 1.33 Lakh AG consumers. In addition, the report also presents the suggestions regarding the methodology for ascertaining the AG Sales for FY 2014-15 and for the 3rd Control Period (FY 2016-17 to FY 2019-20) and procedure and way forward for measurement and estimation of AG consumption for future period.

4.2.14 Some of the key findings of the AGWG through analysis of field survey and analysis of feeder-wise input data is as under:

Status of AG Metering: *The analysis of AG metering status based on field survey of nearly 1.33 lakh consumers spread across the state shows that* ***compared to utility records, meters were found to be present for only 27% metered AG consumers****. Further in cases where meter readings could be validated,* ***more than 50% readings were found to be incorrect****. This highlights significant challenges in metering agricultural consumers.*

Bill Payment History: A zone-wise analysis of records of billing payment history also reveal an important point, which affects MSEDCL cash-flow significantly. It was observed that except in couple of zones, more than half of AG consumers have not paid any bill in last 4 years.

Number of days of Pump Usage: *In terms of no. of days of pump usage, survey reveals that nearly 70% of surveyed consumers use pumps between 50 and 150 days a year. 90 % consumers use pumps for less than 200 days a year, and just about 1.5 % consumers use pumps for more than 250 days a year.* ***This indicates that average days of pump usage is unlikely to exceed 250 days / yr. for any AG feeder****.*

Annual Hours of Pump Usage: *Annual hours of pump usage for each surveyed consumer is computed by multiplying the high-end value of days of pump usage for all seasons with hours of pump usage per day reported by consumer for the respective season.* ***It is observed that 98% of consumers, use pumps for less than 1500 hrs. a year.***

Pump Operational Status: *About 3 % of surveyed consumers responded that their pumps were non-operational, while another 2.7% consumers responded that their pumps were operational, but neither pump nor control panel was present on site. Another 9.5% of surveyed consumers responded that their pump is operational but even control panel was not present on site of these consumers.*

Analysis of Feeder Input and Excess Load: Detail analysis of AMR / MRI feeder meter data reveals that nearly 35% to 45% of analysed AG feeders have recorded load much more than the total connected load on the feeder. Such excess loading indicates the presence of either significant excess load by registered AG consumers or huge unregistered load or major lacunae in consumer mapping. This needs to be considered while deriving the feeder consumption norm based on feeder input.

Analysis of Current loading profile of Feeder: *Statistical analysis of the current loading profile of around 70 feeders was undertaken as shown in table 5.3. This table shows the number and % of feeders (out of 70 feeders)* ***for which current was above a particular value for at least 25 % of average pump usage hours of that feeder.***

Estimation of Technical Loss on Feeder: *Technical loss calculation requires information such as feeder length, conductor size, number of DTs, and year-round load profile of the feeder, etc. Such complete information was available only for 44 feeders out of 502 feeders. Out of these 44 selected feeders, similar to the load profile analysis presented in section 5.2,* ***29 feeders have registered excess loading (i.e. load more than the total connected load of the feeder).*** *It is also observed that 45% of these feeders have lengths between 11 km and 20 km, while for 23% feeders, length exceeds 20 km.*

Based on these calculations, it was observed that ***technical losses in AG feeders range between 6%-24%, with a weighted average of these 44 feeders being 18%.*** *Such wide variation in losses is observed primarily because of loading on the feeders and length of the feeders. For example, one feeder reported a technical loss of 24% as it runs 29 km and had significant excess loading (241 Amp) for the duration of around 180 hours, while another feeder runs only 9 km and no excess loading was observed, resulting in a loss of just 6%.*

4.2.15 The Final report was given to MSEDCL for their comments on 12 March 2020. MSEDCL was asked to submit their comments by 18 March 2020. However, no response has been received from MSEDCL. In absence of any response, the Commission considered MSEDCL's submission on interim Report as a final submission. In that submission, MSEDCL has broadly objected on three issues viz 1) use of latest data, 2) computation of technical loss and 3) use of boundary limits i.e. 3000 hours/HP/year. The Commission notes that in the Final Report, issue of using latest data and computation of technical losses has been addressed by the WG. However, on the issue of using boundary conditions for eliminating feeder from computation of Ag sales index, WG has provided reasons and not accepted submissions of MSEDCL. Thus, in absence of MSEDCL's reply on Final Report, the Commission presumes that only objection of MSEDCL would be not specifying any boundary limits and to consider all units fed to Agricultural Feeder as Agricultural sale.

4.2.16 In the final report, one of the findings of the WG was that, for the selected 502 Feeders some feeders were having inconsistent data, where either consumer mapping or feeder meter reading or Non-Ag Sales were inaccurate. Therefore, such feeders were excluded during the analysis.

4.2.17 Further, feeder-wise AG consumption (in kWh) was calculated by subtracting non-ag sales and feeder losses from metered feeder input. The same was then used to calculate feeder-wise consumption norm/index, in kWh/HP/year and Hrs/HP/year by dividing AG consumption by total AG connected load on the feeder as per MSEDCL's billing/master data.

4.2.18 Thus, based on the extensive analysis, the WG finally estimated the LT AG Sales for FY 2018-19 as in the range of +/-4% of 23,500 MU, which would imply the distribution loss of around 22%. This also corresponds to AG consumption norm of 1093 kWh/HP/yr, or 1,465 hrs/yrs. The relevant extract of the WG recommendations is provided as under:

"……

This analysis, using different datasets and technical loss values, indicate that for FY 18-19, LT AG sales of MSEDCL were in the range of +/- 4% of 23.500 MU, and ***hence, 23,500 MU should be used for any specific analysis and energy balance as well as distribution loss calculations for MSEDCL system.***

Based on various analysis presented in the preceding chapters of the report, the ***Working Group estimates FY18-19 LT Agricultural Sales of MSEDCL to be 23,500 MU. This corresponds to agriculture consumption norm of 1,093 kWh/HP/yr or 1,465 hrs/yr****.*

…….

Based on the extensive analysis carried out by the WG, FY 18-19 LT AG Sales of MSEDCL are estimates to be 23,500 MU. This is about 70% of sales estimated by the utility, ***and would imply distribution loss of around 22%, a difference of around 7.3% points compared to 14.7% as claimed by MSEDCL for FY 18-19" (Emphasis Added)***

4.2.19 The Commission upon scrutiny and review of the overall approach and methodology presented in the Final Report, is of the opinion that, for estimation of AG Sales and its corresponding AG consumption norm for FY 2018-19, AGWG has come out with a fair and reasonable estimation method based on comprehensive analysis of feeder input. The Commission also notes from the analysis that though the technical loss level is in the range of 6% to 24%, on some of the feeders the losses are of significantly high order ranging from 16% to 18%, which could be due to multiple factors such as, long length of feeders, vintage of feeders, excessive loading (due to higher connected load than record or unauthorized use) for long duration out of operating hours of the feeder etc. Accurate mapping/indexing of consumers (AG and Non-AG) and validating their connected load as per master records or updating master records is critical for improving feeder based energy accounting and addressing the issue of high loss levels. For accurate estimation, apart from validation of connected load, it is equally important to address the issue of unauthorized loads. The Commission is also aware of the fact that there are a large number of paid pending cases awaiting Agriculture connection

which clearly indicates a possibility of unauthorized loads in the system. All these factors do have an impact on the estimation of Agriculture consumption. Further, the Commission observes that a very rigorous and sustained approach on at least medium term basis is necessary to come close to the real estimated Ag consumption. The Commission appreciates that through their sustained efforts and reliance on automation for meter reading, MSEDCL is moving in the right direction of proper estimation of Ag consumption and the Commission further observes that AGWG study would not have been possible without availability of extensive AMR/MRI based feeder input data and active participation and support from MSEDCL. This fact has also been acknowledged by AGWG in its Final Report as reproduced below:

> *"….WG wish to record that the methodology adopted in this report and analysis undertaken was possible primarily due to the efforts put in by MSEDCL in recent years for deploying AMR / MRI feeder metering infrastructure and more importantly, ensuring continuous maintenance and monitoring of these systems. This emphasis of MSEDCL management on building transparent and accountable metering infrastructure has enabled the WG to develop methodology for transparent estimation of AG consumption and to help address challenge of AG consumption estimation."*

4.2.20 In this context, the Commission notes that the best possible option for Energy Accounting would be individual metering of all the consumers including all Ag on that feeder, DTC metering and feeder metering. Consumer metering is also a mandate of the Electricity Act and is not optional. Further all these meters, to the extent possible should be automatically read. This will clearly give the actual Ag consumption. Though ultimately MSEDCL will have to adopt this method as a long term option, it may not be possible for them to achieve the same in medium term due to various difficulties in implementing this method. The AGWG also has referred and substantiated these practical difficulties faced by MSEDCL in metering the individual AG consumers. Thus in the interim, some viable alternative and a method better than the one implemented at present needs to be considered. The interim method needs to cover the difficulties of MSEDCL and also address the issue of correct AG consumers billing. The Commission also feels that though the AGWG has carried out the study in a very transparent and fair manner, there are some factors which need to be considered for incremental improvement of the estimates. The Commission, till such time all the AG consumers are metered and are accurately/automatically read, would like MSEDCL to continue the good work esp with regard to automated readings of the feeder meter for more accurate estimation of AG consumption. While recognising the reality on field and the difficulties of MSEDCL regarding metering and reading of meters AGWG also has recommended an alternative method with regard to estimation of AG consumption. The Commission also, in the interim deems it fit to allow feeder input based

methodology for Ag billing to selected feeders.

4.2.21 The Commission also notes the difficulties and limitations expressed by AGWG in maintaining, updating the feeder metering (AMR/MRI) information. In order to have a credible interim arrangement of feeder input based methodology, (through operationalising the feeder input based methodology), it is important that feeder-based energy accounting data based on AMR/MRI is maintained and made available in automated manner without manual intervention and without need for assessment due to any reason (including but not limited to CT/PT errors, mapping errors, communication errors etc.). Further, estimation of feeder-wise technical losses (by segregating losses on account on wrong/non billing and unauthorised consumption (if any), mapping of AG and Non-AG consumers on the feeder, updating master data thereof and timely publishing this information in transparent manner on regular basis is essential, which will boost the confidence level of all stakeholders in ascertain a better estimation of actual AG consumption in the state using Feeder Input based methodology, in the absence of actual metering of entire AG consumers.

4.2.22 The Commission further notes the opinion of AGWG that, despite existing limitations and constraints, the existing feeder input based methodology, which is based on rigorous stratified random sample based feeder selection approach, is reasonably robust enough to represent the state-wide AG consumption within +/- range of 4%. However, the Commission feels that further refinements and improvements in the estimation would be possible if MSEDCL addresses the current limitations and difficulties as highlighted above and the methodology is extended to cover more number of feeders over the period of time.

4.2.23 In this context, the Commission notes the observations and suggestions made by AGWG, which are summarised below:

- Feeder input based metering, as considered in this report, enables capturing consumption of large number of AG consumers in an economical, efficient and reasonably accurate manner. For example, sample 502 feeders considered in this study covered total of about 2.3 lakh AG consumers (i.e. more than 5% of total AG consumers of MSEDCL).
- Based on field survey input, it is certain that ensuring reasonably accurate metering of AG consumers is going to take some time and AG sales will need to be estimated for few more years. Hence, it is important to continuously improve reliability of such estimation, by ensuring correct consumer mapping, reliable and accurate feeder metering, identification of missing / defunct AG connections and restating total AG connected load to that extent.

- Analysis carried out by the WG also indicates that even technical losses on AG feeders may be different for different feeders and could be higher than expected. This could be due to feeder loading pattern, large number of DTs on AG feeders, unauthorised load and excessive feeder length. It would be helpful for MSEDCL to undertake thorough analysis of technical loss on AG feeders and also address the issue of commercial losses. This will help better identification of distribution losses and plan infrastructure investment to reduce distribution loss.
- The feeder meter-based method would enable year on year estimation of AG sales. Such an estimation would also capture changes in AG sales due to factors such as change in rainfall, seasonal impact, regional water availability based usage pattern, regional cropping pattern, and electricity supply hours, as effect of these parameters on pump usage will be captured in feeder input and hence feeder meter readings.
- A similar exercise, covering more number of feeders for feeder meter analysis and more focused, limited sample for field validation, could be undertaken at the beginning of each MYT period to assess agricultural consumption, and inter-alia distribution loss for the last year of previous MYT period. Till such time all the consumers are fully and properly metered and the readings are taken in an automated manner, this exercise could be continued.
- This distribution loss could be used as reference for final true-up of previous MYT period as well as for providing distribution loss trajectory for ensuing MYT period. This would enable capturing dynamic nature of AG consumption on periodical basis. For the purpose of mid-term review and provisional true-up on yearly basis, a limited exercise of feeder meter based analysis could be carried out at the time of mid-term review exercise. Improving consumer mapping and AMR based feeder metering would help cover larger number of feeders and would also improve accuracy of estimation.

4.2.24 The Commission notes that AGWG has computed only Technical Losses based on loading data available from the Feeder meter and physical parameters of the various elements (such as conductor size, length, DTC parameters etc) of the feeder. However, the AGWG is not able to look into commercial and billing losses on these feeders as primary requirement for this is metered sales of all consumers which is not accurately available. As observed earlier, chances of having higher commercial loss and hence higher total losses on account of long list of paid pending Ag connection applications, unauthorised use etc. cannot be ruled out. Hence, MSEDCL needs to work towards reducing these losses on Ag feeder for having reliable Ag estimation. Also, continuous

monitoring of selected feeder over the longer period would factor in changes such as regional (climatic/cropping) changes, seasonal changes, ground water levels etc.in addition to factors mentioned by the WG. This exercise will result in incremental improvement in the AG estimation over a period of time.

4.2.25 Upon careful consideration of above points and suggestions made by AGWG, the Commission is of the view that key activities that MSEDCL needs to focus in order to operationalise feeder-input based energy accounting and to further improve the estimation of AG consumption shall cover amongst various aspects following specific action points:

- Ensuring availability of (month-wise/time-slot-wise) feeder metering (AMR/MRI) for feeders (>95% time-slot data).
- Addressing the difficulty in feeder metering (AMR/MRI) and minimising assessment of feeder meter data (month-wise/time-slot wise) due to CT/PT errors, mapping errors, communication error etc. (<5% time-slot data)
- Web-publishing of Feeder-wise AMR/MRI data in timely manner (By 7th of month for previous month).
- Metering the DTC (AMR), to start with the DTC on all the 502 feeders which were taken up for survey. Web-publishing of Feeder wise DTC wise AMR data in timely manner (By 7th of month for previous month)
- Feeder-wise mapping of consumers (AG and Non-AG) and indexing/geo-tagging of consumer data to DTC and feeder and regularly updating (not later than one month) it in case of shifting of load from one DTC/feeder to another.
- Compiling/updating Feeder profile information and undertaking technical loss assessment of Feeder based on feeder length, no. of DTCs and its distribution across feeder, current loading pattern, LT circuit distribution and number of pumpsets/connected load
- Updating Master records of AG consumers for Addition/Deletion of consumer based on field validation (before MTR and end of Control Period)
- Updating Master records of Connected Load of AG consumers for Addition/Deletion of Connected Load based on field validation (before MTR and end of Control Period)

4.2.26 The Commission hereby directs MSEDCL to submit detailed roadmap and action plan for undertaking above activities mentioned at 4.2.25 and also additional activities that MSEDCL wishes to undertake so as to improve the estimation process. The roadmap

and the action plan shall be submitted to the Commission within two months from issuance of this Order.

4.2.27 As regards estimation of AG Sales for FY 2017-18 and FY 2018-19 is concerned, the Commission opines that given the difficulties and limitations that one is required to deal with, even under robust methodology, the estimation could vary in the range of +/- 4%, which is also noted by AGWG in its study. Hence, any kind of exact estimation of AG sales and consequently exact assessment of distribution losses thereof would neither be fair nor be proper and such figures would be range bound. Further, as AG sales constitute around 25%-28% of total sales, the estimation of distribution loss itself could vary in the range of +/- 1% to 1.5% as compared to figures considered for the estimation of loss levels for FY 2018-19. Hence, the Commission has decided to accept overall approach and feeder input based methodology as basis for estimation of AG Sales and assessment of distribution loss in principle with adjustment in the range of estimation as +/-8% instead of +/-4% and for the purpose of true-up of sales, energy balance and assessment of distribution loss level for FY 2018-19 and for stipulating distribution loss reduction trajectory for future period.

True-up of AG Sales for FY 2018-19:

4.2.28 Accordingly, for the purpose of true-up for sales, energy balance and assessment of distribution losses for FY 2018-19, the Commission has considered estimation of AG sales of 25,380 MU upon applying range adjustment factor of +/-8% as against recommendation of AGWG of +/-4%, which amounts to AG consumption norm of 1181 units/HP/annum (i.e.1583 hours/HP/annum) vis-à-vis AG consumption norm recommended by AGWG at 1093 units/HP/annum (i.e.1465 hours/HP/annum) for FY 2018-19. The AG consumption norm considered by Commission under MTR Order for FY2018-19 was 1354 unit/HP/annum (i.e.1815 hours/HP/annum) whereas AG consumption norm as claimed by MSEDCL in its MYT petition for FY 2018-19 is 1515 units/HP/annum (i.e.2031 hours/HP/annum). Further, considering AG sales of 25,380 MU, the distribution loss level for FY 2018-19 works out to 20.54%. The detailed computation of the distribution loss level for FY 2018-19 is provided under subsequent section on approved Energy Balance for FY 2018-19.

4.2.29 Further, the treatment for sharing of gains/losses on account of distribution loss level along with rationale thereof, is elaborated under subsequent chapters of this Order.

4.2.30 Further, refinements and improvements in the estimation of AG sales can be accomplished with improvement in accounting of feeder inputs and other initiatives as highlighted in the earlier paragraphs. MSEDCL is directed to develop a roadmap and action plan to undertake the same.

4.2.31 The Commission observes that improvement in estimation/assessment of loss level for FY 2018-19 was possible due to improved availability of feeder input (AMR/MRI) data thereby allowing better understanding in assessment of AG sales. Such assessment of AG Sales and hence the loss levels for the past period would not have been possible in the absence of feeder input data (AMR/MRI). Besides, such loss assessment is range bound due to the various difficulties and limitations as cited above. Refinements/improvements in the methodology would be possible in future through continuous efforts and support from stakeholders/consumers by sharing of data, extending support during field validation and while undertaking exercise of updating master data/records in transparent manner. Hence, the Commission opines that holding only licensee accountable for such reassessment would not be proper and would defeat very purpose of demystifying AG consumption conundrum and may pose challenge in initiating measures to take corrective steps/measures in the larger interest of all stakeholders. The Commission has to strike balance between upholding regulatory principles for treatment of past period enumerated through earlier Orders and at the same time ensure that interest of consumers and utility are protected alike. Accordingly, the Commission has decided to give effect towards treatment of past period loss level to an extent of only 50% of estimated impact on account of variation in distribution loss (now ascertained) which Licensee has to bear as per sharing of gains and losses, MYT Regulations, 2015

Re-assessment of AG Sales and Distribution Loss for Past Period:

4.2.32 As regards assessment of distribution loss level for past period (incl. true-up for FY2017-18 and FY2018-19), the Commission observes that under its MTR Order it has stipulated as under:

> *"3.2.34. The Commission would undertake a detailed review of the methodology of determination of AG Sales based on the Study proposed to be carried out by the Commission through a third party agency appointed. The methodology finalised through* ***this study shall form the basis for approval of AG sales during truing up exercise to be carried out at the end of the 3rd Control Period and for years FY 2014-15, to FY 2016-17.*** *However, it is clarified that as the true-up of ARR for these years is already over (except for the assessment of AG sales and corresponding revision in the distribution loss thereof (if any)),* ***the revision of revenue gap (over-recovery or under-recovery) shall be undertaken only in terms of sharing of distribution loss.*** *For this purpose of sharing of gains/losses same methodology and principles as adopted through this MTR Order for respective years shall be followed for such adjustment." (emphasis added)*

4.2.33 However, the Commission agrees with the observations made by AGWG that it needs to be noted that this difference in now estimated distribution loss of around 5.8% (i.e.

20.54% as compared to that claimed by MSEDCL 14.7% for FY 2018-19) is a result of better estimation of AG sales that was possible due to improved feeder metering undertaken in recent years and Commission's consistent emphasis, since 2011, to undertake third party independent estimation of AG sales. Also, the estimate of Distribution losses can be further improved by continuously monitoring the feeder input and updating the master data with accurate mapping. The possibility of the Distribution losses in earlier years could be at the same level of FY 2018-19 but could not have been accurately estimated in the absence of detailed exercise as carried out by MSEDCL and the working group.

4.2.34 Further, in this context of reassessment of AG sales for past period and the treatment of past period distribution losses, the Commission also notes the following observations of AGWG:

> *Government of Maharashtra also provides subsidy to reduce agricultural tariff. This subsidy is based on connected load (HP) of un-metered AG consumers and sales to metered consumers. This subsidy is provided on the basis of gross numbers and not to any specific individual. Restatement of AG sales to 70% of earlier estimates implies that on per unit basis Government subsidy towards agricultural consumption was in fact more. In the absence of such subsidy, entire burden of additional losses (except loss reduction target of typically 1% to 2% points) would have fallen on MSEDCL consumers and average tariff would have increased.* ***Thus, even though AG sales are restated, government subsidy calculated on the basis of earlier estimates, has helped reduce burden of excess losses, cross-subsidy as well as tariff for all consumers of MSEDCL. Being regulated entity MSEDCL cannot make any profit out of such subsidy amount.***

4.2.35 The Commission tends to agree with above observations of AGWG. As explained earlier, estimation done by the AGWG is a different way of moving towards a more accurate estimation. The estimation method used by MSEDCL earlier and which was transparently informed to the Commission all along clearly implies that MSEDCL all along had kept the Commission in knowledge of the estimation mechanism. The Commission would like to categorically state here that the method of AG estimation (using metered Ag sale for estimation of un-metered Ag sale) used by MSEDCL was approved by this Commission in the past. However, over the period as technological tools become available, the Commission through AGWG is intending to improve upon such methodology for estimation of Ag sale. Also, the additional subsidy which appears due to change of methodology is the correct subsidy based on the methodology adopted by MSEDCL in the past. Also, the subsidy in no way is resulting in any gains of any kind for MSEDCL. In fact, as observed by AGWG as a result of additional losses in previous period, possibly the Government could have retained the overall amount of

this subsidy by increasing the per unit/per hp subsidy and the tariffs for other consumer categories would have been maintained at the present levels. Alternatively, the tariffs of the subsidizing consumers would have been required to be increased further to balance the ARR of MSEDCL. Thus, the Commission categorically states that the difference in the estimation of Agriculture consumption is only due to the improvement in availability of automated metering data due to which a better methodology for estimation could be adopted.

4.2.36 Under the circumstances, the Commission would undertake a detailed review of the operationalisation of Feeder Input based methodology of determination of AG Sales at the time of MTR, as per roadmap and action plan put in place by MSEDCL. The outcome of results and methodology finalised through this exercise shall form the basis for approval of AG sales from FY2019-20 onwards, during truing up exercise to be carried out at time of MTR.

4.2.37 As highlighted in earlier paragraphs, the Commission has decided to give effect towards treatment of past period loss level (i.e. from FY 2014-15 to FY 2018-19) to an extent of only 50% of estimated impact on account of variation in distribution loss (now ascertained).The detailed computation of treatment for sharing of gains/losses on account of distribution loss level for past period alongwith rationale thereof, is elaborated under subsequent chapters of this Order.

True-up of AG Sales for FY 2017-18

4.2.38 In view of above, for the purpose of true-up for sales, energy balance and assessment of distribution losses for FY 2017-18, the Commission has estimated AG sales of 23,149MU considering same level of distribution loss (20.54%) as that estimated for FY 2018-19, in line with recommendation of AGWG. The detailed computation of the Energy Balance and distribution loss level for FY 2017-18 is provided under subsequent section on approved Energy Balance for FY 2017-18. However, no treatment of sharing of gains/losses for past period on account of distribution loss level is proposed to be undertaken at this stage for the reason elaborated under earlier paragraphs.

4.2.39 The summary of the approved Sales for FY 2017-18 and FY 2018-19 for the purpose of Truing-up is provided as under:

Table 4-4: Sales of FY 2017-18 and FY 2018-19 as approved by the Commission (MU)

Particulars	FY 2017-18	FY 2018-19

	MTR Order	MYT Petitioned	Approved by the Commission	MTR Order	MYT Petitioned	Approved by the Commission
HT Sales	34,788	34,799	34,799	35,478	38,005	38,005
LT Sales (Excl. LT AG Sales)	36,854	36,952	37,080	38,873	38,830	38,970
LT AG Sales	28,746	29,921	23,149	29,362	32,696	25,380
Total Sales	**100,388**	**101,673**	**95,029**	**103,714**	**109,531**	**102,355**

4.3 Energy Balance for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.3.1 For calculating energy balance of MSEDCL as a whole, the sale to the consumers within the Distribution Franchisee area and OA sales has also been considered. In addition, MSEDCL has also factored the sales against the Solar offset units. Accordingly, energy available for FY 2017-18 and FY 2018-19 is computed by MSEDCL as below:

Table 4-5: Energy Available for Sales for FY 2017-18 (MU) as submitted by MSEDCL

Particulars	FY 2017-18		
	MTR Order	Actual	Deviation
Energy Sales by MSEDCL for FY 2017-18	95,950.79	97,300.14	1,349.35
Add: Category wise sales in DF area	4,436.88	4,372.89	(63.99)
Add: Solar Offset Units		18.17	18.17
Add: OA Sales (Conventional)	4,330.00	4,303.33	(26.67)
Add: Renewable OA	679.00	676.51	(2.49)
Total Energy sales MSEDCL	**1,05,396.67**	**1,06,671.04**	**1,274.37**

Table 4-6: Energy Available for Sales for FY 2018-19 (MU) as submitted by MSEDCL

Particulars	FY 2018-19		
	MTR Order	Actual	Deviation
Energy Sales by MSEDCL for FY 2018-19 incl. Offset Solar Units	99,038.77	1,05,209.70	6,171
Add: Category wise sales in DF area	4,675.16	4,395.33	(279.83)
Add: OA Sales (Conventional)	4546.50	3,967.38	(579.12)
Add: Renewable OA	712.95	854.92	141.97
Total Energy sales MSEDCL	**1,08,973**	**1,14,427.33**	**5,453.95**

4.3.2 MSEDCL submitted that the total energy sales for FY 2017-18 is 1,06,671.04 MU and for FY 2018-19 is 1,14,427 MU as compared to 1,05,396.67 MU and 1,08,973.38 MU for FY 2017-18 and FY 2018-19 respectively which was approved by the Commission

in MTR Order dated 12th September 2018.

4.3.3 MSEDCL also submitted that data of metered energy is available at 3 points: at bus-bar of the MSEDCL generating station, at T <> D interface i.e. at Distribution Periphery and sales at consumer end. MSEDCL further stated that in order to calculate Distribution Loss, it considered metered energy at Distribution periphery and sales at consumer end.

4.3.4 MSEDCL submitted that it is procuring power from various Sources including MSPGCL, CGS, including nuclear power plants, traders, IPPs and Renewable sources. It would be very difficult to differentiate which power is coming from which source at Transmission periphery. Hence, an average inter-state loss for the whole year is considered for power sourced from outside the State of Maharashtra.

4.3.5 MSEDCL submitted that power purchased from the inter-state transmission network is scheduled by Western Region Load Dispatch Center. MSEDCL further submitted that based on the power scheduled at generator bus for Maharashtra is available as Full Schedule on WRLDC web based scheduling software. Similarly, power scheduled at Maharashtra state periphery are available as Net schedule on WRLDC web based scheduling software.

4.3.6 MSEDCL submitted that in case of Tarapur Atomic Power Station of NPCIL (TAPS 1&2) is considered as ISGS station but connected to Maharashtra State STU network for power evacuation. Hence, for scheduling of power to Maharashtra, no PoC / scheduling loss is considered. Similarly, EMCO Warora is located in Maharashtra but this generating station is connected to ISTS network. Hence power is scheduled by WRLDC.

4.3.7 For interstate loss computation, power scheduled from ISGS station, CGPL, EMCO, SSP, Pench & short term through Inter-state network i.e. whose scheduling done by RLDC is taken into consideration.

4.3.8 MSEDCL submitted that it has also purchased power from power market mainly Indian Energy Exchange as per requirement to meet demand or for cost optimization. The power purchase from Indian Energy Exchange is at Regional periphery and drawal losses are applicable for energy purchased from IEX to compute energy available at Maharashtra State periphery.

4.3.9 MSEDCL submitted that it has also had agreements for banking of power from States like Haryana, Himachal Pradesh, and UPPCL etc. In banking arrangement, Power transactions are settled at Regional Periphery and concerned DISCOMs has to bear

Drawal loss when receiving power from other DISCOM and has to bear injection loss when delivering power to other DISCOM.

4.3.10 MSEDCL submitted that the surplus power traded at the Exchange is billed at the Regional periphery and bilateral power traded is billed at STU periphery. MSEDCL has traded surplus power quantum of 985 MU during FY 2017-18 and 1,413 MU during FY 2018-19 through energy exchange and bilateral trading.

4.3.11 MSEDCL further submitted that as per latest DSR available, UI for FY 17-18 is considered as (1,413.85) MU. The WRLDC provides web based scheduling reports on their website where details of full schedule and net schedule from each Inter State Generating Station. The WRLDC uses this data for loss calculation. Further, WRPC prepares the REA from this data which forms the basis of billing for ISGS.

4.3.12 MSEDCL has prepared the cumulative information for FY 17-18 and FY 18-19 based on these above mentioned reports. Considering the energy at ex bus bar and energy received at STU periphery from these reports, MSEDCL has considered the inter-state transmission losses as 3.54% for FY 17-18 and 3.07% for FY 2018-19.

4.3.13 MSLDC computes the Intra State Transmission System (InSTS) Grid Loss based on the Energy Input and Energy Output. This is grid loss for the Maharashtra Transmission System and not for MSEDCL. Hence, considering the fact that Grid Loss can't be same for all Distribution Licensees, MSEDCL has computed Intra-State losses.

4.3.14 MSEDCL submitted that the open access consumption takes place at different voltages viz. 11 kV, 22 kV, 33 kV and EHV level. The Commission has been allowing the wheeling losses of 9%, 7.5%, 6% and 0% respectively for these voltage levels. Further, Intra State transmission loss for Maharashtra System is 3.30%. In view of these losses and consumption, MSEDCL has considered a normative loss of 6% for computing the input for OA consumption.

4.3.15 Considering the energy available for sale for FY 2017-18 and FY 2018-19 as shown below, the energy balance for MSEDCL is calculated. The following tables shows the energy balance for FY 2017-18 and FY 2018-19 as submitted by MSEDCL.

Table 4-7: Energy Balance for FY 2017-18 as submitted by MSEDCL

Sr. No.	Particulars	Calculation	UoM	FY 2017-18	
				MTR Order	Actual
1	LT Sales (Including D.F.)	A	MU	65,600.00	66,874.00
2	HT sales excluding EHV level Sales(Including D.F)	B	MU	27,082.00	27,075.00

Sr. No.	Particulars	Calculation	UoM	FY 2017-18	
				MTR Order	Actual
3	HT/LTIP Credit Sales and HT/LT Offset Export Solar Units	C	MU		18.00
4	**Total Sales Including D.F. (Excluding EHV Sales)**	**d=a+b+c**	**MU**	92,683.00	**93,967.00**
5	OA Sales (Renewables)	e	MU	**679.00**	677.00
6	OA Sales (Conventional)	f	MU	4,330.00	4,303.00
7	**Retail Energy Sale to Consumers (Excluding EHV Sales)**	**A=d+e+f**	**MU**	**97,692.00**	**98,947.00**
8	**Total Power Purchase**	**B=g+h**	**MU**	**1 ,25,422**	**1,27,311.00**
9	Power Purchase Quantum from Intra-State sources	g	MU	82,115.00	83,616.00
10	Power Purchase Quantum from Inter-State sources	h	MU	43,307.00	43,696.00
11	**Inter-State Losses**	I	%	3.47%	3.54%
12	Power Purchase Quantum from Inter-State sources at MS Periphery	j=h*(1-i)	MU	41,806.00	42,149.00
12.1	Add: FBSM	k			-1,413.85
13	**Power Quantum handled at Maharashtra Periphery**	**I=g+j+k**	**MU**	**1 ,23,921**	**1,24,351.00**
14	Infirm Non-PPA Wind Power	m	MU	-	720.00
15	Input for OA Consumption	n=f/(1-6%)	MU	4,606.00	4,578.00
16	**Total Power Purchase Quantum Handled**	**o=I+m+n-w**	**MU**	**1,28,039.00**	**1,29,159.00**
17	Surplus Power Traded	p	MU	580.00	985.00
18	**Energy Requirement at G<>T Periphery**	**q=o-p**	**MU**	**1,27,459.00**	**1,28,174.00**
19	**Intra-State Transmission Loss**	r	**%**	3.30%	3.72%
20	Intra-State Transmission Loss	s=q*r	MU	4,206.00	4,772.00
21	Net Energy requirement at T<>D Periphery	t=q-s	MU	1,23,253.00	1,23,402.00
22	EHV Sales	u	MU	7,705.00	7,724.00
23	Net Energy Available for Sale at 33kV	v=t-u	MU	1,15,548.00	1,15,678.00
24	Energy injected and drawn at 33kV	w	MU	488.00	490.00
25	**Total Energy Available for Sale at 33kV (Metered Energy at EHV and 33 kV Input)**	**C=v+w**	**MU**	**1 ,16,036**	**1,16,168.00**
26	**Distribution Loss (Excl. EHV Sales)**	**D=C-A**	**MU**	**18,344.00**	**17,221.00**
27	**Distribution Loss (Excl. EHV Sales)**	**E=D/C**	**%**	**15.81%**	**14.82%**

Table 4-8: Energy Balance for FY 2018-19 as submitted by MSEDCL

Sr. No.	Particulars	Calculation	UoM	FY 2018-19	
				MTR Order	Actual
1	LT Sales (Including D.F.)	a	MU	68,236.00	71,527.00
2	HT sales excluding EHV level Sales(Including D.F)	b	MU	27,363.00	28,391.00
3	HT/LTIP Credit Sales and HT/LT Offset Export Solar Units	c	MU	-	73.89

Sr. No.	Particulars	Calculation	UoM	FY 2018-19	
				MTR Order	Actual
4	**Total Sales Including D.F. (Excluding EHV Sales)**	**d=a+b+c**	**MU**	95,598.00	**99,991.00**
5	OA Sales (Renewables)	e	MU	**713.00**	855.00
6	OA Sales (Conventional)	f	MU	4,547.00	3,967.00
7	**Retail Energy Sale to Consumers (Excluding EHV Sales)**	**A=d+e+f**	**MU**	**1,00,858.00**	**1,04,813.00**
8	**Total Power Purchase**	**B=g+h**	**MU**	**1,27,199.00**	**1,36,435.00**
9	Power Purchase Quantum from Intra-State sources	g	MU	87,596.00	89,916.00
10	Power Purchase Quantum from Inter-State sources	h	MU	39,604.00	46,519.00
11	**Inter-State Losses**	I	%	3.30%	3.07%
12	Power Purchase Quantum from Inter-State sources at MS Periphery	j=h*(1-i)	MU	38,297.00	45,091.00
12.1	Add: FBSM	k		-	-1,286.00
13	**Power Quantum handled at Maharashtra Periphery**	**I=g+j+k**	**MU**	**1,25,892.00**	**1,33,721.00**
14	Infirm Non-PPA Wind Power	m	MU	-	909.48
15	Input for OA Consumption	n=f/(1-6%)	MU	4,837.00	4,221.00
16	**Total Power Purchase Quantum Handled**	**o=I+m+n-w**	**MU**	**1,30,241.00**	**1,38,278.00**
17	Surplus Power Traded	p	MU	-	1,413.00
18	**Energy Requirement at G<>T Periphery**	**q=o-p**	**MU**	**1,27,459.00**	**1,36,866.00**
19	**Intra-State Transmission Loss**	r	**%**	3.30%	3.62%
20	Intra-State Transmission Loss	s=q*r	MU	4,298.00	4,956.00
21	Net Energy requirement at T<>D Periphery	t=q-s	MU	1,25,943.00	1,31,910.00
22	EHV Sales	u	MU	8,116.00	9,614.00
23	Net Energy Available for Sale at 33kV	v=t-u	MU	1,17,827.00	1,22,296.00
24	Energy injected and drawn at 33kV	w	MU	488.00	573.00
25	**Total Energy Available for Sale at 33kV (Metered Energy at EHV and 33 kV Input)**	**C=v+w**	**MU**	**1,18,315.00**	**1,22,869.00**
26	**Distribution Loss (Excl. EHV Sales)**	**D=C-A**	**MU**	**17,458.00**	**18,062.00**
27	**Distribution Loss (Excl. EHV Sales)**	**E=D/C**	**%**	**14.76%**	**14.70%**

4.3.16 MSEDCL further submitted that the FBSM has not been finalized after February 2018. It has been more than 1.5 years since the FBSM was finalized. MSEDCL has requested to the Commission to direct SLDC to finalize the FBSM on regular basis so the exact impact of the quantum as well as cost can be considered in tariff Petitions.

Commission's Analysis and Ruling

4.3.17 The Commission notes that the Energy Balance submitted by MSEDCL for FY 2017-18 and FY 2018-19 is as per the format F1.4 approved for third MYT Control period, in which Distribution Loss has been estimated excluding EHV sales.

4.3.18 The Commission has considered the Conventional Open Access Sales and Renewable Open Access Sales as submitted by the MSEDCL. The data has been verified from the submission made in response to queries raised. Accordingly, the submission by MSEDCL towards Open Access Sales is found to be in order.

4.3.19 In previous sections, the Commission has elaborated on its approach for estimation of AG sales for the purpose of true-up of FY 2017-18 and FY 2018-19 and for the purpose of Energy Balance and assessment of distribution losses thereof.

4.3.20 Based on the revised estimate of LT Sales by the Commission as approved in this Order, the approved sales including the DF sales, OA sale and solar offset units as available for the Energy Balance of FY 2017-18 and FY 2018-19 are as shown below:

Table 4-9: Energy Available for Sale for FY 2017-18 (MU) as approved by the Commission

Particulars	FY 2017-18		
	MTR Order	Actual	Approved in this Order
Energy Sales by MSEDCL for FY 2017-18	95,950.79	97,300.14	95,028.80
Add: Category wise sales in DF area	4,436.88	4,372.89	
Add: Solar Offset Units		18.17	18.17
Add: OA Sales (Conventional)	4,330.00	4,303.33	4,303.33
Add: Renewable OA	679.00	676.51	676.51
Total Energy sales MSEDCL	**1,05,396.67**	**1,06,671.04**	**100,026.81**

Table 4-10: Energy Available for Sale for FY 2018-19 (MU) as approved by the Commission

Particulars	FY 2018-19		
	MTR Order	Actual	Approved in this Order
Energy Sales by MSEDCL for FY 2018-19	99,038.77	1,05,135.81	102,354.62
Add: Category wise sales in DF area	4,675.16	4,395.33	
Add: Solar Offset Units		73.89	73.89
Add: OA Sales (Conventional)	4546.50	3,967.38	3,967.38
Add: Renewable OA	712.95	854.92	854.92
Total Energy sales MSEDCL	**1,08,973.38**	**1,14,427.33**	**107,250.81**

4.3.21 The Commission has considered the energy injected and drawn at 33 kV as submitted by MSEDCL as this information about energy injected and drawn at 33 kV is maintained at Circle offices of MSEDCL.

4.3.22 The Commission found that there was a difference in the Energy drawn at Distribution periphery when compared with the data submitted by MSLDC (Deviation of 144.26

MU and 8.51 MU in FY 2017-18 and FY 2018-19 respectively). MSEDCL was asked to submit the reasons for the deviation w.r.t. Energy drawn by MSEDCL at Distribution Periphery compared to the MSLDC data. The reasons for variation has been clarified by the MSEDCL in response to the query raised as below.

4.3.23 For FY 17-18, the major reason observed for difference is that the consumption of EHV Consumer, Chandrapur Thermal Power Station (2x500 MW) (Consumer No. 450019100140) of 164.37 MU is considered by MSEDCL but same is not considered by MSETCL. In addition, the Metering Point for EHV consumers were different for MSEDCL and MSETCL in FY 2017-18. For FY 2018-19, the difference of 8.51 MU is attributed to the reasons that the Metering Point for EHV consumers are different for MSEDCL and MSETCL. In addition, Metering points, location of Meters, count of drawal points and class of accuracy of meters are different for MSEDCL and other Licensee.

4.3.24 Accordingly, the Commission has considered the Net Energy requirement at T<>D Periphery as claimed by the MSEDCL for FY 2017-18 and FY 2018-19 for calculating the Distribution Loss.

4.3.25 The Distribution Losses arrived at for FY 2017-18 and FY 2018-19 in the Energy Balance are consequent to the above changes.

Table 4-11: Energy Balance for FY 2017-18 as approved by the Commission

Sr. No.	Particulars	Calculation	UoM	FY 2017-18		
				MTR Order	MYT Petition	Approved in this Order
1	Net Energy requirement at T<>D Periphery	a	MU	123,253	123,402	123,402
2	EHV Sales	b	MU	7,705	7,724	7,724
3	Net Energy Available for Sale at 33kV	c=a-b	MU	115,548	115,678	115,678
4	Energy injected and drawn at 33kV	d	MU	488	490	490
5	**Total Energy Available for Sale at 33kV**	**A=c+d**	**MU**	**116,036**	**116,168**	**116,168**
6	LT Agriculture Sales (Including D.F)	e	MU	28,746	29,921	23,149
7	LT Sales excluding Agriculture Sales (Including D.F)	f	MU	36,854	36,952	37,080
8	HT Sales excluding EHV level sales (Including D.F)	g	MU	27,082	27,075	27,075
9	HT/LTIP Credit Sales and HT/LT Offset Export Solar units	h	MU	-	18	18
10	**Total Sales including D.F (Excluding EHV Sales)**	**i=e+f+g+h**	**MU**	**92,683**	**93,967**	**87,323**
11	OA Sales (Renewables)	j	MU	679	677	677
12	OA Sales (Conventional)	k	MU	4,330	4,303	4,303

Sr. No.	Particulars	Calculation	UoM	FY 2017-18		
				MTR Order	MYT Petition	Approved in this Order
13	**Retail Energy Sale to Consumers (Excluding EHV Sales and Including OA Sales)**	**B=i+j+k**	**MU**	**97,692**	**98,947**	**92,303**
14	**Distribution Loss (Excl. EHV Sales)**	**C=A-B**	**MU**	**18,344**	**17,221**	**23,866**
15	**% Distribution Loss (Excl. EHV Sales)**	**D=C/A**	**%**	**15.81%**	**14.82%**	**20.54%**

Table 4-12: Energy Balance for FY 2018-19 as approved by the Commission

Sr. No.	Particulars	Calculation	UoM	FY 2018-19		
				MTR Order	MYT Petition	Approved in this Order
1	Net Energy requirement at T<>D Periphery	a	MU	125,943	131,910	131,910
2	EHV Sales	b	MU	8,116	9,614	9,614
3	Net Energy Available for Sale at 33kV	c=a-b	MU	117,827	122,296	122,296
4	Energy injected and drawn at 33kV	d	MU	488	573	573
5	**Total Energy Available for Sale at 33kV**	**A=c+d**	**MU**	**118,315**	**122,869**	**122,869**
6	LT Agriculture Sales (Including D.F)	e	MU	29,362	32,696	25,380
7	LT Sales excluding Agriculture Sales (Including D.F)	f	MU	38,873	38,830	38,970
8	HT Sales excluding EHV level sales (Including D.F)	g	MU	27,363	28,391	28,391
9	HT/LTIP Credit Sales and HT/LT Offset Export Solar units	h	MU	-	74	74
10	**Total Sales including D.F (Excluding EHV Sales)**	**i=e+f+g+h**	**MU**	**95,598**	**99,991**	**92,815**
11	OA Sales (Renewables)	j	MU	713	855	855
12	OA Sales (Conventional)	k	MU	4,547	3,967	3,967
13	**Retail Energy Sale to Consumers (Excluding EHV Sales and Including OA Sales)**	**B=i+j+k**	**MU**	**100,858**	**104,813**	**97,637**
14	**Distribution Loss (Excl. EHV Sales)**	**C=A-B**	**MU**	**17,458**	**18,062**	**25,232**
15	**% Distribution Loss (Excl. EHV Sales)**	**D=C/A**	**%**	**14.76%**	**14.70%**	**20.54%**

4.4 Distribution Losses for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.4.1 MSEDCL submitted that in MYT Order dated 3 November 2016 in Case No. 48 of 2016, the Commission had approved distribution loss of 16.26% (excl. EHV Sales) for FY 2017-18 and 14.76% (excl. EHV Sales) for FY 2018-19. The actual distribution loss excluding EHV sales for FY 2017-18 and FY 2018-19 are 14.82 % and 14.70 %

respectively which is lesser than the approved distribution loss by the Commission.

Table 4-13: Distribution Losses for FY 2017-18 and FY 2018-19 as submitted by MSEDCL

Particulars	FY 2017-18			FY 2018-19		
	Approved in MYT Order	Actual	Deviation	Approved in MYT Order	Actual	Deviation
Distribution Loss	16.26 %	14.82 %	-1.44 %	14.76 %	14.70 %	-0.06 %

4.4.2 Loss reduction is a slow process and becomes increasingly difficult as the loss levels come down. The change in the sales mix also impacts the distribution losses. Hence, MSEDCL requested the Commission to approve the actual Distribution Loss.

Commission's Analysis and Rulings

4.4.3 The Commission has noted that the MSEDCL has made the comparison of Distribution Loss w.r.t last MYT Order instead of MTR Order. Accordingly, the Commission has corrected the same.

4.4.4 Based on the methodology for computation of Distribution Loss by considering the sales at the distribution periphery excluding EHV sales, the Distribution Loss level stipulated for FY 2017-18 and FY 2018-19 in the last MTR Order was 15.81 % and 14.76 %. However, MSEDCL now has submitted a Distribution Loss level of 14.82% and 14.70 % for FY 2017-18 and FY 2018-19 respectively, which is lower than the provisionally approved figures under MTR Order.

4.4.5 Further, the Commission has elaborated in earlier paragraphs regarding estimation of AG sales which itself is range bound and its consequent impact on distribution loss would also be range bound.

4.4.6 Accordingly, for the purpose of Energy Balance and assessment of distribution loss for FY 2017-18 and FY 2018-19 under this Order, the Commission has now approved revised Energy Sales of 100,027 MU for FY 2017-18 against the claim of 1,06,671 MU and Energy Sales of 107,251 MU for FY 2018-19 against the claim of 114,427 MU, including DF Sales, OA Sales and Solar Offset Units. Based on this, the approved Distribution Loss for FY 2017-18 and FY 2018-19 as shown in the Table below:

Table 4-14: Distribution Loss for FY 2017-18 and FY 2018-19 as approved the Commission

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MYT Petition	Approved in this Order	MTR Order	MYT Petition	Approved in this Order
Distribution Loss	15.81 %	14.82 %	20.54 %	14.76 %	14.70 %	20.54 %

4.5 Power Purchase Expenses for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.5.1 Following table summarizes the source wise power purchase done by MSEDCL during the FY 2017-18.

Table 4-15: Source wise Power Purchase for FY 17-18 as submitted by MSEDCL

Source	PP Quantum (MU)			PP Cost (Rs. Cost)			PP Cost (Rs./Units)		
	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation
MSPGCL	48842.89	48,842.89	-	18,625.24	17,405.35	(1,219.88)	3.81	3.56	(0.25)
NTPC	30116.27	30,116.28	0.01	8,242.51	8,284.33	41.82	2.74	2.75	(0.01)
NPCIL	2588.55	2,590.66	2.11	757.77	750.1	(7.67)	2.93	2.9	(0.03)
SSP	245.6	245.6	-	50.35	50.42	0.07	2.05	2.05	0
Pench	50.55	50.68	0.13	10.36	10.36	0	2.05	2.04	(0.01)
Dodson	82.53	82.53	-	21.9	21.9	-	2.65	2.65	0
JSW	1898.92	1,898.92	-	548.18	548.18	-	2.89	2.89	0
CGPL	4990.04	4,990.04	-	1,275.01	1,210.93	(64.08)	2.56	2.43	(0.13)
Adani Power	17,256.53	17,256.53	-	6,158.71	6,646.40	487.69	3.57	3.85	0.28
EMCO Power	1260.62	1,260.62	-	532.37	495.17	(37.2)	4.22	3.93	(0.29)
Rattan India	4347.12	4,347.12	-	2,149.87	2,157.24	7.37	4.95	4.96	0.01
Renewable	11,046.27	11,187.72	141.45	6,245.18	6,324.76	79.58	5.65	5.65	0
Traders	4055.75	4,056.25	0.5	1,495.16	1,495.37	0.22	3.69	3.69	0
RECs	0		-	689.13	482.53	(206.6)			0
Short provision for PP		-	-		430.56	430.56			0
Other Adjustments	0		-	36.36	94.01	57.65			0
PGCIL Charges	0		-	2,558.82	2,557.96	(0.86)			0
FBSM	(1359.28)	(1,413.85)	(54.57)	(267.17)	(267.21)	(0.05)	1.97	1.89	(0.08)
Intra State Purchase			-		4.57	4.57			0
Rebate		0	-		(280.31)	(280.31)			0

Source	PP Quantum (MU)			PP Cost (Rs. Cost)			PP Cost (Rs./Units)		
	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation
Total Power Purchase	**125422.36**	**1,25,512**	**90**	**49,130**	**48,423**	**(707)**	**3.92**	**3.86**	**(0.06)**

4.5.2 In the following paragraphs, MSEDCL has submitted the detailed reasons for variation in the power purchase quantum by 90 MU and variation power purchase cost by Rs -707 Cr in FY 2017-18 as against that approved under MTR Order.

4.5.3 **MSPGCL-** MSEDCL submitted that the Commission in its Order dated 12th September 2018 in Case No. 196 of 2017 for MSPGCL had approved the total revenue surplus of Rs. 1,275.12 Crore including holding cost, after final true-up of FY 2015-16 and FY 2016-17 and provisional true-up for FY 2017-18. MSEDCL further submitted that, as per IndAS 10, significant financial events that occurred after reporting period, but prior to the issue of financial statements is also considered in final Accounting Statements. Accordingly, MSEDCL has considered the surplus of Rs. 1275.12 Crore for MSPGCL. Further, MSEDCL had received supplementary bill of Rs. 55.11 Crore for April 17 to Mar 18 from MSPGCL.

4.5.4 **NTPC-** As regards variation in claim vis-à-vis MTR Order, MSEDCL submitted that it has considered the NVVNL bundled power from NTPC for FY 2017-18.

4.5.5 **NPCIL:** As regards variation in claim vis-à-vis MTR Order, MSEDCL submitted that it is the amount received for power supply of Auxiliary Consumption from April 2016 to September 2017.

4.5.6 **CGPL**: MSEDCL submitted that for FY 2017-18, an amount of Rs. 65 Crores was booked as a provision for FY 16-17. However, the provision so made for Mar-17 of Rs. 65 Crores was reversed after MTR petition was filed.

4.5.7 **APML**: MSEDCL submitted that the Commission has issued the Order on 19th April 2018 in case No. 102 of 2016 and approved the compensation in Tariff on account of change in Law in respect of 800 MW out of 1320 MW power contracted under PPA dated 08.09.2008 for FY 2017-18. MSEDCL has considered the same.

4.5.8 **EMCO Power**: MSEDCL submitted that in FY 2017-18, STOA/ MTOA credit passed on by GMR to MSEDCL along with interest amounting to Rs. 38 Crores which was not available at time of MTR Petition.

4.5.9 **RattanIndia Power:** MSEDCL submitted that an amount of Rs. 9.91 Crores was booked provisionally towards change in law of RIPL as per Order in Case No. 84 of 2016. Subsequently, the claim was finalized at 17.28 Crores. Hence, in FY 2017-18 there is increase in cost of RIPL by Rs. 7.37 Crores as compared to MTR approved cost.

4.5.10 **Renewable Energy:** MSEDCL submitted that Wind Energy injected in FY 2014-15 & FY 2015-16 considered in FY 2017-18 due to the execution of EPA in March and August 2017.

4.5.11 **Rebate:** MSEDCL submitted that as per the IndAS, the rebate received from power generators for prompt payments is shown in the power purchase only, instead of earlier practice of showing in Non-Tariff Income.

4.5.12 **RECs:** MSEDCL submitted that at the time of submission of provisional information for FY 2017-18, MSEDCL had submitted Rs. 689 Crores towards REC purchase for meeting shortfall in Non-Solar RPO Target. In FY 17-18, MSEDCL has withdrawn the provision amounting to Rs. 206 Crores made for RECs in FY 16-17**.**

4.5.13 **Short Provisions**: MSEDCL submitted that the short provision of Rs. 521 Crores during FY 16-17 and Short provision of Rs. (90.53) Crores for FBSM for FY 16-17 is included in short provision while finalizing the Accounts for FY 2017-18.

4.5.14 **Other Adjustments:** MSEDCL submitted Other Adjustments include Rs. 100 Crores of EMCO Power related to FY 15-16, FBSM of Rs. (43) Crores for FY 16-17 and Rs. 36 Crores paid to RGPPL. MSEDCL has paid Rs.36 Crores towards adjustment of electrical charges of Shirala Water Pump related to RGPPL.

4.5.15 Following table summarizes the source wise power purchase done by MSEDCL during the FY 2018-19.

Table 4-16: Source wise Power Purchase for FY 18-19 as submitted by MSEDCL

Source	PP Quantum (MU)			PP Cost (Rs. Cost)			PP Cost (Rs./Units)		
	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation
MSPGCL	47,691.69	49,423.42	1,731.73	18,715.20	19,648.52	933.32	3.92	3.98	0.05
NTPC	25,936.59	29,665.17	3,728.58	8,197.40	9,562.31	1,364.91	3.16	3.22	0.06
NPCIL	5,470.24	4,475.32	(994.92)	1,400.42	1,263.15	(137.27)	2.56	2.82	0.26
SSP	1,209.94	153.63	(1,056.31)	248.04	31.49	(216.54)	2.05	2.05	0
Pench	136.5	43.71	(92.79)	27.98	8.96	(19.02)	2.05	2.05	0
Dodson	115.72	78.01	(37.71)	21.31	24.58	3.27	1.84	3.15	1.31
JSW	2,055.10	1,998.60	(56.5)	658.89	686.59	27.71	3.21	3.44	0.23

Source	PP Quantum (MU)			PP Cost (Rs. Cost)			PP Cost (Rs./Units)		
	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation	Approved in MTR order	Actual	Deviation
CGPL	5,480.26	4,854.00	(626.26)	1,373.08	1,456.84	83.76	2.51	3.00	0.5
Adani Power	20,207.15	21,140.45	933.3	6,898.58	9,126.87	2,228.29	3.41	4.32	0.9
EMCO Power	1,370.06	1,313.25	(56.81)	496.05	593.76	97.72	3.62	4.52	0.9
Rattan India	-	3,717.12	3,717.12	982.87	1,970.07	987.2		5.30	5.3
Renewable	17,526.06	13,558.44	(3,967.62)	8,881.68	7,745.56	(1,136.13)	5.07	5.71	0.65
Traders		6,022.64	6,022.64		2,870.47	2,870.47		4.77	4.77
RECs		-	-		154.56	154.56			
Short provision for PP		-	-		(287.05)	(287.05)			
Other Adjustments		-	-		(354.61)	(354.61)			
PGCIL Charges		-	-	2,688.00	2,808.75	120.75			
FBSM		9.03	9.03		(1,006.07)	(1,006.07)			
Intra State Purchase		-	-		6.26	6.26			
Rebate		-	-		(50.68)	(50.68)			
Total Power Purchase	**1,27,199**	**1,36,452.8**	**9,253**	**50,589**	**56,260**	**5,671**	**3.98**	**4.12**	**0.15**

4.5.16 In the following paragraphs, MSEDCL has submitted the detailed reasons for variation in the power purchase quantum by 9253 MU and variation in power purchase cost by Rs 5671 Crore in FY 2018-19 as against that approved under MTR Order.

- **MSPGCL**- MSEDCL submitted that the Commission in Order dated 12th September 2018 in Case No. 196 of 2017 did not approve quantum and cost of the following generation stations of MSPGCL:

  - BHUSAWAL-3
  - NASHIK-3, 4 & 5
  - PARAS UNIT-3 & 4
  - PARLI UNIT- 6 & 7
  - PARLI- 4 & 5
  - Parli Replacement U-8

4.5.17 However, due to coal shortages, MSEDCL has purchased power from above mentioned units. Hence, the actual quantum of power from MSPGCL generating units have increased as compared to that approved by the Commission in the last MTR Order.

4.5.18 Further, MSEDCL submitted that the Commission did not consider Fixed and Variable

cost for Parli Replacement Unit 8 but MSEDCL has purchased power worth Rs. 751 Crores from this station.

- **Central Generating Stations-** MSEDCL submitted that the Commission did not consider the quantum of the Mauda and NTPC-Solapur generating stations in the last MTR Order. However, due to coal shortages MSEDCL has purchased power from the above mentioned units. Hence, the actual quantum and cost from central sector generating units is higher than that approved by the Commission in the last MTR Order. Further to this, CERC has approved new tariff for Gandhar in its Tariff Order dated 19.02.2019. Hence, the cost has increased.

- **JSW**- The increase in cost is due to impact of Rs. 41 Crores due to Change in Law.

- **Adani** – MSEDCL submitted that it has paid an amount of Rs. 1786 Crores along with carrying cost to M/s. APML towards compensation in domestic coal shortfall. Such compensation is as per Order of the Commission in Case No. 189 of 2013 dated 07.03.2018 and Case No 290 of 2018 dated 22.12.2018. MSEDCL further submits that M/s. APML has submitted claim towards principal of Rs. 2,821 Crores and carrying cost of Rs. 1,316 Crores. However, MSEDCL has paid only 50% amount of claim along with carrying cost.

- **CGPL**: MSEDCL submitted that Actual MUs are less than approved by the Commission in its last MTR Order. However, there is increase in cost due to change in law of 108 Crores.

- MSEDCL submitted that CERC published new escalation indices in June 2018 & July 2018 and revised the escalation index applicable to Domestic coal and transportation from April 2013. This has resulted in increase in Energy Charges. Such revision in index has resulted in increased energy charges by Rs. 0.26 p.u. approximately in respect of APML 125 MW, 1200 MW & 440 MW PPAs (1320 MW PPA does not include escalable tariff component). Since, such indices were revised from April 2013, MSEDCL had to make payment of Rs. 102.22 Crores pertaining to period from April 2013 to May 2018 to M/s. APML during FY 2018-19. Further, MSEDCL submitted that the Capacity charges for APML 440 MW PPA are more than that approved in last MTR Order (Rs. 447 Crores against Rs. 77 Crores approved in MTR order).

- **RattanIndia**: MSEDCL submitted that the Commission in its last MTR Order had not approved any quantum from RattanIndia. However, owing to coal shortage and demand increase, MSEDCL had to buy power from RattanIndia.

The Commission had approved only Capacity charges of Rs. 983 Crores in the MTR Order. However, MSEDCL bought 3,717.12 MU from RattanIndia. Due to this there is a deviation of Rs. 987.20 Crores in RattanIndia.

- **EMCO**- MSEDCL had projected variable cost of Rs. 1.83 p.u. for the FY 2018-19. However, due to change in CERC index towards fuel and transportation from FY 2013, there is increase in escalable energy charges by Rs. 0.21 p.u. (Impact is around Rs. 35 Crores.). Moreover, CERC has approved some change in law events in favour of M/s. EMCO Ltd, such as evacuation facility charges, Busy season and development surcharge etc. (Impact is around Rs.30 Crores.). In addition, other charges have increased more than that projected in the MTR Order. Such increase constituted around Rs. 20 Crores. MSEDCL submitted that it has paid an amount of Rs. 11.5 Crores towards domestic coal shortfall.
- **Short Term PP**- MSEDCL submitted that due to increase in demand for the months of September 2018 and October 2018, MSEDCL has purchased short term power which increased Power Purchase cost by Rs. 1,672.14 Crores.

4.5.19 MSEDCL further submitted that in the Audited Accounts of FY 18-19, it has made a provision of Rs. 2,390 Crores towards the shortfall in achieving the renewable purchase obligation (RPO) for FY 18-19. However, since it is only provision, MSEDCL has not claimed the same in actual cost of power purchase for FY 18-19. MSEDCL claims that it reserves its right to claim the same on actual basis as and when such expense is incurred.

4.5.20 MSEDCL submitted that the above changes are beyond the reasonable control of MSEDCL but well within the regulatory provisions for consideration in True up. Hence, MSEDCL requested the Commission to approve the power purchase expenses as per Audited Accounts.

4.5.21 MSEDCL submitted the details of RE purchase for FY 2017-18 and FY 2018-19. These details are shown in the following table:

Table 4-17: RE purchase for FY 2017-18 and FY 2018-19 as submitted by MSEDCL

Source	FY 2017-18		FY 2018-19	
	Quantum (MU)	Cost (in Rs. Crs.)	Quantum (MU)	Cost (in Rs. Crs.)
Wind	6331.68	3198.77	6619.7	3539.75
SHP	229.07	95.73	315.6	134.68
Bagasse based Cogen.	3381.42	2104.96	4173.81	2638.19
Biomass	428.74	284.63	488.89	282
MSW	0.18	0.09	0.89	0.47
Non-Solar RECs	***2872***	***482.53***		

Source	FY 2017-18		FY 2018-19	
	Quantum (MU)	Cost (in Rs. Crs.)	Quantum (MU)	Cost (in Rs. Crs.)
Total Non-Solar	**10371.09**	**6166.71**	**11598.97**	**6595.09**
SPV	816.63	640.57	1957.64	1150.47
Solar REC:				
upto 2015-16			1360	152.42
2016-17			19	2.13
Total Solar RECs			***1379***	***154.55***
Total Solar	**816.63**	**640.57**	**1957.64**	**1150.47**

4.5.22 MSEDCL submitted that during FY 2017-18, MSEDCL has fulfilled non-Solar RPO Target and with surplus of 55.151 MU and has the shortfall of 2147.016 MU in fulfilling cumulative Solar RPO Target till FY 2017-18 including the standalone shortfall of 1476 MU for FY 2017-18.

4.5.23 MSEDCL submitted that during FY 2018-19, MSEDCL has procured 3337 MU of Solar Power and has the standalone Solar RPO shortfall of 1321 MU for FY 2018-19. In addition, MSEDCL has procured 11599 MU of Non-Solar Power and has the standalone non-Solar RPO shortfall of 1933 MU for FY 2018-19.

Commission's Analysis and Ruling

4.5.24 The Commission notes that there is no major deviation in the Power Purchase quantum and Cost in FY 2017-18 with w.r.t claimed values and values approved in last MTR. This is because at the time of last MTR, FY 2017-18 was trued-up provisionally and data was available of almost full year for FY 2017-18.

4.5.25 The Commission notes that significant variation in power purchase quantum (+9254 MU) and variation in power purchase cost by Rs 5671 Crore in FY 2018-19 as against that approved under MTR Order, is caused due to increase in sales by around 6000 MU+ (mainly contributed by increase in claim of AG sales by +3343 MU and increase in reported Non-AG sales mainly from HT-Industry by +2527 MU in FY 2018-19) and as also due to variation in loss level (22.06%) as against that provisionally approved (14.76%) in MTR Order.

4.5.26 Further, shortfall in available generation from renewable energy sources by (-3967 MU), from NPC by (-994 MU) and from SSP by (-1056 MU) has resulted in need for replacement of these power sources through procurement from short term power sources and other thermal generating sources by around (+6014 MU) at higher cost than that approved in the MTR Order. Further, impact of claims on account of change of law

allowed through other Orders and fuel escalation index as approved by Central Commission has also resulted in corresponding increase in per unit cost claimed during FY 2018-19.

4.5.27 The Commission had undertaken detailed scrutiny of the submissions/claims made by MSEDCL and sought clarification on various counts including reconciliation of statement of accounts between claims by MSEDCL and that of MSPGCL for FY 2018-19. Source-wise analysis of various power sources is presented in the subsequent paragraphs.

MSPGCL:

4.5.28 The Commission sought the Reconciliation Statement on power purchase expenses between 'Revenue from Sale of power to MSEDCL as per MSPGCL Audited Accounts for FY 2017-18 & FY 2018-19 and 'Cost of Purchase of Power from MSPGCL as per MSEDCL Audited Accounts for FY 2017-18 & FY 2018-19. The Audited Accounts of MSPGCL showed the total revenue from sale of power of Rs. 19,011.33 crore and Rs. 18,985.11 crore for FY 2017-18 and FY 2018-19 respectively, however, MSPGCL had not reported the breakup of revenue from sale of power to MSEDCL. In addition, MSEDCL had also not reported the breakup of Power purchase in Audit Accounts showing the expense towards power purchase from MSPGCL. Hence, the Commission had asked MSEDCL to submit detailed breakup of the power purchase cost components as per Audited accounts of MSEDCL, along with the reconciliation of the difference with the MSPGCL's Annual Accounts, for verification of mismatches, if any. MSEDCL submitted the reconciliation statement for the difference amount and the Commission found them to be in order.

4.5.29 The Commission in its last MTR Order had projected the lesser quantum of Energy Purchase based on the Merit Order Despatch principles for FY 2018-19. In addition, due to lesser availability of the RE Sources in FY 2018-19, MSEDCL had to procure the costlier power of some MSPGCL plants as per the Merit Order Despatch determined by MSLDC. Therefore, there is an increase in Power Purchase and quantum and cost for FY 2018-19.

4.5.30 However, the Commission in its MSPGCL's Order observed that the major deviations w.r.t last MTR in fixed cost is because of actual availability of the stations being lower than that approved in the last MTR because of unavailability of Coal in FY 2017-18 and FY 2018-19 such as at Koradi Units 6 & 7, the actual availability during FY 2017-18 and FY 2018- 19 was only 13.16% and 14.62% and for Koradi Units 8 to 10, the actual availability during FY 2017-18 and FY 2018-19 was 53.98% and 46.67% respectively. Therefore there is reduction in the fixed cost due to lower availability,

which is separately factored in the ARR Section.

Table 4-18: Power Purchase cost and quantum of MSPGCL stations for FY 2017-18 as approved by the Commission

Generator Name	MTR Order			MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
MSPGCL Total	45,428	17,932	3.95	45,428	16,712	3.68	45,428	16,712	3.68

Table 4-19: Power Purchase cost and quantum of MSPGCL stations for FY 2018-19 as approved by the Commission

Generator Name	MTR Order			MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
MSPGCL Total	43,753	18,506	4.23	45,698	19,133	4.19	45,698	19,133	4.19

Central Generating Stations:

4.5.31 MSEDCL was asked to submit samples of Supplementary bills of NTPC stations for FY 2017-18 and FY 2018-19. MSEDCL submitted samples of supplementary bills raised by NTPC during the year. Upon verification of the sample bills, it is found to be in order.

4.5.32 In response to Commission's query, MSEDCL in its reply to data gaps submitted detailed breakup of the source-wise power purchase components as per Audited accounts of MSEDCL. The Commission has verified the source-wise power purchase cost of all the NTPC stations and reconciled it with the Audited Accounts for FY 2017-18 and FY 2018-19 and found them to be in order.

4.5.33 There is no major deviation in the NTPC Stations in terms of quantum and Cost w.r.t MTR Order and claimed values for FY 2017-18, as the audited figures were available at the tame of last MTR for FY 2017-18. However, the increase in per unit rate of power procured in FY 2018-19 w.r.t MTR Order and claimed value is because of increase in Total cost w.r.t Energy quantum.

4.5.34 The Commission in its last MTR Order had projected the lesser quantum of Energy

Purchase based on the Merit Order Despatch principles for FY 2018-19. In addition, due to lesser availability of the RE Sources in FY 2018-19, MSEDCL had to procure the costlier power of some NTPC stations as per the Merit Order Despatch determined by MSLDC. Therefore, there is an increase in Power Purchase and quantum and cost for FY 2018-19.

Table 4-20: Power Purchase cost and quantum of NTPC stations for FY 2017-18 as approved by the Commission

Generator Name	MTR Order			MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
NTPC Total	30,116	8,243	2.74	30,116	8,284	2.75	30,116	8,284	2.75

Table 4-21: Power Purchase cost and quantum of NTPC stations for FY 2018-19 as approved by the Commission

Generator Name	MTR Order			MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
NTPC Total	25,937	8,197	3.16	29,665	9,562	3.22	29,665	9,562	3.22

IPPs:

4.5.35 The Commission sought clarifications regarding difference in Per Unit Variable Charge and Per Unit Fixed Charge as claimed towards power purchase cost vis-à-vis that covered in Tariff Schedule for IPP for FY 2017-18 and FY 2018-19. MSEDCL was asked to submit the reconciliation of Total Charges considered for IPPs. As per the submissions provided by MSEDCL for all the IPPs, the quoted Tariff was reworked as these Quoted PPA rates are linked to various factors such as variation in monthly exchange rate, CERC index for inland handling of imported fuel, CERC index for inland transportation of fuel, etc. In addition, MSEDCL was also asked to submit reasons for deviations with the quoted PPA Tariff and quantify the same for all the IPPs. MSEDCL submitted the compensatory payments made to IPPs in FY 2017-18 and FY 2018-19 as per the tables shown below. The Commission scrutinised the Quoted Tariff as per PPAs and the Compensatory payments made for FY 2017-18 and FY 2018-19 and cross-verified with the values as claimed in the Petition and found them in order.

Table 4-22: Compensatory payments done to IPPs in FY 2017-18 as submitted by MSEDCL (Rs. Crore)

Sr. No.	Name of IPP	Quantum MU	Regular CIL		NCDP/Coal shortfall		Escalation index revision	
			Total	Rs. P.u.	Total	Rs. P.u.	Total	Rs. P.u.
1	JSW	1,898.92	37.19	0.20	-	-	-	-
2	CGPL	4,990.04	75.44	0.15	-	-	-	-
3	Adani Power	17,256.53	1037.65	0.60	-	-	-	-
4	GMR Warora	1,260.62	70.19	0.56	-	-	-	-
5	RIPL	4,347.12	153.42	0.35	-	-	-	-
6	**Total**	**29,753.23**	**1373.89**	**0.46**	**-**	**-**	**-**	**-**

Table 4-23: Compensatory payments done to IPPs in FY 2018-19 as submitted by MSEDCL (Rs. Crore)

Sr. No.	Name of IPP	Quantum MU	Regular CIL		NCDP/Coal shortfall		Escalation index revision	
			Total	Rs. P.u.	Total	Rs. P.u.	Total	Rs. P.u.
1	JSW	1,998.60	40.51	0.20	-	-	-	-
2	CGPL	4,854.00	140.13	0.29	-	-	-	-
3	Adani Power	21,140.45	617.58	0.29	1,786.00	0.84	102.22	0.05
4	GMR Warora	1,313.25	70.34	0.54	11.5	0.09	8.39	0.06
5	RIPL	3,717.12	127.66	0.34	-	-	31.9	0.09
6	**Total**	**33,023.42**	**996.22**	**0.3**	**1,797.50**	**0.54**	**142.51**	**0.04**

4.5.36 Further, MSEDCL submitted that the Capacity charges for APML 440 MW PPA are more than that approved in last MTR Order (Rs. 447 Crores against Rs. 77 Crores approved in MTR order). Adani 440 MW plant achieved COD in Feb 17. There has been a deduction against deemed availability for APML 440 MW for FY 2016-17 in MTR, which was as per MSEDCL's claim. While projecting the fixed charges for FY 2018-19, the Commission in its last MTR order had projected the lower capacity charges , which was even MSEDCL's claim. Accordingly, the Commission has approved Rs. 447 Crores towards the actual Capacity charges paid for FY 2018-19.

4.5.37 Regarding Impact of Change-in-Law in Adani Power Maharashtra Limited (APML), MSEDCL submitted that the Commission had passed orders in the following matters in respect of M/s APML for approval of various claims under change-in-law.

Table 4-24: Orders related to Change-in-Law matters in respect of M/s APML

Sr. No.	Subject Matter	The period of Impact	Case No.	Date of order
1	NCDP policy as Change in law	June 2013 to 31.03.2017 i.e. 4 years	189 of 2013 and 140 of 2014	07.03.2018
2	SHAKTI policy as Change In Law	Since 01.04.2017 to Till date i.e. 2.5 years	290 of 2018	07.02.2019
3	Cancellation of Lohara Coal Block as Change in Law	From Date of commissioning till date i.e. 5 years	68 of 2012	06.09.2019
4	Carrying Cost	June 2013 to 31.03.2017 i.e. 4 years	295 of 2018	18.12.2018

Table 4-25: Total Impact towards Change-in-Law including Carrying Cost as submitted by MSEDCL (Rs. Crore)

Change In Law Event	Claim Type	Claims in Rs. Cr.
NCDP	Main Bill	3,094.00
	Carrying Cost	1,442.88
SHAKTI	Main Bill	2,451.05
	Carrying Cost	242.70
Cancellation Lohara Coal Block	Main Bill	3,280.61
	Carrying Cost	2,406.00
Total		**12,917.24**

4.5.38 MSEDCL submitted that it has principally challenged MERC order dated 07.02.2019 in Case No. 290 of 2018 (SHAKTI) and MERC order dated 06.09.2019 in Case No. 68 of 2012 (Lohara Coal Block) before the APTEL. On the other hand, APML has challenged MERC orders dated 07.03.2018 in Case No. 189 of 2013 and Case No. 140 of 2014, order dated 07.02.2019 in Case No. 290 of 2018 demanding consideration of operational parameters such as normative SHR and GCV on as received basis along with compensation for 100% shortfall. In addition, APML has also challenged order dated 06.09.2019 in Case No. 68 of 2019 before APTEL.

4.5.39 4.5.27. The Commission notes the MSEDCL's submission that, regarding Inter Plant Transfer (IPT) of coal, i.e. utilization of linkage coal of Adani Power Limited (Mundra) to Adani Power Maharashtra Limited (Tiroda), CERC has also issued order dated 31.05.2018 in Petition No.97/MP/2017 and order dated 08.07.2019 in Petition no.269/MP/2018 and has ruled that supply of coal under the FSA shall remain unchanged for the commercial purpose and shall be on account of the original Power Plant.

4.5.40 The Commission notes that MSEDCL has claimed for the recovery of 50% of payments towards change-in-Law (50% of Rs. 12,917 Crore = Rs. 6,458 Crore) as per Hon'ble Supreme Court's Judgement dated 29.10.2018 in Case No. 10188 of 2018. The

Commission also notes that MSEDCL has made partial payment towards Rs. 6,458 crores of claims amounting to Rs. 2,266 Crore, which also includes carrying cost and the remaining amount of Rs. 4,192 crores is liable for payment. The Commission in this section has only dealt with the actual payment of Rs. 2,266 crores. The Commission had asked the MSEDCL to submit the bills towards change-in-law payments. However, MSEDCL has only submitted the change-in-law bills on sample basis. In addition, the Commission has verified the total power purchase of APML 440 MW as per the audited accounts for FY 2018-19 and found to be same as claimed by MSEDCL in its submission.

4.5.41 The remaining amount of Rs. 4,192 crore which the MSEDCL is liable for payment has been dealt separately in the Additional Claims Section in this Order.

4.5.42 As the APTEL has not granted any stay in the above mentioned appeals of APML, therefore, the Commission has approved the claims towards payment of Change-in-Law and Carrying Cost amounting to Rs. 2,266 Crore. However, the reconciliation towards all change-in-Law related claims vis-à-vis actual payments would be scrutinised at the time of next MTR process.

4.5.43 Similarly, M/s. GMR had filed the Petition No. 8/MP/2014 before CERC. CERC issued the Order on 01.02.2017 and disallowed compensation on certain change in law events claimed by the M/s. GMR. Aggrieved by the decision of the CERC, M/s. GMR filed appeal A. No. 111 of 2017 before APTEL. APTEL vide its Judgement dated 14.8.2018, remanded back the matter to CERC to pass consequential orders regarding Busy Season Surcharge, Development Surcharge, MOEF Notification on coal quality, change in NCDP and Carrying Cost.

4.5.44 Meanwhile, GMR had also filed a fresh Petition No. 284/MP/2018 whereby GMR included all its previous disallowed Change in Law along with fresh claim regarding SHAKTI Policy with a prayer for declaration of the same as a change in law event. CERC issued Order on 16.05.2019 and has allowed all the claims considering SHR as per CERC regulation and GCV on as received basis. MSEDCL has filed appeal on 26.07.2019 (bearing DFR No. 2221 of 2019) against CERC Order dated 16.05.2019 before APTEL. APTEL, during the hearing on 23.10.2019 directed to release 50% of payment of total claim by GMR after adjusting payments made within one week. Accordingly, MSEDCL has made payment of Rs. 81.34 Crores (i.e. 50 % of claim made by GMR).

4.5.45 As the APTEL has not granted any stay in the above mentioned appeals of GMR, therefore, the Commission has approved the claims towards payment of Change-in-

Law amounting to Rs. 81.34 Crore.

4.5.46 For FY 2018-19, the major deviation in power purchase quantum w.r.t last MTR Order is because the quantum was approved based on the MOD principles. For FY 2017-18, there is no major deviation towards power purchase quantum as actual power purchase expense were available at the time of MTR approval and MOD analysis was not required for provisional truing-up.

Table 4-26: Power Purchase cost and quantum of IPPs and UMPP stations for FY 2017-18 as approved by the Commission

Generator Name	MTR Order			MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
IPP and UMPP Total	29,753	10,665	3.58	29,753	11,058	3.72	29,753	11,058	3.72

Table 4-27: Power Purchase cost and quantum of IPPs and UMPP stations for FY 2018-19 as approved by the Commission

Generator Name	MTR Order			MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
IPP and UMPP Total	29,113.0	10,409	3.58	33,023	13,834	4.19	33,023	13,834	4.19

Short-term Power Purchase:

4.5.47 MoP, vide Resolution dated 15 May 2012, had issued Guidelines for short-term power procurement by Distribution Licensees through tariff-based competitive bidding. Hence, the Commission had directed MSEDCL to procure all short-term power with the above said issued guidelines through competitive bidding route, except in case of power procured from the Power Exchanges or under the Banking mechanism. Accordingly, the Commission had approved a ceiling rate of Rs. 4.00 per kWh for power procurement from short-term sources over the 3rd Control Period in Case No. 48 of 2016.

4.5.48 In addition to this, the Commission in its Order dated 4th July, 2018 in Case No. 176 of 2018 has allowed MSEDCL to procure additional short-term power at higher cost than the ceiling rate of Rs. 4 per unit as and when required on the e-bidding portal in accordance with the Short-Term Competitive Bidding Guidelines and/or from the Power Exchanges till March, 2019. The relevant extracts of the said Order is stated below for reference.

"The Commission notes that MSEDCL has been following up with its long term Contracted Generators to increase their generation Availability and that it has purchased short term power for FY 2017-18 is 4019.70 MU of amount Rs.1495.31 crore with average rate of Rs.3.72 per unit., which is below the ceiling rate of Rs. 4 per unit. Considering the factual position set out above, and in order to offset any likely shortage of power and avoid load shedding, the Commission allows MSEDCL in principle to procure additional power at higher cost than the ceiling rate of Rs.4 per unit as and when required on the e-bidding portal in accordance with the Short-Term Competitive Bidding Guidelines and/or from the Power Exchanges till March, 2019 or re-statement of ceiling rate in MTR Order of MSEDCL. This dispensation is subject to the following conditions:

"(1) The rates of the additional short-term procurement shall be as discovered through short-term Competitive Bidding or through the Power Exchanges, as the case may be.

(2) MSEDCL shall justify the quantum of additional power procured at higher rates, and show that it has prudently exercised its choice of sourcing power as between short-term Competitive Bidding and the Power Exchanges and has procured the cheapest available power.

(3) In case the additional power purchase in the first half of FY 2018-19 is expected to exceed five per cent of the power procurement quantum approved in the MYT Order, MSEDCL shall approach the Commission through a separate Petition, as may be appropriate, under Regulation 21 of the MYT Regulations, 2015.

(4)…"

4.5.49 MSEDCL submitted the month wise short-term power procured with the monthly average rate and quantum for FY 2017-18 and FY 2018-19. The average yearly short-term bilateral purchase computed for FY 2017-18 is below the ceiling norm of Rs. 4.00 per kWh set in Case No. 48 of 2016. However, the average yearly short-term bilateral purchase computed for FY 2018-19 is Rs. 4.32 per kWh, which is above the ceiling norm of Rs. 4.00 per kWh set in Case No. 48 of 2016. The Commission analysed the short-term power procured from the Power Exchanges for FY 2018-19 and found that even the average yearly power procurement from the Power Exchanges for FY 2018-19 (Rs. 5.27 /kWh) is above the ceiling norm of Rs. 4.00 per kWh. As sought by the Commission, the month-wise break-up of the actual short-term power for FY 2017-18 and FY 2018-19 as provided by MSEDCL is provided in the tables below. Moreover, the quantum of the short-term Bilateral power Purchase is even less than 2% of the Total Power Purchase quantum for FY 2018-19. In view of Order dated 4th July, 2018 in Case No. 176 of 2018 stated above, by comparing the rates that prevailed in the Power Exchange based on the market conditions and the average power purchase cost for FY 2018-19, the Commission approves the short-term power purchase for FY 2017-18 and FY 2018-19 on actuals as claimed by MSEDCL.

Table 4-28: Short term Power Purchase in FY 2017-18 as submitted by MSEDCL

Month	Energy Exchange		Bilateral Purchase		Banking Return Power from other utilities at regional periphery
MU at Regional periphery	MU	Rs/Unit	MU	Rs/Unit	MU
Apr-17	264.28	2.80	0.00	0.00	72.00
May-17	237.61	3.16	276.94	3.12	139.20
Jun-17	66.90	2.98	0.00	0.00	0.00
Jul-17	73.30	2.54	48.57	2.75	0.00
Aug-17	119.05	2.76	55.81	2.76	0.00
Sep-17	47.89	3.38	83.47	3.91	0.00
Oct-17	55.73	3.95	565.03	3.95	0.00
Nov-17	270.70	4.42	506.30	3.74	81.41
Dec-17	103.73	3.87	305.85	3.54	84.12
Jan-18	175.83	4.23	0.00	0.00	0.00
Feb-18	150.56	4.14	0.00	0.00	0.00
Mar-18	252.13	4.58	396.58	3.94	0.00
Total	**1817.70**	**3.69**	**2238.56**	**3.68**	**376.73**

Table 4-29: Short term Power Purchase in FY 2018-19 as submitted by MSEDCL

Month	Energy Exchange		Bilateral Purchase		Banking Return Power from other utilities at regional periphery
MU at Regional Periphery	MU	Rs/Unit	MU	Rs/Unit	MU
Apr-18	161.66	4.14	420.23	4.04	0.00
May-18	389.35	4.92	409.66	4.04	42.00
Jun-18	134.74	4.29	101.82	4.24	22.50
Jul-18	14.64	3.20	0.00	0.00	0.00
Aug-18	60.56	3.54	0.00	0.00	0.00
Sep-18	934.61	5.19	252.40	4.43	0.00
Oct-18	1397.38	6.01	451.90	4.63	28.70
Nov-18	270.58	4.35	372.22	4.54	50.59
Dec-18	20.34	4.07	287.85	4.38	0.00
Jan-19	13.03	4.32	0.00	0.00	0.00
Feb-19	66.13	4.16	0.00	0.00	0.00
Mar-19	2.68	3.69	117.04	4.10	0.00
Total	**3465.68**	**5.27**	**2413.13**	**4.32**	**143.78**

RPO Compliance:

4.5.50 As per the RPO Regulations, 2016, each Distribution Licensee has to meet 12.5% and 13.75% of its requirement through RE sources in FY 2017-18 and FY 2018-19 respectively, including 2% through solar sources and 10.5% through Non-solar (Other RE) sources for FY 2017-18 and 2.75% through solar sources and 11% through Non-solar (Other RE) sources for FY 2018-19. In addition, 0.2% of the Non-solar (Other RE) RPO obligation has to be met through Mini Hydro or Micro Hydro power projects.

4.5.51 The Commission had verified the compliance of RPO targets by MSEDCL for FY 2017-18 in its Order dated 27 March 2019 in Case No. 36 of 2019. The Commission concluded that MSEDCL had not fulfilled its stand-alone and cumulative solar targets for FY 2017-18 with a cumulative shortfall of 2,147.106 MU. However, MSEDCL has fulfilled its stand-alone as well as cumulative Non-Solar RPO target for 2017-18 with a cumulative surplus of 55.151 MU at the end of FY 2017-18. In addition, MSEDCL has fulfilled its standalone as well as cumulative min/micro Hydro RPO targets till FY 2017-18. The RPO compliance verification Order also ruled as under:

"1) The Case No. 36 of 2019 stands concluded with following ruling:

a. Maharashtra State Electricity Distribution Co. Ltd has fulfilled its standalone as well as cumulative non-Solar RPO targets till FY 2017-18 with a surplus of 55.151 MU.

b. Maharashtra State Electricity Distribution Co. Ltd has fulfilled its standalone as well as cumulative min/micro Hydro RPO targets till FY 2017-18.

2) Maharashtra State Electricity Distribution Co. Ltd. is directed as follow:

a) There is shortfall of 2147.016 MU in fulfilling cumulative Solar RPO targets till FY 2017-18. Maharashtra State Electricity Distribution Co. Ltd shall purchase Solar Power and/or Renewable Energy Certificates by the end of March, 2020 so as to fully meet its standalone and cumulative shortfall."

4.5.52 The Commission has considered the RE procurement towards RPO as per submissions made by MSEDCL for FY 2018-19, as the Order on RPO Compliance for FY 2018-19 is not yet approved by the Commission. However, the Commission concludes that any deviation in the compliance of RPO target for FY 2018-19 as approved in this order and the Commission's Order on RPO Compliance for FY 2018-19, would be adjusted and dealt with at the time of next MTR process.

Table 4-30: RPO compliance status for FY 2018-19 as approved by the Commission

FY 2018-19	RPO Target		RPO Compliance		Standalone Shortfall	
	Solar	Non-Solar	Solar	Non-Solar	Solar	Non-Solar
Percentage (%)	2.75%	11.00%	1.59%	9.44%	1.16%	1.56%
Quantum (MU)	3,379.59	13,518.38	1,957.64	11,598.97	1,421.95	1,919.40

FBSM Bills:

4.5.53 The Commission had asked MSEDCL to submit year-wise and source-wise revenue from FBSM/IBSM bills. To its reply, MSEDCL submitted that the Commission in its Order dated 29.09.2019 in Case No. 297 of 2018 has directed MSLDC to re-compute

the weighted average system marginal price (WASMP) for the period from FY 2011-12 to FY 2017-18. The same is under process at MSLDC and at this stage, it would not be possible by MSEDCL to ascertain the revenue as source-wise. Hence, MSEDCL submitted that after finalisation of reconciliation by MSLDC and after raising the invoices, it would pass on the impact to consumers through FAC.

4.5.54 In addition, the Commission had asked MSEDCL to submit reconciliation of month-wise FBSM bills in terms of Quantum (MU) and Cost (Rs. Crore) as per Daily System Reports (DSR) for FY 2017-18 and FY 2018-19. As the FBSM has not been finalized after February 2018, MSEDCL submitted the reconciliation of FBSM bills till February 2018. MSEDCL further submitted that, it has considered FBSM receivable of Rs. 267.21 Crore for 1,413.85 MU as per the audited annual accounts of FY 2017-18 against bill raised for the financial years FY 2015-16 & FY 2016-17. Even though the FBSM has not been finalized after February 2018, MSEDCL has considered FBSM Revenue in FY 2018-19. As sought by the Commission, the basis of considering the FBSM revenue in FY 2018-19 is substantiated as below. MSEDCL submitted that it would consider the FBSM related revenue/cost of FY 2017-18 and FY 2018-19 in the subsequent audited accounts after finalisation of FBSM Bills. Hence, based on the above submissions and reconciliation provided by MSEDCL, the Commission approved the FBSM related revenue/cost as claimed by MSEDCL

Table 4-31: FBSM Revenue considered as per DSR for FY 2018-19 as submitted by MSEDCL

Particulars	Amount (Rs Cr.)
Variable Cost as per MERC Order 297 of 2018	615.87
Fixed cost booked in SAP against receivable bills	101.21
FBSM Bills for FY 2016-17 booked in FY 2018-19	275.76
FBSM Bills for FY 2017-18 booked in FY 2018-19	13.25
Total considered in FY 2018-19	**1,006.08**

PGCIL Charges:

4.5.55 As sought by the Commission, MSEDCL submitted the monthly bills against ISTS charges by PGCIL for FY 2017-18 and FY 2018-19. The Commission verified and found that the summation of the monthly bills for FY 2017-18 and FY 2018-19 is equal to the claimed value for PGCIL charges by MSEDCL for FY 2017-18 and FY 2018-19. Based on the above verification, the Commission approves the PGCIL charges as claimed by the MSEDCL for FY 2017-18 and FY 2018-19.

4.5.56 Accordingly, upon scrutiny and verification, the Commission has approved the actual power purchase expenses as claimed by MSEDCL for FY 2017-18 and FY 2018-19 for the purpose of truing up of FY 2017-18 and FY 2018-19. The approved Power Purchase

is shown in the table below.

Table 4-32: Power Purchase Expenses for FY 2017-18 as approved by the Commission (Rs. crore)

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
KAPP	-20.70	-7.67	3.70	-20.70	-7.67	3.70
TAPP 1&2	539.16	113.36	2.10	539.16	113.36	2.10
TAPP 3&4	2,072.20	644.41	3.11	2,072.20	644.41	3.11
SSP	245.60	50.42	2.05	245.60	50.42	2.05
Pench	50.68	10.36	2.04	50.68	10.36	2.04
Dodson I	53.11	8.78	1.65	53.11	8.78	1.65
Dodson II	29.42	13.12	4.46	29.42	13.12	4.46
Renewable - Solar	816.63	640.57	7.84	816.63	640.57	7.84
Renewable - Non- Solar	10,371.09	5,684.19	5.48	10,371.09	5,684.19	5.48
Hydro (including GHATGHAR)	3,414.88	693.34	2.03	3,414.88	693.34	2.03
BHUSAWAL	533.23	243.73	4.57	533.23	243.73	4.57
BHUSAWAL 4 & 5	5,623.67	2,561.69	4.56	5,623.67	2,561.69	4.56
KHAPARKHEDA - 1to 4	2,815.27	1,018.35	3.62	2,815.27	1,018.35	3.62
KHAPARKHEDA 5	2,815.33	1,116.65	3.97	2,815.33	1,116.65	3.97
NASHIK- 3,4 & 5	2,580.14	1,225.42	4.75	2,580.14	1,225.42	4.75
CHANDRAPUR - 1 to 7	8,068.62	2,310.92	2.86	8,068.62	2,310.92	2.86
PARAS UNIT- 3 & 4	2,808.80	1,134.59	4.04	2,808.80	1,134.59	4.04
PARLI - 3, 4 & 5	-13.40	26.68	-19.92	-13.40	26.68	-19.92
PARLI UNIT- 6 & 7	1,985.04	1,004.66	5.06	1,985.04	1,004.66	5.06
KORADI - 5, 6 & 7	376.14	127.78	3.40	376.14	127.78	3.40
GTPS URAN	3,119.86	660.92	2.12	3,119.86	660.92	2.12
Parli replacement U 8	752.02	445.63	5.93	752.02	445.63	5.93
Chandrapur 8	2,620.60	1,068.57	4.08	2,620.60	1,068.57	4.08
Chandrapur 9	3,088.24	1,127.25	3.65	3,088.24	1,127.25	3.65
Koradi R U-8	2,877.26	1,170.27	4.07	2,877.26	1,170.27	4.07
Koradi 9	2,445.96	1,034.18	4.23	2,445.96	1,034.18	4.23
Koradi10	2,931.22	1,124.17	3.84	2,931.22	1,124.17	3.84
Others	-	-689.47	-	-	-689.47	-
KSTPS	4,815.38	758.46	1.58	4,815.38	758.46	1.58
KSTPS III	975.88	274.67	2.81	975.88	274.67	2.81
VSTP I	3,170.62	576.59	1.82	3,170.62	576.59	1.82
VSTP II	2,610.39	582.55	2.23	2,610.39	582.55	2.23
VSTP III	2,236.53	572.15	2.56	2,236.53	572.15	2.56
VSTP IV	2,316.97	723.92	3.12	2,316.97	723.92	3.12
VSTP V	1,356.46	414.83	3.06	1,356.46	414.83	3.06
KAWAS	650.40	119.69	1.84	650.40	119.69	1.84

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
GANDHAR	852.14	324.46	3.81	852.14	324.46	3.81
KhSTPS-II	855.30	312.41	3.65	855.30	312.41	3.65
SIPAT TPS 2	2,126.78	553.40	2.60	2,126.78	553.40	2.60
SIPAT TPS 1	4,363.02	1,148.78	2.63	4,363.02	1,148.78	2.63
Mauda	1,949.76	1,063.46	5.45	1,949.76	1,063.46	5.45
Mauda II	1,094.34	497.10	4.54	1,094.34	497.10	4.54
KhSTPS-I/FSTPS-I	-	-10.07	-	-	-10.07	-
NTPC solapur	597.51	348.06	5.83	597.51	348.06	5.83
RRAS	-	-17.76	-	-	-17.76	-
NTPC NVVN Coal	144.79	41.63	2.87	144.79	41.63	2.87
IPP - JSW	1,898.92	548.18	2.89	1,898.92	548.18	2.89
Adani power 125 MW	830.42	318.72	3.84	830.42	318.72	3.84
Adani power 1320 MW	6,293.89	2,313.20	3.68	6,293.89	2,313.20	3.68
Adani power 1200 MW	7,972.06	3,059.73	3.84	7,972.06	3,059.73	3.84
Adani power 440 MW	2,160.15	954.76	4.42	2,160.15	954.76	4.42
EMCO Power	1,260.62	495.17	3.93	1,260.62	495.17	3.93
Rattanindia Amravati	4,347.12	2,157.24	4.96	4,347.12	2,157.24	4.96
CGPL	4,990.04	1,210.93	2.43	4,990.04	1,210.93	2.43
RGPPL	-	36.36	-	-	36.36	-
Renewable Energy Certificate	-	482.53	-	-	482.53	-
Short term power	4,056.25	1,495.37	3.69	4,056.25	1,495.37	3.69
FBSM	-1,413.85	-267.21	-	-1,413.85	-267.21	-
Intra State Purchase	-	4.57	-	-	4.57	-
Short provision for PP	-	430.56	-	-	430.56	-
Other Adjustments	-	57.65	-	-	57.65	-
PGCIL Charges &posoco wrldc	-	2,580.16	-	-	2,580.16	-
Reactive Charges	-	-22.20	-	-	-22.20	-
Rebate	-	-280.31	-	-	-280.31	-
Total Power Purchase	**125,511.99**	**48,422.63**	**3.86**	**125,511.99**	**48,422.63**	**3.86**

Table 4-33: Power Purchase Expenses for FY 2018-19 as approved by the Commission (Rs. crore)

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
KAPP	297.68	69.48	2.33	297.68	69.48	2.33
TAPP 1&2	1,048.05	217.34	2.07	1,048.05	217.34	2.07
TAPP 3&4	3,129.59	976.33	3.12	3,129.59	976.33	3.12

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
SSP	153.63	31.49	2.05	153.63	31.49	2.05
Pench	43.71	8.96	2.05	43.71	8.96	2.05
Dodson I	55.32	9.28	1.68	55.32	9.28	1.68
Dodson II	22.70	15.30	6.74	22.70	15.30	6.74
Renewable - Solar	1,959.47	1,150.47	5.87	1,959.47	1,150.47	5.87
Renewable - Non- Solar	11,598.97	6,595.09	5.69	11,598.97	6,595.09	5.69
Hydro (including GHATGHAR)	3,725.80	515.42	1.38	3,725.80	515.42	1.38
BHUSAWAL - 3	179.23	138.82	7.75	179.23	138.82	7.75
BHUSAWAL 4 & 5	5,974.11	2,771.11	4.64	5,974.11	2,771.11	4.64
KHAPARKHEDA - 1to 4	4,008.00	1,433.84	3.58	4,008.00	1,433.84	3.58
KHAPARKHEDA 5	2,805.00	1,162.85	4.15	2,805.00	1,162.85	4.15
NASHIK- 3,4 & 5	2,057.29	1,105.11	5.37	2,057.29	1,105.11	5.37
CHANDRAPUR - 3 to 7	8,734.27	2,828.71	3.24	8,734.27	2,828.71	3.24
PARAS UNIT-3 & 4	2,352.30	1,026.03	4.36	2,352.30	1,026.03	4.36
PARLI -4 & 5	-14.21	17.53	-12.33	-14.21	17.53	-12.33
PARLI UNIT-6 & 7	1,353.22	870.28	6.43	1,353.22	870.28	6.43
KORADI - 6 & 7	403.92	156.34	3.87	403.92	156.34	3.87
GTPS URAN	2,505.90	663.72	2.65	2,505.90	663.72	2.65
Parli replacement U 8	1,182.73	751.59	6.35	1,182.73	751.59	6.35
Chandrapur 8	3,021.42	1,407.22	4.66	3,021.42	1,407.22	4.66
Chandrapur 9	2,932.76	1,227.54	4.19	2,932.76	1,227.54	4.19
Koradi R U-8	2,248.92	1,232.16	5.48	2,248.92	1,232.16	5.48
Koradi 9	2,620.42	1,068.69	4.08	2,620.42	1,068.69	4.08
Koradi10	2,401.08	1,017.59	4.24	2,401.08	1,017.59	4.24
Others	-	-0.12	-	-	-0.12	-
MSPGCL Infirm	-	2.22	-	-	2.22	-
MSPGCL Case IV (Dhariwal)	795.58	214.47	-	795.58	214.47	-
MSPGCL Case IV (IEPL)	135.72	37.40	-	135.72	37.40	-
KSTPS	4,486.14	918.08	2.05	4,486.14	918.08	2.05
KSTPS III	909.86	242.94	2.67	909.86	242.94	2.67
VSTP I	2,987.05	752.38	2.52	2,987.05	752.38	2.52
VSTP II	2,457.50	558.57	2.27	2,457.50	558.57	2.27
VSTP III	2,093.61	538.64	2.57	2,093.61	538.64	2.57
VSTP IV	2,261.74	692.61	3.06	2,261.74	692.61	3.06
VSTP V	1,169.71	375.06	3.21	1,169.71	375.06	3.21
KAWAS	669.21	301.96	4.51	669.21	301.96	4.51
GANDHAR	395.48	249.10	6.30	395.48	249.10	6.30
KhSTPS-II	979.29	325.93	3.33	979.29	325.93	3.33
SIPAT TPS 2	2,053.74	518.83	2.53	2,053.74	518.83	2.53

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
SIPAT TPS 1	4,208.71	1,076.76	2.56	4,208.71	1,076.76	2.56
Mauda	1,725.29	1,054.08	6.11	1,725.29	1,054.08	6.11
Mauda II	2,297.29	1,137.99	4.95	2,297.29	1,137.99	4.95
NTPC solapur	823.08	809.75	9.84	823.08	809.75	9.84
RRAS	-	-35.74	-	-	-35.74	-
NTPC NVVN Coal	147.47	45.36	3.08	147.47	45.36	3.08
IPP - JSW	1,998.60	686.59	3.44	1,998.60	686.59	3.44
Adani power 125 MW	920.55	382.23	4.15	920.55	382.23	4.15
Adani power 1320 MW	8,858.69	2,299.53	2.60	8,858.69	2,299.53	2.60
Adani power 1200 MW	8,837.25	5,326.97	6.03	8,837.25	5,326.97	6.03
Adani power 440 MW	2,523.96	1,118.14	4.43	2,523.96	1,118.14	4.43
EMCO Power	1,313.25	593.76	4.52	1,313.25	593.76	4.52
Rattanindia Amravati	3,717.12	1,970.07	5.30	3,717.12	1,970.07	5.30
CGPL	4,854.00	1,456.84	3.00	4,854.00	1,456.84	3.00
Renewable Energy Cerificate incl. provision for RPO	-	154.56	-	-	154.56	-
Short term power	6,022.64	2,870.47	4.77	6,022.64	2,870.47	4.77
FBSM	9.03	-1,006.07	-	9.03	-1,006.07	-
Intra State Purchase	-	6.26	-	-	6.26	-
Short provision for PP	-	-287.05	-	-	-287.05	-
Other Adjsutments	-	-354.61	-	-	-354.61	-
PGCIL Charges &posoco wrldc	-	2,856.89	-	-	2,856.89	-
Reactive Charges	-	-48.13	-	-	-48.13	-
Rebate	-	-50.68	-	-	-50.68	-
Total Power Purchase	**136,452.80**	**56,260.34**	**4.12**	**136,452.80**	**56,260.34**	**4.12**

4.6 Intra State Transmission Charges and MSLDC Charges for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.6.1 MSEDCL submitted the actual transmission charges and SLDC charges paid to MSETCL and MSLDC. The details are as follows:

Table 4-34: Intra State Transmission Charges for FY 17-18 and FY 18-19 as submitted by MSEDCL

Particular	FY 2017-18			FY 2018-19		
	MTR Order	Actual	Deviation	MTR Order	Actual	Deviation
Intra-State Transmission Charges	4,796.64	4,796.64	-	4,288.40	4,760.61	472.21
MSLDC Charges	15.53	15.53	-	14.12	14.89	0.77

Total	**4,812.17**	**4,812.17**	**-**	**4302.53**	**4,775.50**	**472.98**

4.6.2 MSEDCL submitted that it pays the transmission charges to STU as per the InSTS Order issued by the Commission from time to time. MSEDCL requested the Commission to approve the actual Transmission and MSLDC Charges as per the Audited Accounts.

Commission's Analysis and Ruling

4.6.3 For FY 2017-18, the Commission has considered the actual Transmission Charges and SLDC charges paid by MSEDCL as per the Order in Case No. 91 of 2016 dated 22nd July, 2016 and Case No. 20 of 2016 dated 22nd July, 2016 respectively for the purpose of truing up of FY 2017-18.

4.6.4 For FY 2018-19, the Commission has considered the actual monthly Transmission Charges and SLDC charges paid by MSEDCL as per the Order in Case No. 91 of 2016 dated 22nd July, 2016 and Case No. 20 of 2016 dated 22nd July, 2016 respectively upto 31st August, 2018 and as per the Order in Case No. 265 of 2018 dated 12th September, 2018 and Case No. 171 of 2018 dated 12th September, 2018 respectively from 1st September 2018 as per the applicability of respective orders.

4.6.5 Accordingly, intra-state transmission charges and MSLDC charges as approved by the Commission for the purpose of true-up for FY 2017-18 and FY 2018-19 is summarised below:

Table 4-35: Intra State Transmission Charges and MSLDC Charges for FY 17-18 and FY 18-19 as approved by the Commission (Rs. Crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MYT Petition	Approved in this Order	MTR Order	MYT Petition	Approved in this Order
Intra-State Transmission Charges	4,796.64	4,796.64	4,796.64	4,288.40	4,760.61	4,752.29
MSLDC Charges	15.53	15.53	15.53	14.12	14.89	14.88
Total	**4,812.17**	**4,812.17**	**4,812.17**	**4302.53**	**4,775.50**	**4,767.17**

4.7 O&M Expenses for FY 2017-18 and FY 2018-19

MSEDCL's Submission

Actual O&M Expenses

4.7.1 MSEDCL has considered the O&M Expenses on actual basis as per its Audited Annual Accounts for FY 2017-18 and FY 2018-19 respectively, as shown below:

Table 4-36: O&M Expenses for FY 2017-18 and FY 2018-19 as submitted by MSEDCL (Rs. Crore)

Particulars	FY 2017-18 (Actual)	FY 2018-19 (Actual)
Employee Expenses	4157.45	4877.64
A&G Expenses	684.76	764.49
RM Expenses	816.07	758.89
Net O&M Expenses	**5658.28**	**6401.01**

4.7.2 The head-wise details of actual O&M Expenses have been submitted by MSEDCL for Employee expenses, A&G Expenses and R&M Expenses. MSEDCL has also stated that there is a reduction Rs. 138.41 Crore in the actual O&M expenses claimed for FY 2017-18 as compared to that of FY 2016-17.

Sr. No	Particulars	2016-17	2017-18	Diff.
1	Employee expense	4292.21	4157.45	(134.76)
2	A&G expense	727.13	684.76	(42.37)
3	R&M Expense	777.35	816.07	38.72
	Total O&M expense	**5796.69**	**5658.28**	**(138.41)**

4.7.3 MSEDCL has submitted that the reduction in employee cost in FY 2017-18 as compared to FY 2016-17 is attributed to change in constituent components of Employee Expenses. Further the reduction in employee expenses is accounted by a decrease of gratuity payment by Rs. 61.76 Crore, as the provision for gratuity and leave encashment as per actuarial valuation is less in FY 2017-18 as compared to FY 2016-17. Further reduction in employee expenses, is resulting from a decrease in earned leave encashment accounting to Rs. 305.51 Crore However there is an expenditure item in outsourced employees amounting to Rs. 69.6 Crore.

4.7.4 The R&M expenses have also increased on account of charges paid towards damages as per Hon'ble Supreme Court order which includes an amount of Rs. 108.82 Crore Paid to Datar Switchgear Private Limited.

4.7.5 MSEDCL has further submitted that in the employee expenses, MSEDCL has added Rs. 50.20 Crore towards the Re-measurement of defined benefits plans. Adding to the submission, it stated that Gratuity is recognized in the financial statements as per actuarial valuations by independent actuaries at the year-end by using projected unit credit method as on 31st March, 2018 and that it is unfunded defined benefit plan.

4.7.6 MSEDCL has also submitted that all Actuarial Gain & Loss arising during the year has been recognized in the Other Comprehensive Income (OCI) under IND AS 19 and the

amount recognized as OCI for FY 2017-18 is given in the table below. MSEDCL requested that the same be allowed for recovery under employee expenses for FY 2017-18.

Table 4-37: Other comprehensive Income for FY 2017-18 and FY 2018-19 due to actuarial gain/loss

Particulars	FY 2017-18	FY 2018-19
Actuarial gain & Loss due to Financial assumptions changes in Defined benefit obligation (DBO)	-80.42	
Actuarial gain & Loss due to Experience on DBO	130.62	
Re-measurement of Defined benefit Plan (as per Audited accounts)	50.20	250.89

Normative O&M Expenses

4.7.7 While MSEDCL has claimed O&M Expenses as per the Audited Annual Accounts, it has also sought that they be approved as per the norms specified in the MYT Regulations, 2015. Accordingly, it has worked out the O&M Expenses separately for the Wires Business and Supply Business on a normative basis in accordance with Regulation 72.3 of the MYT Regulations, 2015 (1st Amendment). The relevant extract of the regulation is as given below:

> *"... Provided that, in the Truing-up of the Operation and Maintenance expenses for any particular year of the Control Period, an inflation factor with 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the past five financial years (including the year of Truing-up) and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years (including the year of Truing-up), as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, shall be applied to arrive at the permissible Operation and Maintenance Expenses for that year."*

4.7.8 Based on the regulation by considering the year-on-year variation of CPI and WPI, the annual escalation factor for arriving at O&M Expenses is computed as 3.48% and 2.83% for FY 2017-18 and FY 2018-19 respectively. The escalation for O&M expenses has been done by considering O&M expenses for FY 2015-16 as the base, where the normative value of O&M Expenses have been recomputed by MSEDCL after considering the impact of addition of Rs. 927 Crore of disallowed capital cost to the opening balance of GFA.

4.7.9 The normative O&M expenses FY 2017-18 and FY 2018-19 as submitted by MSEDCL

is given in the table below:

Table 4-38: Normative O&M Expenses for FY 2017-18 and FY 2018-19 by MSEDCL (Wires + Supply) as submitted by MSEDCL (Rs Crores)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	Normative O&M	MTR Order	Normative O&M
O&M Expenditure for Wires business	4543.93	4424.57	4773.68	4492.13
O&M Expenditure for Retail Supply business	2446.73	2382.46	2570.44	2419.27
Operation and Maintenance Expenses	**6990.67**	**6807.02**	**7344.13**	**6912.20**

4.7.10 MSEDCL requested to allow the O&M expenses as computed in the above table.

Commission's Analysis and Ruling

4.7.11 The Commission observes that MSEDCL has claimed O&M expenses for FY 2017-18 and FY 2018-19 on normative basis while considering the same as controllable expense and shared the impact of efficiency gain/loss on account of its variation w.r.t actual/audited O&M expense during the year.

4.7.12 The Commission further observes that the actual O&M expense for FY 2017-18 and FY 2018-19 is lower than the normative O&M expense during the period. The Commission has verified the actual O&M expense claimed by MSEDCL from the audited accounts for FY 2017-18 and FY 2018-19. It is observed that Actual employee expense in the audited accounts of FY 2017-18 and FY 2018-19 are Rs. 4107.25 Crore and Rs. 4626.72 Crore, respectively as compared to Rs 4157.45 Crore and 4877.64 Crore for the respective years, claimed in the petition.

4.7.13 The Commission in data gaps sought the head-wise reconciliation of the O&M expense. In reply to data gaps, MSEDCL submitted that employee expense of Rs.4157.45 Crore claimed in the petition is including Other Comprehensive Income of re-measurement of defined benefit plan of Rs 50.19 Crore and Rs 250.89 Crore shown separately in Audited Accounts. Further, MSEDCL submitted that the Gratuity is recognized in the financial statements as per actuarial valuations by independent actuaries at the year-end by using projected unit credit method as on 31stMarch, 2018. In accordance with the IND AS 19, all Actuarial Gain & Loss arising during the year has been recognized in the Other Comprehensive Income (OCI).

Table 4-39: Reconciliation of O&M expense for FY 2017-18 and FY 2018-19

Particulars	Employee Expenses	A&G Expenses	R&M Expenses
FY 2017-18			

Particulars	Employee Expenses	A&G Expenses	R&M Expenses
As per Audited Accounts of FY 2017-18	4107.28	696.76	816.07
Add: re-measurement of defined benefit plan	50.20		
Less: Rent paid to MPECS		(12)	
Shown in Formats for FY 2017-18	**4,877.61**	**758.89**	**764.49**
FY 2018-19			
As per Audited Accounts of FY 2018-19	**4157.47**	**684.12**	**816.07**
Add: re-measurement of defined benefit plan	250.89		
Less: Rent paid to MPECS		(12)	
Shown in Formats for FY 2018-19	**4,877.61**	**758.89**	**764.49**

4.7.14 During the verification of O&M expense, the Commission found that there is very steep rise in employee expense in FY 2018-19 as compared to the previous years.

Particulars	FY-16	FY-17	FY-18	FY-19
Actual Employee expense (In Cr)	4187	4292	4157	4877

4.7.15 In data gaps Commission sought the justification for such steep rise in O&M expense. In reply to data gaps MSEDCL submitted that the Pay revision effect has been given in FY 2018-19 for Rs.582.11 Crs and the same has been considered in the Petition as per Administrative Circulars No.590/591/592/593/594/596 dated 18.09.2019 which are attached to the reply of data gaps.

4.7.16 Further, Commission sought date of actual disbursal with dates of arrears and corresponding amount paid by MSEDCL due to pay revision till date. MSEDCL in its reply submitted that First installment of pay revision has been given in the month of November 2019. However, the provision for FY 18-19 is already included in the Annual Accounts. As per MSEDCL Administrative Circular dated 18-09-2019, the Second and Third Installment of the arrears shall be paid to the employees within next 18 month period depending on the cash flow position.

4.7.17 The Commission noted that in FY 2018-19 Rs 582.11 Crore is provisioning for the arrears pertaining to wage revision which was paid in the month of November 2019. The amount is not paid in FY 2018-19, thus Rs 582.11 Crore is not allowed in actual O&M expense for FY 2018-19.

4.7.18 The Commission has applied the amended norms specified in Regulations 72 and 81 of

the MYT Regulations, 2015 for approval of O&M Expenses for the Wires Business and Supply Business.

4.7.19 The Commission in its review order dated 24 December 2018, accepted error in computation of O&M expenses for FY 2015-16 and stated that normative opening GFA to be considered for calculating normative O&M expense for FY 2015-16 has to be corrected to Rs 40,568 Crore (Rs 39641+ Rs 927) Crore, and the normative O&M expense for FY 2015-16 has to be recalculated. Thus revised normative O&M expense for FY 2015-16 comes at Rs. 6,826 Crore for wire and supply business as shown in the following table.

Table 4-40:Normative O&M Expenses for FY 2015-16 as Approved by the Commission for wire

Sr. No.	Particulars	Units	FY 2015-16	
			MTR Order	Approved in this Order
A)	**Composite O&M Norms**			
1	**O&M Expenses Norm specified in Regulations**			
1.1	For Wheeled Energy	paise/kWh	14.34	14.34
1.2	For No. of Consumers in Wires Business	Rs Lakh/ '000 Consumers	7.40	7.40
1.3	For R&M Expenses	% of GFA	4.00%	4.00%
2	**Parameters for O&M Expenses**			
2.1	Wheeled Energy	MU	1,09,543.00	1,09,543.29
2.2	No. of Consumers in Wires Business	'000 Consumers	23,151.00	23,150.97
2.3	Opening GFA	Rs. Crore	35,677.00	36,511.30
B)	**Total O&M Expenses wire**	Rs. Crore	**4,711**	**4,744.47**

Table 4-41: Normative O&M Expenses for FY 2015-16 as Approved by the Commission for Supply

Sr. No.	Particulars	Units	FY 2015-16	
			MTR Order	Approved in this Order
A)	**Composite O&M Norms**			
1	**O&M Expenses Norm specified in Regulations**			
1.1	For Sales in Supply Business	paise/kWh	9.94	9.94
1.2	For No. of Consumers in Supply Business	Rs Lakh/ '000 Consumers	5.13	5.13
1.3	For R&M Expenses	% of GFA	0.50%	0.50%
2	**Parameters for O&M Expenses**			
2.1	Sales	MU	87,903.00	87,902.89

Sr. No.	Particulars	Units	FY 2015-16	
			MTR Order	Approved in this Order
2.2	No. of Consumers in Supply Business	'000 Consumers	23,151.00	23,150.97
2.3	Opening GFA	Rs. Crore	3,964.00	4,056.70
B)	**Total O&M Expenses -Supply**	Rs. Crore	**2,081.22**	**2,081.68**

4.7.20 As per the amendment to the MERC (MYT) Regulations, 2015 the Base Year expenses for FY 2015-16 need to be escalated by an inflation factor with 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index (WPI) of the past five financial years and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index (CPI) for Industrial Workers (all-India) of the past five financial years, as reduced by an efficiency factor of 1% to arrive at the permissible O&M expenses for each year of the Control Period. It is noted that MSEDCL has used WPI series of 2011-12 for the truing up years. The Commission in its approval of O&M expenses during MYT Order had considered 2004-05 data series which was prevailing at that time. The Commission has also observed that 2004-05 data series is now not publishing WPI data. The Commission is of the view that principles set or methodology adopted during MYT Period should not be changed during the same Control Period. Hence, the Commission has used 2004-05 data series for working out escalation rate for O&M expenses. To overcome the issue of non-availability of WPI data for FY 2017-18 and FY 2018-19, the Commission has applied escalation rate of 2011-12 data series on FY 2016-17 WPI numbers of 2004-05 data series.

4.7.21 Considering the year-on-year variations in CPI and WPI and escalation factor as approved by the Commission is shown in the following table.

Table 4-42: Normative O&M Expenses for FY 2017-18 and FY 2018-19 (Wires + Supply) as approved by Commission

Year	WPI	WPI Inflation	CPI	CPI Inflation
FY 2012-13	167.62	7.35%	215.17	10.44%
FY 2013-14	177.64	5.98%	236.00	9.68%
FY 2014-15	181.19	2.00%	250.83	6.29%
FY 2015-16	176.68	-2.49%	265.00	5.65%
FY 2016-17	183.20	3.69%	275.92	4.12%
FY 2017-18	188.55	2.92%	284.42	3.08%
FY 2018-19	196.62	4.28%	299.92	5.45%
Average from FY14 to FY18		2.42%		5.76%
Weight		30%		70%
Escalation Factor				4.76%
Efficiency Factor				1.00%

Year	WPI	WPI Inflation	CPI	CPI Inflation
Escalation Factor for FY 18 net of Efficiency Factor				**3.76%**
Average from FY15 to FY19		2.08%		4.92%
Weight		30%		70%
Escalation Factor				4.07%
Efficiency Factor				1.00%
Escalation Factor for FY 19 & MYT Control Period net of efficiency factor				**3.07%**

4.7.22 In accordance with Regulation 72.3 of the MYT Regulations, 2015 (1st Amendment, 2017). The relevant extract of the regulation is as given below:

> *"... Provided that, in the Truing-up of the Operation and Maintenance expenses for any particular year of the Control Period, an inflation factor with 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the past five financial years (including the year of Truing-up) and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years (including the year of Truing-up), as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, shall be applied to arrive at the permissible Operation and Maintenance Expenses for that year."*

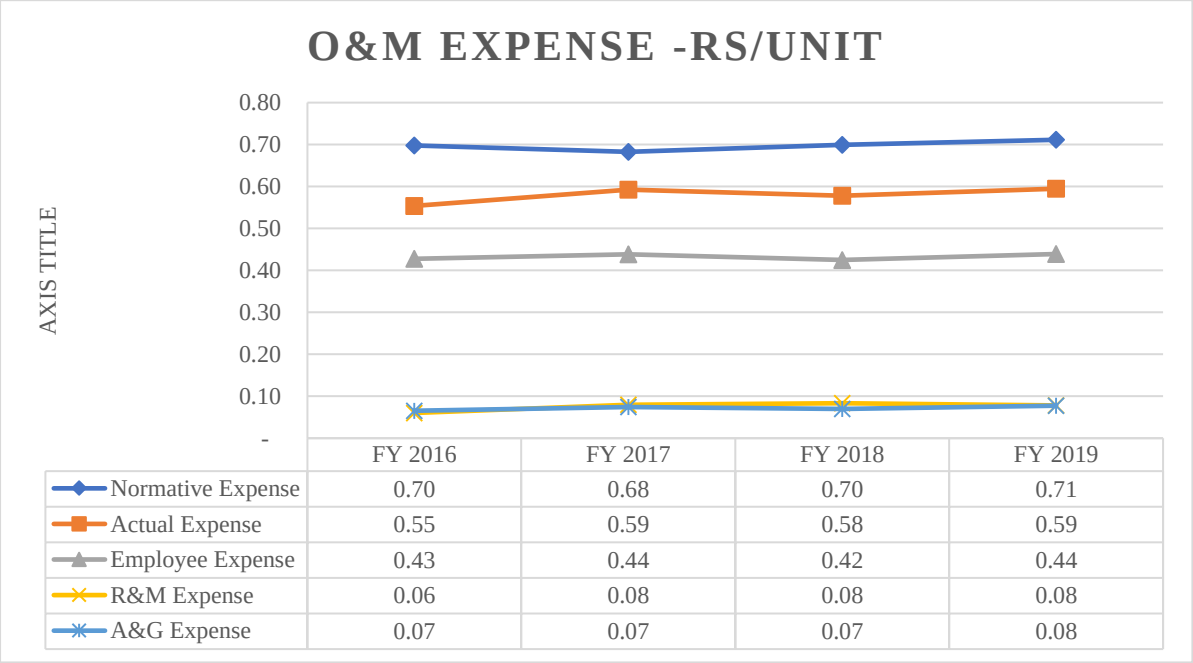
4.7.23 The Commission has computed the escalation factor as specified according to the above provision of the MYT Regulations, 2015 and the same works out to 4.76% & 4.07% and 3.76% & 3.07% after reducing 1% efficiency factor for FY 2017-18 and FY 2018-19 respectively. Thus, for the purpose of working out normative O&M expenses for FY 2017-18 & FY 2018-19, an escalation factor of 3.76% and 3.07% is has been considered.

4.7.24 For Working out normative O&M expense for FY 2017-18, the Commission has recomputed O&M norms for FY 2015-16 based on the revised GFA and escalated it with 3.76% for two years to arrive at O&M expense norms for FY 2017-18 and for working out O&M expense for FY 2018-19, the Commission escalated 3.07% on the recomputed O&M norms for FY 2015-16 for three years to arrive at O&M norms for FY 2018-19.

4.7.25 The Commission has further verified the actual O&M expenses of MSEDCL for FY 2017-18 and FY 2018-19 from the audited accounts and found the same to be lower than normative O&M expense. Since O&M expense is a controllable expense, the efficiency gains on account of lower actual O&M expense compared to normative expense has to be shared among MSEDCL and the consumer in accordance with the

principles outlined under MYT Regulations, 2015 (1st Amendment, 2017).

4.7.26 The Commission have analyzed component-wise O&M expense Per Unit (Employee, R&M, A&G) v/s Normative O&M expense as shown in the below table:



	FY 2016	FY 2017	FY 2018	FY 2019
Normative Expense	0.70	0.68	0.70	0.71
Actual Expense	0.55	0.59	0.58	0.59
Employee Expense	0.43	0.44	0.42	0.44
R&M Expense	0.06	0.08	0.08	0.08
A&G Expense	0.07	0.07	0.07	0.08

4.7.27 Commission notes that form FY 2015-16 to FY 2018-19, Normative O&M expense varies from Rs. 0.68/Unit to Rs. 0.71/Unit and actual O&M expense is always lower from normative O&M expense and varies from Rs. 0.55/Unit to Rs. 0.59/Unit. Out of actual O&M expense, Employee expense is major contributor, consisting of 73% to 77% of actual expense. The Commission also notes that R&M expense as percentage of actual O&M expense varies from 11% to 14% against the stipulated 20%. The Commission is of the view that R&M expense need to be increased so as to ensure better power quality to the consumers. The present expenses on R&M are on the lower side which may be adversely impacting the power quality. The low spending on R&M activities is a matter of concern, as it directly affects the reliability and upkeep of the Distribution network which in-turn has a bearing on quality service to the consumers. During the public consultation process , many Consumers have complained about the supply quality of MSEDCL. In view of the above Commission has already specified norms for spending on R&M expense in the MYT Regulations, 2019. Regulation 75.6 of MYT Tariff Regulation states that if Repair and Maintenance expense is less than total O&M expense allowed then the saving in R&M expense shall not be set off against other heads of O&M expense. The relevant regulation is reproduced for reference:

> *"75.6 In case the expenditure on Repairs & Maintenance falls below 20% of total O&M expenses allowed under these Regulations, then such savings in Repairs & Maintenance shall not be set off against other heads of O&M expenses"*

4.7.28 Thus, for ensuing years MSEDCL needs to maintain R&M expense at least 20% of allowed O&M expense failing which the Commission may be constrained to disallow the proportionate sharing in O&M expenses..

4.7.29 The O&M expense approved for the purpose of truing up of FY 2017-18 and FY 2018-19 for Wires Business and Retail Supply of electricity is shown in following table.

Table 4-43: O&M Expenses for FY 2017-18 and 2018-19 (Wires + Supply) approved by Commission (Rs. Crore)

Particulars	FY 2017-18				FY 2018-19			
	MTR Order	MSEDCL Normative	MSEDCL Actual /Audited	Approved in this Order	MTR Order	MSEDCL Normative	MSEDCL Actual /Audited	Approved in this Order
O&M Expenditure for Wires business	4,544	4,425	-	4,448	4,774	4,493	-	4,524
O&M Expenditure for Retail Supply business	2,447	2,382	-	2,395	2,570	2,419	-	2,436
Operation and Maintenance Expenses (wires+retail)	6,991	6,807	5,658	6,844	7,344	6,912	6,401	6,959

4.7.30 The Commission approves normative O&M expense of Rs. 6,844 Crore on Truing-up of ARR for FY 2017-18 and Rs. 6,959 Crore on Truing-up of ARR for FY 2018-19.

4.8 Capital Expenditure and Capitalization for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.8.1 MSEDCL has submitted that it has achieved a capitalization of Rs. 3337.9 Crore and Rs. 5240.66 Crore against an approved value of Rs. 5519.11 Crore and Rs. 4565.00 Crore for FY 2017-18 and FY 2018-19 respectively.

4.8.2 MSEDCL has submitted the details of capitalization, that it has considered for FY 2017-18 and FY 2018-19. MSEDCL has also segregated DPR schemes into those which have been approved by the Commission, schemes that are pending for approval and also schemes for which DPR has not yet been submitted by MSEDCL to the Commission. The following Tables summaries the details of capitalization for DPR and Non-DPR schemes

Table 4-44: DPR Scheme Capitalization as submitted by MSEDCL for FY 2017-18 and FY 2018-19 (Rs. crore)

	DPR- Approved by the Commission	FY 2017-18	FY 2018-19
1	Infra Plan Works	127.02	3.55
2	Infra Plan Works II	1,562.91	1,830.00
3	GFSS	6.43	29.63
4	Single Phasing - Left out villages	1.28	9.26
5	Elimination of 66 KV line	1.30	0.06
6	AMR	7.47	30.28
7	APDRP	710.47	249.06
8	Internal Reforms	9.49	-
9	SPA:PE	34.60	60.97
10	P:SI	3.33	17.58
11	P:IE	0.19	0.97
12	RGGVY	4.21	3.39
13	ERP	0.43	-
14	AG Metering	10.01	5.96
15	Deogad Wind Power Project	0.64	-
16	DDUGJY	23.19	427.25
17	IPDS	42.91	588.00
18	Sinhansth Kumbmela Nashik	5.59	0.76
19	Saubhagya Scheme	0.09	230.17
20	DPDC / Non-Tribal	58.22	145.40
21	DPDC / SCP	72.14	149.14
22	DPDC / TSP + OTSP	113.25	244.25
23	Mukhyamantri Saur Vahini Yojana Phase I	-	2.22
24	Smart Grid Project	0.16	-
25	DELP	0.18	-
	DPR- Pending for Approval		
26	AG Special Package for Vidharbha/Marathwada	321.98	604.91
27	Shet Tale	-	1.52
	DPR- Not yet submitted by MSEDCL		
28	New Service Connection	14.02	7.00
29	New Consumers	2.09	8.00
	Total DPR Schemes	**3,133.60**	**4,649.34**

Table 4-45: Non-DPR Scheme Capitalization as submitted by MSEDCL for FY 2017-18 and 2018-19 (Rs. crore)

S.No	NON DPR SCHEMES	FY 2017-18	FY 2018-19
1	Facility Management System	1.02	2.66
2	MIS/IT Backbone	5.89	1.52
3	Load Management	0.04	-
4	Distribution Schemes	-	-

S.No	NON DPR SCHEMES	FY 2017-18	FY 2018-19
a	Evacuation	1.07	-
b	P.F.C Urban Distribution Scheme	12.56	15.32
c	MIDC Interest Free Loan Scheme	0.73	24.81
d	Rural Electrification	7.38	14.50
f	Ag Backlog	102.83	133.48
5	Single Phasing I,II & III	0.63	4.83
6	DDF/Non DDF	72.15	383.41
7	Evacuation of Wind generation	-	10.01
8	Dhadak Sinchan Yojana	-	0.01
9	Energy Command & Control Center	-	-
10	Implementation of Electric Vehicle Charging Infrastructure operation Center (IT)	-	-
11	Electric Vehicle Charging Stations	-	-
12	JBIC	-	-
13	RT DAS	-	-
14	Mahavitaran Aplya Dari	-	-
	Total Non-DPR Schemes	**204.30**	**590.55**

Table 4-46: Summary of Capitalization as submitted by MSEDCL for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR approved	Actual	MTR approved	Actual
Capitalization				
DPR Schemes	4,599.25	3,133.60	3,804.00	4,650.00
Non DPR Schemes	919.85	204.30	761.00	591.00
Total	**5,519.11**	**3,337.90**	**4,565.00**	**5,240.66**

4.8.3 As per the Annual Accounts, the addition to GFA is Rs. 3379.39 Crore for FY 2017-18 and Rs. 5334.55 Crore for FY 2018-19, whereas in Form 4.2 MSEDCL has shown capitalisation as Rs. 3,337.90 Crore and Rs 5,240 Crore for FY 2017-18 and FY 2018-19 respectively. MSEDCL clarified that, in Form 4.2, only scheme-wise details have been shown, whereas in the Annual Accounts the Addition to GFA is shown in totality, including land and land rights, buildings, etc. The details are shown in the following table:

Table 4-47: Summary of Capitalisation for FY 2017-18 and FY 2018-19, as submitted by MSEDCL

Sr. No.	Particulars	FY 2017-18	FY 2018-19
1	Capitalization as per Note 12 of Annual Accounts	3,379.29	5,334.55
2	Capitalization as per Form 4 (A)	3,337.90	5,240.66
	Other Assets		
3	Land	10.75	5.63
4	Buildings	13.04	20.24
5	Vehicles	0.31	-

Sr. No.	Particulars	FY 2017-18	FY 2018-19
6	Furniture & Fixtures	1.11	1.53
7	General Assets	15.42	46.23
8	Other Civil Works	0.76	20.16
	Total (2 to 8)	**3,379.29**	**5,334.45**

4.8.4 MSEDCL has also submitted that Commission in its previous orders has allowed the Capitalization towards schemes not forming part of any scheme, which are of the nature of General Assets, and has accordingly made revisions in the GFA to that extent. MSEDCL has further requested the Commission to approve capitalization as per audited accounts and revise the GFA accordingly.

Commission's Analysis and Rulings

4.8.5 The Commission has perused the capitalisation details of the schemes as claimed by MSEDCL for FY 2017-18 and FY 2018-19. It is observed that, MSEDCL has claimed excess capitalisation over and above in-principle approved cost for some scheme. The scheme-wise excess capitalisation is provided in the following Table.

Table 4-48: Excess Capitalisation claimed by MSEDCL in FY 2017-18 and FY 2018-19 (Rs. Crore)

S.No	Major Schemes	Excess Capitalization in FY 2017-18	Excess Capitalization in FY 2018-19
1	Infrastructure Plan for 119 Divisions	125.90	3.54
2	GFSS - II	0.93	2.23
3	GFSS - III	0.65	8.06
4	AMR		0.76
5	DTC Metering Phase-III	9.40	0
6	SPA:PE	34.30	60.97
7	P:SI	3.30	17.54
8	P:IE	0.19	0.97
10	**Total**	174.67	94.07

4.8.6 Regulation 23.2 of MYT Regulations, 2015 specifies the provisions to be referred while allowing capitalisation.

> "*The capital cost admitted by the Commission after prudence check shall form the basis for determination of Tariff:*
>
> *Provided that prudence check may include scrutiny of the reasonableness of the capital expenditure, financing plan including the choice and manner of funding, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of Tariff."*

4.8.7 As emphasized in earlier Orders also, some capitalisation is due to time over run of the

schemes, and excess interest was incurred which would have been capitalised as IDC. Due to excess capitalisation, an undue burden of excess IDC is being passed on to consumers, which is not justifiable. Further, the Commission observes that MSEDCL does not maintain scheme-wise IDC computations. Instead IDC is computed on a notional basis as a percentage of the total capitalisation of each scheme. In case of schemes with excess capitalisation over and above the in-principle approved capital cost, the Commission has disallowed 100 % IDC for these schemes instead of 50% as per previous Orders. Thus IDC of Rs 1.58 Crores and Rs. 0.06 Crore is disallowed in FY 2017-18 and FY 2018-19 respectively.

4.8.8 The Commission has verified the DPR schemes submitted by MSEDCL and has disallowed Rs. 0.97 Crores in FY 2017-18 towards DPR schemes, for which in-principle approval is already accorded. The Commission also disallows Pending/Yet to approve DPR schemes of Rs 16.11 Crore and Rs. 15.21 Crore for FY 2017-18 and FY 2018-19 respectively and the same may be considered as and when the schemes will be approved by the Commission.

4.8.9 Further Regulation 27.5 of MYT Regulations, 2015 specifies limit on capitalisation of non-DPR schemes that are allowable.

> *"The Commission may approve for each year of the Control Period, an additional amount equivalent to 20% of the total capital expenditure approved for respective financial year of the Control Period towards unplanned capital expenditure or the capital expenditure that is included under the Business Plan but is yet to be approved by the Commission."*

In line with the above Regulations, capitalisation towards non-DPR schemes has been allowed only up to that threshold level.

4.8.10 Based on the above, the Capitalization allowed for FY 2017-18 and FY 2018-19 is as follows:

Table 4-49: Capitalisation approved by Commission for FY 2017-18 and FY 2018-19 (Rs. Crore)

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Actuals	Approved in this Order	MSEDCL Actuals	Approved in this Order
Approved DPR Capitalisation amount	3,104.48	3103.51	4627.34	4627.34
IDC claimed	13.02	11.44	7.56	7.50
Pending/ yet to approve DPR	16.11	0.00	15.21	0.00
Sub-total	3,133.61	3114.95	4650.11	4634.84

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Actuals	Approved in this Order	MSEDCL Actuals	Approved in this Order
Non DPR	204.30	204.30	590.55	590.55
%of Non DPR to DPR	6.55%	6.56%	12.74%	12.74%
Allowable Non DPR Capped	204.30	204.30	590.55	590.55
Total Captalisation	**3,337.90**	**3319.25**	**5240.66**	**5225.39**

4.8.11 Accordingly, the total capitalisation approved for FY 2017-18 and FY 2018-19 is summarized as shown below:

Table 4-50: Capitalisation for FY 2017-18 and FY 2018-19 (Rs crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Actuals	Approved in this Order	MTR Order	MSEDCL Actuals	Approved in this Order
Total Captalisation	5,519.11	3,337.90	3319.25	4565.19	5240.66	5225.39

4.8.12 Thus, the Commission approve the capitalization of Rs. 3319.25 Crores and Rs. 5225.39 Crores for FY 2017-18 and FY 2018-19 respectively.

4.9 Depreciation for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.9.1 MSEDCL has submitted that in petition filed during the Mid-Term review process it had requested the Commission to reconcile the GFA in line with the approval of Rs. 927 Crore of disallowed capitalization and revise the opening GFA for FY 2015-16. MSEDCL while filing the current petition has submitted the detailed calculation of depreciation as per the revised GFA from FY 2007-2008 onwards.

4.9.2 The opening GFA for FY 2017-18 and FY 2018-19 as per MSEDCL's audited accounts for respective years are Rs 49,151.79 Crore and Rs. 49760.55 Crore (excluding the impact of Final Transfer Scheme/Restructuring Plan and subsequent evaluation). The Depreciation has been calculated considering the opening balance of assets at the beginning of the respective years and the actual capitalization during the respective years on pro-rata basis based on the revised opening GFA for True-up years of FY 2017-18 and FY 2018-19. The amount of depreciation claimed by MSEDCL is as follows:

Table 4-51: Depreciation as submitted by MSEDCL for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18	FY 2018-19
Opening GFA (Actual)	49,151.79	-

Particulars	FY 2017-18	FY 2018-19
Revised Opening GFA as per MERC	48,442,09	-
Less; Consumer Contribution and grants	760.55	-
Net Opening GFA approved	47,681.54	49,760.55
Depreciation(Actual)	2,184.18	2,601.18
Depreciation (Claimed in proportion to actual	2,118.15	2464.00

Commission's Analysis and Rulings

4.9.3 The Commission has worked out allowable depreciation considering the approved Opening GFA for FY 2017-18 and FY 2018-19 on the revised capitalisation approved during the respective year.

4.9.4 Further, as per provision of MYT Regulations, 2015, consumer contribution and grants has been deducted from GFA while working out depreciation. The relevant Regulations is reproduced as under.

> *"25.2 The expenses on such capital works shall be treated as follows :—*
>
> *(a) normative O and M expenses as specified in these Regulations shall be allowed ;*
>
> *(b) the debt-equity ratio, shall be considered in accordance with Regulation 26, after deducting the amount of such financial support received ;*
>
> ***(c) provisions related to depreciation, as specified in Regulation 27, shall not be applicable to the extent of such financial support received ;***
>
> *(d) provisions related to return on equity, as specified in Regulation 28 shall not be applicable to the extent of such financial support received ;*
>
> *(e) provisions related to interest on loan capital, as specified in Regulation 29 shall not be applicable to the extent of such financial support received."****(Emphasis Added)***

4.9.5 As regards the impact of past capitalization of Rs. 927.00 Crores, the Commission would like to highlight that, while provisional truing up of FY 2017-18 in the MTR order, this impact of approval of past capitalization was already factored in while arriving at the opening GFA of FY 2017-18 as well as in the subsequent years. Hence no separate impact of the same is worked out in FY 2017-18 and subsequent years. The impact on depreciation for the past years have been separately allowed as detailed in

the previous section of this Order.

4.9.6 Upon scrutiny, the Commission observed that there is a difference in the opening GFA of FY 2017-18 approved in the MTR Order and that presently claimed by MSEDCL. In MTR Order, approved Opening GFA for FY 2017-18 was Rs. 47173 Crore while as per the present Petition it is Rs. 47682 Crore. To assess the variation, opening GFA of FY 2016-17 and subsequent addition in capitalization was verified. The Commission has approved opening GFA of Rs. 45,344 Crores for FY 2016-17 in the MTR Order dated 12th September 2018.IMPORTANT

Table 4-52: Working for opening GFA for Depreciation of FY 2017-18

Particulars	Amount Rs. Crs	Reference
Opening GFA for FY 16-17	45,344	Table 4-28 of MTR Order (Approved by Commission)
Add: Capitalisation approved for FY 16-17	2,531	Table 4-26 of MTR Order (Approved by Commission)
Add: Other Assets for FY 16-17	58	Table 4-23 of MTR Order (As submitted by MSEDCL)
Less: Consumer Contribution for FY 16-17*	760	Table 4-31 of MTR Order (Approved by Hon'ble Commission)

*(Excluded for the purpose of depreciation computation as per Regulations)

4.9.7 Accordingly, the approved Capitalization for FY 2016-17 works out to be Rs. 2,589.27 Crores. However, subsequently MSEDCL submitted the DPR for DPDC for the approval. Commission accorded its post facto approval vide Letter No. MERC/CAPEX/2019-20/1108 dated 28th November 2019. The Commission considers DPDC in DPR schemes for FY 2016-17 and allows the impact of the same

Table 4-53:for opening GFA for Depreciation of FY 2017-18

Sr. No	Particulars	Amount Rs. Crs
1	Capitalisation approved for FY 16-17	2,589
2	Impact of Capitalisation of DPDC disallowance for FY 16-17	508
3	**Revised Capitalisation for FY 16-17 (a)**	**3,097**
4	Opening GFA for FY 16-17 (b)	45,344
5	Less: Consumer Contribution & Grants for FY 16-17 (c)*	760

Sr. No	Particulars	Amount Rs. Crs
6	**Opening GFA for FY 17-18 (d) = (a+b-c)**	**47,682**
7	Addition during the year	3,319
8	Add: General Assets (f)	41
9	Less: Consumer Contribution & Grants for FY 17-18 (g)*	1292
10	**Opening GFA of FY 2018-19 (h) = (d+e+f-g)**	**49,749**

*(Excluded for the purpose of depreciation computation as per Regulations)

4.9.8 The Commission sought Yearly depreciation & GFA (with Asset class-wise break-up) having accumulated depreciation less than 70%, between 70% and 90% and greater than 90%. MSEDCL in its reply to data gap submitted the details of Depreciation covering asset wise GFA which are depreciated less than 70%, between 70% and 90% and above 90%.. In the ensuing years for Truing up and Projections, MSEDCL needs to maintain details of Depreciation in the same manner, inability to maintain the same will lead to curtailment of the Depreciation claims. Thus, the revised opening GFA for FY 2017-18 works out to Rs. 47,682 and for FY 2018-19 works out to Rs 49,749 Crores.

Table 4-54: Depreciation approved for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18	FY 2018-19
Depreciation as per MSEDCL	2,119	2,464
Op. GFA as per MSEDCL	47,682	49,761
Op GFA as per Commission	47,682	49,749
Closing GFA as per Commission	49,749	52,374
Depreciation (Approved in proportion to actual)	2,119	2,463
Composite weighted average depreciation rate	4.44%	4.95%

4.9.9 The difference in opening GFA approved for FY 2018-19 and Petitioned is owing to the approved capitalization and corresponding consumer contribution & grants considered in FY 2017-18.

4.9.10 Accordingly, the depreciation approved for FY 2017-18 and FY 2018-19 are as follows:

Table 4-55: Summary of Depreciation for FY 2017-18 and FY 2018-19 (Rs. crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Depreciation	2,183	2,119	2,119	2,329	2,464	2,463

4.9.11 Thus, the Commission approves depreciation of Rs. 2,119 Crores and Rs. 2,463 Crores for FY 2017-18 and FY 2018-19 respectively.

4.10 Interest Expenses for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.10.1 MSEDCL has submitted that the computation of Interest expenses has been done on a normative basis linked to normative opening loan and normative loan addition during the year. The revised opening balance of loan for FY 2017-18 and FY 2018-19 considering the addition of Rs. 927 Crore has been considered for the normative computation.

4.10.2 Further it has submitted that the rate of interest considered for the calculation of Interest expense, the weighted average rate of interest is computed on the basis of the actual loan portfolio during the concerned year as per Regulation 29.5 of MYT, 2015 Regulations. The weighted average interest rate computed by MSEDCL is as shown in the table below:

Table 4-56: Computation of weighted average interest rate for FY 2017-18 and FY 2018-19 (In Crores)

Particular	Formula	FY 2017-18	FY 2018-19
Outstanding Loan at the start of the year	**A**	13,649.45	14945.76
Loan drawl during the year	**B**	3,182.78	1592.27
Loan repayment during the year	**C**	1,886.38	2,355.38
Balance outstanding at the end of the year	**d = a+b-c**	14,945.76	14182.66
Average Loan of the year	**e = Avg(a,d)**	14,297.55	14564.21
Interest Expense incurred during the year	**F**	1,442.88	1496.49
Weighted Average Interest rate	**g=f/e**	10.09%	10.28%

4.10.3 Regarding the above computation, MSEDCL has stated that only long term capital loan amount is considered and Medium Term Loan (MTL) amount is not included in the computation of interest rate.

4.10.4 The repayment of normative loan considered by MSEDCL is considered equal to depreciation as per Regulation 29.3 of MYT Regulation, 2015. The relevant extract of the regulation is provided below for easy reference:

"The repayment during each year of the Control Period from FY 2016-17 to FY 2019- 20 shall be deemed to be equal to the depreciation allowed for that year."

4.10.5 Thus, the interest expenses computed by MSEDCL on normative loan is provided in the Table below:

Table 4-57: Interest Expenses for FY 2017-18 and FY 2018-19 as submitted by MSEDCL

Particulars	FY 2017-18		FY 2018-19	
	MTR Approved	MSEDCL Petition	MTR Approved	MSEDCL Petition
Normative Outstanding Loan at beginning of the year	13,573.33	13,919.44	14,334.50	13,277.61
Loan drawn	2,942.55	1,477.02	1,680.60	2,190.74
Loan Repayment	2,183.38	2,118.85	2,329.35	2,464.00
Normative Balance outstanding at the end of the year	14,344.50	13,277.61	12,973.05	13,004.36
Average Balance of Net Normative Loan	13,954.92	13,598.53	13,119.31	13,140.99
Interest Rate	11.37%	10.09%	11.37%	10.28%
Gross Interest Expenses	1586.38	1372.24	1,592.66	1,350.25

4.10.6 MSEDCL has submitted that the Commission in the MTR Order dated 12th September 2018 had approved funding of Capitalization based on the approved capitalization, and the actual Capitalization is lower than the approved capitalization. The normative loan is also lower than that approved in the MTR order.

4.10.7 MSEDCL has requested to approve the normative interest expenses as submitted in the computation above.

Commission's Analysis and Rulings

4.10.8 The Commission has allowed the interest expenses on normative basis linked to the normative opening loan and normative loan addition approved during the year. Further, for arriving at the interest rate, the Commission has considered the weighted average interest rate of actual loan portfolio during the FY 2017-18 and FY 2018-19 in accordance with Regulation 29.5 of the MYT Regulations, 2015. Regulation 29.5 of MYT Regulations, 2015 is reproduced as below:

"29.5 The rate of interest shall be the weighted average rate of interest computed on the basis of the actual loan portfolio at the beginning of each year:

Provided that at the time of Truing-up, the weighted average rate of interest computed on the basis of the actual loan portfolio during the concerned year shall be considered as the rate of interest:"

4.10.9 Opening of long term loan in the Note 18 of audited accounts of FY 2017-18 is Rs. 18,660.89 Crores. However, the opening submitted by MSEDCL is Rs. 13,649.35 Crores. In reply to query, MSEDCL submitted that the difference is due to the Medium Term Loan which is reflected in the audited accounts and provided the reconciliation for the same. Further, the Commission has verified that there is retirement of asset of Rs 0.19 Crores and Rs 17.21 Crores for FY 2017-18 and FY 2018-19 from the Audited Accounts, which has been duly considered while working out and allowing the normative interest expenses in the respective years.

4.10.10 Further, the Commission sought opening and closing balance of loan from different banks and reconciliation of the same from audited accounts and in reply to data gaps MSEDCL submitted the same. Summary of opening and closing balance of loan from different banks is shown in below table:

Table 4-58: Summary of opening and closing balance of loan from different banks

Particulars	FY 2017-18	FY 2018-19
PFC		
Opening Balance of Loan	3,763.98	3,091.73
Less: Reduction of Normative Loan due to retirement or replacement of assets		
Addition of Loan during the year	84.69	509.14
Loan Repayment during the year	756.94	743.47
Closing Balance of Loan	3,091.73	2,857.40
Average Loan Balance	3,427.86	2,974.56
Applicable Interest Rate (%)	9.54%	10.20%
Interest Expenses	327.06	303.4
REC		
Opening Balance of Loan	9,701.53	11,696.91
Less: Reduction of Normative Loan due to retirement or replacement of assets		
Addition of Loan during the year	3,098.09	1,083.13
Loan Repayment during the year	1,102.71	1,598.30
Closing Balance of Loan	11,696.91	11,181.74
Average Loan Balance	10,699.22	11,439.33
Applicable Interest Rate (%)	10.39%	10.41%
Interest Expenses	1,111.96	1,190.88
MIDC		
Opening Balance of Loan	123.52	123.52

Particulars	FY 2017-18	FY 2018-19
Less: Reduction of Normative Loan due to retirement or replacement of assets		
Addition of Loan during the year	-	-
Loan Repayment during the year	-	-
Closing Balance of Loan	123.52	123.52
Average Loan Balance	123.52	123.52
Applicable Interest Rate (%)	-	-
Interest Expenses	-	-
Other Loan		
Opening Balance of Loan	4.46	0
Less: Reduction of Normative Loan due to retirement or replacement of assets		
Addition of Loan during the year	-	-
Loan Repayment during the year	4.46	-
Closing Balance of Loan	0	0
Average Loan Balance	2.23	0
Applicable Interest Rate (%)	9.25	-
Interest Expenses	0.1	-
GOM		
Opening Balance of Loan	55.85	33.59
Less: Reduction of Normative Loan due to retirement or replacement of assets		
Addition of Loan during the year	-	-
Loan Repayment during the year	22.26	13.6
Closing Balance of Loan	33.59	19.99
Average Loan Balance	44.72	26.79
Applicable Interest Rate (%)	8.41%	8.27%
Interest Expenses	3.76	2.22
Total		
Opening Balance of Loan	13,649.35	14,945.76
Less: Reduction of Normative Loan due to retirement or replacement of assets	-	-
Addition of Loan during the year	3,182.78	1,592.27
Loan Repayment during the year	1,886.38	2,355.38
Closing Balance of Loan	14,945.76	14,182.65
Average Loan Balance	14,297.55	14,564.21
Applicable Interest Rate (%)	**10.09%**	**10.28%**
Interest Expenses	1,442.88	1,496.49

4.10.11 The Commission has ensured debt equity ratio is 70:30 and that equity is not claimed more than 30%, in the event of which the equity in excess of 30% shall be considered as normative loan. The funding pattern for FY 2017-18 and FY 2018-19 for the

capitalisation is approved by the Commission, in proportion to the funding pattern of capital expenditure adopted by MSEDCL and considering the approved capitalisation for the respective year. The approved funding pattern is presented in the following table:

Table 4-59: Funding of Capitalisation approved by Commission for FY 2017-18 and FY 2018-19

Particular	Amount (Rs. Crore)	Amount (Rs. Crore)
Total Capitalization	3,319.25	5225.39
Less: Consumer Contribution	266.90	624.63
Less: Grants	1,025.91	2,051.93
Balance to be funded	2,026.44	2,548.83
Equity	560.80	365.54
Debt	1,465.64	2,183.30
Equity (%)	28%	14%
Debt (%)	72%	86%

*4.10.12*The Opening loan for FY 2017-18 is considered at Rs. 13,919 Crores details of which is explained in the earlier chapter of Impact of Reconciliation of Opening GFA.

Table 4-60: Interest Expenses approved by the Commission for FY 2017-18 and FY 2018-19 (Rs. Crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Opening Balance of Net Normative Loan	13,575	13,919	13,919	14,334	13,278	13,266
Less: Reduction of Normative Loan due to retirement	-	-	0*	-	-	12
Addition of Normative Loan due to capitalisation	2,943	1,477	1,465	1,681	2,191	2,183
Repayment of Normative Loan	2,183	2,119	2,119	2,329	2,464	2,463
Closing Balance of Net Normative Loan	14,334	13,278	13,266	12,973	13,004	12,974
Average Balance of Net Normative Loan	13,955	13,599	13,593	13,119	13,141	13,120
Weighted average Rate of Interest on actual Loans (%)	11.37%	10.09%	10.09%	11.37%	10.28%	10.28%
Interest Expenses	1,586	1,372	1,372	1,593	1,350	1,348
Total Interest Expenses	**1,586**	**1,372**	**1,372**	**1,593**	**1,350**	**1,348**

**(Non-zero value of 0.13 Crores)*

4.10.13Thus, the Commission approves Interest on Loan Capital of Rs. 1,372 Crores and Rs. 1,348 Crores for FY 2017-18 and FY 2018-19 respectively.

4.11 Return on Equity for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.11.1 MSEDCL has claimed RoE in accordance with Regulation 28.2 of the MYT Regulations, 2015 by revising the opening equity in line with the addition of Rs. 927 Crore from FY 2007-08 on onwards. The equity portion of the capitalization is computed by considering a debt to equity ratio of 70:30 as per Regulation 26.1 of MYT Regulations, 2015. Further, Proviso of Regulation 26 states that if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan where equity actually deployed is less than 30% of the capital cost of the capitalised asset, the actual equity shall be considered.

4.11.2 In accordance with the proviso of Regulation 68 of MYT Regulation 2015, MSEDCL has submitted that return on equity capital is allocated in the ratio of Fixed Assets between the Wires and Retail Supply Business, i.e., 90% to Wires Business and 10% to Supply Business. On similar lines it has stated that the capital expenditure, grants, equity and capitalization is divided into wires and supply business in the ratio of 90:10.

4.11.3 MSEDCL has also submitted that since the assets retired for FY 2017-18 only consisted of land it has not considered any asset retirement while computing the RoE corresponding to capitalization during the year.

4.11.4 Further it has submitted that for FY 2018-19, the amount of Rs.15.76 Crore was inadvertently considered in addition to asset twice which was corrected. However instead of reduction in addition to asset it is shown as retirement of asset and since there is no actual retirement for the year. MSEDCL has not reduced the equity portion of capitalization to that extent while computing RoE.

4.11.5 Thus as per the provisions of MYT Regulations, 2015 the Return on Equity computed for Wires business and supply business for FY 2017-18 and FY 2018-19 are provided separately in the table below:

Table 4-61: RoE for Wires Business for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Equity at the beginning of the year (Wires)	9,796.00	9.719.53	11,066.00	10,244.55

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Equity portion of Assets Capitalization	1,270.00	540.72	633.43	328.98
Equity at the end of the year	**11,066.00**	**10244.25**	**11.699.43**	**10,553.23**
Return on Computation				
Return on Equity at the beginning of the year- 15.5%	1,518.38	1,506.23	1,715.23	1,584.76
Return on Normative Equity portion of Asset Capitalization	98.43	39.12	49.09	25.05
Interest on Equity Portion above 30% equity	6.00	-	-	-
Total Return on Equity	**1,622.81**	**1,545.64**	**1,764.32**	**1,610.25**

4.11.6 For the Supply Business, the RoE has been computed by MSEDCL at the rate of 17.5% on the average equity taking the opening balance of equity and normative additions during the year. Accordingly, the RoE for the Retail Supply Business as submitted by MSEDCL for FY 2017-18 and FY 2018-19 is as under:

Table 4-62: RoE for Supply Business for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Equity at the beginning of the year (Supply)	1,088.00	1.080.00	1,229	1,136
Equity portion of Assets Capitalization	141.00	56.00	70.00	37.00
Equity at the end of the year	**1,229**	**1,136**	**1,299.00**	**1,173.00**
Return on Computation				
Return on Equity at the beginning of the year- 17.5%	190.40	189.07	215.08	198.88
Return on Normative Equity portion of Asset Capitalization	12.34	4.91	6.16	3.20
Interest on Equity portion above 30% @11.37% p.a	1	-	-	-
Total Return on Equity	**203.74**	**193.38**	**221.23**	**202.08**

4.11.7 MSEDCL has submitted that the commission approve the computation of RoE for wires and retail supply business as submitted in the table above.

Commission's Analysis and Rulings

4.11.8 The approved opening equity for FY 2017-18 is considered at Rs. 9,719.53 Crores and Rs. 1,080.40 Crores for wire and supply business respectively, details of which is explained in the earlier chapter of Impact of Reconciliation of Opening GFA.

4.11.9 Similarly, the approved opening equity for FY 2018-19 is Rs. 10,224 Crores and Rs.

1,136 Crores for wire and supply business respectively.

4.11.10 The Commission has approved the funding pattern based on the approved capitalisation for FY 2017-18 and FY 2018-19, as discussed in the earlier Section on interest expenses.

4.11.11 The RoE approved for the purpose of truing up of FY 2017-18 and FY 2018-19 is as follows:

Table 4-63: Return on Equity (Wires) for FY 2017-18 and FY 2018-19 approved by Commission (Rs. crore)

Particulars	%	FY 2017-18	FY 2018-19
Equity at the beginning of the year		9,719.53	10,224.25
Equity portion of Assets Capitalization		504.72	328.98
Equity at the end of the year		10,224.25	10,553.23
Return on Computation			
Return on Equity at the beginning of the year - @15.5%	15.50%	1,506.53	1,584.76
Return on Normative Equity portion of Asset Capitalization - @15.5%/2	7.75%	39.12	25.50
Total Return on Equity		**1,545.64**	**1,610.25**

Table 4-64: Return on Equity (Supply) for FY 2017-18 and FY 2018-19 approved by Commission (Rs. crore)

Particulars	%	FY 2017-18	FY 2018-19
Equity at the beginning of the year		1,080.40	1,136.48
Equity portion of Assets Capitalization		56.08	36.55
Equity at the end of the year		1,136.48	1,173.03
Return on Computation			
Return on Equity at the beginning of the year - @17.5%	17.50%	189.07	198.88
Return on Normative Equity portion of Asset Capitalization - @17.5%/2	8.75%	4.91	3.20
Total Return on Equity		**193.98**	**202.08**

Table 4-65: RoE approved by Commission for FY 2017-18 and FY 2018-19 (Wires+Supply) (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this Order	MTR Order	MSEDCL Petition	Approved in this Order
RoE for Wires Business	1,622.81	1,545.64	1,545.64	1,764.32	1,610.25	1,610.25

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this Order	MTR Order	MSEDCL Petition	Approved in this Order
RoE for Retail Supply Business	203.74	193.98	193.98	221.23	202.08	202.08
Return on Equity	**1,826.01**	**1,739.62**	**1,739.62**	**1,985.60**	**1,812.34**	**1,812.34**

4.11.12Thus, the Commission approves RoE of Rs. 1739.62 Crore and Rs 1812.34 Crore for FY 2017-18 and FY 2018-19 respectively.

4.12 Interest on Working Capital for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.12.1 MSEDCL has computed the Interest on Working Capital on normative basis, while it has also submitted interest on Actual working Capital Requirement.

4.12.2 MSEDCL has submitted that it has computed the Interest on Working Capital for wire business as per Regulation 31.3 of MYT Regulation, 2015. Also as per the Regulation 2.1(10) of the first amendment regulations for MYT Regulations, 2015 issued in 29th November 2017 the interest on working Capital shall be allowed at a rate equal to the weighted average of 1 – year MCLR of SBI prevailing during the concerned year plus 150 basis points, As a result, for FY 2017-18, SBI base rate was considered for the first 8 months and the SBI MCLR Rate was considered for the remaining 8 months. As per the above Regulations, MSEDCL has computed the rate of Interest on working Capital for FY 2017-18 and FY 2018-19 as 10.19% and 9.89% respectively.

4.12.3 MSEDCL has further submitted that amendment to the Regulation 19.11 of MYT Regulation, 2015 provided for Interest rate on Consumer Security Deposit as SBI MCLR plus 150 basis points. MSEDCL has also submitted the General Commercial Circular showing the interest rate at 9.50% and 9.65% per annum for FY 2017-18 and FY 2018-19 respectively, for computation of interest on security deposit as annexure to the petition.

4.12.4 The Interest on Working Capital and Interest on Security Deposit computed by MSEDCL for FY 2017-18 and FY 2018-19 in accordance with the regulations specified above is provided in the Table below:

Table 4-66: Interest on Working Capital and Security Deposit for Wires Business for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Computation of Working Capital				
One-twelfth of the amount of Operations and Maintenance Expenses	379,00	368.71	397.81	374.41
Maintenance spares at 1% of the opening GFA	431,00	435.98	481.07	466.39
1.5 months of the expected revenue from charges for use of Distribution Wires at prevailing tariffs	1,162.00	1,174.95	1,206.11	1,252.31
Less: Amount of Consumers' Security Deposit From Distribution System users	698.00	698.60	768.29	754.35
Total Working Capital	**1,274.00**	**1,281.04**	**1,316.70**	**1,338.57**
Rate of Interest (% p.a.)	10.20%	10.19%	9.45%	9.89%
Interest on Working Capital	**129.95**	**130.48**	**124.43**	**132.39**
Actual Working Capital		**89.38**		**66.22**
Interest on Consumers' Security Deposit				
Rate of Interest (% p.a.)	10.60%	-	9.65%	-
Interest on Consumers' Security Deposit	**73.99**	**63.26**	**74.14**	**66.53**

4.12.5 MSEDCL has submitted that the Interest on Working Capital for Retail Supply business is computed as per Regulation 31.4 of MYT Regulation, 2015.

4.12.6 The interest on working Capital and interest on amount held as security deposit from consumers for retail supply business computed by MSEDCL for FY 2017-18 and FY 2018-19 is provided in the table below:

Table 4-67: Interest on Working Capital and Consumers' Security Deposit for Supply Business for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Computation of Working Capital (Supply Business)				
One-twelfth of the amount of Operations and Maintenance Expenses	2024.00	195.84	214.20	201.61
Maintenance spares as 1% of the opening GFA	48.00	48.44	53.45	51.82
1.5 months of the expected revenue from sale of electricity at the prevailing tariff	7,582.00	7,797.00	8,220.15	9,263.40
Less: Amount held as Security Deposit	6,826.00	6,287.40	6,914.61	6,789.13

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
One month equivalent of cost of power purchased	4,495.00	4,436.23	4,574.33	5,086.32
Total Working Capital	**2947.00**	**2,679.21**	**3,001.34**	**2,538.62**
Computation of working capital interest				
Rate of Interest (% p.a.)	10.20%	10.19%	9.45%	9.89%
Interest on Working Capital	-	-	-	-
Actual Working Capital		804.43	-	595.95
Interest on Security Deposit				
Rate of Interest (% p.a.)	10.60%	-	9.65%	
Interest on Consumers' Security Deposit	**662.34**	**569.34**	**667.26**	**598.75**

Commission's Analysis and Ruling

4.12.7 Commission has worked out IoWC and interest on security deposit on normative basis as specified under MYT Regulations, 2015.

4.12.8 Commission verified the actual Interest on Working Capital for FY 2017-18 and FY 2018-19 from the audited accounts of MSEDCL and variation in figures was observed. Since the actual IoWC expense presented as Rs. 893.82 Crore in FY 2017-18 and Rs. 662.17 Crore in FY 2018-19 Crore did not match the Audited Accounts, the Commission sought reconciliation and MSEDCL provided the reconciliation in the reply of the data gap query and the Commission found reconciliation in order with the audited accounts.

4.12.9 As per the Regulation 29.11 of the MYT Regulations 2015, the Commission has allowed the interest on the amount of security deposit for the year on the basis of the actual interest paid by the Licensee. The Commission has reworked the IoWC in accordance with the MYT Regulations, 2015 norms and based on parameters such as the O&M Expenses, Wires ARR and Supply ARR approved in this Order.

Table 4-68: Interest on Working Capital and Security Deposit for Wires Business as approved by Commission for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Petition	Approved in this order	MSEDCL Petition	Approved in this order
O&M expenses for a month	368.71	370.70	374.41	376.97
Maintenance Spares at 1% of Opening GFA	435.98	435.98	466.39	466.22
One and half months equivalent of the expected revenue from sale of electricity including revenue from CSS and Additional Surcharge	1,174.95	1,177.92	1,258.35	1,258.23

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Petition	Approved in this order	MSEDCL Petition	Approved in this order
Less: Amount of Security Deposit	-698.60	-698.10	-754.35	-754.35
Total Working Capital Requirement	**1,281.04**	**1,286.50**	**1,347.19**	**1,347.07**
Computation of Working Capital Interest				
Rate of Interest (%) = SBI Base Rate + 150 basis points	10.19%	10.18%	9.89%	9.89%
Interest on Working Capital	**130.48**	**130.97**	**132.39**	**133.23**
Interest on Security Deposit				
Rate of Interest (%) = SBI Base Rate + 150 basis points	9.06%	10.60%	8.82%	10.20%
Interest on Security Deposit	**63.26**	**63.26**	**66.53**	**66.53**

Table 4-69: Interest on Working Capital and Consumers' Security Deposit for Supply Business as approved by Commission for FY 2017-18 and FY 2018-19 (Rs crore)

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Petition	Approved in this order	MSEDCL Petition	Approved in this order
O&M expenses for a month	198.54	199.61	201.61	202.98
Maintenance Spares at 1% of Opening GFA	48.44	48.44	51.82	51.80
One and half months equivalent of the expected revenue from sale of electricity including revenue from CSS and Additional Surcharge	7,797.44	7,797.44	9,263.40	9,263.40
Less: Amount of Security Deposit	(6,287.40)	(6,287.40)	(6,789.13)	(6,789.13)
Less: One month equivalent of cost of power purchase, Transmission Charges and MSLDC Charges	(4,436.23)	(4,436.23)	(5,086.32)	(5,086.32)
Total Working Capital Requirement	(2,679.21)	(2,679.21)	(2,358.62)	(2,357.26)
Computation of Working Capital Interest				
Rate of Interest (%) = SBI Base Rate + 150 basis points	10.19%	10.18%	9.89%	9.89%
Interest on Working Capital	-	-	-	-
Interest on Security Deposit				
Rate of Interest (%) = SBI Base Rate + 150 basis points	9.06%	10.60%	0.00%	10.20%
Interest on Security Deposit	**569.34**	**569.34**	**598.75**	**598.75**

4.12.10The IoWC and the Interest on Security Deposits from Consumers and Distribution System Users approved for FY 2017-18 and FY 2018-19 is as follows:

Table 4-70: IoWC and Interest on Security Deposit as approved by Commission FY 2017-18 and FY 2018-19 (Wires+Supply) (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSED CL Petition	Approved in this order	MTR Order	MSED CL Petition	Approved in this order
IoWC & Interest on CSD (Wires)	203.94	193.74	194.23	198.57	198.92	199.75
IoWC & Interest on CSD (Supply)	666.32	569.34	569.34	667.26	598.75	598.75
IoWC & Interest on CSD	**870.25**	**763.08**	**763.57**	**865.83**	**797.67**	**798.51**

4.12.11 Regulation 31.6 of MYT Regulations, 2015 specifies that the contribution of delay in receipt of payment to the actual interest on working capital shall be deducted from the actual interest on working capital, before sharing of the efficiency gain or efficiency loss. The relevant Regulations is reproduced as following:

> *"31.6 For the purpose of Truing-up for each year, the variation between the normative interest on working capital computed at the time of Truing-up and the actual interest on working capital incurred by the Generating Company or Licensee or MSLDC, substantiated by documentary evidence, shall be considered as an efficiency gain or efficiency loss, as the case may be, on account of controllable factors, and shared between it and the respective Beneficiary or consumer as the case may be, in accordance with Regulation 11: Provided that the contribution of delay in receipt of payment to the actual interest on working capital shall be deducted from the actual interest on working capital, before sharing of the efficiency gain or efficiency loss, as the case may be."*

4.12.12 To give effect to the above provision, actual interest on working capital in FY 2017-18 and FY 2018-19 has been reduced by the amount of contribution of actual delay payment charges for FY 2017-18 and FY 2018-19. Thus, the net actual IoWC works out to Rs. 748.34 Crore and Rs. 459.19 Crore for FY 2017-18 and FY 2018-19 respectively. This amount of net IoWC has been considered for the purpose of sharing of gains and losses on account of IoWC.

4.12.13 Under the MYT Regulations, 2015, IoWC expense is a controllable parameter, and any difference between the actual and the approved IoWC should be considered as efficiency gain or efficiency loss to be shared among MSEDCL and consumers in accordance with Regulations. The efficiency loss to the extent of the difference between the actual IoWC as per the Audited Accounts and that allowed on normative basis for FY 2017-18 and FY 2018-19 has been shared accordingly. The subsequent sections detailed the sharing of gains/losses.

4.13 Other Finance Charges for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.13.1 MSEDCL submitted that it has incurred Other Finance Charges amounting to Rs.28.34 Crores in FY 2017-18 and Rs. 26.11 Crore in FY 2018-19 under the headers of Guarantee charges, finance charges, stamp duty and service fee for which the details were submitted as following.:

Table 4-71: Other Finance Charges for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18	FY 2018-19
Guarantee Charges	1.20	-
Finance Charges	24.17	19.22
Stamp Duty	0.61	0.95
Service Fee i.e. Fund raising charges	2.36	5.93
Total Other Finance Charges	**28.34**	**26.11**

4.13.2 MSEDCL has further submitted that these charges depend on number of loans, LC required to be given to power suppliers, documentation for availing long term and working capital loans. It has hence claimed that these charges are beyond its reasonable control due to which MSEDCL requests commission to approve the charges on actual basis as provided in the Audited book of accounts.

Commission's Analysis and Ruling

4.13.3 The Commission has verified the above Charges with the Audited Accounts, and found them to be in order after reconciliation statement provided by MSEDCL. Commission also analysed the past trends of Other finance charges as percentage of closing GFA and find them in order with the current submission.

Table 4-72 : Finance charge as a percentage of Closing Loan of Past years

Particulars	FY 2015-16	FY 2016-17
Other Finance Charges	35.82	29.27
Closing Loan	14,342.69	13834.50
Other Finance Charge as % of Closing Loan	0.25%	0.21%

4.13.4 Hence, the Commission has approved the Other Finance Charges as Rs. 28.34 Crore and Rs. 26.11 Crore for FY 2017-18 and FY 2018-19.

Table 4-73: Other Finance Charges for FY 2017-18 and FY 2018-19 as approved by Commission (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this Order	MTR Order	MSEDCL Petition	Approved in this Order
Other Finance Charges	-	28.34	28.34	-	26.11	26.11

4.13.5 Thus, the Commission approves Rs 28.34 Crore and Rs. 26.11 Crore as Other Finance Charge for FY 2017-18 and FY 2018-19 respectively.

4.14 Provision for Bad Debts for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.14.1 MSEDCL has submitted that in accordance with Regulation 73 and 82 of MYT Regulations, 2015, bad and doubtful debt may be allowed up to 1.5% of the amount shown as trade receivables or receivables in the Audited Accounts of the distribution licensee duly allocated for wires and supply business respectively.

4.14.2 MSEDCL has also stated in the petition that bad debts are inseparable incidents of the business of electricity distribution and retail supply and that Provision of bad debt generally depends on the nature of the business and the risk involved in the business. A business typically estimates the amount of bad debt based on historical experience.

4.14.3 The amount written off towards bad debt as submitted by MSEDCL is Rs. 37.20 Crore for FY 2017-18 and Rs 4,019.34 Crore for FY 2018-19, thus making the closing balance of the provision of bad and doubtful debt nil. MSEDCL has considered the provision for Bad and Doubtful Debts based on the audited receivables for FY 2017-18 and FY 2018-19 is given in the following table.

Table 4-74: Provision for Bad and Doubtful Debts for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Opening Balance of provision for bad and doubtful debts	1,120.58	1,120.58	1,612.10	1,764.11
Receivables	32,768.47	45,382.08	32,768.47	48,842.02
Percentage of Receivables	1.50%	1.50%	1.50%	1.50%
Provision for Bad and doubtful debts during the year.	491.53	680.73	26.32	732.63
Actual bad and doubtful debts written off	-	37.20	-	4,019.34
Closing Balance of Provision for bad and doubtful debts	1,612.10	1764.11	1,638.42	-
Closing balance as % of Receivables	4.92%	3.89%	5.0%	-

4.14.4 Considering the allocation matrix as provided in the MYT Regulations, 2015 the

provision of bad and doubtful debts for wires and supply business computed by MSEDCL for FY 2017-18 and FY 2018-19 is as given below:

Table 4-75: Provision for bad and doubtful debt of wire and supply business for FY 2017-18 and FY 2018-19

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	Normative	MTR Order	Normative
Bad debts provision for wires business	49.15	68.07	2.63	73.26
Bad debt provision for retail supply business	442.37	612.66	23.69	659.37
Bad Debt Provision	**491.53**	**680.73**	**26.32**	**732.63**

4.14.5 MSEDCL has requested the Commission to approve the provision for bad and doubtful expenses as computed for wires and retail supply business as computed above.

Commission's Analysis and Ruling

4.14.6 Regulation 73 and 82 of the MERC MYT Regulations, 2015 provides for the provision of bad and doubtful debts up to 1.5% of the amount shown as Trade Receivables or Receivables from Sale of Electricity excluding the provision made for unbilled revenue at the end of the year. The relevant extract of Regulation 73 and 82 of MYT Regulations, 2015 is provided below for reference purposes:

> *"For any Year, the Commission may allow a provision for bad and doubtful debts up to 1.5 % of the amount shown as Trade Receivables or Receivables from Wheeling Charges in the audited accounts of the Distribution Licensee for that Year :*
>
> *Provided that the Commission, in its MYT Order, shall provisionally approve provision for bad and doubtful debts for each Year of the Control Period, based on the actual provision for bad and doubtful debts made by the Distribution Licensee in the latest Audited Accounts available for the Petitioner, as allowed by the Commission :"*

4.14.7 The Commission observed that there is significant increase in total receivable of MSEDCL in FY 2017-18 compared to previous years. The Commission sought consumer category-wise and aging-wise receivables for FY 2017-18 and FY 2018-19. MSEDCL submitted consumer categories wise and aging wise receivables and from the data submitted by MSEDCL, the Commission observed that such increase is mainly on account of increase in receivables from AG consumers. The Commission has verified the receivables from the audited accounts and found them in order with the audited accounts.

4.14.8 The Commission has also sought details of category wise Bad debt written off for FY

2017-18 and FY 2018-19. MSEDCL has provided the category-wise details of bad debts written off for FY 2017-18 and FY 2018-19 as shown in the tables below:

Table 4-76: Category-wise bad and doubtful debts written off for FY 2017-18

Sl. no.	Category	Amount in Rs. Crores
A	PD LT Consumers having arrears less than Rs. 1000	
1	Residential	26.86
2	Commercial	3.53
3	IP	0.49
4	Other	0.5
	Total	**31.39**
B	PD Amnesty Scheme	5.72
C	Abhay Yojana	0.09
	Grand Total	**37.2**

Table 4-77: Category-wise bad and doubtful debts written off for FY 2018-19

Category	Total more than 15 years	Abhay Yojana	Amnesty Scheme	AG Interest prior to March 2013	Total W/off (Rs. Crores)
LT AG	-	-	-	3,338.36	3,358.36
LT PD Consumers	489.44	0.10	0.46	-	489.99
HT Industrial	0.01	-	0.01	-	0.02
HT PD Consumers	-	-	1.77	-	1.77
Consumers from Bhiwandi DF Area	169.20	-		-	169.20
Total	658.65	0.10	2.24	3,538.36	4,019.34

4.14.9 The Commission observed that, MSEDCL has written off arrears in respect of PD LT non Ag & AG category that are permanently disconnected before 15 years, amounting to Rs. 658 Crore and interest arrears of Rs. 3358 Crore levied on LT AG live consumers up to March 2013 on principal amount prior to March 2013.

4.14.10 The provision for Bad Debts worked out on normative basis is as following.

Table 4-78: Provision for Bad Debts for FY 2017-18 and FY 2018-19 as approved by Commission for Wire (Rs. Crore)

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Petition	Approved in this order	MSEDCL Petition	Approved in this order
Receivables for the year	4,538.21	4,538.21	4,884.20	4,884.20
Opening Balance of Provision of Bad and Doubtful Debt as % of Receivables	1.50%	1.50%	1.50%	1.50%

Provision for Bad & Doubtful Debts during the year	68.07	68.07	73.26	73.26

Table 4-79: Provision for Bad Debts for FY 2017-18 and FY 2018-19 as approved by Commission for Supply (Rs. Crore)

Particulars	FY 2017-18		FY 2018-19	
	MSEDCL Petition	Approved in this order	MSEDCL Petition	Approved in this order
Receivables for the year	40,843.87	40,843.87	43,957.82	43,957.82
Opening Balance of Provision of Bad and Doubtful Debt as % of Receivables	1.50%	1.50%	1.50%	1.50%
Provision for Bad & Doubtful Debts during the year	612.66	612.66	659.37	659.37

4.14.11 The provision for Bad Debts approved for FY 2017-18 and FY 2018-19 together for wires and supply businesses is summarized as follows:

Table 4-80: Summary of approved Provision for Bad Debts for FY 2017-18 and FY 2018-19 (Rs crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Provision for Bad and Doubtful Debts	491.53	680.73	680.73	26.33	732.63	732.63

4.14.12 Thus, the Commission approves Rs 680.73 Crore and Rs 732.63 Crore for FY 2017-18 and FY 2018-19 towards Provision for Bad Debts.

4.15 Other Expenses for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.15.1 MSEDCL has submitted that the expenses claimed for recovery under True-up of FY 2017-18 and FY 2018-19 includes expenditure on account of non-moving items written-off interest to suppliers/contractors, Incentive to distribution franchisee and other expenses viz. compensation for injuries to staff and outsiders. MSEDCL has provided reconciliation of the same from the Audited book of accounts in its replies submitted against data gaps to the Commission.

4.15.2 Accordingly, the details of other expenses as claimed by MSEDCL for the True-up years are as provided in the Table below:

Table 4-81: Other Expenses for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Compensation for injuries, death to staff	1.23	1.28	1.29	1.14
Compensation for injuries, death to others	14.81	16.05	15.55	13.84
Loss on obsolescence of Fixed Assets	-	22.53	-	1.49
Sundry debit balances written off	-	1.55	-	1.64
Non Moving Items	3.45	1.67	3.63	15.36
Interest to Suppliers/Contractors (O&M)	3.45	280.71	-	1.94
Others	-	-	2.51	15.74
Other Expenses (Incl. of payable to DSL towards damages in terms of Arbitral Award dt. 18.06.2004)	-	41.81	-	6.90
Other Expenses for Previous years	-	11.89	-	7.02
Expected Credit Loss on other receivables	41.41	8.99	43.49	
Total	**63.30**	**386.47**	**66.46**	**65.07**

4.15.3 MSEDCL submitted that the amount under the head "interest to suppliers/contractor" as per the Audited Accounts included Delayed Payment Charges / Surcharge payable to MSPGCL, MSETCL, IPPs & Wind Generators for FY 2017-18 and FY 2018-19 and MSEDCL has not claimed the same.

Commission's Analysis and Ruling

4.15.4 MSEDCL submitted reconciliation of other expense from the audited accounts in response to a query raised. The Commission has verified the above Charges with the Audited Accounts, and found them to be in order.

4.15.5 Further, the Commission sought break up of "Interest to suppliers/Contractors" as there was abnormal increase as compared to the trend of last three years.

Table 4-82: Trend of Interest to suppliers/Contractors (Rs. crore)

Particulars	FY 2014-15	FY 2015-16	FY 2016-17
Interest to suppliers	2.37	8.91	10.32

4.15.6 In reply to data gaps, MSEDCL submitted the breakup of "Interest to suppliers/Contractors" as shown in the below table.

Table 4-83: Break-up of "Interest to suppliers/Contractors" head of Other Expense

Particulars	Amount (Rs. Crs)
Incentive to Distribution Franchisee	0.30
Interest to suppliers/Contractors	265.14
Other Interest and Charges	10.58
Interest on security deposit on bill collection agency	4.68
Total	**280.71**

4.15.7 Further, MSEDCL submits details of Interest to suppliers/Contractors are as follows:

Particulars	Amount (Rs. Crs)
Interest to DSL (Datar Switchgear Ltd) pursuant to Arbitral Award	246.20
Payable to CGL (Crompton Greaves Ltd.) regarding Interest claim.	9.34
Interest paid to NTPC	8.66
Others	0.94

4.15.8 The Commission approved the Other Expenses to the extent of Rs. 386.47 Crore for FY 2017-18 and Rs 65.07 Crore for FY 2018-19.

Table 4-84: Other Expenses for FY 2017-18 and FY 2018-19 as approved by the Commission (Rs. crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Compensation for injuries, death to staff	1.23	1.28	1.28	1.29	1.14	1.14
Compensation for injuries, death to others	14.81	16.05	16.05	15.55	13.84	13.84
Loss on obsolescence of fixed Assets	-	22.53	22.53	-	1.49	1.49
Sundry debit balances written off	-	1.55	1.55	-	1.64	1.64
Non Moving Items	3.45	1.67	1.67	3.63	15.36	15.36
Interest to Suppliers/Contractors	-	280.71	280.71	-	1.94	1.94
Others	2.39	-	-	2.51	15.74	15.74
Other Expenses	-	41.81	41.81	-	6.90	6.90
Other Expenses for previous years	-	11.89	11.89	-	7.02	7.02
Expected Credit loss on other receivables	41.41	8.99	8.99	43.49	-	-
TOTAL	**63.30**	**386.47**	**386.47**	**66.46**	**65.07**	**65.07**

4.15.9 Thus, the Commission approves Rs. 386.47 Cr and Rs. 65.07 Cr as Other Income for FY 2017-18 and FY 2018-19

4.16 Contribution to Contingency Reserves for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.16.1 MSEDCL has submitted that considering the precarious financial condition and unavailability of sufficient funds to discharge its various liabilities, it was not feasible for MSEDCL to invest in contingency reserves. Therefore, it has not invested any amount in contribution to contingency reserves. Accordingly, the same is not claimed in ARR of the FY 2017- 18.

4.16.2 For FY 2018-19, it has invested Rs. 126.00 Crore towards contribution to contingency reserves as provided in the Table below, for which certain documentary evidence of investment made was also submitted along with the MYT Petition.

Table 4-85: Contingency Reserve for FY 2018-19 Submitted by MSEDCL (Rs. crore)

Particulars	FY 2018-19	
	MTR Order	MSEDCL Petition
Contribution to Contingency Reserve	-	126.00

4.16.3 MSEDCL has requested the Commission approve the contingency reserve contribution for FY 2018-19 as submitted in the above table.

Commission's Analysis and Ruling

4.16.4 Regulation 36 of the MYT Regulations, 2015 provides for appropriation to the Contingency Reserve of not less than 0.25 per cent and not more than 0.5 per cent of the original cost of Fixed Assets annually towards in the calculation of ARR. The amount is to be invested in securities authorized under the Indian Trusts Act, 1882 within six months of the close of the financial year. MSEDCL has neither provisioned for any addition in Contingency Reserve in FY 2017-18 nor planned for investment within the timelines stipulated. Accordingly, for truing-up, taking into account MSEDCL's submissions and the considerations explained, the Commission has not considered any amount towards contribution to Contingency Reserve in FY 2017-18.

4.16.5 The Commission noted the MSEDCL claimed Rs 126.00 Cr towards contingency reserve for FY 2018-19. In reply to data gaps MSEDCL provided documentary evidence to validate the investment made in contingency reserve. The Commission found the documentary evidence in order and thus approves Rs 126 Crores contribution to contingency reserves in FY 2018-19.

Table 4-86: Contingency Reserve Approved for FY 2017-18 FY 2018-19 (Rs. Crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Contribution to Contingency Reserves	-	-	-	-	126.00	126.00

4.16.6 Thus, the Commission approves nil amount towards Contribution to Contingency reserve for FY 2017-18 and Rs. 126 Crores for Contribution to Contingency reserve for FY 2018-19.

4.16.7 While formulation of MYT Regulations, the Commission had envisaged that the Utilities will invest only in securities which are safe, and the reserve created out of these investments would be available to them in contingency situations including Force Majeure situations. Hence, considering the purpose of the fund, the Commission is of the view that the Licensee shall not invest the Contingency Reserves amount in market linked instruments such as Mutual Funds, etc., since the uncertainty associated with the Mutual Funds cannot be passed on to consumers. Therefore, the Commission in exercise of inherent powers to deal in the best interest of utility and consumers in just and equitable manner and also in exercise of "Power to remove difficulties" as per Regulation 102 of MYT Regulations, 2015 directs MSEDCL to ensure that contingency reserve is invested only in specified investment instruments, i.e., Fixed Deposit or Government Securities (G-Sec – 10 year).

4.17 Income Tax for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.17.1 MSEDCL has not submitted any claim on Income Tax incurred for FY 2017-18.

4.17.2 For FY 2018-19 MSEDCL has claimed in the petition that it has paid Income Tax amounting to Rs. 215.08 Crore which is as per the Audited book of accounts for the financial year. The Income Tax claimed by MSEDCL for FY 2018-19 is as provided in the Table below:

Table 4-87: Income Tax as submitted my MSEDCL for FY 2018-19

Particulars	FY 2018-19	
	MTR Order	MSEDCL Petition
Income Tax (Wire Business)	-	193.57
Income Tax (Supply Business)	-	21.51
Total Income Tax	-	215.08

4.17.3 MSEDCL has requested the Commission to allow the Income Tax for FY 2018-19 as

submitted above.

Commission's Analysis

4.17.4 The Commission has verified the income tax paid by MSEDCL from the audited accounts note 37(13). Further, the Commission sought documentation proof of IT payment through Tax challans and MSEDCL provided copies of the same. The Commission verified the tax challans and approved Income Tax as actual as submitted by MSEDCL for FY 2018-19.

Table 4-88: Income Tax Approved for FY 2017-18 FY 2018-19 (Rs. crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Income Tax	-	-	-	-	215.08	213.89

4.17.5 Thus, the Commission approves Income Tax of NIL Crores for FY 2017-18 and Rs 213.89 Crores for FY 2018-19.

4.18 Incentives and Discounts for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.18.1 MSEDCL submits that during FY 2017-18 and FY 2018-19, it has paid Rs.242.40 Crore and Rs. 287.38 Crore of incentives/discounts to the consumers for timely payment of bills as against Rs.246.58 Crore and Rs. 258.91 Crore, approved by in MTR Order dated 12 September 2018.

Table 4-89: Incentives and Discounts for FY 2017-18 and FY 2018-19 submitted by MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Incentives/Discounts	246.58	242.40	258.91	287.38

4.18.2 MSEDCL has requested the Commission to approve the Incentives/discounts submitted as per the Audited book of accounts for FY 2017-18 and FY 2018-19 as above.

Commission's Analysis and Ruling

4.18.3 The Commission has observed the trend of Incentives and Discount for the past years. The approved Incentives and Discount for FY 2015-16 and FY 2016-17 is Rs. 249 Crore and Rs. 235 Crore, respectively, Thus, the present claim is in line with the past trends and there is no steep rise or decline in Incentives and Discount.

4.18.4 The Commission sought further break-up of "Incentives/Discounts" from MSEDCL. In reply to data gap, MSEDCL submitted that this is the prompt payment discount provided to consumers for payment of electricity bills within 7 days from the date of issue of bills. The Commission has verified the incentive/discounts from the Audited Accounts, which is majorly the prompt payment discount, and taken the actuals as submitted by MSEDCL for FY 2017-18 and FY 2018-19.

Table 4-90: Incentives and Discounts approved for FY 2015-16 (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this Order	MTR Order	MSEDCL Petition	Approved in this Order
Incentives and Discounts	246.58	242.40	242.40	258.91	287.38	287.38

4.18.5 Thus, the Commission approves Rs 242.20 Crores and Rs 287.38 Crores for incentives/discounts in FY 2017-18 and FY 2018-19 respectively.

4.19 RLC Refund for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.19.1 MSEDCL has submitted that it had made a refund of Rs. 0.70 Crore for FY 2017-18 1.67 Crore for FY 2018-19 of RLC and requested the Commission to allow the refund as per Audited book of accounts. MSEDCL has also requested to allow the refund amount whenever it refunds RLC to consumers.

Table 4-91: RLC Refund submitted by MSEDCL for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Approved	MSEDCL Petition	MTR Approved	MSEDCL Petition
RLC Refund	-	0.70	-	1.67

Commission's Analysis and Ruling

4.19.2 Under the Commission's directions in Order dated April 2, 2008 in Case Nos. 47 and 92 of 2007 on MSEDCL's Review Petition regarding refund of RLC, MSEDCL has to refund around Rs. 3,227 crore collected through RLC from December 2003 to September 2006. As per the MTR order, the balance outstanding to be refund after 2016-17 was 107 Crore. It is observed that the present amount claimed by MSEDCL as refund made in FY 2017-18 and FY 2018-19 is within this balance amount.

4.19.3 The Commission has verified the RLC refund made by MSEDCL for the purpose of

truing up of FY 2017-18 and FY 2018-19 from the Audited Accounts. It was booked in the note 36 of the audited accounts "Other expense" and the same was not claimed in the "Other expense" claimed by the petitioner in the above section.

Table 4-92: RLC Refund approved by Commission for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this Order	MTR Order	MSEDCL Petition	Approved in this Order
RLC Refund	-	0.70	0.70	-	1.67	1.67

4.19.4 Thus, the Commission approves Rs. 0.70 Crores and Rs. 1.67 Crores as RLC refund for FY 2017-18 and FY 2018-19 respectively.

4.20 Additional Supply Charge Refund for FY 2015-16

MSEDCL's Submission

4.20.1 MSEDCL has submitted that it has made a refund of Rs. 0.49 Crore of ASC for FY 2017-18 and has requested the Commission to allow the ASC refund as per the Audited Book of Accounts.

4.20.2 It has further added that the refund was made in the month of May, 2017. MSEDCL has stated that Commission in the Order in Case no. 101 of 2016 dated 7th July, 2017 had directed that:

"…….no further such refunds shall be made from the date of this Order irrespective of whether or not any applications are pending".

4.20.3 MSEDCL submitted that as per the directive in the said order ASC refund stopped. Being an actual refund made to consumers as per the order of the Commission, MSEDCL submits that this ASC refund is in line with Hon'ble Commission's earlier directives for ASC Refund. Hence, MSEDCL has claimed the ASC refund which is legitimate expense as per the Audited Account and that as per the order it has topped all refunds on account of ASC. MSEDCL has not projected any such expense in FY 2018-19.

Table 4-93: ASC Refund approved by Commission for FY 2017-18 (Rs. crore)

Particulars	FY 2017-18	
	MTR Approved	MSEDCL Petition
ASC Refund	-	0.49

Commission's Analysis and Ruling

4.20.4 The Commission has verified the ASC Refund from audited accounts and considered

the ASC Refund as submitted by MSEDCL for FY 2017-18. The Commission notes the submission of MSEDCL that refund has been made in May 2017, which is before the issuance of directive to stop refund in the Order dated 7th July, 2017. In view of the same, the present claim has been allowed.

Table 4-94: ASC Refund approved by Commission for FY 2017-18 (Rs. crore)

Particulars	FY 2017-18		
	MTR Order	MSEDCL Petition	Approved in this Order
ASC Refund	-	0.49	0.49

4.20.5 Thus, the Commission approves Rs 0.49 Crores as ASC refund for FY 2017-18.

4.21 Revenue for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.21.1 The revenue from sale of Electricity has been considered by MSEDCL based on the Audited book of accounts. It has submitted that the though the revenue as shown in the Audited book of accounts consists of revenue from various other sources including revenue from regulatory income. However, since these components by practice are not considered to be included in the revenue from sale of power, MSEDCL has not included the same in revenue from sale of Electricity. Revenue from sale of electricity as per Audited book of accounts as shown in the Table below:

Table 4-95: Revenue for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Revenue from Sale of Power	60,538.76	61,146.03	68,813.54	72,591.72

4.21.2 MSEDCL has also submitted the Category-wise revenue for various consumer categories. MSEDCL has submitted revenue equivalent to Rs. 12,083.89 Crore for residential category, Rs. 7880.20 for commercial category and Rs. 24, 903.80 Crore for Industrial category. The agricultural revenue submitted by MSEDCL is Rs. 9088.38 Crore.

4.21.3 MSEDCL has also submitted the details of revenue of Rs. 550.16 Crore recovered from theft/malpractice, revenue from subsidy and grant and also miscellaneous charges from consumers.

Commission's Analysis and Ruling

4.21.4 The Commission verified the revenue from the Annual Accounts for FY 2017-18 and

FY 2018-19. In reply to data gap MSEDCL provided the reconciliation of revenue from the sale of electricity from the audited accounts for FY 2017-18 and FY 2018-19. Reconciliation of revenue from sale of electricity from the audited accounts for FY 2017-18 and FY 2018-19 is in the following table.

Table 4-96: Reconciliation of Revenue from sale of electricity for FY 2017-18 and FY 2018-19

Particulars	FY 17-18	FY 18-19
Total Revenue as per Accounts (Note 28)	66,311.84	73,210.76
Less: Regulatory Income	4,555.03	
Total Revenue without Regulatory Income	**61,756.81**	**73,210.76**
Add: PPD claimed separately	242.40	287.38
Total Revenue excl. PPD	**61,999.21**	**73,498.15**
Less: Income Claimed Separately		
Income from Open Access	546.56	387.11
Income from Additional Surcharge	118.88	108.44
Income from Traders	186.27	408.82
Income from Wheeling Charges	1.46	1.79
Total	853.18	906.16
Revenue from Sale of Power Form 13	**61,146.03**	**72,591.72**

4.21.5 The category-wise revenue for FY 2017-18 and FY 2018-19 is as shown in the table below.

Table 4-97: Revenue for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18	FY 2018-19
LT-I BPL & Domestic	12084	13,366
LT II Commercial	5588	6,591
LT III PWW	262	345
LT IV Agriculture	8693	11,775
LT V Industrial	4525	5,517
LT VI Street Lighting	387	1,214
LT-IV(A) - Grampanchayat Street Light	654	
LT VII -(B)Temporary Others	20	34
LT VIII Advertisement & Hoarding	6	8
LT IX Crematorium & Burila Grounds	0	1

Particulars	FY 2017-18	FY 2018-19
LT X Public Service	331	418
LT XI Charging Station		0
HT II Commercial	2292	2,426
HT I Industrial	20379	24,593
HT III Railway Traction	43	47
HT IV PWW	917	1,153
HT V Agriculture	396	650
HT VI Group Housing	149	206
HT VIII Temporary Supply Religious	0	0
HT VIII Temporary Supply Others	6	7
HT IX Public Service	916	1,000
HT Auxilary Consumer	0	0
Income from Wheeling Charges claimed Separately	-1.46	(2)
Recoveries from Theft of Power/Malpractice	88.41	69
Sale of energy to Distribution Franchisee@input	2549.78	2,756
Standby charges	397.79	396
Revenue from subsidy & grant/Electricity Charges	406.79	(45)
Miscellaneous charges from consumers	56.43	66
Total incl. DF @Input	**61146.03**	**72,592**

4.21.6 As highlighted in the section on sales in this chapter, there has been variation in category-wise actual sales for FY 2017-18 and FY 2018-19 compared to that approved in the MTR Order. The major variation being in Industrial and Agricultural category in FY 2017-18 and FY 2018-19. This has actually led to increase in revenue on overall basis.

4.21.7 The table below shows the deviation of revenue category-wise for FY 2017-18. Similar table were provided for FY 2018-19, however category-wise actual sales compared with MTR approved as provided in above section of this chapter explains the reason for variation in actual revenue compared to MTR approved.

Table 4-98: Category-wise revenue for FY 2017-18

Category	Approved	Actual	Deviation
Residential	12,084.19	12,083.89	-0.30
Commercial	7,880.72	7,880.20	-0.52
HT-Industrial	20,234.19	20,379.21	145.02
LT-Industrial	4,549.58	4,524.59	-24.98
PWW	1,170.31	1,178.75	8.44
Street Light	1,031.39	1,041.06	9.67
Agriculture	9,060.16	9,088.38	28.22

Category	Approved	Actual	Deviation
Public Services	1,239.91	1,247.11	7.20
Railways	43.14	43.42	0.28
Other Categories	180.14	181.69	1.55
Other (Subsidy/Recoveries from Theft etc	182.81	550.16	367.35
Sub Total	57,656.54	58,198.46	541.92
Revenue from DF@input sales	2,486.06	2,549.78	63.73
Standby Charges	396.17	397.79	1.62
Total	**60,538.76**	**61,146.03**	**607.27**

4.21.8 Based on the above, the Commission approves the following actual revenue for FY 2017-18 and FY 2018-19.

Table 4-99: Revenue for FY 2017-18 and FY 2018-19 as approved by Commission (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MYT Order	MSEDCL Petition	Approved in this order	MYT Order	MSEDCL Petition	Approved in this order
Revenue from Sale of Power	60,538.76	61,146.03	61,146.03	68,813.54	72,591.72	72,591.73

4.21.9 Thus, the Commission approves Rs 61,146.03 and Rs. 72,591.73 as Revenue from sale of electricity for FY 2017-18 and FY 2018-19

4.22 Non-Tariff Income for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.22.1 MSEDCL submitted that it has certain sources of Non-Tariff Income, viz. interest on arrears of consumers, DPC, interest on staff loans and advances, sale of scrap, interest on investments, rebate on power purchase, etc.,

4.22.2 MSEDCL has claimed a non-tariff income equal to Rs. 380.33 Crore for FY 2017-18 and Rs. 609.35 Crore for FY 2018-19. The Comparison of Non-Tariff Income as estimated by MSEDCL and as earlier approved by the Commission is presented in the Table below:

Table 4-100: Non-Tariff Income as per MSEDCL for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Approved	MSEDCL Petition	MTR Approved	MSEDCL Petition
Rents of land or buildings	1.15	1.15	1.21	0.98
Sale of Scrap	50.88	51.36	53.42	80.21
Income from investments	15.65	15.65	16.43	17.61
Interest from Franchisee	84.95	-	-	-
Income from sale of tender documents	6.24	6.24	6.56	8.49
Prompt payment discount from REC/PFC	14.72	4.72	15.45	11.58
Other/Miscellaneous receipts	274.50	291.22	958.12	405.62
Revenue from subsidy & grant	-	-	-	84.85
Non-Tariff Income	**448.09**	**380.33**	**1,051.19**	**609.35**

4.22.3 MSEDCL has submitted that as provided in the Regulation 36.3 of MYT Regulation, 2015 it has not considered delayed payment charge as part of Non-Tariff Income.

4.22.4 MSEDCL has not considered the income from grants and contribution reported under non-tariff income for FY 2017-18 and FY 2018-19 as the treatment to the same is already considered while computing the depreciation for the respective years.

4.22.5 MSEDCL also submitted that it has not considered the grant of Rs. 992.00 Crore received under UDAY Scheme under Non-Tariff Income as approved by the commission in MTR Order dated 12 September 2018.

Commission's Analysis and Ruling

4.22.6 The Commission notes that break-up of non-tariff income claimed by MSEDCL as provided under Form-9 of the Petition. The same was further verified and found to be as per the Audited Accounts for FY 2017-18 and FY 2018-19.

4.22.7 Commission noted that "Other/Miscellaneous receipts" has increased steeply as compared to last year. Thus, Commission analyzed the past trends of "Other/Miscellaneous receipts" as shown in the table below.

Table 4-101: Trend of Other/Miscellaneous receipts (Rs. crore)

Particulars	FY 2015-16	FY 2016-17	FY 2017-18
Other/Miscellaneous receipts	696.16	55.64	291.22

4.22.8 Further Commission sought the break-up of 405.62 Crore of miscellaneous expense in FY 2018-19, MSEDCL in its reply to data gap submitted the same as shown in the table below:

Particulars	Amount (Rs. Crs)
Income from Hire Charges from Contractors & others	0.14
Commission for collection of Electricity Duty	1.00
Income from supervision charges of stores	0.01
Registration Fees	1.91
Ground Rent on Material lying with stores	0.02
Sundry Credit Balances written back	136.39
Miscellaneous Receipts	70.33
Board vehicle use for private purpose	0.00
Penalty charges recovered from vendor	135.98
RTI Charges	0.07
Receipts from REC, PFC, ICF training program	4.50
Profit on sale of Asset	0.13
Other income related to prior period	18.80
Interest from Banks other than fixed Deposit	0.00
Interest income from investments in Bank Deposits	33.08
Interest on Staff Loans & Advances	0.01
Interest Income for prior period	3.25
Total	**405.62**

4.22.9 It is noted that there is significant variation in actual Non-Tariff Income compared to projected during MTR period. The reason for the said deviation is observed as MTR Order for FY 2016-17 and FY 2017-18, computed the depreciation by deducting grant and consumer's contribution from GFA and accordingly, excluded the deferred income from non-tariff income. However, for FY 2018-19 and FY 2019-20, the Hon'ble Commission computed depreciation by deducting grant and consumer contribution from GFA but has not excluded the projected deferred income from non-tariff income.

Table 4-102: Non-Tariff Income for FY 2017-18 and FY 2018-19, as approved by Commission (Rs. crore)

	FY 2017-18			FY 2018-19		
Particulars	**MTR Order**	**MSEDCL Petition**	**Approved in this Order**	**MTR Order**	**MSEDCL Petition**	**Approved in this Order**
Non-Tariff Income	447.80	380.33	380.33	1,051.19	609.35	609.35

4.22.10 Thus, the Commission approves Non-Tariff Income of Rs. 380.33 Crore and Rs. 609.35 Crore for FY 2017-18 and FY 2018-19 respectively.

4.23 Income from Wheeling Charges for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.23.1 MSEDCL had an income from Wheeling Charges of Rs. 1.46 Crore in actual as well approved value as per MTR Order during FY 2017-18 and Rs. 1.79 Crore against Rs. 1.53 Crore approved by the commission for FY 2018-19.

Table 4-103: Income from Wheeling Charges for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Income from Wheeling Charges	1.46	1.46	1.53	1.79

4.23.2 MSEDCL has submitted the actual value of income from wheeling charges submitted is as per audited book of accounts for FY 2017-18 and FY 2018-19.

Commission's Analysis and Ruling

4.23.3 Commission sought the nature of the Wheeling charges claimed for the truing Up years and in reply to data gaps MSEDCL submitted that the nature of income claimed for true up years is wind mill generator's open access charges booked under few O&M Circles of MSEDCL.

4.23.4 The Commission has verified the income from Wheeling Charges from the Audited Accounts and has considered them accordingly.

Table 4-104: Income from Wheeling Charges approved for FY 2017-18 and FY 2018-19 (Rs crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Income from Wheeling Charges	1.46	1.46	1.46	1.53	1.79	1.79

4.23.5 Thus, the Commission approves Rs. 1.46 Crore and Rs 1.79 Crore as Income from Wheeling Charges for FY 2017-18 and FY 2018-19 respectively.

4.24 Income from Additional Surcharge for FY 2017-18 and FY 2018-19

MSEDCL's submission

4.24.1 MSEDCL has an income of Rs. 118.88 Crore for FY 2017-18 as equivalent to the approved value and Rs. 108.84 Crore against Rs. 122.44 Crore approved in the MTR

Order for FY 2018-19. The comparison of Actual value vis-à-vis approved value of Income from Additional surcharge is as shown in the Table below:

Table 4-105: Income from Additional Surcharge for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Income from Additional Surcharge	118.88	118.88	122.44	108.84

4.24.2 MSEDCL has submitted the actual value of income from additional surcharge submitted is as per audited book of accounts for FY 2017-18 and FY 2018-19.

Commission's Analysis

4.24.3 The Commission has verified Income from additional surcharge from audited accounts of MSEDCL for FY 2017-18 and 2018-19. For truing-up, the Commission approves the income from Additional Surcharge as per the Audited Accounts.

Table 4-106: Income from Additional Surcharge for FY 2017-18 and FY 2018-19 as approved by Commission (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Income from Additional Surcharge	118.88	118.88	118.88	122.44	108.84	108.84

4.24.4 Thus, the Commission approves Rs 118.88 Cr and Rs 108.84 Cr as Income from Additional Surcharge for FY 2017-18 and FY 2018-19 respectively.

4.25 Income from Open Access Charges

MSEDCL's Submission

4.25.1 MSEDCL submitted that it has received an income from OA Charges of Rs. 546.56 Crore for FY 2017-18 as against Rs. 536.17 Crore and 387.11 Crore as against Rs. 641.33 Crore during FY 2018-19.

Table 4-107: Income from Open Access Charges FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. crore)

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Income from Open Access Charges	536.17	546.56	641.33	387.11

4.25.2 MSEDCL has also submitted the details of actual open access charges collected for FY 2017-18 and FY 2018-19 as shown in the table below:

Table 4-108: Details of Open Access charges collected for FY 2017-18 and FY 2018-19 as per MSEDCL (Rs. Crore)

Particulars	FY 2017-18	FY 2018-19
Energy Charges Open Access	71.04	25.25
F.C.A Charges Open Access	-1.56	-0.56
Penal Charges Open Access		0.03
Additional Charges Open Access	0.05	0.41
Adj to past billing Open Access	-10.56	-39.18
PF Penalty Open Access	0.11	0
Cross Subsidy Surcharge Open Access	221.84	166.25
Wheeling Charge Open Access	52.61	37.47
Transmission Charge Open Access	220.17	182.33
Operating Charges Open Access	17.25	14.9
Threshold penalty Open Access	-1.08	0.19
Other Adjustment	-23.00	0.00
Total Income from Open Access Charges	**546.56**	**387.11**

Commission's Analysis and Ruling

4.25.3 Commission sought the reason for deviation of Income from Open Access Charges from the MTR order of Rs 641.33 Crore to Rs. 387.11 Crores. MSEDCL submitted that in the MTR Order, the Hon'ble Commission has approved the Income from Open Access Charges considering a growth of 5% over previous year. MSEDCL has estimated the income from OA charges based on the information available for Apr-Sep17. However, subsequently, the open access quantum reduced. (Estimated 5,259 MUs, actual 4,822 MUs).

Particulars	Conventional			Non-Conventional			TOTAL (Mus)
	CPP	IPP	TOTAL	CPP	IPP	TOTAL	
MTR	3,883	664	4,547	259	454	713	5,259

4.25.4 Further, Commission noted that the income from Open Access in FY 15-16 and FY 16-17 were Rs. 678 Crs and Rs. 1034 Crs respectively. However, subsequently, the open access sales has reduced resultantly income from OA got reduced. The detailed break up of approved in MTR Order against actual Open Access Charges is given in following

table.

Table 4-109 : Deviation of Open Access Income from MTR order

Particulars	MTR Order (Rs. Crs)	Petition (Rs. Cr)
Energy Charges	120.26	25.25
F.C.A Charges		-0.56
Penal Charges	0.05	0.03
Additional Charges		0.41
Adj to past billing		-39.18
PF Penalty		0
Cross Subsidy Surcharge	194.96	166.25
Wheeling Charge	72.17	37.47
Transmission Charge	247.94	182.33
Operating Charges	5.96	14.9
Threshold penalty		0.19
Total Income from Open Access Charges	**641.33**	**387.11**

4.25.5 The Commission has verified the income from Open Access Charges from the audited accounts. In accordance with the ruling of the Commission in the Order in Case No. 361 of 2018 dated 14 June, 2019 and Regulations 14 (1) (v) of the DOA Regulations, 2019 (First Amendment),

> *"Distribution Licensees shall not retain the transmission charges collected from partial open access consumers and shall arrange to remit the same to STU in the immediate next billing cycle, as and when levied/collected from such open access consumers. STU shall maintain separate account of such revenue from transmission charges."*

4.25.6 The Commission has asked STU to submit details of actual amount received from the Distribution Licensee on account of amount collected by Distribution Licensee as Transmission charges from partial Open Access Consumers. STU submitted the following information which confirmed that MSEDCL has not yet transferred such amount to STU.

Table 4-110: Submission of STU regarding Transmission charge of Partial Open access Consumers

	FY 2017-18			FY 2018-19		
	Rs. Collected	Rs Passed on to STU	Rs. Retained	Rs. Collected	Rs Passed on to STU	Rs. Retained
MSEDCL	220.17		220.17	182.33		182.33
TPC-D	27.74	27.74		21.16	21.16	

	FY 2017-18			FY 2018-19		
	Rs. Collected	Rs Passed on to STU	Rs. Retained	Rs. Collected	Rs Passed on to STU	Rs. Retained
AEML-D	7.78	7.78		9.00	9.00	

4.25.7 Thus, Transmission charge Open access revenue of Rs 220.17 Cr and Rs 182.33 Cr in FY 2017-18 and FY 2018-19 respectively is not allowed to be retained by the petitioner. The Commission hereby directs to transfer such amount to STU in six months from the issuance of this Order with monthly equal installments.

Table 4-111: Income from OA Charges approved for FY 2017-18 and FY 2018-19 (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MYT Order	MSEDCL Petition	Approved in this order	MYT Order	MSEDCL Petition	Approved in this order
Income from Open Access Charges	536.17	546.56	326.39	641.33	387.11	204.78

4.25.8 Thus, the Commission approves Rs 326.39 Cr and Rs 204.78 Cr as Income from Open access in FY 2017-18 and FY 2018-19 respectively.

4.26 Income from Trading Surplus Power

MSEDCL's Submission

4.26.1 MSEDCL submitted that it has received income of Rs. 186.27 Crore from trading of surplus power, as against Rs. 179.94 Crore earlier approved by the Commission for FY 2017-18. The actual income from trade of Surplus power for FY 2018-19 is Rs. 408.82 Crore as against a value of zero approved in the MTR Order. The comparison of Actual income from trade in Surplus power to the approved Income is as shown in Table below:

Table 4-112: Approval vs. actual Income from surplus power traded for FY 2017-18 and FY 2018-19, as submitted by MSEDCL

Particulars	FY 2017-18		FY 2018-19	
	MTR Order	MSEDCL Petition	MTR Order	MSEDCL Petition
Income from Trading Surplus	179.94	186.27	-	408.82

Commission's Analysis and Ruling

4.26.2 The Commission upon verification of the audited accounts has considered the income

from trading of surplus power as submitted by MSEDCL for the purpose of truing up of ARR of FY 2017-18 and FY 2018-19.

Table 4-113: Income from Trading Surplus for FY 2017-18 and FY 2018-19 as approved by Commission (Rs. crore)

Particulars	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Income from Trading Surplus	179.94	186.27	186.27	-	408.82	408.82

4.26.3 Thus, the Commission approves Rs 186.27 Crores and Rs. 408.82 Crores as Income from Trading surplus for FY 2017-18 and FY 2018-19.

4.27 Impact of Payment to MPECS for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.27.1 The Commission in the MYT Order dated 3 November 2016 had approved on a future basis the payment to MPECS for the years from FY 2017-18 to FY 2019-20 as following: Payment Approved to MPECS by the Commission

Table 4-114: Payment Approved to MPECS by the Commission

Financial Year	Amount
FY 2017-18	46.20
FY 2018-19	43.18
FY 2019-20	40.17

4.27.2 MSEDCL has submitted that the Commission in the MTR Order also ruled that it shall consider the actual amount towards this head during the True-up of FY 2017-18 and FY 2018-19.

4.27.3 Thus in the MYT Petition MSEDCL has claimed the same amount equivalent to Rs. 46.46 Crore for FY 2017-18 and Rs. 43.43 Crore for FY 2018-19 respectively.

Commission's Analysis

4.27.4 Commission vide its Order dated 2nd May 2016, has determined the monthly user charges to be paid to MPECS by MSEDCL and for the purpose of truing up, Commission has verified the same from the audited accounts and found that MSEDCL has paid Rs 46.20 Cr and Rs 43.43 Cr to MPECS.

Table 4-115: Impact of payment to MPECS for FY 2017-18 and FY 2018-19 as approved by Commission (Rs. crore)

Particular	FY 2017-18			FY 2018-19		
	MTR Order	MSEDCL Petition	Approved in this order	MTR Order	MSEDCL Petition	Approved in this order
Impact of Payment to MPECS	46.20	46.46	46.20	43.18	43.43	43.43

4.27.5 Thus, the Commission allows Rs 46.20 Crores and Rs. 43.43 Crores as Impact of payment to MPECS for FY 2017-18 and FY 2018-19.

4.28 Past Period Adjustment by Commission

MSEDCL's Submission

4.28.1 MSEDCL has submitted that the Commission while approving the MYT order for the third control period in Case no. 48 of 2016 had considered the net impact of past period while approving the revenue from revised tariffs for the control period. MSEDCL had accordingly considered the impact of the same in the respective year during the MTR Process. It added that accordingly the Commission had approved the past period adjustments of Rs. 1,116 Crore in the MTR Order in Case no. 195 of 2019. MSEDCL has considered the same value of past period adjustments for FY 2017-18.

4.28.2 On similar lines MSEDCL has considered past period adjustment of Rs. 1031.50 Crore for FY 2018-19 as claimed in the MTR petition and approved by the Commission in the order in Case no. 195 of 2019. The claim of past period adjustment for the True-up years is as shown in the table below:

Table 4-116: Past Period Adjustment claimed by MSEDCL for FY 2017-18 and FY 2018-19 (In Crores)

Particulars	FY 2017-18	FY 2018-19
Past Period Adjustment claimed	(1,116.00)	(1,031.50)

Commission's Analysis

4.28.3 **Commission has approved the past period adjustments as approved in the MTR Order dated 12th September 2018**. The same has been considered by the Commission while arriving at the trued-up revenue gap of FY 2017-18 and FY 2018-19

4.29 Sharing of Efficiency Gains and Losses for FY 2017-18 and FY 2018-19

MSEDCL's Submission

4.29.1 MSEDCL has submitted it has done the sharing of efficiency gains and losses in accordance with the controllable/uncontrollable factors and the mechanism of sharing gains/losses for these factors as defined by Regulation 9, 10 and 11 of MYT Regulations, 2015. The relevant extracts of the Regulations are as provided below for reference purposes:

> *"11.1 The approved aggregate gain to the Generating Company or Licensee or MSLDC on account of controllable factors shall be dealt with in the following manner:—*
> *(a) Two-third of the amount of such gain shall be passed on as a rebate in Tariff over such period as may be stipulated in the Order of the Commission under Regulation 8.4;*
> *(b) The balance amount of such gain shall be retained by the Generating Company or Licensee or MSLDC.*
> *11.2 The approved aggregate loss to the Generating Company or Licensee or MSLDC on account of controllable factors shall be dealt with in the following manner:—*
> *(a) One-third of the amount of such loss may be passed on as an additional charge in Tariff over such period as may be stipulated in the Order of the Commission under Regulation 8.4;*
> *(b) The balance amount of such loss shall be absorbed by the Generating Company or Licensee or MSLDC."*

4.29.2 The parameters like O&M Expenses and Interest on Working Capital etc. for which the norms for computation have been defined in the Regulations have been computed by MSEDCL on normative basis.

4.29.3 The sharing for the parameters have been done by MSEDCL as per MYT Regulations, 2015 such that any variation in the actual expenses as against the permissible normative levels has been shared between MSEDCL and consumers.

- O&M Expenditure:

The actual O&M expenses as per the Audited Accounts for FY 2017-18 and for FY 2018-19 are lower than that allowed on normative basis. The Summary of sharing of gains on O&M Expenses is as given in the Table below:

Table 4-117: O&M Expenses Normative vs. Actual as per MSEDCL (Rs. crore)

Particulars	FY	Normative value	Actual value	Gain/ (Loss)	2/3 of Efficiency Gains passed on to consumers	1/3 of Efficiency Gains retained by MSEDCL	Net Entitlement after sharing
O&M Expenses	2017-18	6,807.02	5,658.28	1,148.74	765.83	382.91	6,041.20
	2018-19	6,912.20	6,401.01	511.19	340.79	170.40	6,571.41

- Interest on Working Capital:

IoWC expenses as per the Audited Accounts for FY 2017-18 as well as for FY 2018-19 is higher than the value allowed on normative basis. The summary of sharing of Losses on Interest on Working capital is as given in the table:

Table 4-118: Interest on Working Capital Approved vs. Actual as per MSEDCL (Rs. crore)

Particulars	FY	Normative value	Actual value	Gain/ (Loss)	2/3 of Efficiency Gains/ Losses retained by MSEDCL	1/3 of Efficiency Gains/losses passed on to Consumers	Net Entitlement after sharing
IoWC	2017-18	130.48	893.82	(763.34)	(508.89)	(254.45)	384.93
	2018-19	132.39	662.17	(529.78)	(353.18)	(176.59)	308.98

- Distribution Loss:

The actual distribution loss (excluding EHV Sales) in FY 2017-18 is lower than the loss approved in the MYT Order. Also, for FY 2018-19 as well, the actual distribution loss (excluding EHV Sales) for FY 2018-19 is lower than that approved in the MTR Order.

4.29.4 MSEDCL has submitted that it has not computed the value of Normative loss as approved by in the MTR order as the loss of 13.50% approved in the MTR Order for FY 2015-16 also included the EHV Sales. Hence in the current MYT Petition MSEDCL has submitted that it has computed the sharing of efficiency gain/ loss considering 16.26% as the approved distribution loss target (Excluding EHV Sales) against the actual distribution losses for FY 2017-18 and for FY 2018-19, MSEDCL has considered a loss target of 14.76% (Excluding EHV Sales) for loss/gain sharing computation. Further, it has added that in MYT Order dated 3rd November 2016 the Hon'ble Commission itself has approved the distribution loss target as 16.26% (excluding EHV sales) for FY 2017-18. The normative loss of 13.50% was approved loss trajectory for FY 2015-16 on provisional basis and was inclusive of EHV Sales.

4.29.5 Hence MSEDCL submitted that since Distribution Loss Trajectory excluding EHV sales was introduced by the Commission for 3rd Control Period in MYT Order, the actual Distribution Loss excluding EHV sales needs to be compared with the approved Distribution Loss Trajectory excluding EHV sales. The Summary of Sharing of gains/losses as computed by MSEDCL as per the above submissions is shown in Table below:

Table 4-119: Efficiency Loss due to higher Distribution Loss in FY 2017-18 and FY 2018-19 as per MSEDCL

Particulars	Unit	FY 2017-18	FY 2018-19
Normative Distribution Losses	%	16.26%	14.76%
Actual Distribution Losses	%	14.82%	14.70%
Sales Excl. EHV sales in MUs	MU	93,967	99,991
EHV Sales in MUs	MU	7,724	9,614
Total Sales in MUs	MU	1,01,691	1,09,605
Intra STS loss (Proposed	%	3.72%	3.62%
Power Requirement at Ex-Bus Periphery (Actual)	MU	1,22,602	1,31,602
Power Requirement at Ex-Bus Periphery (Normative)	MU	1,24,566	1,31,688
Additional/ (lower) Power purchase due to higher distribution loss	MU	(1,964.1)	(85.6)
Marginal Variable Cost of Power Purchase	Rs. /kWh	3.24	4.17
Additional/(Lower) Power purchase Cost due to lower distribution loss	Rs. Crores	(637.10)	(35.74)
2/3 Efficiency gain/(loss) to be borne/retained by MSEDCL	**Rs. Crores**	**424.73**	**23.83**
1/3 Efficiency gain/(loss) to be borne by the consumers	**Rs. Crores**	**212.37**	**11.91**

4.29.6 The total impact of sharing of gains and losses of the three parameters as computed by MSEDCL for FY 2017-18 and FY 2018-19 is as shown in table below:

Table 4-120: Net Impact of sharing of gains and losses FY 2017-18 and FY 2018-19

Particulars	FY 2017-18	FY 2018-19
O&M Expenses	(765.83)	(340.79)
Interest on Working Capital	254.45	176.59
Revenue due to Distribution Loss	212.37	11.91
Total	(299.01)	(152.29)

Commission's Analysis and Ruling

4.29.7 Regulations 9, 10 and 11 of the MYT Regulations, 2015 specify the controllable and uncontrollable parameters, mechanism of pass-through of gains and losses on account of uncontrollable parameters, and the mechanism for their sharing on account of controllable parameters as follows:

> *"14.1 The approved aggregate gain to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*

(a) One-third of the amount of such gain shall be passed on as a rebate in tariff over such period as may be stipulated in the Order of the Commission under Regulation 11.6;

(b) The balance amount, which will amount to two-third of such gain, may be utilized at the discretion of the Generating Company or Transmission Licensee or Distribution Licensee.

14.2 The approved aggregate loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:

(a) One-3rd of the amount of such loss may be passed on as an additional charge in tariff over such period as may be stipulated in the Order of the Commission under Regulation 11.6; and

(b) The balance amount of loss shall be absorbed by the Generating Company or Transmission Licensee or Distribution Licensee.

14.3 Gains and losses on account of controllable factors during the 2nd Control Period shall be shared with the consumers at the time of Mid-term Performance Review and also at the time of tariff determination process of the Third Control Period."

4.29.8 As per the MYT Regulations 2015, Two-third of the efficiency gain/ (loss) has to be passed on to consumers and one-thirds allowed to be retained by MSEDCL. The summary of sharing of efficiency gains/(loss) on account of O&M Expenses, IoWC and Distribution Loss as approved by the Commission are shown in the Tables below:

Table 4-121: Sharing of Gains/Loss on O&M and IoWC Expenses, approved by Commission (Rs. crore)

Particulars	FY	Normative value	Actual value	Gain/ (Loss)	2/3 of Efficiency Gains/ Losses retained by MSEDCL	1/3 of Efficiency Gains/losses passed on to Consumers	Net Entitlement after sharing
O&M Expenses	2017-18	6,843.69	5,658.28	1,185.41	790.27	395.14	**6,053.42**
	2018-19	6,959.36	5,818.90	1,140.46	760.31	380.15	**6,199.05**
IoWC	2017-18	130.97	748.34	(617.4)	(411.6)	(205.8)	**336.8**
	2018-19	133.24	459.19	(326.0)	(217.3)	(108.7)	**241.9**

Effect of sharing of Gains and Loss on Distribution Loss

4.29.9 Variation in Distribution Loss is considered as a controllable parameter under MYT Regulations. Accordingly sharing of gains and loss on account of the same has been carried out every year at the time of true-up. While doing the same from FY 2014-15 onwards, the Commission in the respective Orders have mentioned that the sharing of loss has been done on provisional basis and based on an independent study, AG sales shall be reassessed and then final treatment shall be provided. Relevant extract of Case 195 of 2017 is reproduced for ease of reference.

> *"B] Distribution Loss*
>
> *2.2.29. For FY 2015-16 and FY 2016-17, the Commission has computed a Distribution Loss based on the revised sales, mainly on account of re-assessment of agriculture sales as approved for the year.* ***Further, the impact of sharing of losses on account of non-achievement of Distribution Loss target has been considered on provisional basis.*** *The Commission's detailed analysis and rulings on the issue of Distribution Loss to be considered for FY 2015-16 and FY 2016-17 are elaborated in Sections 4 and Section 5 of this Order, respectively.*
>
> *2.2.30. As regards remaining period of the 3rd Control Period, since the final true up for these years shall be undertaken at the end of the Control Period, the sharing of gains/loss on account of distribution loss as performance parameter shall be undertaken at the end of the Control Period in accordance with the Regulations and upon undertaking independent study through third party verification agency for AG consumption."*
>
> *…*
>
> *"Hence, the Commission now shall conduct an independent study through an agency for assessment of Ag sales, which shall form the basis of establishment of Ag sales* ***from FY 2014-15 and in subsequent years****. The Commission shall appoint an independent 3rd party agency to undertake such study. Further the Commission shall define a detail ToR in due course of time and would be published on website.:"*

4.29.10 The said study has been now carried out and loss level have been restated for FY 2018-19 to 20.54%. Considering that Distribution Loss of years prior to FY 2018-19 shall be higher or atleast at the same level as that of the reassessed loss of 20.54%, sharing of loss on account of variation in Distribution loss will have to be carried out now.

4.29.11 Following table shows the treatment already provided on provisional basis for the years FY 2014-15 to FY 2018-19.

Table 4-122: Treatment given in past orders

Case 48 of 2016 (MYT-3rd Control Period)		True-up	Prov	Proj	Proj	Proj	Proj
		FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20
Normative Loss	%	13.75%	13.50%	13.50%	13.50%	13.50%	13.50%
Actual Loss	%	16.36%	18.24%	17.76%	16.26%	14.76%	13.26%
Revenue lost due to lower sales	Rs. Cr	1673	3429				

Case 48 of 2016 (MYT-3rd Control Period)		True-up	Prov	Proj	Proj	Proj	Proj
		FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20
Addl Power Purchase Cost Burden	Rs. Cr			1545	954	468	-95
Share of loss passed on to consumer	Rs. Cr	558	1143	515	318	156	-
MSEDCL Share of loss	**Rs. Cr**	**1115**	**2286**	**1030**	**636**	**312**	**-**

Case 195 of 2017 (MTR-3rd Control Period)			True-up	True-up	Prov	Proj	Proj
			FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20
Normative Loss	%		13.50%	13.50%			
Actual Loss	%		14.29%	15.95%			
Revenue lost due to lower sales	Rs. Cr						
Addl Power Purchase Cost Burden	Rs. Cr		412	1035			
Share of loss passed on to consumer	Rs. Cr		137	345			
Share of loss to be borne by MSEDCL	**Rs. Cr**		**275**	**690**			
Sharing of loss already effected through earlier Orders	**Rs Cr**	**1115**	**275**	**690**	**636**	**312**	
Total effect of sharing of loss through earlier Orders	**Rs Cr**						**3028**

4.29.12Thus, it is observed that effect of sharing of higher loss level than norms to an extent of Rs 3028 Crore has already been provided through earlier MYT/MTR Orders (Case 48 of 2016 and Case 195 of 2017).

4.29.13Following table shows the effect of sharing of loss on account of variation in Distribution loss considering the reassessed Distribution loss level in the respective years of FY 2014-15 to FY 2018-19. For the same, Commission has considering loss level as 20.54% and rate of power purchase at Average Variable Cost; with loss sharing ratio 2/3rd :1/3rd between MSEDCL and consumer, in accordance with provision of MYT Regulations 2011 and MYT Regulations, 2015 respectively for FY 2014-15 and other financial years.

Table 4-123: Sharing of Gains/Loss on Distribution losses, approved by Commission (Rs. crore)

Working in present Order		True-up	True-up	True-up	True-up	True-up	
		FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	SUM
	Units						
Normative Loss	%	13.75%	13.50%	13.50%	13.50%	13.50%	
Actual Loss	%	20.54%	20.54%	20.54%	20.54%	20.54%	
Energy Input	MU	110458	120537	112171	126630	119530	
Addl Power Purchase Quantum	MU	7500.1	9810.2	8666.6	10306.1	9728.2	
Rate of PP (at avg. VC - AVC)	Rs/kWh	2.62	2.17	2.19	2.23	2.37	
Addl Power Purchase Cost Burden	Rs. Cr	1965	2129	1898	2298	2306	**10,596**
Share of loss passed on to consumer	Rs. Cr	655	710	633	766	769	**3,532**
Share of loss to be borne by MSEDCL	Rs. Cr	1310	1419	1265	1532	1537	**7,064**
Sharing of loss already effected through earlier Orders	Rs Cr	(1115)	(275)	(690)	(636)	(312)	(3028)
Net Impact (after adjusting for effect already provided thru earlier Orders)		**195**	**1144**	**575**	**896**	**1225**	
Total Impact to be borne by MSEDCL						**4036**	

4.29.14 Total impact of additional power purchase to be borne by MSEDCL is estimated as Rs 7064 Crore (2/3rd of estimated avoided power purchase cost at average variable cost). However, out of Rs 7064 Crore, impact of Rs 3028 Crore has already been effected through earlier Orders (MYT/MTR) – Case 48 of 2016 & Case 197 of 2017, from FY 2014-15 to FY 2018-19. Thus, net impact for past period restatement of loss would be Rs 4036 crore (Rs 7064 Cr – Rs 3028 Cr) for 5 years (FY 2014-15 to FY 2018-19).

4.29.15 The Ag consumption varies from Year on Year based on various factors. Also, considering the consumption methodology adopted by the other states, norms of other states, secondary data for estimating Ag consumption submitted by MSEDCL and the limitations expressed by the AGWG, the worked out lower numbers of Ag consumption cannot be attributed fully to MSEDCL. Further, energy flows on Ag Feeder is with intention to supply agriculture pumps. However, on account of wrong mapping / wrong recorded HP/ unauthorised pumps, lower consumption is estimated and hence higher losses have been arrived at. Though the primary responsibility of loss control is with MSEDCL's, it cannot be penalised beyond the limit for which it has limited control.

4.29.16 In view of the above, and considering a one time settlement, invoking in public interest, the inherent power of Commission, 50% of the net impact to MSEDCL is waived off and after adjusting for the same, a net benefit of Rs. 2018 Crore is passed on to the consumer through the present Order, in addition to Rs. 3028 Crore already passed on to the consumers through past orders.

4.29.17 Accordingly the impact of each year works out as following:

Table 4-124: Impact of Distribution Loss to be borne by MSEDCL for FY 2017-18 and FY 2018-19

Working in present Order	True-up FY 14-15	True-up FY 15-16	True-up FY 16-17	True-up FY 17-18	True-up FY 18-19
Impact of sharing of loss on Distribution loss (to be borne by MSEDCL)	97.50	572.00	287.50	448.00	612.50

4.29.18 Accordingly, the impact of past years and of FY 2017-18 is considered as part of the trued-up revenue gap/(surplus) of FY 2017-18 and the impact of FY 2018-19 is considered as part of the trued-up revenue gap/(surplus) of FY 2017-18.

4.30 Aggregate Revenue Requirement for FY 2017-18 and FY 2018-19

4.30.1 Based on the analysis, the summary of ARR for the Wires Business and Supply Business, as claimed by MSEDCL and as trued-up by the Commission for FY 2017-18 is presented in the Tables below.

Table 4-125: ARR for Wires Business for FY 2017-18 as approved by Commission (Rs. crore)

Particulars	FY 2017-18			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Operation & Maintenance Expenses	4,543.93	4,424.57	4,448.40	(95.53)
Depreciation	1,965.04	1,906.96	1,906.96	(58.08)
Interest on Loan Capital	1,427.74	1,235.10	1,234.58	(193.16)
Interest on Working Capital	129.90	130.48	130.97	1.06
Interest on deposit from Consumers and Distribution System Users	74.04	63.26	63.26	(10.78)
Other Finance Charges	-	25.50	25.50	25.50
Provision for bad and doubtful debts	49.15	68.07	68.07	18.92
Total Revenue Expenditure	**8,189.81**	**7,853.94**	**7,877.74**	**(312.07)**
Return on Equity Capital	1,643.41	1,545.64	1,545.64	(97.77)
Aggregate Revenue Requirement	**9,833.22**	**9,399.59**	**9,423.38**	**(409.84)**
Income from Wheeling Charges	1.46	1.46	1.46	-
Income from Open Access Charges	536.17	546.56	326.39	(209.77)
Net Revenue Requirement for Wire	**9,295.59**	**8,851.56**	**9,095.52**	**(200.06)**
Revenue from Wire Business		5,372.08	8,699.43	86.40*
Revenue Gap/(Surplus)		**3,479.48**	**396.10**	**(286.46)**

**Calculated as per Pro-rata basis from revenue from sale of electricity approved in MTR into revenue from sale of electricity from wire and supply business.*

Table 4-126: ARR for Supply Business for FY 2017-18 as approved by Commission (Rs. crore)

Particulars	FY 2017-18			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Power Purchase Expenses (including Inter-State Transmission Charges)	49,129.74	48,422.63	48,422.63	(707.11)
Operation & Maintenance Expenses	2,446.73	2,382.46	2,395.29	(51.44)
Depreciation	218.34	211.88	211.88	(6.45)
Interest on Loan Capital	158.64	137.23	137.18	(21.46)
Interest on Working Capital	-	-	-	-
Interest on Consumer Security Deposit	666.32	569.34	569.34	(96.98)
Other Finance Charges	-	2.83	2.83	2.83

Particulars	FY 2017-18			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Provision for bad and doubtful debts	442.37	612.66	612.66	170.28
Other Expenses	63.30	386.47	386.47	323.18
Income Tax	-	-	-	-
Intra-State Transmission Charges	4,812.17	4,812.17	4,812.17	-
Incentives/Discounts	246.58	242.40	242.40	(4.19)
Contribution to contingency reserves	-	-	-	-
DSM Expenses	0.88	4.30	4.30	3.42
RLC refund	-	0.70	0.70	0.70
ASC refund	-	0.49	0.49	0.49
Effect of sharing of gains/losses	-	-299.01	-1,989.84	(1,989.84)
Past Period Surplus	-1,116.00	-1,116.00	-1,116.00	-
Revenue Gap Recovery Allowed	-	-	-	-
Impact of payment to MPECS in future years	46.20	46.46	46.46	0.26
Total Revenue Expenditure	**57,115.27**	**56,417.01**	**54,738.96**	**(2,376.31)**
Return on Equity Capital	182.60	193.98	193.98	11.38
Aggregate Revenue Requirement	**57,297.87**	**56,610.99**	**54,932.94**	**(2,364.93)**
Less:				-
Non-Tariff Income	447.80	380.33	380.33	(67.46)
Income from Additional Surcharge	118.88	118.88	118.88	-
Income from Trading of Surplus Power	179.94	186.27	186.27	6.33
Net Revenue Requirement for Retail supply	**56,551.26**	**55,925.51**	**54,247.46**	**(2,303.80)**
Revenue from Retail Supply Business	-	**55,773.95**	**52,446.60**	553.92 *
Revenue Gap/(Surplus)		**151.56**	**1,800.85**	**(2,857.72)**

**Calculated as per Pro-rata basis from revenue from sale of electricity approved in MTR into revenue from sale of electricity from wire and supply business.*

Table 4-127: ARR for FY 2017-18 (Wires + Supply) as approved by Commission (Rs. crore)

Particulars	FY 2017-18			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Power Purchase Expenses (including Inter-State Transmission Charges)	49,129.74	48,422.63	48,422.63	(707.11)
Operation & Maintenance Expenses	6,990.67	6,807.02	6,843.69	(146.98)
Depreciation	2,183.38	2,118.85	2,118.85	(64.54)
Interest on Loan Capital	1,586.38	1,372.34	1,371.76	(214.63)
Interest on Working Capital	129.90	130.48	130.97	1.06
Interest on Consumer Security Deposit	740.35	632.60	632.60	(107.75)
Other Finance Charges	-	28.34	28.34	28.34
Provision for bad and doubtful debts	491.53	680.73	680.73	189.20

Particulars	FY 2017-18			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Other Expenses	63.30	386.47	386.47	323.18
Income Tax	-	-	-	-
Intra-State Transmission Charges	4,812.17	4,812.17	4,812.17	-
Incentives/Discounts	246.58	242.40	242.40	(4.19)
Contribution to contingency reserves	-	-	-	-
DSM Expenses	0.88	4.30	4.30	3.42
RLC refund	-	0.70	0.70	0.70
ASC refund	-	0.49	0.49	0.49
Effect of sharing of gains/losses	-	-299.01	-1,989.84	(1,989.84)
Past Period Surplus	-1,116.00	-1,116.00	-1,116.00	-
Revenue Gap Recovery Allowed	-	-	-	-
Impact of payment to MPECS in future years	46.20	46.46	46.20	-
Total Revenue Expenditure	65,305.08	64,270.96	62,616.44	(2,688.64)
Return on Equity Capital	1,826.01	1,739.62	1,739.62	(86.39)
Aggregate Revenue Requirement	67,131.10	66,010.58	64,356.06	(2,775.03)
Less:				
Non-Tariff Income	447.80	380.33	380.33	(67.46)
Income from Open Access Charges	536.17	546.56	326.39	(209.77)
Income from Trading of Surplus Power	179.94	186.27	186.27	6.33
Income from Wheeling Charges	1.46	1.46	1.46	-
Income from Additional Surcharge	118.88	118.88	118.88	-
Net Aggregate Revenue Requirement	65,846.84	64,777.07	63,342.72	(2,504.12)
Revenue from Sale of Power	60,538.76	61,146.03	61,146.03	607.27
Revenue Gap/(Surplus)	5,308.08	3,631.04	2,196.69	(3,111.39)

4.30.2 Based on the analysis of ARR for Truing-up of accounts for FY 2018-19 the summary of ARR components as approved by the Commission is presented in the Tables below:

Table 4-128: ARR for Wires Business for FY 2018-19 as approved by Commission (Rs. crore)

Particulars	FY 2018-19			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Operation & Maintenance Expenses	4,773.70	4,492.93	4,523.58	(250.12)
Depreciation	2,096.54	2,217.60	2,217.09	120.55
Interest on Loan Capital	1,433.44	1,215.23	1,213.29	(220.16)
Interest on Working Capital	124.43	132.39	133.23	8.80
Interest on deposit from Consumers and Distribution System Users	74.14	66.53	66.53	(7.61)
Other Finance Charges	-	2.61	23.49	23.49
Provision for bad and doubtful debts	2.63	73.26	73.26	70.63

Particulars	FY 2018-19			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Contribution to Contingency reserve	-	12.60	12.60	12.60
Income Tax	-	193.57	192.50	192.50
Total Revenue Expenditure	8,504.88	8,406.72	8,455.58	(49.31)
Return on Equity Capital	1,787.00	1,610.25	1,610.25	(176.75)
Aggregate Revenue Requirement	**10,291.88**	**10,016.97**	**10,065.83**	(226.05)
Income from Wheeling Charges	1.53	1.79	1.79	0.26
Income from Open Access Charges	641.33	387.11	204.78	(436.55)
Net Revenue Requirement for Wire	9,649.03	9,628.08	9,859.27	210.24
Revenue from Wire Business	-	**5,376.38**	**9,208.30**	**479.26 ***
Revenue Gap/(Surplus)		**4,251.70**	**650.97**	**(269.03)**

**Calculated as per Pro-rata basis from revenue from sale of electricity approved in MTR into revenue from sale of electricity from wire and supply business.*

Table 4-129: ARR for Supply Business for FY 2018-19 as approved by Commission (Rs. crore)

Particulars	FY 2018-19			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Power Purchase Expenses	50,589.49	56,260.34	56,260.34	5,670.85
Operation & Maintenance Expenses	2,570.70	2,419.27	2,435.78	(134.92)
Depreciation Expenses	232.94	246.40	246.34	13.40
Interest on Loan Capital	159.28	135.03	134.81	(24.47)
Interest on Working Capital	-	-	-	-
Interest on Consumers Security Deposit	667.27	598.75	598.75	(68.52)
Other Finance Charges	-	23.49	2.61	2.61
Provision for bad and doubtful debts	23.70	659.37	659.37	635.67
Other Expenses	66.47	65.07	65.07	(1.40)
Income Tax	-	21.51	21.39	21.39
Intra-State Transmission Charges MSLDC charge	4,302.54	4,775.50	4,775.50	472.96
Incentives/Discounts	258.91	287.38	287.38	28.47
Contribution to Contingency Reserves	-	113.40	113.40	113.40
DSM expenses	-	-	-	-
Effect of sharing of gains/losses	-	-152.29	-1,264.18	(1,264.18)
Past Period Adjustment by Commission	-1,031.50	-1,031.50	-1,031.50	-
Revenue Gap Recovery Allowed	2,256.56	2,256.56	2,256.56	-
Add: Impact of payment to MPECS in future years	43.18	43.43	43.43	0.25
RLC refund	-	1.67	1.67	1.67
ASC refund	-	-	-	-
Total Revenue Expenditure	60,139.55	66,723.39	65,606.73	5,467.18

Particulars	FY 2018-19			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Return on Equity Capital	198.60	202.08	202.08	3.48
Aggregate Revenue Requirement from Retail Tariff	**60,338.15**	**66,925.47**	**65,808.81**	5,470.67
Non-Tariff Income	1,051.19	609.35	609.35	(441.84)
Income from Open Access Charges	122.44	108.44	108.44	(14.00)
Income from Trading of Surplus Power	-	408.82	408.82	408.82
Net Aggregate Revenue Requirement from Retail Tariff	**59,164.52**	**65,798.86**	**64,682.20**	**5,517.68**
Revenue from Retail Supply Business	-	67,215.34	63,383.43	3,298.92
Revenue Gap/(Surplus)		**(1,416.48)**	**1,298.78**	**2,218.76**

**Calculated as per Pro-rata basis from revenue from sale of electricity approved in MTR into revenue from sale of electricity from wire and supply business.*

Table 4-130: ARR for FY 2018-19 (Wires + Supply) as approved by Commission (Rs. crore)

Particulars	FY 2018-19			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Power Purchase Expenses	50,589.49	56,260.34	56,260.34	5,670.85
Operation & Maintenance Expenses	7,344.40	6,912.20	6,959.36	(385.04)
Depreciation Expenses	2,329.48	2,464.00	2,463.44	133.96
Interest on Loan Capital	1,592.72	1,350.25	1,348.10	(244.63)
Interest on Working Capital	124.43	132.39	133.23	8.80
Interest on Consumers Security Deposit	741.41	665.28	665.28	(76.13)
Other Finance Charges	-	26.11	26.11	26.11
Provision for bad and doubtful debts	26.33	732.63	732.63	706.30
Other Expenses	66.47	65.07	65.07	(1.40)
Income Tax	-	215.08	213.89	213.89
Intra-State Transmission Charges MSLDC charge	4,302.54	4,775.50	4,775.50	472.96
Incentives/Discounts	258.91	287.38	287.38	28.47
Contribution to Contingency Reserves	-	126.00	126.00	126.00
DSM expenses	-	-	-	-
Effect of sharing of gains/losses	-	(152.29)	(1,264.18)	(1,264.18)
Past Period Adjustment by Commission	(1,031.50)	(1,031.50)	(1,031.50)	-
Revenue Gap Recovery Allowed	2,256.56	2,256.56	2,256.56	-
Add: Impact of payment to MPECS in future years	43.18	43.43	43.43	0.25
RLC refund	-	1.67	1.67	1.67
ASC refund	-	-	-	-
Total Revenue Expenditure	68,644.43	75,130.11	74,062.31	5,417.88

Particulars	FY 2018-19			
	MTR Order (a)	MSEDCL Petition (b)	Approved Value (c)	True Up d = c-a
Return on Equity Capital	1,985.60	1,812.34	1,812.34	(173.26)
Aggregate Revenue Requirement	**70,630.03**	**76,942.44**	**75,874.65**	5,244.61
Non-Tariff Income	1,051.19	609.35	609.35	(441.84)
Income from Open Access Charges	641.33	387.11	204.78	(436.55)
Income from Trading of Surplus Power	-	408.82	408.82	408.82
Income from Wheeling Charges	1.53	1.79	1.79	0.26
Income from Additional Surcharge	122.44	108.44	108.44	(14.00)
Net Revenue Requirement	**68,813.55**	**75,426.94**	**74,541.47**	**5,727.92**
Revenue from sale of electricity	68,813.55	72,591.72	72,591.72	3,778.17
Revenue Gap/(Surplus)		**2,835.22**	**1,949.75**	**1,949.75**

5 PROVISIONAL TRUE-UP FOR FY 2019-20

5.1 Provisional Sales for FY 2019-20

5.1.1 MSEDCL submitted that it has considered the actual sales till September 2019 and estimated the sales for remaining six months of FY 2019-20 considering historical trend.

5.1.2 The provisional sales for the FY 2019-20 excluding the sales in the areas of the Distribution Franchisee is provided in the table below:

Table 5-1: Category-wise Sales for FY 19-20 as submitted by MSEDCL

Category	FY 2019-20 (MUs)		
	MTR Order	Estimated	Deviation
Residential	20,336.63	20,747.29	410.66
Commercial	7,963.08	7,745.71	(217.37)
HT-Industries	29,207.84	30,903.47	1,695.63
LT-Industries	7,232.08	7,004.10	(227.98)
PWW	2,427.77	2,348.25	(79.52)
Street light	2,013.76	1,817.36	(196.40)
Agriculture*	31,943.14	30,491.51	(1,451.63)
Public Services	1,515.68	1,472.76	(42.92)
Railways	59.25	64.23	4.98
Others	740.91	698.57	(42.34)
MSEDCL Excl. DF	**1,03,440.14**	**1,03,293.22**	**-146.92**

**Agriculture Sales shown in the table is the sum of HT AG, LT AG Sales (Metered and Unmetered sales) and LT AG Sales (Others). The break-up for the same is provided in the table below:*

Table 5-2: Break-up of Agriculture Sales (Excl. DF) for FY 2019-20

Category	FY 2019-20 (MU)		
	MTR Order	Estimated	Deviation
Agriculture	**31943**	**30,491.51**	**(1,451.63)**
LT AG (Unmetered)	*9899*	*9,909*	*10*
LT AG (Metered)	*21,091*	*19,127*	*(1,963)*
LT AG Sales (M+ UM)	**30,990**	**29,036**	**(1,953)**
LT AG (Others)	150	162	13
HT AG	804	1,293	(489)

HT AG is +489 and not (….), wrong submission .

5.1.3 MSEDCL further submitted that, LT Agriculture sales for FY 2019-20 have been estimated based on the half yearly sales plus the sales for remaining six months keeping in view the water availability for irrigation in the State. The actual sales to LT Agriculture consumers will depend upon Rabi crop cultivation and the same shall be updated to the Hon'ble Commission during the months of February/ March 2020.

Commission's Analysis and Ruling

Provisional True-up of Non-AG Sales for FY 2019-20:

5.1.4 For provisional true-up of sales for FY 2019-20, the Commission has reviewed the actual sales of first half i.e. H1 (April, 2019 to September, 2019) as well as the estimated sales for H2 (October, 2019 to March, 2020) based on the historical sales trends claimed by MSEDCL vis-à-vis that approved in the MTR Order except the claim for AG Sales.

5.1.5 The variation in the sales estimate vis-à-vis that projected under MTR Order is marginal i.e. (147) MU, although there is variation across few consumer categories. The variation in projected sales is mainly on account of variation in HT Industrial Sales of 1696 MU and variation in LT AG Sales (Metered and Un-metered) of (1953) MU as compared to that provisionally approved under MTR Order. For the purpose of Provisional True-up the Commission has provisionally accepted the actual sales reported for first half (April to September) for Non-AG consumer categories, whereas for the projection of sales for second half (October to March), the Commission has re-estimated category wise sales based on the historical trend in sales as provided by MSEDCL. As regards the Provisional True-up of AG Sales for FY 2019-20, the Commission has elaborated its approach in the above section upon the detailed scrutiny of MSEDCL's submissions and considering suggestions on estimation of AG Sales as covered under the Final Report submitted by AG Working Group.

Provisional True-up of AG Sales for FY 2019-20:

5.1.6 As regards the estimation of AG sales by MSEDCL, it is observed that, there is significant reduction in estimated AG sales for FY 2019-20 (29,045 MU) by around 11% as against that reported by MSEDCL for AG Sales (32,556 MU) in FY 2018-19. Such significant reduction in AG consumption may have resulted on account of extended monsoon/rainfall during FY 2019-20 across most parts of Maharashtra. As compared to projected AG Sales (31,943 MU) under MTR Order for FY 2019-20, the reduction in estimated sales by MSEDCL for FY 2019-20 amounts to 6%.

5.1.7 As discussed in earlier section on true-up for FY 2017-18 and FY 2018-19, the Commission has elaborated its views on the AG consumption norm and the methodology recommended in the Final Report by the AG Working Group. In line with the recommended approach and considering proportionate reduction in the AG

consumption norm for FY2019-20 as claimed by MSEDCL, the Commission has re-estimated the AG sales for FY 2019-20.

5.1.8 Approved Sales (for purpose of provisional true-up) for FY 2019-20 is as summarised in the table below:

Table 5-3: Sales provisionally approved for FY 2019-20 (MU)

Particulars	MTR Order	MSEDCL Petition	Approved in this Order
HT Sales	35,293	37,175	37,175
LT Sales - Excluding AG Sales	37,008	37,082	37,082
LT Sales - AG Sales	31,139	29,036	23,096
MSEDCL Sales - Total	**103,440**	**103,293**	**97,353**
Energy Sales in DF Areas	4,929	4,710	4,710
Total Energy Sales (Incl. of DF Sales)	**108,369**	**108,004**	**102,063**

5.2 Energy Balance for FY 2019-20

MSEDCL's Submission

5.2.1 The quantum of sales in MU shown in Table below represents the sales of MSEDCL excluding the sales in the area served by Distribution Franchisees in the year FY 2019-20 as submitted by MSEDCL. However, while calculating energy balance of MSEDCL as a whole, the sale to the consumers of the Distribution Franchisee area has also been considered. MSEDCL submitted that since the Distribution Franchisee is an agent to MSEDCL as per the Franchisee Agreement, it has to consider the loss within the Franchisee area for Energy balance. Therefore, energy available for sale for FY 2019-20 is computed as below as submitted by MSEDCL:

Table 5-4: Energy Available for Sale for FY 2019-20 (MU) as submitted by MSEDCL

Particulars	FY 2019-20 (MTR Order)	FY 2019-20 (MYT Petition)
Energy Sales by MSEDCL for FY 2019-20	1,03,440.14	1,03,367.11
Add: Category wise sales in DF area	4,929.10	4,709.97
Add: OA Sales (Conventional)	4,773.83	3983.40
Add: Renewable OA	748.60	859.40
Total Energy sales MSEDCL	**1,13,891.66**	**1,12,919.88**

5.2.2 MSEDCL submitted that considering the principles discussed in energy balance for FY 2017-18 and FY 2018-19, it has computed the energy balance for FY 2019-20. The following table shows the provisional energy balance for FY 2019-20 as submitted by MSEDCL.

Table 5-5: Energy Balance for FY 2019-20 as submitted by MSEDCL

Sr. No.	Particulars	Calculation	UoM	FY 2019-20	
				MTR Order	MYT Petition
1	LT Sales (Including D.F.)	a	MU	72,166.00	69,983.00
2	HT sales excluding EHV level Sales(Including D.F)	b	MU	27,654.00	28,195.00
3	HT/LTIP Credit Sales and HT/LT Offset Export Solar Units	c	MU	-	74.00
4	**Total Sales Including D.F. (Excluding EHV Sales)**	**d=a+b+c**	MU	**99,820.00**	**98,252.00**
5	OA Sales (Renewables)	e	MU	749.00	859.00
6	OA Sales (Conventional)	f	MU	4,774.00	3,983.00
7	**Retail Energy Sale to Consumers (Excluding EHV Sales)**	**A=d+e+f**	MU	**1,06,342.00**	**1,03,095.00**
8	**Total Power Purchase**	**B=g+h**	MU	**1,30,634.00**	**1,28,767.00**
9	Power Purchase Quantum from Intra-State sources	g	MU	89,295.00	88,780.00
10	Power Purchase Quantum from Inter-State sources	h	MU	41,339.00	39,986.00
11	**Inter-State Losses**	**I**	**%**	**3.14%**	**3.07%**
12	Power Purchase Quantum from Inter-State sources at MS Periphery	j=h*(1-i)	MU	40,041.00	38,759.00
	Add: FBSM	k		-	-
13	**Power Quantum handled at Maharashtra Periphery**	**I=g+j+k**	MU	**1,29,336.00**	**1,27,539.00**
14	Infirm Non-PPA Wind Power	m	MU	-	914.25
15	Input for OA Consumption	n=f/(1-6%)	MU	5,079.00	4,238.00
16	**Total Power Purchase Quantum Handled**	**o=I+m+n-w**	MU	**1,33,926.00**	**1,32,118.00**
17	Surplus Power Traded	p	MU	-	767.00
18	**Energy Requirement at G<>T Periphery**	**q=o-p**	MU	**1,33,926.00**	**1,31,351.00**
19	**Intra-State Transmission Loss**	**r**	**%**	**3.30%**	**2.47%**
20	Intra-State Transmission Loss	s=q*r	MU	4,420.00	3,245.00
21	Net Energy requirement at T<>D Periphery	t=q-s	MU	1,29,507.00	1,28,106.00
22	EHV Sales	u	MU	8,549.00	9,825.00
23	Net Energy Available for Sale at 33kV	v=t-u	MU	1,20,957.00	1,18,281.00
24	Energy injected and drawn at 33kV	w	MU	488.00	573.00
25	**Total Energy Available for Sale at 33kV (Metered Energy at EHV and 33 kV Input)**	**C=v+w**	MU	**1,21,446.00**	**1,18,854.00**
26	**Distribution Loss (Excl. EHV Sales)**	**D=C-A**	MU	**16,103.00**	**15,759.00**
27	**Distribution Loss (Excl. EHV Sales)**	**E=D/C**	%	**13.26%**	**13.26%**

5.2.3 MSEDCL has requested the Commission to approve the Energy Balance as per the above table.

Commission's Analysis and Ruling

5.2.4 The Energy Balance submitted by MSEDCL for FY 2019-20 is as per the format F1.4 approved for 3rd Control period, in which Distribution Loss has been estimated excluding EHV sales.

5.2.5 In reply to a query on reconciliation with FBSM bills, MSEDCL stated that FBSM bills for FY 2019-20 are not available and reconciliation can be possible only after the entire year's FBSM bills become available. Moreover, while submitting the above Energy Balance, MSEDCL had not stated any units towards FBSM.

5.2.6 The Commission has considered the Conventional Open Access Sales and Renewable Open Access Sales as submitted by the MSEDCL. The actual data upto September 2019 was made available by MSEDCL in response to queries raised. Accordingly, the submission by MSEDCL towards Open Access Sales is extrapolated accordingly for FY 2019-20.

5.2.7 In previous sections, the Commission has elaborated on its approach for estimation of AG sales for the purpose of provisional true-up of FY 2019-20 and for the purpose of Energy Balance and assessment of distribution losses thereof.

5.2.8 Based on the revised estimate of LT AG Sales by the Commission as approved in this Order, the approved sales including the DF sales, OA sale and solar offset units as available for the Energy Balance of FY 2019-20 is as shown below:

Table 5-6: Energy Available for Sale for FY 2019-20 (MU) as approved by the Commission

Particulars	MTR Order	MYT Petition	Approved in this Order
Energy Sales by MSEDCL for FY 2019-20	103,440.14	103,293.22	102,062.72
Add: Category wise sales in DF area	4,929.10	4,709.97	
Add: Solar Offset Units		73.89	73.89
Add: OA Sales (Conventional)	4,773.83	3983.40	3983.40
Add: Renewable OA	748.60	859.40	859.40
Total Energy sales MSEDCL	**113,891.66**	**112,919.88**	**106,979.40**

5.2.9 The Energy Balance reported by MSEDCL and approved by the Commission for FY 2019-20 is presented in the Table below. The difference in the Energy Balance claimed by MSEDCL and that approved by the Commission is mainly on account of the difference in LT AG Sales approved by the Commission vis-à-vis that claimed by MSEDCL as part of the total Energy Sales.

5.2.10 MSEDCL has submitted that the information about energy injected and drawn at 33 kV

is maintained at Circle offices and the same was reported under the energy balance. The Commission has considered the same.

5.2.11 The Commission has considered the Net Energy requirement at T<>D Periphery as claimed by the MSEDCL for FY 2019-20 for calculating the Distribution Loss, as per the methodology employed in Truing-up section.

5.2.12 The Distribution Losses arrived at in the Energy Balance are consequent to the above changes.

Table 5-7: Energy Balance for FY 2019-20 as approved by the Commission

Sr.	Particulars	Calculation	UoM	FY 2019-20		
				MTR Order	MYT Petition	Approved in this Order
1	Net Energy requirement at T<>D Periphery	A	MU	129,507	128,106	128,106
2	EHV Sales	B	MU	8,549	9,825	9,825
3	Net Energy Available for Sale at 33kV	c=a-b	MU	120,957	118,281	118,281
4	Energy injected and drawn at 33kV	D	MU	488	573	573
5	**Total Energy Available for Sale at 33kV**	**A=c+d**	**MU**	**121,445**	**118,854**	**118,854**
6	LT Agriculture Sales (Including D.F)	e	MU	31,149	29,214	23,105
7	LT Sales excluding Agriculture Sales (Including D.F)	f	MU	41,016	40,768	40,937
8	HT Sales excluding EHV level sales (Including D.F)	g	MU	27,654	28,195	28,195
9	HT/LTIP Credit Sales and HT/LT Offset Export Solar units	h	MU	-	74	74
10	**Total Sales including D.F (Excluding EHV Sales)**	**i=e+f+g+h**	**MU**	**99,820**	**98,252**	**92,311**
11	OA Sales (Renewables)	j	MU	749	859	859
12	OA Sales (Conventional)	k	MU	4,774	3,983	3,983
13	**Retail Energy Sale to Consumers (Excluding EHV Sales and Including OA Sales)**	**B=i+j+k**	**MU**	**105,342**	**103,095**	**97,154**
14	**Distribution Loss (Excl. EHV Sales)**	**C=A-B**	**MU**	**16,103**	**15,759**	**21,700**
15	**% Distribution Loss (Excl. EHV Sales)**	**D=C/A**	**%**	**13.26%**	**13.26%**	**18.26%**

5.3 Distribution Loss for FY 2019-20

MSEDCL's Submission

5.3.1 In MYT Order dated 3rd November 2016, in Case No. 48 of 2016, the Commission had approved distribution loss excl. EHV of 13.26 %. MSEDCL has considered the same targeted loss levels for estimation as shown below.

5.3.2 MSEDCL has requested the Commission to approve the Distribution Losses as submitted below in the table:

Table 5-8: Distribution Loss for FY 2019-20 as submitted by MSEDCL

Particulars	FY 2019-20 (MTR Order)	FY 2019-20 (MYT Petition)	Deviation
Distribution Loss	13.26%	13.26%	-

Commission's Analysis and Ruling

5.3.3 The Commission had stipulated the trajectory for reduction of Distribution Loss in its MYT Order for 3rd control period in Case No. 48 of 2016. Based on the revised formats and methodology for computation of Distribution Loss by considering the sales at the distribution periphery excluding EHV sales, the Distribution Loss level stipulated for FY 2019-20 was 13.26% in the MYT Order. In addition, the Commission had also approved the same value of Distribution Loss of 13.26% in its revised projections in the latest MTR Order. That formed the basis for estimated approval of the Energy Balance in the previous MTR Order for that year. Further, MSEDCL now has submitted a Distribution Loss level of 13.26% for FY 2019-20 which is similar to the estimated target.

5.3.4 Further, the Commission has elaborated in earlier paragraphs regarding estimation of AG sales and its consequent impact on distribution loss.

5.3.5 The Commission would undertake a detailed review of the operationalisation of Feeder Input based methodology of determination of AG Sales at the time of MTR, as per roadmap and action plan put in place by MSEDCL. The outcome of results and methodology finalised through this AG exercise shall form the basis for approval of AG sales from FY2019-20 to 2021-22 during truing up exercise to be carried out at time of MTR.

5.3.6 Accordingly, for the purpose of Energy Balance and assessment of distribution loss for FY 2019-20 under this Order, the Commission has now approved revised Energy Sales of 106,979 MU for FY 2019-20 against the claim of 112,920 MU including DF Sales, OA Sales and Solar Offset Units. Based on this, the approved Distribution Loss for FY 2019-20 is as shown in the Table below:

Table 5-9: Distribution Loss for FY 2019-20 as approved by the Commission

Particulars	MTR Order	MYT Petition	Approved in this Order
Distribution Loss	13.26%	13.26%	18.26%

5.4 Power Purchase Expense for FY 2019-20

MSEDCL's Submission

5.4.1 MSEDCL submitted that it has considered the power purchase till September 2019 (provisional) and projected power purchase for remaining 6 months of FY 2019-20 considering sales projection with estimated Distribution losses.

Table 5-10: Source-wise Power Purchase estimated for FY 2019-20 as submitted by MSEDCL

Source	PP Quantum (MUs)			PP Cost (Rs. Cost)			PP Cost (Rs./Units)		
	Approved in MTR order	Estimated	Deviation	Approved in MTR order	Estimated	Deviation	Approved in MTR order	Estimated	Deviation
MSPGCL	47,826.72	47,840.33	13.61	18,769.37	20,238.13	1,468.76	3.92	4.23	0.31
NTPC	27,634.48	26,638.65	-995.83	9,182.60	10,452.18	1,269.58	3.32	3.92	0.60
NPCIL	5,485.23	5,612.76	127.54	1,474.47	1,615.18	140.71	2.69	2.88	0.19
SSP	1,213.26	1,043.46	-169.80	248.72	213.91	-34.81	2.05	2.05	-
Pench	136.87	91.58	-45.29	28.06	18.77	-9.29	2.05	2.05	-
Dodson	116.04	34.68	-81.36	16.33	14.67	-1.66	1.41	4.23	2.82
JSW	2,060.73	2,120.32	59.59	660.58	725.07	64.49	3.21	3.42	0.21
CGPL	5,495.27	4,696.92	-798.35	1,375.53	1,350.07	-25.46	2.50	2.87	0.37
Adani power	19,655.43	19,710.82	55.38	6,783.31	7,496.65	713.34	3.45	3.80	0.35
EMCO Power	1,373.82	1,331.67	-42.15	494.19	569.08	74.89	3.60	4.27	0.67
Rattan India	-	3,356.11	3,356.11	982.87	2,122.00	1,139.13		6.32	6.32
Renewable	19,635.91	15,718.00	-3,917.91	9,794.24	7,761.79	-2,032.45	4.99	4.94	-0.05
Traders		571.42	571.42	2,928.00	224.84	-2,703.16		3.93	3.93
Other Adjustments					0.01	0.01			
PGCIL Charges					3,501.12	3,501.12			
Intra State Purchase					1.98	1.98			
Total Power Purchase	**130,634**	**128,767**	**-1,867**	**52,738**	**56,305**	**3,567**	**4.04**	**4.37**	**0.34**

5.4.2 MSEDCL has requested the Commission to approve the Power Purchase as per the above table.

Commission's Analysis and Ruling

5.4.3 The Commission notes that MSEDCL has estimated lower power purchase quantum against that approved under MTR Order (deviation of 1,867 MU). The deviation is

mainly because of the lower availability of power from renewable energy sources, CGPL and NTPC than that projected under MTR Order. In addition, MSEDCL based on the past trend of power despatch from RattanIndia Power Ltd. in FY 2018-19 have estimated the Power Purchase from RattanIndia in FY 2019-20. The Commission further notes that there is a variation in power purchase cost by Rs 3,567 Crore in FY 2019-20 as against that approved under MTR Order, mainly because of reduced power purchase from Renewables, CGPL, NTPC and corresponding power Purchase at higher cost from other stations including short term sources. In addition, there is variation in loss level (18.26%) as against that provisionally approved (13.26%) in MTR Order.

5.4.4 The Commission had undertaken detailed scrutiny of the submissions/claims made by MSEDCL and sought clarification on various counts as presented in the subsequent paragraphs.

Short-Term Power Purchase:

5.4.5 MoP, vide Resolution dated 15th May 2012, had issued Guidelines for short-term power procurement by Distribution Licensees through tariff-based competitive bidding. Hence, the Commission had directed MSEDCL to procure all short-term power with the above said guidelines through competitive bidding route, except in case of power procured from the Power Exchanges or under the Banking mechanism. Accordingly, the Commission had approved a ceiling rate of Rs. 5.00 per kWh for power procurement from short-term sources over the 3rd Control Period.

5.4.6 As sought by the Commission, MSEDCL submitted the month wise short-term power procured with the monthly average rate and quantum for FY 2019-20 upto September 2019, as shown in the table below.

Table 5-11: Short term Power Purchase in FY 2019-20 as submitted by MSEDCL

Month	Bilateral		Exchange		Banking	Total
	MU	Avg. rate (Rs./kWh)	MU	Avg. rate (Rs./kWh)	MU	MU
Apr-19	195.07	4.42	0.50	3.15	43.04	238.61
May-19	115.24	4.50	3.48	3.52	44.58	163.29
Jun-19	-	-	24.96	3.44	-	24.96
Jul-19	-	-	7.76	3.37	-	7.76
Aug-19	-	-	90.29	3.60	-	90.29
Sep-19	-	-	134.14	3.10	-	134.14
Total	**310.31**	**4.45**	**261.13**	**3.32**	**87.62**	**659.06**

5.4.7 Total half-yearly weighted average of the short-term power for FY 2019-20 (Rs. 3.93 per kWh) is below the ceiling rate of Rs.5 per unit. The Commission provisionally approves the short term power through bilateral as well as power exchanges as claimed by the MSEDCL for FY 2019-20, subject to prudence check during MTR.

Table 5-12: Short term Power Purchase in FY 2019-20 as approved by the Commission

Short-Term Power Purchase	MYT Petition			As approved in this Order		
	MU	Wt. Avg. rate (Rs./kWh)	Total (Rs. Crore)	MU	Avg. rate (Rs./kWh)	Total (Rs. Crore)
Bilateral	310.31	4.45	86.7	310.31	4.45	86.7
Exchange	261.13	3.32	138.1	261.13	3.32	138.1
Total	***571.44***	***3.93***	***224.8***	***571.44***	***3.93***	***224.8***

NTPC:

5.4.8 MSEDCL was asked to provide sample copy of Supplementary bills of NTPC and NPCIL stations for FY 2019-20. MSEDCL submitted samples of supplementary bills raised by Generator during the year upto September 2019. The Commission has verified the sample bills and found them to be in order.

MSPGCL:

5.4.9 As the Audited Accounts for the FY 2019-20 for MSPGCL and MSEDCL is yet to be finalised, the claim of power purchase cost of MSPGCL power stations are scrutinised for assumption of fuel escalation rates. Further, the Commission has verified the power purchase quantum upto September 2019 as per the data from SLDC. The Commission found that the estimated Power Purchase for FY 2019-20 is in line with the past trend. Hence, the Commission has approved the MSEDCL's submission on power purchase from MSPGCL for FY 2019-20.

PGCIL Charges:

5.4.10 For FY 2019-20, MSEDCL has estimated the PGCIL Charges as Rs. 3,501.12 crore, which amounts to y-o-y increase of over 22.55% over FY2018-19. In response to clarification sought by the Commission w.r.t. significant increase in PGCIL charges, MSEDCL submitted copies of monthly bills against ISTS charges from PGCIL for FY 2017-18, FY 2018-19 and FY 2019-20 (Upto September 2019) and clarified that supplementary bill for the period (Jan to Mar 2019) received in Jun-2019 is accounted for during FY 2019-20 and accordingly, projection for H2 (Oct-19 to Mar-20) has been extrapolated. Upon analysis of month-wise ISTS bills of H1 of FY 2019-20 submitted, the Commission observes that annual escalation of H1 of FY 2019-20 w.r.t. H1 of FY 2018-19 is far lower than 22.55% if adjustment of impact of supplementary bill is factored in. Further, actual annual impact of ISTS bills for FY 2019-20 would only be known at the end of the year. Hence, for the purpose of provisional true-up for FY 2019-20, the Commission has considered growth in ISTS charges at the rate of 10.73% similar to actual annual growth observed in FY 2018-19 over FY 2017-18. Accordingly, the Commission has provisionally approved the PGCIL charges of Rs. 3,163.30 crore for FY 2019-20. However, the same shall be subject to scrutiny and prudence check at the time of Truing-up, at MTR stage.

RPO Targets:

5.4.11 As per the RPO Regulations, 2016, each Distribution Licensee has to meet 15% of its requirement through RE sources in FY 2019-20, including 3.5% through solar sources and 11.5% through Non-solar (Other RE) sources. In addition, 0.2% of the Non-solar (Other RE) RPO obligation has to be met through Mini Hydro or Micro Hydro power projects. The Commission provisionally approves the MSEDCL's submitted values for RE generation and power purchase from RE sources. However, at the time of truing-up for FY 2019-20, the Commission shall ascertain the compliance of RPO obligation is adhered to or not.

IPPs:

5.4.12 The Commission sought workings of the Variable Charges and Fixed Charges for FY 2019-20 as claimed towards power purchase cost vis-à-vis that covered in Tariff Schedule for IPP for FY 2019-20 as per PPAs. As per the submissions provided by MSEDCL for all the IPPs, the Energy Charges were reworked, since the Quoted Rates are linked to various factors such as variation in monthly exchange rate, CERC index for inland handling of imported fuel, CERC index for inland transportation of fuel, etc. While reworking the projected Energy Charge component, the Commission has verified the escalation factors as per notifications issued by CERC and the monthly energy rates tallies with the estimates of MSEDCL for the months from October 2019 to March 2020 after allowing for effect of change in law. Further, the Commission observes that, the MSEDCL has factored in the effect of compensatory Tariff as per Change-in Law claims in FY 2019-20. As per the Commission's analysis, the projected values of Fixed and Variable Charges for FY 2019-20 are found to be in order. Therefore, the Commission has provisionally approved the Power Purchase Cost as projected by the MSEDCL for IPPs for FY 2019-20.

5.4.13 Accordingly, for provisional truing-up of FY 2019-20, the Commission approves the power purchase cost as per below table, subject to further prudence check at the time of final truing-up of FY 2019-20.

Table 5-13: Power Purchase Expenses for FY 2019-20 as approved by Commission (Rs. crore)

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
KAPP	992.19	237.25	2.39	992.19	237.25	2.39
TAPP 1&2	1,200.89	256.24	2.13	1,200.89	256.24	2.13
TAPP 3&4	3,419.68	1,121.69	3.28	3,419.68	1,121.69	3.28

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
SSP	1,043.46	213.91	2.05	1,043.46	213.91	2.05
Pench	91.58	18.77	2.05	91.58	18.77	2.05
Dodson I	21.87	4.27	1.95	21.87	4.27	1.95
Dodson II	12.81	10.40	8.11	12.81	10.40	8.11
Renewable - Solar	3,583.15	1,407.98	3.93	3,583.15	1,407.98	3.93
Renewable - Non- Solar	12,134.85	6,353.81	5.24	12,134.85	6,353.81	5.24
Hydro (including GHATGHAR)	4,567.57	226.70	0.50	4,567.57	226.70	0.50
BHUSAWAL - 3	35.66	134.31	-	35.66	134.31	37.66
BHUSAWAL 4 & 5	2,951.06	1,982.72	6.72	2,951.06	1,982.72	6.72
KHAPARKHEDA - 1to 4	2,821.94	1,245.91	4.42	2,821.94	1,245.91	4.42
KHAPARKHEDA 5	3,187.44	1,289.42	4.05	3,187.44	1,289.42	4.05
NASHIK- 3,4 & 5	1,419.78	926.62	6.53	1,419.78	926.62	6.53
CHANDRAPUR - 3 to 7	10,100.13	3,554.99	3.52	10,100.13	3,554.99	3.52
PARAS UNIT-3 & 4	1,441.98	967.93	6.71	1,441.98	967.93	6.71
PARLI -4 & 5	-4.20	16.41	-	-4.20	16.41	-
PARLI UNIT-6 & 7	272.10	402.67	14.80	272.10	402.67	14.80
KORADI - 6 & 7	1,389.83	552.66	2.77	1,389.83	552.66	3.98
GTPS URAN	2,903.35	773.77	2.67	2,903.35	773.77	2.67
Parli replacement U 8	151.46	322.69	21.31	151.46	322.69	21.31
Chandrapur 8	3,199.80	1,509.59	4.72	3,199.80	1,509.59	4.72
Chandrapur 9	3,201.00	1,370.08	4.28	3,201.00	1,370.08	4.28
Koradi R U-8	3,242.92	1,553.65	4.79	3,242.92	1,553.65	4.79
Koradi 9	3,359.77	1,580.32	4.70	3,359.77	1,580.32	4.70
Koradi10	3,598.75	1,827.70	5.08	3,598.75	1,827.70	5.08
KSTPS	4,468.53	977.90	-	4,468.53	977.90	2.19
KSTPS III	729.80	243.52	3.34	729.80	243.52	3.34
VSTP I	2,914.40	806.00	2.77	2,914.40	806.00	2.77
VSTP II	2,026.45	533.83	2.63	2,026.45	533.83	2.63
VSTP III	2,154.31	610.81	2.84	2,154.31	610.81	2.84
VSTP IV	2,070.19	731.62	3.53	2,070.19	731.62	3.53
VSTP V	1,207.62	422.63	3.50	1,207.62	422.63	3.50
KAWAS	435.15	253.33	5.82	435.15	253.33	5.82
GANDHAR	80.64	180.27	22.36	80.64	180.27	22.36
KhSTPS-II	996.65	322.79	3.24	996.65	322.79	3.24
SIPAT TPS 2	1,981.11	564.43	2.85	1,981.11	564.43	2.85
SIPAT TPS 1	3,471.12	1,101.01	3.17	3,471.12	1,101.01	3.17
Mauda	1,542.17	1,145.12	7.43	1,542.17	1,145.12	7.43
Mauda II	1,574.10	877.70	5.58	1,574.10	877.70	5.58
NTPC solapur	355.33	1,245.48	35.05	355.33	1,245.48	35.05

Generator Name	MYT Petition			Approved in this Order		
	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)	Energy Purchase (ex-bus) (MUs)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Lara	492.00	279.97	5.69	492.00	279.97	5.69
Gadarwara	7.54	48.08	63.75	7.54	48.08	63.75
NTPC NVVN Coal	131.55	41.37	3.15	131.55	41.37	3.15
Khargone	-	66.30	-	-	66.30	-
IPP – JSW	2,120.32	725.07	3.42	2,120.32	725.07	3.42
Adani power 125 MW	799.53	346.11	4.33	799.53	346.11	4.33
Adani power 1320 MW	8,965.96	2,589.66	2.89	8,965.96	2,589.66	2.89
Adani power 1200 MW	8,065.48	3,956.86	4.91	8,065.48	3,956.86	4.91
Adani power 440 MW	1,879.86	604.01	3.21	1,879.86	604.01	3.21
EMCO Power	1,331.67	569.08	4.27	1,331.67	569.08	4.27
Rattanindia Amravati	3,356.11	2,122.00	6.32	3,356.11	2,122.00	6.32
CGPL	4,696.92	1,350.07	2.87	4,696.92	1,350.07	2.87
Short term power	571.42	224.84	3.93	571.42	224.84	3.93
FBSM	-	-	-	-	-	-
Intra State Purchase	-	1.98	-	-	1.98	-
PGCIL Charges &posoco wrldc	-	3,501.12	-	-	3,163.30	-
Reactive Charges	-	0.01	-	-	0.01	-
Total Power Purchase	**128,766.7**	**56,305.45**	**4.37**	**128,766.7**	**55,967.62**	**4.35**

5.4.14 The rate per unit of power procured of some of the stations in FY 2019-20 is extremely high (i.e., Busawal-3, Parli-6,7 & 8, Gandhar, NTPC Solapur and Gadarwara) because of lower units of generation. However, based on the respective stations availability, MSEDCL has to bear the cost of fixed cost towards respective stations.

5.5 Intra State Transmission Charges for FY 2019-20

MSEDCL's Submission

5.5.1 MSEDCL submitted that the Intra State transmission charges are taken actual upto September 2019 and estimated for remaining 6 months of FY 2019-20 as per the InSTS Order dated 12th September 2018 in Case No 265 of 2018.

5.5.2 Based on the above submission, the comparison of the approved and the estimated transmission charges for FY 2019-20 is as shown below. MSEDCL has requested the Commission to approve the below said Intra-State Transmission Charges.

Table 5-14: Intra-State Transmission Charges for FY 2019-20 as submitted by MSEDCL

Particular	FY 2019-20 (Rs. Crore)		
	MYT Order	MYT Petition	Deviation
Intra-State Transmission Charges	4,863.74	4,867.55	3.81

Commission's Analysis and Ruling

5.5.3 While MSEDCL has shown the entire amount of Rs. 4,867.55 crores as Transmission Charges paid to MSETCL, it also includes a component of MSLDC Charges paid by MSEDCL. The Commission has approved the MSEDCL's share of InSTS Charges and MSLDC Charges for FY 2019-20 as per the Order in Case No. 265 of 2018 dated 12th September, 2018 and Case No. 171 of 2018 dated 12th September, 2018 respectively for the purpose of provisional truing up of FY 2019-20.

Table 5-15: Intra State Transmission Charges and MSLDC Charges for FY 19-20 as approved by the Commission (Rs. Crore)

Particular	FY 2019-20		
	MTR Order	MYT Petition	Approved in this Order
Intra-State Transmission Charges	4,863.74	4,867.55	4,839.42
MSLDC Charges			24.32
Total	**4,863.74**	**4,867.55**	**4,863.74**

5.6 O&M Expenses for FY 2019-20

MSEDCL's Submission

5.6.1 MSEDCL submitted that it has estimated the O&M Expenses on normative basis for FY 2019-20 based on Regulation 72 and 81 of MERC MYT (1st Amendment) Regulations, 2017 for Wires and Retail supply business respectively.

5.6.2 Considering the escalation factor same as that computed for FY 2018-19 which is 2.83%, and base year O&M expense for FY 2015-16 (Net entitlement after sharing of gains/(losses), MSEDCL has computed the O&M expense for Wires Business and Retail supply of electricity for FY 2019-20 as shown in figure.

Table 5-16: Operation & Maintenance Expenses for FY 2019-20, as submitted by MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL Petition (Normative)
O&M Expenditure for Wires Business	5,015.05	4,620.17

Particulars	MTR Order	MSEDCL Petition (Normative)
O&M Expenditure for Supply Business	2700.41	2,487.79
Operation & Maintenance Expenses	**7,715.46**	**7,107.96**

5.6.3 MSEDCL has requested to approve the same on a provisional basis for wires and supply business.

Commission's Analysis and Ruling

5.6.4 The Commission has applied the amended norms specified in Regulations 72 and 81 of the MYT Regulations, 2015 (1st amendment 2017) for approval of O&M Expenses for the Wires Business and Supply Business for FY 2017-18. The relevant extract of the regulation is as given below:

> *"... Provided that, in the Truing-up of the Operation and Maintenance expenses for any particular year of the Control Period, an inflation factor with 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the past five financial years (including the year of Truing-up) and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years (including the year of Truing-up), as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, shall be applied to arrive at the permissible Operation and Maintenance Expenses for that year."*

5.6.5 In accordance with the same, the revised normative O&M expenses (Net entitlement after sharing of gains/(losses)) as approved under this order for FY 2015-16, as worked out in the above chapter of truing up for FY 2017-18 and FY 2018-19, has been considered as the base year O&M expense for arriving at the normative O&M expense of FY 2019-20.

5.6.6 For the purpose of deriving the escalation rate, CPI and WPI for the period FY 2014-15 to FY 2018-19 has been considered along with efficiency factor of 1% in accordance with the Regulations, as shown below.

Table 5-17: O&M expense escalation rate

Particulars	WPI	CPI
Average from FY15 to FY19	2.08%	4.92%
Weight	30%	70%
Escalation Factor		4.07%
Efficiency Factor		1.00%
Escalation Factor for FY 19 & MYT Control Period net of efficiency factor		**3.07%**

5.6.7 Thus, the Commission has revised O&M norms of 2015-16 Rs. 6356.66 Crore for four

years at 3.07%, to arrive at O&M Norms for FY 2019-20which works out to Rs 7172.70 Crore.

5.6.8 Further, MSEDCL had provisioned for arrears owing to wage revision in the audited accounts of FY 2018-19 to the tune of Rs 582.11 Crore, which Commission in the present Order has not allowed while truing up of expenses of FY 2018-19 as no actual disbursement of the amount was made during the year. However, the Commission sought actual disbursal of arrears and corresponding amount paid by MSEDCL due to pay revision in FY 2019-20. MSEDCL in its reply submitted that first installment of pay revision has been given in the month of November 2019. Further MSEDCL provided the relevant Administrative Circular dated 18-09-2019 which stated that arrears shall be disbursed in three installment. Further stated that as per the said circular, MSEDCL shall make the Second and Third Installment payment of the arrears to the employees within next 18 months period. In this context, considering the annual provisioned amount of Rs 582.11 Crore (figure as per books of FY 2018-19) to be 2/3rd of the total arrears and since only one installment (1/3rd of total arrears) is actually disbursed in FY 2019-20, an amount of Rs. 291.06 Crore is provisionally allowed in FY 2019-20 over and above derived O&M norms for the year. The balance 2/3rd of the arrear is considered for allowance in the subsequent year i.e., FY 2020-21, which is discussed in the next chapter of this Order under the section for ARR projections. Thus, for the purpose of provisional true-up, Rs. 291.06 Crore is allowed over and above normative O&M of Rs. 7172.70 Crore to arrive at the total allowable O&M expense for FY 2019-20. The total allowable O&M expense works out to Rs. 7463.76 Crore for Wires Business and Retail Supply of electricity for FY 2019-20. The same is as shown in following table.

Table 5-18: O&M Expenses for FY 2019-20 (Wires + Supply) approved by the Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Normative)	Approved in this Order
Impact of arrears -Wires Business			189.19
Impact of arrears - Supply Business			101.87
Sub Total (A)			**291.06**
Normative O&M Expenditure for Wires Business	5,015.05	4,620.17	4,662.26
Normative O&M Expenditure for Supply Business	2700.41	2,487.79	2,510.45
Normative **Operation & Maintenance Expenses (B)**	**7,715.46**	**7,107.96**	**7172.70**
Total O&M Expense allowed (C = A +B)	**7,715.46**	**7,107.96**	**7,463.76**

5.6.9 Thus, the Commission provisionally approves Rs. 7,463.76 Crore as normative O&M expense for FY 2019-20, which shall be subject to prudence check at the time of final true-up.

5.7 Capital Expenditure and Capitalization for FY 2019-20

MSEDCL's Submission

5.7.1 MSEDCL has submitted that it has estimated the Capitalization for FY 2019-20 as Rs. 6469.03 Crore which is as shown in the table below:

Table 5-19: Capex and Capitalization as submitted by MSEDCL for FY 2019-20 (Rs. crore)

Particulars	MTR Order	MSEDCL Petition
Capex	-	6419.47
Capitalization	2546.90	6469.03

5.7.2 The Scheme-wise details for Capital Expenditure and Capitalization has been submitted by MSEDCL in the regulatory formats submitted along with the petition. MSEDCL has also estimated a Capitalization of Rs. 100 Crore towards other assets, which is not forming part of any specific scheme. The summary of capitalization as claimed by MSEDCL is submitted in the table below:

Table 5-20: Summary of Capex and Capitalization as submitted by MSEDCL for FY 2019-20 (Rs. Crore)

Particulars	Amount
Capitalization as per Regulatory Formats	6,469.03
Estimated Other Assets	100.00
Total	**6,569.03**

5.7.3 The following tables summarize the capital expenditure and capitalization for DPR and non-DPR schemes claimed by MSEDCL during FY 2019-20.

Table 5-21: Summary of Capex and Capitalization as submitted by MSEDCL for FY 2019-20 (Rs. crore)

Particulars	FY 2019-20 (Provisional)
Capital Expenditure	
DPR Schemes	6,364.13
Non DPR Schemes	55.34
Total	**6419.47**
Capitalization	
DPR Schemes	6,250.54

Particulars	FY 2019-20 (Provisional)
Non DPR Schemes	219.49
Total	**6.469.03**

5.7.4 MSEDCL has submitted that the Commission in the past had approved capitalization towards schemes not forming part of DPR or Non-DPR category of schemes. Accordingly the Commission had revised the GFA to that extent. Hence MSEDCL has requested in the current petition to approve the Capitalization as submitted above.

Commission's Analysis and Rulings

5.7.5 The Commission noted that MSEDCL has estimated capitalization of Rs. 6,469.03 Crore for FY 2019-20, whereas Commission approved Capitalisation for FY 2019-20 is Rs. 2,546.90 Cr. The Commission sought justification for the significant deviation of Capitalisation compared to approved capitalization in the MTR Order.

5.7.6 The following table shows comparison of capitalization against DPR schemes approved on projection basis for FY 2019-20 in MTR Order and the projection made by MSEDCL against DPR in the present Petition. This shows the major variation in the approval in the past and the present projections by MSEDCL. As can be observed, MSEDCL has now proposed several new schemes which were not proposed at the time of MTR Petition.

Table 5-22: Deviation in Capitalisation from MTR for FY 2019-20

Scheme Name	Approved in MTR	Projected
	FY 19-20	
DPR SCHEMES		
DPR- Approved by the Commission		
Infra Plan Works II		
Infra Plan Works - II	356.66	303
Additional Infra _II	278.32	-
GFSS		
GFSS - II		1
GFSS IV	3.30	32
Single Phasing - Left out villages		0
Elimination of 66 KV line	0.95	-
AMR		2
APDRP		
R-APDRP A (130 town)	2.26	-
R-APDRP B	101.31	-
30 Towns		42
Pandharpur Town		
SCADA Part A		20
SCADA Part B	4.89	
Internal Reforms		
DTC Metering Phase-III		24

Scheme Name	Approved in MTR	Projected
	FY 19-20	
SPA:PE	4.09	62
P:SI	2.40	7
P:IE	0.34	9
RGGVY		13
ERP	6.07	6
AG Metering	2.67	3
DDUGJY	636.68	824
IPDS		
IPDS in 45 Circles	722.05	962
Sinhansth Kumbmela Nashik		1
Saubhagya Scheme		431
DPDC / Non-Tribal		275
DPDC / SCP		212
DPDC / TSP + OTSP		178
HVDS		1,520
Mukhyamantri Saur Vahini Yojana Phase I		26
Fixed Capicitor Scheme		23
High Loss Feeder		75
System strengthening work in Metropolitain Area		125
Survey & Asset Mapping of MSEDCL Electric Network		29
Ag DSM-Pilot project in Mangalwedha, solapur	0.22	-
Star rated celing fan Phase-II (HVAC)	0.24	-
DPR- Pending for Approval		
AG Special Pacakage for Vidharbha/Marathwada		293
Shet Tale		156
Evacuation of Power from EHV Substation		3
DPR- Not yet submitted by MSEDCL		
NSC		4
New Consumers		545
National Cyclone Risk Mitigation Project (Conversion of ovberhead network to U/G network)		45
Total DPR Schemes	**2,122**	**6,250**

5.7.7 MSEDCL in its reply to data gap stated that the Commission had approved the Capitalization for FY 2019-20 based on the projections made by MSEDCL in the MTR Petition. Subsequently new schemes were started and additional information of many schemes that has continued to be ongoing is available and has made the following submissions on selected schemes.

5.7.8 Reasons for deviation of major schemes as submitted by MSEDCL is shown below:

- In case of DDUGJY scheme the projections in previous petition for FY 2017-18 and FY 2018-19 were Rs. 272.07 Crore and Rs. 761.60 Crore. The expenditure incurred in previous years is expected to be capitalized in FY 2019-

20 and hence the projections FY 2019-20 are revised to Rs. 824 Crore as compared to previous projection of Rs. 636.68 Cr.

- For the IPDS Scheme MSEDCL has projected that the gap in projection and actual capitalization for FY 2017-18 and FY 2018-19 is Rs. 682.15 Crore. Hence the projections are increased to Rs. 962 Crore.
- Regarding the expenditure of DPDC, MSEDCL has submitted that due to the timely completion of projects the DPDC expenditure and funding is expected to increase by another Rs. 200 Crore. Accordingly MSEDCL has revised the projections to Rs. 665.18 Crore.
- The new schemes that were introduced in FY 2017-18 and FY 2018-19 and has not been considered in the MTR petition. The projections for these new schemes have been included in the current petition. These schemes includes Shet Tale, Saubhagya, HVDS and MSVVY.
- New Schemes introduced in FY 2019-20 included in FY 2019-20 include High Loss feeder scheme, System Strengthening Work and NRCMP

5.7.9 The Commission has perused the capitalization details of the schemes as claimed by MSEDCL for FY 2019-20. It is observed that, for the following DPR schemes, MSEDCL has claimed excess capitalization over and above their in-principle approved cost.

Table 5-23: Excess Capitalization during FY 2019-20 (Rs. Crore)

Major Schemes	Excess Capitalization in FY 2019-20
AMR	1.56
DTC Metering Phase-III	24.43
SPA:PE	61.65
P:SI	6.63
P:IE	9.19
Total	**103.46**

5.7.10 Regulation 23.2 of MYT Regulations, 2015 specifies the provisions to be referred while allowing Capitalisation.

"*The capital cost admitted by the Commission after prudence check shall form the basis for determination of Tariff:*

Provided that prudence check may include scrutiny of the reasonableness of the capital expenditure, financing plan including the choice and manner of funding, interest during construction, use of efficient technology, cost over-run and time

over-run, and such other matters as may be considered appropriate by the Commission for determination of Tariff."

5.7.11 As observed, some of the excess capitalisation is due to time over run of the schemes, and excess interest was incurred which would have been capitalised as IDC. Due to excess capitalisation, an undue burden of excess IDC is being passed on to consumers, which is not justifiable. Further, the Commission observes that MSEDCL does not maintain scheme-wise IDC computations. Instead IDC is computed on a notional basis for each scheme. In case of schemes with excess capitalisation over and above the in-principle approved capital cost, in this Order the Commission has decides to disallow100 % of IDC. The Commission also disallows Pending/Yet to approve DPR schemes of Rs 548.97 Crore for FY 2019-20 and the same may be allowed as and when the schemes will be approved by the Commission.

5.7.12 In addition, it is noted that MSEDCL has estimated Rs. 100 Crore towards capitalization of other Assets, which does not form part of any specific scheme on projection basis. For the purpose of provisional true-up, the Commission has not allowed such capitalization and shall be allowed at the time of final true-up of FY 2019-20, subject to prudence check.

5.7.13 Based on the above, the capitalization provisionally allowed for FY 2019-20 is as follows:

Table 5-24: Capitalization approved by Commission for FY 2019-20 (Rs crore)

Particulars	FY 2019-20		
	MTR Order	MSEDCL Actuals	Approved in this Order
Approved DPR Capitalisation amount		5690.71	5690.71
IDC claimed		9.85	9.80
Pending/ yet to approve DPR		548.97	-
Sub-total (a)		6249.54	5700.51
NDPR		219.49	219.49
%of NDPR to DPR		3.85%	3.85%
Allowable NDPR Capped (b)		219.49	219.49
Total Captalisation (c = a+b)	**2546.90**	**6469.03**	**5920.00**

5.7.14 Summary of Capitalisation approved by the Commission is as follows:

Table 5-25: Summary of Capitalisation approved by Commission for FY 2019-20

Particulars	MYT Order	MSEDCL Petition	Approved in this Order
Capitalisation	2546.90	6469.03	5920.00

5.7.15 Thus, for provisional truing up the Commission approves the Capitalisation of Rs. 5920.00 Crores for FY 2019-20, which shall be subject to prudence check at the time of final true-up.

5.8 Depreciation for FY 2019-20

MSEDCL's Submission

5.8.1 MSEDCL has submitted that depreciation for FY 2019-20 has been computed by considering the opening GFA arrived at by excluding grants and Consumer contribution. Depreciation rate used for computation for FY 2019-20 is actual weighted average rate for FY 2018-19.

5.8.2 The depreciation computed by MSEDCL for FY 2019-20, and claimed for provisional true-up is as shown in the table below:

Table 5-26: Depreciation as submitted by MSEDCL for FY 2019-20 (Rs. crore)

Particulars	MTR Order	MSEDCL Petition
Opening GFA	53,761.00	52,393.41
Depreciation	2,411.41	2,594.37
% Depreciation	4.49%	4.95%

5.8.3 MSEDCL has requested to allow the depreciation as submitted in the above table.

Commission's Analysis and Rulings

5.8.4 The Commission has taken the Opening GFA as the closing GFA approved for FY 2018-19 in Truing Up for computing the depreciation, and on the revised capitalization approved during FY 2019-20. Further, as per Regulation 25.2 (c) of the MYT Regulations, 2015, the Commission has excluded contribution from grants and consumer contribution for the purpose of computation of depreciation for FY2019-20. The relevant Regulations is reproduced as under.

> *"25.2 The expenses on such capital works shall be treated as follows :—*
> *(a) normative O and M expenses as specified in these Regulations shall be allowed ;*
> *(b) the debt-equity ratio, shall be considered in accordance with Regulation 26, after deducting the amount of such financial support received ;*
> ***(c) provisions related to depreciation, as specified in Regulation 27, shall not be applicable to the extent of such financial support received ;***
> *(d) provisions related to return on equity, as specified in Regulation 28 shall not be applicable to the extent of such financial support received ;*
> *(e) provisions related to interest on loan capital, as specified in Regulation 29 shall not be applicable to the extent of such financial support received***."**

5.8.5 The Commission sought yearly depreciation and GFA (with Asset class-wise break-up) having accumulated depreciation less than 70%, between 70% and 90% and greater than 90%. MSEDCL in its reply to data gap submitted the details of Depreciation as an Annexure to data gap and the same was reviewed. MSEDCL should maintain details of Depreciation and GFA in the same manner and should be furnished along with all future tariff Petitions.

Table 5-27: Depreciation approved for FY 2019-20 (Rs. crore)

Particulars	Approved in this Order
Opening GFA	52,374.60
Depreciation	2,665.53
% Depreciation	4.95%

5.8.6 As regards Depreciation rate for computation for FY 2019-20, the same is considered as actual weighted average rate for FY 2018-19.

5.8.7 Summary of depreciation approved by the Commission is as follows:

Table 5-28: Summary of Depreciation for FY 2019-20 (Rs. crore)

Particulars	MYT Order	MSEDCL Petition	Approved in this Order
Depreciation	2,411.41	2,594.37	2,665.53

5.8.8 Thus, for provisional truing up the Commission approves Depreciation expense at Rs. 2,665.53 for FY 2019-20, which shall be subject to prudence check at the time of final true-up.

5.9 Interest Expenses for FY 2019-20

MSEDCL's Submission

5.9.1 MSEDCL has submitted that the interest on long term loan for FY 2019-20 has been computed on normative basis linked to the normative loan addition during the year. The interest rate considered for estimating the interest expenses for FY 2019-20 is the weighted average interest rate computed for FY 2018-19.

5.9.2 MSEDCL has referred to Regulation 29.3 of MERC MYT Regulations, 2015, stating that the loan repayment is considered equal to depreciation for calculation of interest.

5.9.3 Considering the normative opening balance of loan equivalent to closing balance of loan considered for FY 2018-19 and repayment equal to depreciation the interest expenses as computed by MSEDCL is provided in the table below:

Table 5-29: Interest Expenses for FY 2019-20, as submitted by MSEDCL (Rs. Crore)

Particulars	FY 2019-20 (MTR)	FY 2019-20 (Normative)
Normative Outstanding Loan at beginning of the year	13,685.75	13,004.36
Loan Drawl	-	-
Loan Repayment	920.09	2,853.76
Normative Balance outstanding at the end of the year	2,411.30	2,594.37
Interest Rate	11.37%	10.28%
Average Balance of Net Normative Loan	12,940.14	13,134.05
Net Interest Expenses	1,471.02	1,349.54

Commission's Analysis and Rulings

5.9.4 The Commission sought data from MSEDCL to confirm if any retirement of assets was envisaged in FY 2019-20. MSEDCL stated that it is difficult to predict the retirement of assets during the year. However, after availability of Audited Accounts for FY 2019-20, the details of retirement of assets will be reported.

5.9.5 The Commission has considered the funding pattern for capitalization for FY 2019-20 in the same ratio as for the funding of proposed capital expenditure, in line with the methodology adopted by MSEDCL and after considering the approved quantum of capitalization as presented in the following table, subject to prudence check and review during the truing-up exercise.

Table 5-30: Funding Pattern approved by Commission (Rs. Crore)

Particular	Amount (Rs. crore)
Total Capitalization	5920.00
Less: Consumer Contribution	92.22
Less: Grants	2915.92
Balance to be funded	2911.86
Equity	328.16
Debt	2583.70
Equity (%)	11%
Debt (%)	89%

5.9.6 Regulation 29.5 of MYT Regulations, 2015 is as below:

"29.5 The rate of interest shall be the weighted average rate of interest computed on the basis of the actual loan portfolio at the beginning of each year :

Provided that at the time of Truing-up, the weighted average rate of interest computed on the basis of the actual loan portfolio during the concerned year shall be considered as the rate of interest:

Provided further that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest for actual loan shall be considered :"

5.9.7 Accordingly, as per provisions under the Regulations, the Commission has considered last available rate i.e., the weighted average Rate of interest as approved for FY 2018-19 which is 10.28%. The same has been allowed accordingly. The Opening loan for FY 2019-20 is considered same as closing balance of FY 2018-19 approved by the Commission.

Table 5-31: Interest Expenses approved by the Commission for FY 2019-20 (Rs. Crore)

Particulars	MTR Order	MSEDCL Petition	Approved in this Order
Opening Balance of Net Normative Loan	13,686	13,004	12,974
Less: Reduction of Normative Loan due to retirement or replacement of assets	-	-	-
Addition of Normative Loan due to capitalization during the year	920	2,854	2,584
Repayment of Normative Loan during the year	2,411	2,594	2,666
Closing Balance of Net Normative Loan	12,195	13,264	12,892
Closing Balance of Gross Normative Loan	12,940	13,695	12,933
Average Balance of Net Normative Loan	11.37%	10.28%	10.28%
Weighted average Rate of Interest on actual Loans (%)	1,471	1,350	1,329
Interest Expenses	**1,471**	**1,350**	**1,329**
Expenses Capitalized	-	-	-
Total Interest Expenses	**1,471**	**1,350**	**1,329**

5.9.8 Thus, for provisional truing up the Commission approves Rs. 1,329 Crores for Interest Expense for FY 2019-20, which shall be subject to prudence check at the time of final true-up.

5.10 Other Finance Charges

MSEDCL's Submission

5.10.1 MSEDCL has submitted that the finance charges for FY 2019-20 has been estimated based on the available information as shown in the table below:

Table 5-32: Other Finance Charges for FY 2019-20 submitted by MSEDCL (Rs. Crores)

Particular	Amount
Guarantee Charges	-
Finance Charges	23.04
Stamp Duty	1.12
Service Fee (Fund-raising charges)	6.94
Total	31.10

5.10.2 MSEDCL has requested the Commission to allow these charges as shown in the table above.

Commission Analysis

5.10.3 The Commission observes that the claim towards Other finance charges of the petitioner for FY 2019-20 is mostly in line with similar expense approved by the Commission in the past years. MSEDCL submitted the actuals of six months and projection of remaining six months for FY 2019-20 same as actuals of initial six months. Below is the breakup of "Other Finance Charge".

Table 5-33: Break up of Finance Charges for FY 2019-20

Particulars	Approved in this Order
Guarantee Charges	-
Finance Charges	23.04
Stamp Duty	1.12
Service Fee (Fund-raising charges)	6.94
Total	**31.10**

5.10.4 Commission analyzed the trend of Other Finance Charges and Closing Loan of that year and found them in line with the past trends.

Table 5-34: Finance Charge as percentage of Loan GFA

Particulars	FY 2017-18	FY 2018-19	FY 2019-20
Other Finance Charges	28.34	26.11	31.10
Closing Loan	13,266.10	12,973.91	12,892.08
Other Finance Charge as % of Closing Loan	**0.21%**	**0.20%**	**0.24%**

5.10.5 Hence, the Commission has approved the Other Finance Charges as Rs. 31.10 Crores for FY 2019-20 on provisional basis, which shall be subject to truing up.

Table 5-35: Other Finance Charges for FY 2019-20 as approved by Commission (Rs. crore)

Particulars	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved in this Order
Other Finance Charges	-	31.10	31.10

5.10.6 Thus, for provisional truing up the Commission approves Rs. 31.10 Crore as Other Finance Charge for FY 2019-20.

5.11 Return on Equity for FY 2019-20

MSEDCL's Submission

5.11.1 MSEDCL has submitted that Regulation 28.2 of MYT Regulations, 2015 provides for Return on Equity (RoE) for Distribution Licensee for both Wires and Supply Business.

5.11.2 As per the allocations matrix provided in Regulation 68 of MYT Regulations, 2015 MSEDCL has assigned the fixed assets in the ratio of 90% to 10% between wires and supply business for computation of RoE. Therefore MSEDCL has submitted that capital expenditure, capitalization , grants and equity are also divided in the same ratio.

5.11.3 For wires business, considering the provisions of the MYT Regulations MSEDCL has calculated the return on equity for wires and supply business as shown in the tables below:

Table 5-36: RoE for Wires Business for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL Petition
Equity at the beginning of the year (Wires)	11,699.43	10,553.23
Assets Capitalization		5,822.13
Equity portion of Assets Capitalization	912.40	295.34
Equity at the end of the year	**12,611.83**	**10,848.57**
Return on Computation		
Return on Equity at the beginning of the year- 15.5%	1,813.41	1,635.75
Return on Normative Equity portion of Asset Capitalization	70.71	22.89
Interest on Equity portion above 30% @11.83%p.a	21.86	-
Total Return on Equity for wires	**1,905.98**	**1,658.64**

5.11.4 For supply business, MSEDCL has computed the return on equity at 17.5% on average equity based upon the opening balance of equity and normative additions during the year in the table below:

Table 5-37: RoE for Supply Business for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL Petition
Equity at the beginning of the year (Supply)	1,299	1,173
Assets Capitalization		646.90
Equity portion of Assets Capitalization	101	33
Equity at the end of the year	1,401	1,206
Return on Computation		
Return on Equity at the beginning of the year- 17.5%	227.39	205.28
Return on Normative Equity portion of Asset Capitalization	8.87	2.87
Interest on Equity portion above 30% @11.83%p.a	3.33	
Total Return on Equity	**239.60**	**208.15**

Commission's Analysis and Rulings

5.11.5 The closing equity approved for FY 2018-19 is Rs. 10,553 Crores and Rs. 1,173 Crores respectively for wire and supply business, details of which is explained in the earlier chapter of Truing up of FY 2017-18 and FY 2018-19.

5.11.6 Thus, the opening equity for FY 2019-20 is considered same as the closing equity approved for FY 2018-19 at Rs. 10,553 Crores and Rs. 1,173 Crores for wire and supply business respectively.

5.11.7 The Commission has approved the funding pattern based on the approved capitalisation for FY 2019-20, as discussed in the earlier Section on interest expenses.

5.11.8 The RoE approved for the purpose of Provisional truing up of FY 2019-20 in accordance with the Regulation 28.2 of MYT Regulations, 2015, is as follows:

Table 5-38 : Return on Equity (Wires) for FY 2019-20 approved by Commission (Rs. crore)

Particulars	%	FY 2019-20
Equity at the beginning of the year		10,553.23
Equity portion of Assets Capitalization		295.34
Equity at the end of the year		10,848.57
Return on Equity Computation		
Return on Equity at the beginning of the year -@15.5%	15.50%	1,635.75
Return on Normative Equity portion of Asset Capitalization - @15.5%/2	7.75%	22.89
Total Return on Equity		**1,658.64**

Table 5-39: Return on Equity (Supply) for FY 2019-20 approved by Commission (Rs. crore)

Particulars	%	FY 2019-20
Equity at the beginning of the year		1,173.03
Equity portion of Assets Capitalization		32.82
Equity at the end of the year		1,205.85
Return on Equity Computation		
Return on Equity at the beginning of the year -@17.5%	17.50%	205.28
Return on Normative Equity portion of Asset Capitalization - @17.5%/2	8.75%	2.87
Total Return on Equity		**208.15**

Table 5-40: Summary of RoE approved by Commission (Wires+Supply) (Rs. crore)

Particulars	MTR Order	MSEDCL Petition	Approved in this Order
RoE for Wires Business	1,905.98	1,658.64	1,658.64
RoE for Retail Supply Business	239.60	208.15	208.15
Return on Equity	**2,145.59**	**1,866.79**	**1,866.79**

5.11.9 Thus, for provisional truing up the Commission approves Return on Equity of Rs. 1866.79 Crore for FY 2019-20.

5.12 Interest on Working Capital for FY 2019-20

MSEDCL's Submission

5.12.1 MSEDCL has submitted that the Interest on Working Capital for wires business has been computed in accordance with Regulation 31.3 of MERC MYT Regulations, 2015. The rate of interest on working capital is computed as the base rate as on date of filing of Petition plus 150 basis points, according to the regulation.

5.12.2 Accordingly the rate of interest considered for computation of working Capital by MSEDCL for wires business is 9.50% (8%+1.5%).

5.12.3 MSEDCL has referred to Regulation 29.11 of the 1st Amendment of MYT Regulations, 2015 for computation of interest on security deposit and the rate of interest on security deposit is computed as the MCLR on 01 April 2019 plus 150 Basis points. Accordingly the interest rate on consumer security deposit computed by MSEDCL is 10.05% applied on security deposit for FY 2019-20 obtained by considering a nominal growth of 5% over the amount of consumer deposit collected from the consumers for the previous year. The computation for Interest on Working Capital for MSEDCL's wire business is as shown below:

Table 5-41: Interest on Working Capital and Security Deposit for Wires Business for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL Petition
Computation of Working Capital		
O&M expenses for a month	417.92	385.01
Maintenance Spares at 1% of Opening GFA	522.16	471.71
One and half months equivalent of the expected revenue from charges for use of Distribution Wires	1,246.52	1,281.50
Less:		
Amount of Security Deposit from Distribution System users	(845.12)	(792.07)
Total Working Capital Requirement	**1,341.49**	**1,346.16**
Rate of Interest (% p.a)	9.45%	9.50%
Interest on Working Capital	**126.77**	**127.89**
Interest on Security Deposit		
Rate of Interest (% p.a)	9.65%	10.05%
Interest on Security Deposit	**81.55**	**79.60**

5.12.4 MSEDCL has claimed that the Interest on Working Capital for retail supply business has been computed in accordance with Regulation 31.4 of MERC MYT Regulation. Thus the Interest rate on Working Capital for supply business is computed based on the interest rate of 9.50% and the rate of Interest con consumer security deposit is computed as 10.05%. The Computation of working capital interest for retail supply is as shown in the table below:

Table 5-42: Interest on Working Capital and Consumers' Security Deposit for Supply Business for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL Petition
Computation of Working Capital		
O&M expenses for a month	225.03	207.32
Maintenance Spares at 1% of Opening GFA	58.02	99.68
One and half months equivalent of the expected revenue from sale of electricity at the prevailing Tariff, and including revenue from cross-subsidy surcharge and Additional Surcharge	8,651.54	9,695.24
Less:		
Amount of Security Deposit from retail supply consumers	(7,606.07)	(7,128.59)
One month equivalent of cost of power purchase, Transmission Charges and MSLDC Charges	(4,800.17)	(5,097.75)
Total Working Capital Requirement	(3,471.65)	(2,224.11)
Computation of Working Capital Interest		
Rate of Interest (% p.a)	9.45%	9.50%

Particulars	MTR Order	MSEDCL Petition
Interest on Working Capital (Normative Basis)	-	-
Interest on Security Deposit		
Rate of Interest (% p.a)	9.65%	10.05%
Interest on Security Deposit	**733.99**	**716.42**

5.12.5 MSEDCL has requested the Commission to approve the Interest on Working capital for wires business and supply business as shown in the computation above.

Commission Analysis

5.12.6 The Commission has worked out the working capital requirement on a normative basis, which is based on the approved parameters as per this Order. Considering the negative impact of security deposit, the normative working capital requirement works out to be negative and considered as nil for supply business.

5.12.7 As regards Consumer Security Deposit, the Commission has considered Regulation 29.11 of the 1st Amendment of MYT Regulations, 2015 for computation of interest on security deposit and the rate of interest on security deposit is computed as the MCLR on 01 April 2019 plus 150 Basis points. Accordingly the interest rate on consumer security deposit computed is 10.05% applied on security deposit for FY 2019-20 obtained by considering a nominal growth of 5% over the amount of consumer deposit collected from the consumers for the previous year.

5.12.8 The Commission has reworked the IoWC in accordance with the MYT Regulations, 2015 norms and based on parameters such as the O&M Expenses, Wires ARR and Supply ARR approved in this Order.

Table 5-43: Interest on Working Capital and Security Deposit for Wires Business as approved by Commission for FY 2019-20 (Rs. crore)

Particulars	FY 2019-20	
	MSEDCL Petition	Approved in this order
O&M expenses for a month	385.01	388.52
Maintenance Spares at 1% of Opening GFA	471.71	513.94
One and half months equivalent of the expected revenue from sale of electricity including revenue from CSS and Additional Surcharge	1,281.50	1,318.77
Less: Amount of Security Deposit	-792.07	-792.07
Total Working Capital Requirement	**1,346.16**	**1,429.17**
Computation of Working Capital Interest		
Rate of Interest (%) = SBI Base Rate + 150 basis points	9.50%	9.50%

Particulars	FY 2019-20	
	MSEDCL Petition	Approved in this order
Interest on Working Capital	**127.89**	**135.77**
Interest on Security Deposit		
Rate of Interest (%) = SBI Base Rate + 150 basis points	10.05%	10.55%
Interest on Security Deposit	**79.60**	**79.60**

Table 5-44: Interest on Working Capital and Consumers' Security Deposit for Supply Business as approved by Commission for FY 2019-20 (Rs crore)

Particulars	FY 2019-20	
	MSEDCL Petition	Approved in this order
O&M expenses for a month	207.32	209.20
Maintenance Spares at 1% of Opening GFA	99.68	57.10
One and half months equivalent of the expected revenue from sale of electricity including revenue from CSS and Additional Surcharge	9,695.24	9,695.24
Less: Amount of Security Deposit	-7,128.59	-7,128.59
Less: One month equivalent of cost of power purchase, Transmission Charges and MSLDC Charges	-5,097.75	-5,097.75
Total Working Capital Requirement	**-2,224.11**	**-2,264.79**
Computation of Working Capital Interest		
Rate of Interest (%) = SBI Base Rate + 150 basis points	9.50%	9.50%
Interest on Working Capital	-	-
Interest on Security Deposit		
Rate of Interest (%) = SBI Base Rate + 150 basis points	10.05%	10.05%
Interest on Security Deposit	**716.42**	**716.42**

5.12.9 Accordingly, the IoWC and the Interest on Security Deposits from Consumers and Distribution System Users approved for FY 2019-20 is as follows:

Table 5-45: IoWC and Interest on Security Deposit as approved by Commission FY 2019-20 (Wires+Supply) (Rs. crore)

Particulars	MTR Order	MSEDCL Petition	Approved in this Order
IoWC & Interest on CSD (Wires)	208.32	207.49	215.37
IoWC & Interest on CSD (Supply)	733.99	716.42	716.42
IoWC & Interest on CSD	**942.31**	**923.91**	**931.80**

5.12.10 Thus, for provisional truing up the Commission approves IoWC and Interest on Consumer Security Deposit for FY 2019-20 at Rs. 931.80 Crore

5.13 Provision for Bad Debts for FY 2019-20

MSEDCL's Submission

5.13.1 MSEDCL has claimed provisioning towards Bad Debts for FY 2019-20 in line with Regulations 73 and 82 of the MYT Regulations 2015.The Regulation allows for provisioning of bad debt up to 1.5% of the amount claimed as receivables by the licensee duly allocated for wires and supply businesses respectively.

5.13.2 The claim of MSEDCL for provisioning of bad debts is based on receivables estimated for FY 2019-20. MSEDCL has submitted that it has used the actual value of receivables based on the data available till September 2019 and the remaining values are projected till March 2020 to arrive at the total receivables for FY 2019-20.

5.13.3 It has further submitted that for the interest part of receivables a y-o-y rise of 2% and 10% is taken for Non-AG and AG, while for the principle part a y-o-y rise of 2% and 10% is taken for Non-AG and AG respectively. MSEDCL stated that the provision of bad debts claimed for FY 2019-20 shall only be written-off after the approval of the Commission.

5.13.4 The computation of MSEDCL for provision of bad debts for FY 2019-20 as submitted by MSEDCL is as shown in the table below:

Table 5-46: Provision for Bad Debts for (Wires+Supply) Business for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Opening Balance of Provision for bad and doubtful debts	1,638.42	-
Receivables for the year		56,362.04
% of Receivables		1.50%
Provision for Bad & Doubtful Debts for Wires Business		**845.43**
Estimated bad and doubtful debts written off		845.43
Closing Balance of Provision for bad and doubtful debts	1,638.42	-
Closing Balance as a % of receivables		0.00%

5.13.5 Total provision of bad and doubtful debts is separated into wire and supply business based on the allocation matrix provided by MSEDCL.

Table 5-47: Provision for Bad Debts for Wires and Supply Business for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Bad Debt Provision for Wires business	-	84.54
Bad Debt Provision for Retail Supply business	-	760.89
Bad Debt Provision	**-**	**845.43**

Commission's Analysis and Ruling

5.13.6 The Commission observed that there is significant increase in total receivable of MSEDCL in FY 2019-20 compared to previous years. As per Audited accounts of FY 2018-19 Trade Receivables is Rs. 48,842 Crores and MSEDCL FY 2019-20 estimated is Rs. 56363 Crore which is 15% increase from the previous year. The Commission sought basis of estimated trade receivables for FY 2019-20 based on provisional half yearly accounts. MSEDCL submitted the following basis estimating the receivables. Non-AG Receivable till 30th September 2019 is increased by 2% to arrive at Non AG receivable till 31.03.2020. Principal amount of AG Receivable is increased by 5% and Interest amount increased by 10% to arrive at AG receivable till 31.03.2020. Thus total receivable of MSEDCL in FY 2019-20 is estimated at Rs. 56,362 Crore.

Table 5-48: Estimation of receivables for FY 2019-20 by MSEDCL

Period	Particulars	Rise (%)	Principal (In Crore)	Rise (%)	Interest (In Crore)	Total (In Crore)
Upto 30.09.2019	Non AG		12.387		5,461	17,848
	AG		21,003		14,640	35,643
	Total		**33,390**		**20100**	**53,490**
Upto 31.03.2020	Non AG	2%	12,635	2%	5,570	18,205
	AG	5%	22,035	10%	16,103	38,138
	Total		**34,688**		**21,674**	**56,362**

5.13.7 The Commission observes that in view of the collection efficiency as reported by MSEDCL of around 95%, the estimated receivables for FY 2019-20 is very high. As can be observed the total receivable as projected by MSEDCL here is around Rs. 56000 Crore which is almost 80% of the annual ARR of MSEDCL. This is an alarming situation. Regulatory accounting is on accrual basis but the low collection efficiency will have an adverse impact on MSEDCL's cash flow and financial stability. In view of the above, in their own interest and financial stability, MSEDCL needs to seriously work out an action plan for improving the collection efficiency. Such concrete and plan should be submitted to the Commission within 3 months of this order. The Commission also observes that during the public consultation process of the present petition, many consumers had highlighted the mounting arrears/receivables position of MSEDCL and

raised their concerns and objection on the same. In this context, for provisional truing up Commission has considered the receivables at Rs. 48,842 Crores same as FY 2018-19 against as claimed by MSEDCL.

5.13.8 Accordingly, for the provisional truing-up of FY 2019-20, the Commission has approved the provision for Bad Debts at Rs. 732.63 Crore, subject to subsequent truing-up after prudence check.

Table 5-49: Provision for Bad Debts (Wire) for FY 2019-20 as approved by Commission (Rs. crore)

Particulars	FY 2019-20	
	MSEDCL Petition	Approved in this order
Receivables for the year	5,636.20	4,884.20
Opening Balance of Provision of Bad and Doubtful Debt as % of Receivables	1.50%	1.50%
Provision for Bad & Doubtful Debts during the year	84.54	73.26

Table 5-50:Provision for Bad Debts (Supply) for FY 2019-20 as approved by Commission (Rs. crore)

Particulars	FY 2019-20	
	MSEDCL Petition	Approved in this order
Receivables for the year	50,725.83	43,957.82
Opening Balance of Provision of Bad and Doubtful Debt as % of Receivables	1.50%	1.50%
Provision for Bad & Doubtful Debts during the year	760.89	659.37

Table 5-51: Provision for Bad Debts for FY 2019-20 as approved by Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Provision for Bad & Doubtful Debts	-	845.43	732.63

5.14 Other Expenses for FY 2019-20

MSEDCL's Submission

5.14.1 MSEDCL has claimed 'Other Expenses' comprising expenditure on account of Non-Moving items written off, interest to suppliers/contractors, Incentive to distribution

franchisee and other expenses viz. compensation for injuries to staff and outsiders. MSEDCL has estimated the Other Expenses for FY 2019-20 considering provisional figures for the first six months and projections for the remaining six months.

5.14.2 The details of other expenses as claimed by MSEDCL in the MYT Petition is provided in the table below:

Table 5-52: Other Expenses for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Compensation for injuries, death to staff	1.36	1.26
Compensation for injuries, death to others	16.33	15.22
Loss on obsolescence of fixed Assets	-	1.64
Sundry debit balances written off	-	1.81
Non Moving Items	3.81	16.89
Others	2.63	7.74
Other Expenses for previous years	-	5.52
Expected Credit loss on other receivables	45.66	-
Total	**69.79**	**50.08**

Commission's Analysis and Ruling

5.14.3 For provisional truing-up of FY 2019-20, the Commission has noted the past trend of "Other Expense" and found the present claim of MSEDCL under "Other Expense" to be on similar lines. Thus for the purpose of provisional true up, the Commission allows Rs. 50.08 Crore, which shall be trued-up, subject to prudence check at the time of truing up of FY 2019-20.

5.14.4 Accordingly, the Commission has approved the following towards Other Expenses, subject to prudence check at the time of true-up.

Table 5-53: Other Expenses for FY 2019-20 as approved by Commission (Rs. crore)

Particular	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved in this order
Compensation for injuries, death to staff	1.36	1.26	1.26
Compensation for injuries, death to others	16.33	15.22	15.22
Loss on obsolescence of fixed Assets	-	1.64	1.64
Sundry debit balances written off	-	1.81	1.81
Non Moving Items	3.81	16.89	16.89
Others	2.63	-	-

Particular	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved in this order
Other Expenses for previous years	-	5.52	5.52
Other Sundry Expenses	-	7.74	7.74
Expected Credit loss on other receivables	45.66	-	-
TOTAL	**69.79**	**50.08**	**50.08**

5.14.5 Thus, for provisional truing up the Commission approves Rs 50.08 Crore under Other Expense for FY 2019-20.

5.15 Contribution to Contingency Reserves for FY 2019-20

MSEDCL's Submission

5.15.1 MSEDCL has estimated the provision for contribution to contingency reserves as per Regulation 34 of MYT Regulations, 2015. The relevant extract of the regulation is provided below for easy reference:

> *"Where the Licensee has made a contribution to the Contingency Reserve, a sum not less than 0.25 per cent and not more than 0.5 per cent of the original cost of fixed assets shall be allowed annually towards such contribution in the calculation of Aggregate Revenue Requirement :*
>
> *Provided that where the amount of such Contingency Reserves exceeds five (5) per cent of the original cost of fixed assets, no further contribution shall be allowed :*
>
> *Provided further that such contribution shall be invested in securities authorized under the Indian Trusts Act, 1882 within a period of six months of the close of the Year."*

5.15.2 MSEDCL has submitted the contribution to contingency reserves for FY 2019-20 at 0.25% of the estimated opening GFA (including grants and consumer contribution) as shown in the table:

Table 5-54: Contribution to Contingency Reserve for FY 2019-20 submitted by MSEDCL(Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Contribution to Contingency Reserve	-	**142.85**

5.15.3 MSEDCL has submitted that it has claimed the investment on contingency reserves for FY 2019-20 on similar lines as the investment made in FY 2018-19 and will make the actual investment as per the provisions of the MYT Regulations, 2015 once the

approval of the Commission is received.

Commission's Analysis and Ruling

5.15.4 Regulation 36 of the MYT Regulations, 2015 provides for appropriation to the Contingency Reserve of not less than 0.25 per cent and not more than 0.5 per cent of the original cost of Fixed Assets annually towards in the calculation of ARR. The amount is to be invested in securities authorized under the Indian Trusts Act, 1882 within six months of the close of the financial year. The Commission has not considered any amount towards contribution to Contingency Reserve in FY 2017-18. The Commission has approved Rs 126 Crores into contribution to contingency reserves in FY 2018-19 based on the actual investment on MSEDCL.

5.15.5 In the MTR Order 195 of 2017 Commission has not allowed Contingency Reserve for FY 2019-20 and passed the following order:

5.15.6 "The Commission observes that MSEDCL has not claimed contribution to contingency reserve since FY 2011-12 and therefore no investment have been made subsequent to FY 2011-12. However, for projection purpose Commission has been allowing regularly, but no investments are made out of it. Since MSEDCL is not making any investments even after allowing such expenses in the past, the Commission has not allowed any Contingency Reserve in line with the claim of MSEDCL".

5.15.7 In data gaps, quoting the above Order the Commission sought justification of Rs 141.58 Crore estimated towards contribution to contingency reserve in FY 2019-20. In reply to data gaps MSEDCL submitted that as per the Regulation 34 of the MYT Regulations 2015, MSEDCL has made the investment for FY 2018-19. Considering this, MSEDCL has claimed the contribution to contingency reserve for FY 2019-20. Once the approval is available, MSEDCL shall make the necessary investments.

5.15.8 Thus, the Commission has provisionally approved the Contribution contingency reserves at 0.25% of the estimated opening GFA (including grants and consumer contributions) subject to truing up, as shown in the following table:

Table 5-55: Contribution to Contingency Reserve for FY 2019-20 as considered by Commission (Rs. crore)

Particulars	MSEDCL	Approved in this Order
Opening GFA including Grant & consumer Contribution	57,138.42	57,104.53
% of GFA	0.25%	0.25%
Contribution to Contingency Reserve	**142.85**	**142.76**

5.15.9 Thus, the Commission approves Rs. 142.76 provisionally for Contribution to Contingency Reserve for FY 2019-20.

5.16 Income Tax for FY 2019-20

MSEDCL's Submission

5.16.1 MSEDCL has not claimed any Income Tax for FY 2019-20. For FY 2018-19, MSEDCL has claimed in the petition that it has paid Income Tax amounting to Rs. 215.08 Crore which is as per the Audited book of accounts for the financial year.

Commission's Analysis

5.16.2 The Commission has verified the income tax paid by MSEDCL from the audited accounts note 37(13) and approved as actual as submitted by MSEDCL for FY 2018-19. As per Regulation 33.1 of MERC MYT Regulation 2015, the Commission shall provisionally approve Income Tax payable as per latest audited accounts available, subject to prudence check. The relevant Regulation is reproduced below for ease of reference.

> *"33.1 The Commission, in its MYT Order, shall provisionally approve Income Tax payable for each year of the Control Period based on the actual Income Tax paid by the Generating Company or Licensee or MSLDC, in case the Generating Company or Licensee or MSLDC has not engaged in any other regulated or unregulated Business or Other Business, as allowed by the Commission relating to the electricity Business regulated by the Commission, as per latest available Audited Accounts, subject to prudence check"*

5.16.3 The latest available audited accounts is of FY 2018-19 and the Tax paid as per FY 2018-19 is Rs. 213.89 Crores, which was verified from the copy of Tax challans furnished by MSEDCL. Thus, as per Regulation 33.1 of MERC MYT Regulation 2015, the Commission provisionally approves income tax of Rs. 213.89 Crore for FY 2019-20.**Thus, the Commission provisionally approves income tax of Rs. 213.89 Crore for FY 2019-20 subject to prudence check at the time of final True up.**

5.17 Incentives and Discounts for FY 2019-20

MSEDCL's Submission

5.17.1 MSEDCL has estimated the Incentives and discounts on a provisional basis based on the data available for first six months of FY 2019-20. For the remaining six months it has considered the same figures as of first six months. The Incentives and discounts as estimated provisionally by MSEDCL is as shown in the table below:

Table 5-56: Incentives and Discounts for FY 2019-20 submitted by MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Incentives/Discounts	271.86	307.03

Commission's Analysis and Ruling

5.17.2 The Commission noted the past trend of incentive and discount approved to MSEDCL. In truing up of FY 2017-18 and FY 2018-19, the Commission approved Rs 242.40 Crore and Rs. 287.38 Crore after verifying it from the audited accounts. The Commission found the present claim of Incentive and Discount for FY 2019-20 is mostly in line with the past trend. For FY 2019-20, audited accounts is not available at the time of issuance of Order. Based on the available information of first six months Incentives/Discounts comes out at Rs. 153.51 Crores. The Commission for the remaining six months considered it to be equal to first six months. Thus, the Commission has provisionally approved incentives and discounts as shown in the below table, subject to prudence check at the time of truing-up.

Table 5-57: Incentives and Discounts approved for FY 2019-20 (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Incentives/Discounts	271.86	307.03	307.03

5.17.3 Thus, the Commission provisionally approves Rs 307.03 Crore for Incentives and Discount for FY 2019-20.

5.18 RLC Refund for FY 2019-20

MSEDLC's submission

5.18.1 MSEDCL has submitted that it has made an RLC refund of Rs. 1.84 Crore in FY 2019-20 as per actual data available for the first six months of FY 2019-20. MSEDCL has requested the Commission to approve the amount refunded for FY 2019-20 as shown in the table below:

Table 5-58: RLC refund for FY 2019-20 submitted by MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
RLC Refund	-	1.84

Commission's Analysis and Ruling

5.18.2 The Commission noted that RLC refund approved by the Commission for FY 2019-20 as per actual data available for the first six months of FY 2019-20, MSEDCL has made an RLC refund of Rs. 1.84 Crore. Thus, the Commission provisionally approves Rs. 1.84 Crore as RLC refund for FY 2019-20 is as shown in the table below:

Table 5-59: RLC refund approved for FY 2019-20 (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this order
RLC Refund	-	1.84	1.84

5.18.3 Thus, for provisional truing up the Commission approves Rs. 1.84 Crore as RLC refund for FY 2019-20.

5.19 Non-Tariff Income for FY 2019-20

MSEDCL's Submission

5.19.1 MSEDCL has certain sources of non-tariff income viz. interest on arrears of consumers, delayed payment charges, interest on staff loans and advances, sale of scrap, interest on investment etc.

5.19.2 MSEDCL has submitted that based on the information available for Non-Tariff Income for first six months and the projections for the remaining six months, Non-Tariff Income for FY 2019-20 has been estimated as given in the table below :

Table 5-60: Non-Tariff Income for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Rents of land or buildings	1.27	1.03
Sale of Scrap	56.10	52.05
Income from investments	17.25	18.50
Interest from Franchisee	-	-
Income from sale of tender documents	6.88	8.92
Prompt payment discount from REC/PFC	16.22	12.16
Other/Miscellaneous receipts	1,006.03	269.00
Total	**1,103.75**	**361.66**

5.19.3 MSEDCL has submitted that in accordance with Regulation 36.3 of the MYT Regulations, 2015 it has not considered Delayed Payment Charges and Interest on DPC as non-tariff income.

5.19.4 MSEDCL has not considered income from grants and contribution under non-tariff income as the treatment as it has submitted that the treatment to the same has already been considered while computing depreciation for FY 2019-20.

Commission's Analysis and Ruling

5.19.5 The Commission has examined various heads under which MSEDCL has proposed under Non-Tariff Income. As observed, these heads have been projected by MSEDCL

based on the information available for Non-Tariff Income for first six months and the projections for the remaining six months Non-Tariff Income for FY 2019-20.

5.19.6 Regarding the income head 'miscellaneous receipts', it is noted that there is significant difference in amount estimated in the present Petition and that approved in the MTR Order. It is noted that in the MTR Order such head was projected purely on estimation basis and considered the amount of consumer contribution and grants. However based on change in accounting practice, this amount of consumer contribution and grants is no more considered as non-tariff income. Thus the present projection is lower than earlier approved amount.

5.19.7 The Commission reviewed the past trend of major heads of Non-Tariff Income and found them to be mostly in line with the projections against those heads. Thus, the Commission approves Rs. 361.66 Crores as Non-Tariff Income on provisional basis, subject to truing-up after prudence check.

5.19.8 In view of the above, the Commission has approved the following Non-Tariff Income provisionally for FY 2019-20.

Table 5-61: Non-Tariff Income for FY 2019-20, as approved by Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this order
Rents of land or buildings	1.27	1.03	1.03
Sale of Scrap	56.10	52.05	52.05
Income from investments	17.25	18.50	18.50
Interest from Franchisee	-	-	-
Income from sale of tender documents	6.88	8.92	8.92
Prompt payment discount from REC/PFC	16.22	12.16	12.16
Other/Miscellaneous receipts	1,006.03	269.00	269.00
Total	**1,103.75**	**361.66**	**361.66**

5.19.9 Thus, the Commission provisionally approves Rs. 361.66 Crore as Non-Tariff Income for FY 2019-20.

5.20 Income from Wheeling Charges for FY 2019-20

MSEDCL's Submission

5.20.1 MSEDCL has estimated the wheeling charges for FY 2019-20 to be the same as that estimated for FY 2018-19, The income from wheeling charges as submitted by MSEDCL is shown in the Table below:

Table 5-62: Income from Wheeling Charges for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Income from Wheeling Charges	1.61	1.79

Commission's Analysis and Ruling

5.20.2 The Commission has accepted the wheeling projected by MSEDCL on provisional basis subject to prudence check at the time of truing up. The approved wheeling charge is as shown below.

Table 5-63: Income from Wheeling Charges for FY 2019-20 as approved by Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Income from Wheeling Charges	1.61	1.79	1.79

5.21 Income from Open Access Charges for FY 2019-20

MSEDCL's Submission

5.21.1 MSEDCL has estimated income from OA Charges in FY 2019-20 by considering the available information for the first six months till September 2019 and considering to remain same for the remaining six months. The Income from Open Access charges as submitted by MSEDCL is as shown in the table below :

Table 5-64: Income from Open Access Charges for FY 2019-20 as per MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Income from Open Access Charges	674.71	211.92

Commission's Analysis and Ruling

5.21.2 Commission noted that, MSEDCL has estimated income from OA Charges in FY 2019-20 by considering the available information for the first six months till September 2019. In FY 2018-19 MSEDCL has retained the Transmission charge Open access revenue of Rs 182.33 Cr and this Commission has disallowed the same and directed to transfer the amount to STU within six months of issuance of this order in equal monthly installments, as elaborated in the truing up chapter of this Order. In accordance with the ruling of the Commission in the Order in Case No. 361 of 2018 dated 14 June, 2019 and Regulations 14 (1) (v) of the DOA Regulations, 2019 (First Amendment), Distribution Licensees shall not retain the transmission charges collected from partial open access consumers and shall arrange to remit the same to STU in the immediate

next billing cycle, as and when levied/collected from such open access consumers. STU shall maintain separate account of such revenue from transmission charges.

5.21.3 A similar treatment is adopted while provisionally approving the income from OA charges in FY 2019-20. A same level of transmission charges as in FY 2018-19 is expected to be included in the estimated income from OA charges in FY 2019-20 and thus for the purpose of provisional true-up has disallowed Rs. 182.33 Crore from the projected income from OA charges, while approving the net income from OA charges for FY 2019-20. The present approval is on provisional basis and the same shall be true-up on actual basis, subject to prudence check.

5.21.4 The approved income from Open Access Charges is as shown below.

Table 5-65: Income from Open Access Charges for FY 2019-20 as approved by Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Income from Open Access Charges	674.71	211.92	29.59

5.21.5 Thus, the Commission approves Rs. 29.59 Crore as Income from Open Access Charges for provisional truing up of 2019-20.

5.22 Impact of payment to MPECS in FY 2019-20

5.22.1 The Commission in the MYT Order dated 3rd November 2016 has approved following amount towards payment to MPECS. MSEDCL has considered the same amount for the respective year. The same amount has been allowed by the Commission in the MTR order dated 12 September 2018.

Table 5-66: Impact of payment to MPECS, as approved by Commission (Rs. Crore)

Financial Year	Amount (Rs. Crore)
FY 2017-18	46.20
FY 2018-19	43.18
FY 2019-20	40.17

5.22.2 In accordance with the same MSEDCL has claimed Rs. 40.17 Crore towards payment to MPECS for FY 2019-20.

Commission's Analysis and Ruling

5.22.3 Commission vide its Order dated 2nd May 2016, has determined the monthly user charges to be paid to MPECS by MSEDCL. The Commission shall consider the actual amount towards this head at the time of truing up of FY 2019-20.

Table 5-67:of payment to MPECS for FY 2017-18 and FY 2018-19 as approved by Commission (Rs. crore)

Particular	FY 2017-18		
	MTR Order	MSEDCL Petition	Approved in this order
Impact of Payment to MPECS	40.17	40.17	40.17

5.22.4 Thus, for provisional truing up the Commission allows Rs 40.17 Crores as Impact of payment to MPECS for FY 2019-20.

5.23 Past period Adjustment allowed by Commission for FY 2019-20

MSEDCL's Submission

5.23.1 MSEDCL has submitted that Commission in the MYT Order dated 3 June 2016 had considered the net impact of past period while approving the revenue for MSEDCL from revised tariffs for third control period and MSEDCL had accordingly claimed the same in the MTR Petition

5.23.2 The Commission in the MTR Order had approved a past period impact of Rs. 853 Crore and MSEDCL has claimed the same in the current petition.

Commission's Analysis and Ruling

5.23.3 In the MTR order, following Revenue Gaps/ Surplus were approved. For FY 2017-18, a revenue surplus of Rs. 1,116 Crore was approved. For FY 2018-19 a revenue surplus of Rs. 1032 Crore was approved. In case of FY 2019-20 a revenue gap of Rs. 853 Crore was approved.

5.23.4 Thus, Commission has approved the past period adjustments of Rs 853 Crore, as approved in the MTR Order dated 12th September 2018. The same has been considered by the Commission in Provisional Truing up of revenue gap in FY 2019-20.

5.24 Revenue Gap Recovery Allowed for FY 2019-20

MSEDCL's Submission

5.24.1 MSEDCL has submitted Commission in the MTR Order had approved recover past revenue gap as shown in the Table below and is claiming the same in the current MYT Petition.

Table 5-68: Revenue Gap Recovery allowed (Rs. Crore)

Particulars	Formula	FY 2019-20
ARR approved by the Commission	A	71,616.52
Approved revenue at existing tariff	B	69,086.17
Approved Revenue gap	C=A-B	2,530.35
Projected Revenue at Approved Tariff	D	74,179.45
Additional Recovery from approved tariff	E=D-B	5,093.28
Previous Revenue Gap recovery allowed after adjustment of current year Revenue Gap	F= E-C	2,562.93

Commission's Analysis and Ruling

5.24.2 Commission has approved the past revenue gap of Rs 2,562 Crore, as approved in the MTR Order dated 12th September 2018. The same has been considered by the Commission in Provisional Truing up of revenue gap in FY 2019-20.

5.25 Revenue for FY 2019-20

MSEDCL's Submission

5.25.1 MSEDCL has submitted that based on the available information for six months for the financial year up till September 2019 and projection for the remaining 6 months the revenue for FY 2019-10 has been estimated by MSEDCL as shown in the table:

Table 5-69: Revenue for FY 2019-20, as submitted by MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Revenue	74,179.45	76,371.19

5.25.2 MSEDCL has requested the Commission to approve the revenue from sale of power as shown in the Table.

Commission's Analysis and Ruling

5.25.3 The Commission observes that, the Revenue for FY 2019-20 submitted by MSEDCL is unaudited, which is based on the six months actuals i.e. FY 2019-20 (H1) and estimation for the remaining six months i.e. FY 2019-20 (H2). Thus, for the purpose of the Provisional True-up, the Commission has accepted the first half yearly revenue submitted by MSEDCL and estimated the remaining six months revenue based on the approved Sales for FY 2019-20 as discussed in the above section of the MYT Order. In addition, the Commission observed that, MSEDCL has submitted the Revenue of Rs 1818 Crore from Fuel Adjustment Charges (FAC) for the FY 2019-20 H1, whereas the

same was not considered for FY 2019-20 (H2) revenue estimations. Thus, for the purpose of provisional estimations, the Commission has estimated FAC Revenue of Rs. 2,992 Crore, by considering the FAC rate as the average of Category wise and Month-wise Fuel Adjustment Charges available from October 2019 to February 2019 (as available on the MSEDCL's Website under General Commercial Circulars for the respective months), whereas for the month of March 2019, the Commission has considered the latest FAC rate of February 2019. The revenue estimated by the Commission is allowed on provisional basis and shall be considered at actuals at the time of final true up, subject to prudence check. The summary of the approved Revenue for FY 2019-20 is provided in the table below:

Table 5-70: Revenue for FY 2019-20, as approved by Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Revenue	74,179.45	76,371.19	78,965.30

5.26 Income from Additional Surcharge for FY 2019-20

MSEDCL's Submission

5.26.1 MSEDCL has submitted the Additional Surcharge for FY 2019-20 has been estimated by considering the actual income from additional surcharge for the first six months and has estimated it to remain for the remaining six months of the financial year. The income from additional surcharge as submitted y MSEDCL for FY 2019-20 is as shown in the Table below:

Table 5-71: Income from Additional Surcharge for FY 2019-20, as submitted by MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Income from Additional Surcharge	126.12	317.14

Commission's Analysis and Ruling

5.26.2 Commission noted the deviation of Income from Additional Surcharge and sought the reason of the same from MSEDCL. MSEDCL in its reply submitted that the MTR Order, the Commission has approved the Income from Additional Surcharge considering a growth of 3% over previous year. Further, Commission has also ruled that the Additional Surcharge shall be applicable to Captive Users of Group Captive Power Plants; in addition to Open Access consumers. However, Commission did not give any impact of the same in revenue. Considering the ruling, MSEDCL started levying the Additional Surcharge to Captive Users of Group Captive Power Plants. Considering the provisional income of Rs. 158.57 Crs from additional surcharge upto

Sept-19, MSEDCL has projected the income for FY 19-20.

5.26.3 Commission notes that the present projection of income from additional surcharge has been made on the basis of actual income during the first half of the financial year. For the purpose of provisional approval, the Commission approves the income from Additional Surcharge as projected by MSEDCL for FY 2019-20 as shown in the below table:

Table 5-72: Income from Additional Surcharge for FY 2019-20, as approved by the Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Income from Additional Surcharge	126.12	317.14	317.14

5.27 Income from Trading of Surplus Power

MSEDCL's Submission

5.27.1 The income from trading of surplus power considered by MSEDCL as submitted by MSEDCL for FY 2019-20 is as shown in the Table below:

Table 5-73: Income from Trading of Surplus Power for FY 2019-20, as submitted by MSEDCL (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)
Income from Trading of Surplus Power	-	**298.18**

Commission's Analysis and Ruling

5.27.2 The Commission has accepted the income from Trading of Surplus Power projected by MSEDCL on provisional basis. The approved Income from Trading Surplus is as shown below.

Table 5-74: Income from Trading Surplus in FY 2019-20 as approved by Commission (Rs. crore)

Particulars	MTR Order	MSEDCL (Provisional)	Approved in this Order
Income from Trading of Surplus Power	-	298.18	298.18

5.28 Segregation of Wires and Supply ARR

5.28.1 Regulation 68 of the MYT Regulations, 2015 outlines the requirement of separation of accounts of Distribution Licensee into Distribution Wires Business and Retail Supply Business. It also stipulates that, in the absence of separate accounting records, the Allocation Matrix specified in the Regulations should be used for apportioning the

ARR.

5.28.2 MSEDCL has presented the Wires and Supply ARRs for FY 2019-20 based on the allocation matrix. As elaborated in earlier paragraphs, the Commission has analysed the various components of the respective ARRs in accordance with the Regulations, and has approved the ARR for FY 2019-20 as set out below.

5.29 Aggregate Revenue Requirement for FY 2019-20

MSEDCL's Submission

5.29.1 Based on the analysis, the summary of ARR for the Wires Business and Supply Business, as per provisional information available and as approved by the Commission, for FY 2019-20 is presented in the Table below.

Table 5-75: Aggregate Revenue Requirement for Wires Business for FY 2019-20 as per MSEDCL (Rs. Crore)

Particulars	FY 2019-20	
	MTR Order	MSEDCL Petition
Operation & Maintenance Expenses	5,015.05	4,620.17
Depreciation	2,170.28	2,334.93
Interest on Loan Capital	1,323.93	1,214.59
Interest on Working Capital	126.77	127.89
Interest on deposit from Consumers and Distribution System Users	81.55	79.60
Other Finance Charges	-	3.11
Provision for bad and doubtful debts	-	84.54
Opex Schemes	-	-
Contribution to contingency reserves	-	128.56
Income Tax	-	-
Total Revenue Expenditure	**8,717.58**	**8,593.40**
Return on Equity Capital	1,931.03	1,658.64
Aggregate Revenue Requirement	**10,648.62**	**10,252.04**
Income from Wheeling Charges	1.61	1.79
Income from Open Access Charges	674.71	211.92
Income from Trading of Surplus Power	-	298.18
Aggregate Revenue Requirement from Distribution Wires	**11,324.95**	**9,740.15**

Table 5-76: Aggregate Revenue Requirement for Supply Business for FY 2019-20 as per MSEDCL (Rs. Crore)

Particulars	FY 2019-20	
	MTR Order	MSEDCL Petition
Power Purchase Expenses (including Inter-State Transmission Charges)	52,738.26	56,305.45
Operation & Maintenance Expenses	2,700.42	2,487.79
Depreciation	241.13	259.44
Interest on Loan Capital	147.10	134.95
Interest on Working Capital	-	-
Interest on Consumer Security Deposit	733.99	716.42
Other Finance Charges	-	27.99
Provision for bad and doubtful debts	-	760.89
Other Expenses	69.79	50.08
Income Tax	-	-
Intra-State Transmission Charges	4,863.74	4,867.55
Incentives/Discounts	271.86	307.03
Contribution to contingency reserves	-	14.28
DSM Expenses	-	-
RLC refund	-	1.84
ASC refund	-	-
Past Period Surplus	853.08	853.08
Revenue Gap Recovery Allowed	2,562.93	2,562.93
Impact of payment to MPECS in future years	40.17	40.17
Total Revenue Expenditure	**65,222.47**	**69,389.88**
Return on Equity Capital	214.56	208.15
Aggregate Revenue Requirement	**65,437.03**	**69,598.04**
Less:		
Revenue from Sale of Power	74,179.45	76,371.19
Non-Tariff Income	1,103.75	361.66
Income from Additional Surcharge	126.12	317.14
Total Revenue	**75,409.32**	**77,050.00**
Revenue Gap	**-9,972.29**	**-7,451.96**

Table 5-77: Aggregate Revenue Requirement for FY 2019-20 as per MSEDCL (Rs. Crore)

Particulars	FY 2019-20	
	MTR Order	MSEDCL Petition
Power Purchase Expenses	52,738.26	56,305.45
Operation & Maintenance Expenses	7,715.47	7,107.96
Depreciation Expenses	2,411.41	2,594.37
Interest on Loan Capital	1,471.03	1,349.54
Interest on Working Capital	126.77	127.89

Particulars	FY 2019-20	
	MTR Order	MSEDCL Petition
Interest on Consumers Security Deposit	815.54	796.03
Other Finance Charges	-	31.10
Provision for bad and doubtful debts	-	845.43
Other Expenses	69.79	50.08
Income Tax	-	-
Intra-State Transmission Charges MSLDC charge	4,863.74	4,867.55
Incentives/Discounts	271.86	307.03
Contribution to Contingency Reserves	-	142.85
DSM expenses	-	-
Total Revenue Expenditure	**70,483.87**	**74,525.26**
Return on Equity Capital	2,145.59	1,866.79
Aggregate Revenue Requirement	**72,629.47**	**76,392.05**
Past Period Adjustment by Commission	853.08	853.08
Revenue Gap Recovery Allowed	2,562.93	2,562.93
Add: Impact of payment to MPECS in future years	40.17	40.17
RLC refund	-	1.84
Aggregate Revenue Requirement from Retail Tariff	**76,085.65**	**79,850.07**
Revenue from Sale of Power	**74,179.45**	**76,371.19**
Non-Tariff Income	1,103.75	361.66
Income from Open Access Charges	674.71	211.92
Income from Trading of Surplus Power	-	298.18
Income from Wheeling Charges	1.61	1.79
Income from Additional Surcharge	126.12	317.14
Total Revenue	**76,085.65**	**77,561.88**
Revenue Gap/(Surplus)	**-**	**2,288.19**

Commission's Analysis and Ruling

5.29.2 Revenue from sale of Power is segregated into two parts i.e. "Revenue from Wire business" and "Revenue from supply business". Revenue from supply Business is derived from subtracting "Revenue from wire business" to "Revenue from sale of Power". Further segregation of Revenue from wire business is shown in the table below.

Particulars	MTR Order	MTR Petition	Approved in this Order
HT Wheeling Revenue		1,102.07	1,139.65
LT (AG) Wheeling Revenue		3,556.84	3,040.32
LT (Non-AG) Wheeling Revenue		4,741.59	4,870.15
Total Wheeling/Wire Revenue	**-**	**9,400.51**	**9,050.12**

5.29.3 Based on the component-wise analysis set out in earlier Sections, the summary of the ARR for the Wires Business and Supply Business, as claimed by MSEDCL and as

provisionally approved by the Commission, for FY 2019-20 is presented in the Tables below.

Table 5-78: ARR for Wires Business for FY 2019-20, as approved by Commission (Rs. crore)

Particulars	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved in the order
Operation & Maintenance Expenses	5,015.05	4,620.17	4,851.44
Depreciation	2,170.28	2,334.93	2,398.98
Interest on Loan Capital	1,323.93	1,214.59	1,195.99
Interest on Working Capital	126.77	127.89	135.77
Interest on deposit from Consumers and Distribution System Users	81.55	79.60	79.60
Other Finance Charges	-	3.11	27.99
Provision for bad and doubtful debts	-	84.54	73.26
Contribution to contingency reserves	-	128.56	128.49
Total Revenue Expenditure	**8,717.58**	**8,593.40**	**8,891.53**
Return on Equity Capital	1,931.03	1,658.64	1,658.64
Aggregate Revenue Requirement	**10,648.62**	**10,252.04**	**10,550.17**
Income from Wheeling Charges	1.61	1.79	1.79
Income from Open Access Charges	674.71	211.92	29.59
Aggregate Revenue Requirement from Distribution Wires	**9,972.29**	**10,038.33**	**10,518.79**
Revenue from Wire	-	**9,400.51**	**9,050.12**
Gap Surplus		**637.83**	**1,468.67**

Table 5-79: ARR for Supply Business for FY 2019-20, as approved by Commission (Rs. crore)

Particulars	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved Value
Power Purchase Expenses	52,738.26	56,305.45	55,967.62
Operation & Maintenance Expenses	2,700.42	2,487.79	2,612.31
Depreciation Expenses	241.13	259.44	266.55
Interest on Loan Capital	147.10	134.95	132.89
Interest on Working Capital	-	-	-
Interest on Consumers Security Deposit	733.99	716.42	716.42
Other Finance Charges	-	27.99	3.11
Provision for bad and doubtful debts	-	760.89	659.37
Other Expenses	69.79	50.08	50.08
Income Tax	-	-	213.89
Intra-State Transmission Charges MSLDC charge	4,863.74	4,867.55	4,867.55

Particulars	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved Value
Incentives/Discounts	271.86	307.03	307.03
Contribution to Contingency Reserves	-	14.28	14.28
DSM expenses	-	-	-
Effect of sharing of gains/losses	-	-	-
Past Period Adjustment by Commission	853.08	853.08	853.08
Revenue Gap Recovery Allowed	2,562.93	2,562.93	2,562.93
Add: Impact of payment to MPECS in future years	40.17	40.17	40.17
RLC refund	-	1.84	1.84
ASC refund	-	-	-
Total Revenue Expenditure	65,222.47	69,389.88	69,269.12
Return on equity	214.56	208.15	208.15
Aggregate Revenue Requirement from Retail Tariff	**65,437.03**	**69,598.04**	**69,477.27**
Non-Tariff Income	1,103.75	361.66	361.66
Income from Additional Surcharge	126.12	317.14	317.14
Income from Trading of Surplus Power	-	298.18	298.18
Net Aggregate Revenue Requirement	**64,207.16**	**68,621.05**	**68,500.28**
Revenue from Retail Supply	-	66,970.69	69,915.18
Revenue Gap/(Surplus)	**64,207.16**	**1,650.36**	**(1,414.90)**

Table 5-80: Combined ARR for FY 2019-20 (Wires + Supply), as approved by Commission (Rs. crore)

Particulars	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved Value
Power Purchase Expenses (including Inter-State Transmission Charges)	52,738.26	56,305.45	55,967.62
Operation & Maintenance Expenses	7,715.47	7,107.96	7,463.76
Depreciation	2,411.41	2,594.37	2,665.53
Interest on Loan Capital	1,471.03	1,349.54	1,328.88
Interest on Working Capital	126.77	127.89	135.77
Interest on Consumer Security Deposit	815.54	796.03	796.03
Other Finance Charges	-	31.10	31.10
Provision for bad and doubtful debts	-	845.43	732.63
Other Expenses	69.79	50.08	50.08
Income Tax	-	-	213.89
Intra-State Transmission Charges	4,863.74	4,867.55	4,867.55
Incentives/Discounts	271.86	307.03	307.03
Contribution to contingency reserves	-	142.85	142.76
DSM Expenses	-	-	-

Particulars	FY 2019-20		
	MTR Order	MSEDCL Petition	Approved Value
RLC refund	-	1.84	1.84
ASC refund	-	-	-
Past Period Surplus	853.08	853.08	853.08
Revenue Gap Recovery Allowed	2,562.93	2,562.93	2,562.93
Impact of payment to MPECS in future years	40.17	40.17	40.17
Total Revenue Expenditure	**73,940.05**	**77,983.28**	**78,160.64**
Return on Equity Capital	2,145.59	1,866.79	1,866.79
Aggregate Revenue Requirement	**76,085.65**	**79,850.07**	**80,027.43**
Less:			
Non-Tariff Income	1,103.75	361.66	361.66
Income from Open Access	674.71	211.92	29.59
Income from Trading Surplus	-	298.18	298.18
Income from Wheeling Charges	1.61	1.79	1.79
Income from Additional Surcharge	126.12	317.14	317.14
Net Aggregate Revenue Requirement	**74,179.45**	**78,659.38**	**79,019.07**
Revenue from Sale of Power	74,179.45	76,371.19	78,965.30
Revenue Gap	**0.00**	**2,288.19**	**53.77**

6 PROJECTION OF AGGREGATE REVENUE REQUIREMENT FOR FOURTH CONTROL PERIOD FROM FY 2020-21 TO FY 2024-25

6.1 Background

6.1.1 MSEDCL has sought approval for the projection of ARR for the 4th Control Period FY 2020-21 to FY 2024-25 based on the MYT Regulations, 2019.

6.1.2 The Commission's analysis and approval of various ARR components for MYT Control Period FY 20-21 to FY 24-25 is set out in the following Sections.

6.2 Segregation of Wires and Supply Business for Control Period

MSEDCL's Submission

6.2.1 MSEDCL submitted that Regulation 71 of the MYT Regulations, 2019 provides that Aggregate Revenue Requirement of the Distribution Licensee shall be apportioned between the Distribution Wires Business and Retail Supply Business in accordance with the allocation matrix. MSEDCL submitted that it has not undertaken actual accounting separation between distribution wires business and retail supply business and has segregated the expenses based on the allocation matrix as provided in the Regulations.

Commission's Analysis and Ruling

6.2.2 Regulation 71 of the MYT Regulations, 2019 outlines the requirement of separation of accounts of Distribution Licensee into Distribution Wires Business and Retail Supply Business. It also stipulates that, in the absence of separate accounting records, the Allocation Matrix specified in the Regulations should be used for apportioning the ARR.

> *"71 Separation of Accounts of Distribution Licensee-*
>
> *Every Distribution Licensee shall maintain separate accounting records for the Distribution Wires Business and Retail Supply Business and shall prepare an Allocation Statement to enable the Commission to determine the Tariff separately for:*
>
> *(a) Distribution Wires Business;*
>
> *(b) Retail Supply of electricity:*
>
> *Provided that in case complete accounting segregation has not been done between the Distribution Wires Business and Retail Supply Business of the*

Distribution Licensee, the Aggregate Revenue Requirement of the Distribution Licensee shall be apportioned between the Distribution Wires Business and Retail Supply Business in accordance with the following Allocation Matrix:

... Provided further that the above Allocation Matrix shall be applied for all or any of the heads of expenditure and revenue, where actual accounting separation has not been done between the Distribution Wires Business and Retail Supply Business:

Provided also that the Commission may require the Distribution Licensee to file separate Petitions for determination of Tariff for the Distribution Wires Business and Retail Supply Business."

6.2.3 The Allocation Matrix specified in the Regulations for segregation of expenses is as follows:

Table 6-1: Allocation Matrix for Retail Supply and Wires Business Expenses

Particulars	Distribution Wires Business (%)	Retail Supply Business (%)
Power Purchase Expenses	0%	100%
Inter-State Transmission Charges	0%	100%
Intra-State Transmission Charges	0%	100%
Operation & Maintenance Expenses	65%	35%
Depreciation	90%	10%
Interest on Long-term Loan Capital	90%	10%
Interest on Working Capital	10%	90%
Interest on Consumer Security Deposits	10%	90%
Provision for Bad & Doubtful Debts	10%	90%
Income Tax	90%	10%
Contribution to Contingency Reserves	90%	10%
Return on Equity	90%	10%
Non-Tariff Income	10%	90%

6.2.4 The Commission has analysed the various components of the respective ARRs in accordance with the Regulations, and has approved the ARR for FY 2020-21 and FY 2024-25 as set out below.

6.3 Sales projections for Forth Control Period

MSEDCL's Submission

6.3.1 MSEDCL referred Regulation 82.1 of MYT Regulations, 2019, wherein Distribution Licensee is required to submit a month-wise forecast of the expected sales of electricity to each tariff category/sub-category and to each tariff slab within such Tariff

category/sub-category.

6.3.2 MSEDCL submitted that, from the experience the historical trend method has proved to be reasonably accurate and well accepted method for estimating the load, number of consumers and energy consumption. Thus, energy consumption for various consumer categories are estimated primarily based on the CAGR of past years. If the trend is unreasonable /unsustainable due to isolated incidents/ developments, the growth factors have been corrected to arrive at more realistic projections.

6.3.3 The break-up of the past sales and the CAGR growth rates for different periods (5 years, 3 years and year on year) is provided in the following tables. It may be noted that, the 5 year CAGR growth rate is for the period between FY 2013-14 and FY 2018-19, while the 3 year CAGR growth rate is for the period between FY 2015-16 and FY 2018-19, whereas year on year is for FY 2018-19 over FY 2017-18.

Table 6-2: Historical Sales Growth and CAGR (HT Category)

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Year CAGR	3 Year CAGR	Y-O-Y Growth
HT-I Industries	23,721	25,131	23,315	23,366	28,470	31,381	6%	10%	10%
HT-II Commercial	1,786	1,886	1,927	1,825	1,926	1,805	0%	-2%	-6%
HT III Railways	1,563	1,579	1,072	86	66	77	-45%	-58%	17%
HT IV-PWW	1,678	1,736	1,698	1,702	1,911	1,900	3%	4%	-1%
HT V Agricultural	848	871	1,288	1,331	974	1,413	11%	3%	45%
HT VI Bulk Supply (Housing Complex)	226	221	219	213	227	236	1%	2%	4%
HT Temporary	3	6	5	4	5	5	12%	3%	9%
HT-IX Public services	801	860	907	922	1,003	1,004	5%	3%	0%
MSPGCL AUX SUPPLY	14	61	83	179	218	184	68%	30%	16%
HT EV Charging Stations	-	-	-	-	-	0.31	-	-	-
Total -HT Sales	**30,640**	**32,352**	**30,514**	**29,628**	**34,799**	**38,004**	**4%**	**8%**	**9%**

6.3.4 Historical trend in LT Category sales growth (including sales in Franchisee Area) is provided in following table.

Table 6-3: Historical Sales Growth and CAGR (LT Category) (MU)

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Yr CAGR	3 Yr CAGR	Y-O-Y Growth
LT Category									
LT I -BPL	138	102	77	61	55	41	-22%	-19%	-26%
LT I Domestic	16,281	17,678	18,861	18962	19994	20788	5%	3%	4%
LT II Non-Domestic	3,914	4,087	4,358	4,524	5,444	5,874	8%	10%	8%
LT III PWW	593	627	673	691	707	803	6%	6%	14%
LT IV Agriculture	20915	25786	27512	27525	29921	32696	9%	6%	9%
LT V Power loom	2878	3222	3243	3270	3551	3645	5%	4%	3%
LT V Industrial General	4599	4816	5026	5114	4,903	5,138	2%	1%	5%
LT VI Streetlight	1328	1498	1667	1751	1843	2007	9%	6%	9%
LT VII- Temporary Connection	23	19	18	16	17	24	0.01	0.09	0.43

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Yr CAGR	3 Yr CAGR	Y-O-Y Growth
LT VIII Advertisement & Hoardings	3	3	3	4	5	4	6%	7%	-6%
LT IX – Crematoriums & Burial Grounds	2	1	1	2	2	2	4%	11%	5%
LT X - Public services	87	203	307	361	431	504	42%	18%	17%
LT Prepaid	12	13							
P.D. Consumers	-14	-10	-11	-5					
Total LT Sales	**50760**	**58045**	**61736**	**62275**	**66,874**	**71,526**	**7%**	**5%**	**7%**
Total Sales	**81400**	**90397**	**92250**	**91903**	**101673**	**109531**	**6%**	**6%**	**8%**

CAGR considered for Sales Projection for Control Period

6.3.5 MSEDCL submitted that, sales in the past years have normal growth rate, with the considerable increase in the availability of power has resulted in the growth in sales of MSEDCL. Additional availability of power to the consumers have resulted in uninterrupted supply of power to all consumers (except AG with stipulated hours of supply) and hence resulted in increase in the consumption and in turn the sales of MSEDCL.

6.3.6 MSEDCL has considered the 3 years/5 years CAGRs for projecting the sales. Wherever, the trend is found to be unreasonable/unsustainable, the growth factors have been corrected to arrive at more realistic projections.

6.3.7 The category wise CAGRs considered for the Control Period from FY 2020-21 to FY 2024-25 along with the rationale for HT Category is as shown in the following table:

Table 6-4: CAGR Considered for Sales Projections (HT Category)

Consumer Category	Considered	Justification/Rationale
HT-IND 11 KV	4%	5-year CAGR considered
HT-IND 22 KV	4%	5 year/3-year CAGR coming 5% & 8% respectively. However, realistic growth rate of 4% considered
HT-IND 33 KV	4%	5 year/3-year CAGR coming 5% & 11% respectively. However, realistic growth rate of 4% considered
HT-IND EHV	4%	5 year/3-year CAGR coming quite high i.e. 9% & 18% respectively. Hence, realistic growth rate of 4% considered
HT-COMM 11 KV	2%	Unrealizing trends in CAGR observed due to change in category of some consumers from Commercial to Public Services. Hence, realistic growth rate of 2% has been considered
HT-COMM 22 KV	2%	
HT-COMM 33 KV	2%	
HT-COMM EHV	2%	
HT RAILWAY/METRO/MONO 11 KV	2%	Negative trend in CAGR observed due to migration of Railway/ Metro/ Monorail consumers to Open Access. Thus, nominal growth rate of 2% has been observed considering upcoming metro rail in Nagpur.
HT RAILWAY/METRO/MONO 22 KV	2%	
HT RAILWAY/METRO/MONO 33 KV	2%	
HT RAILWAY/METRO/MONO EHV	2%	
HT-PWW 11 KV	5%	Varying trends in CAGR observed in PWW category across all voltage levels. However, considering Government initiative of "Har Ghar Jal",a realistic growth rate of 5% has been considered across all
HT-PWW 22 KV	5%	
HT-PWW 33 KV	5%	
HT-PWW EHV	5%	

Consumer Category	Considered	Justification/Rationale
HT-AGRICULTURE 11 KV	0%	3-year CAGR -3%. Hence, 5-year CAGR has been considered
HT-AGRICULTURE 22 KV	20%	5 Yr CAGR considered
HT-AGRICULTURE 33 KV	3%	5 Yr CAGR considered
HT-AGRICULTURE EHV	17%	5 Year CAGR has been considered
HT-AGRICULTURE OTHERS 11 KV	12%	5 Yr CAGR considered
HT-AGRICULTURE OTHERS 22 KV	7%	5 Yr CAGR considered
HT-AGRICULTURE OTHERS 33 KV	18%	5 Yr CAGR considered
HT-GROUP HOUSING 11 KV	1%	5 Yr CAGR considered
HT-GROUP HOUSING 22 KV	1%	5 Yr CAGR considered
HT-GROUP HOUSING 33 KV	0%	Negative CAGRs, hence 0% considered
HT-PUBLIC SER.-GOVT 11 KV	2%	3 Yr CAGR considered
HT-PUBLIC SER.-GOVT 22 KV	2%	3 Yr CAGR considered
HT-PUBLIC SER.-GOVT 33 KV	2%	CAGR considered for 11/22 KV considered
HT-PUBLIC SER.-OTHER 11 KV	2%	2 Year CAGR considered
HT-PUBLIC SER.-OTHER 22 KV	2%	Realistic growth rate of 2% considered in line with that considered for 11 kV sales
HT-PUBLIC SER.-OTHER 33 KV	2%	Realistic growth rate of 2% considered in line with that considered for 11 kV sales
HT-PUBLIC SER.-OTHER EHV	2%	Realistic growth rate of 2% considered in line with that considered for 11 kV sales

6.3.8 The Category wise CAGRs considered for the Control Period from FY 2020-21 to FY 2024-25 along with rationale for LT category is as shown in the following table:

Table 6-5: CAGR considered for Sales Projections (LT Category)

Consumer Category	CAGR Considered	Justification/ Rationale
LT-I (A): LT- BPL	10%	5 & 3-year CAGR coming -22% & -19%, respectively. However, considering the GoI Schemes for Household Electrification, a realistic growth considered
LT-I (B): LT-Residential (Other than BPL)		
1-100 Units	3%	Considering the CAGRs, realistic growth of 3% considered in view of the increased use of LEDs;
101-300 Units	2%	Considering the CAGRs, realistic growth of 2% considered in view of the increased use of LEDs;
301-500 Units	1%	Considering the CAGRs, realistic growth of 1% considered;
501-1000 Units	-1%	Considering the CAGRs and impact of Rooftop Solar, realistic growth of -1% considered;
Above 1000 Units	-1%	
LT-II : LT- Non Residential		
0-20 KW		
0-200 Units	4%	Considering the CAGRs, realistic growth of 4% considered;
Above 200 units	12%	Considering the varying CAGRs, realistic growth of 12% considered which in equivalent to 5 yr CAGR;
>20-<=50 KW	7%	Considering the varying CAGRs, realistic growth of 7% considered which in equivalent to 5 yr CAGR;
>50 KW	10%	Considering the varying CAGRs, realistic growth of 10% considered which in equivalent to 5 yr CAGR;

Consumer Category	CAGR Considered	Justification/ Rationale
LT-III: LT-Public Water Works	0%	
0-20 KW	5%	Considering the varying CAGRs, realistic growth of 5% considered which in equivalent to 5 yr CAGR;
20-<=40 KW	5%	Considering the varying CAGRs, realistic growth of 5% considered which in equivalent to 5 yr CAGR;
> 40 KW	10%	Considering the varying CAGRs, realistic growth of 10% considered which in equivalent to 5 yr CAGR;
*** LT-AG-Unmetered (Pump sets)	0%	No new connections, hence, 0%
LT-AG Metered (Pump sets)	4%	3-year CAGR 10%. Realistic growth of 4%
LT-AG Metered (Others)	0%	3 Year CAGR coming quite high. Realistic rate of 0% considered
LT V(A): LT Industry- Power Looms	0%	
0-20 KW (Upto & including 27 HP)	4%	3 & 5-year CAGR coming quite low. Realistic growth of 4%
Above 20 KW (above 27 HP)	4%	3 & 5-year CAGR coming quite high. Realistic growth of 4%
LT V(B) : LT Industry- General	0%	
0-20 KW (Upto & including 27 HP)	4%	5 & 3-year CAGR coming negative. Realistic growth of 4%
Above 20 KW (above 27 HP)	4%	5 & 3-year CAGR coming 6%. Realistic growth of 4%
LT X - Public services - Govt	0%	
0-20 KW	0%	
0-200 Units	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
>200 units	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
>20-50 kW	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
>50 kW	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
LT X - Public services - Other	0%	
0-20 KW	0%	
0-200 Units	6%	5-year CAGR coming 29% & 3-year CAGR coming -2%, hence realistic growth of 6%
>200 units	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
>20-50 kW	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
>50 kW	6%	3 & 5-year CAGR coming quite high. Realistic growth of 6%
LT VI – Street Light		
Gram panchayat A, B & C Class Municipal Council	2%	YoY Growth considered
Municipal corporation Area	4%	YoY Growth considered
LT VII – Temporary connection		
Temporary Connection (Religious)	10%	CAGRs too high, realistic growth considered
Temporary Connection (Other Purposes)	10%	CAGRs too high, realistic growth considered
LT VIII - Advertisements & Hoardings	8%	3 yr CAGR and YoY 8%, hence, YoY considered
LT IX - Crematorium and Burial Grounds	0%	CAGRs are varying, realistic growth considered

Sales Projections for Control Period

6.3.9 FY 2018-19 is considered as the Base Year for projecting Sales of 4th Control Period from FY 2020-21 to FY 2024-25. Based on the sales of FY 2018-19 and the CAGR as shown in above tables, MSEDCL projected the Sales for various categories. Sales projections of HT Categories for the 4th Control Period is shown in the following table:

Table 6-6: Sales Projections (HT Category) for the Control Period (MU)

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
HT-I Industries	33,586	34,929	36,326	37,779	39,290
HT-II Commercial	1,850	1,887	1,925	1,963	2,003
HT III Railways	80	82	84	85	87
HT IV-PWW	1,745	1,832	1,924	2,020	2,121
HT V Agricultural	1,486	1,685	1,919	2,192	2,512
HT VI Bulk Supply (Housing Complex)	239	242	244	246	249
HT Temporary	5	5	5	5	5
HT-IX Public services	1,044	1,065	1,086	1,108	1,130
MSPGCL AUX SUPPLY	184	184	184	184	184
HT Ag Others	299	332	368	410	456
HT EV Charging Stations	0.31	0.31	0.31	0.31	0.31
Total -HT Sales	**40,519**	**42,243**	**44,065**	**45,993**	**48,037**

6.3.10 Based on the above growth rate, it is estimated that HT Category will witness a growth of ~5% on Y-o-Y basis.

6.3.11 For LT AG Category, MSEDCL has considered a growth rate of 4% since, MSEDCL is planning to provide future AG connections through Off-Grid Solar pumps. Details of the scheme are provided in Details of CAPEX chapter. MSEDCL has considered the average of consumption for FY 2017-18, FY 2018-19 and FY 2019-20 as base for projections of AG Sales for Control Period.

6.3.12 Sales projections of LT Categories for the 4th Control Period is as shown in the following table:

Table 6-7: Sales Projections (LT Category) (MU)

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
LT I -BPL	140	154	169	186	205
LT I Domestic	21,583	22,120	22,674	23,242	23,827
LT II Non Domestic	6,360	6,900	7,491	8,141	8,854
LT III PWW	886	932	981	1,033	1,088
LT IV Agriculture	31,374	32,185	33,028	33,904	34,816
LT V Power loom	2,132	2,217	2,306	2,398	2,494
LT V Industrial General	5,265	5,475	5,694	5,922	6,159
LT VI Streetlight	2,383	2,610	2,863	3,145	3,458
LT VII- Temporary Connection	24	24	24	24	24
LT VIII Advertisement & Hoardings	5	5	5	6	6
LT IX – Crematoriums & Burial Grounds	2	2	2	2	2
LT X - Public services	569	609	652	698	748
LT XI EV Charging Stations	0.23	0.23	0.23	0.23	0.23
Total LT Sales	**70,722**	**73,233**	**75,889**	**78,701**	**81,682**
Total Sales	**111,241**	**115,476**	**119,954**	**124,694**	**129,719**

6.3.13 Based on the above growth rate, it is estimated that LT Category as well as overall sales will witness a growth of ~4% on Y-o-Y basis.

6.3.14 MSEDCL further submitted that, in the Petition it has proposed the introduction of kVAh based billing for HT consumers. In view of the same, for the purpose of determination of revenue from the proposed kVAh based tariff, MSEDCL has converted the kWh Sales into kVAh sales considering category-wise power factors shown in the table provided in the subsequent section of kVAh based billing.

Sales projections for Distribution Franchisee for Control Period

6.3.15 MSEDCL submitted that, due to financial condition, M/s SNDL, the Nagpur DF, in its Letter dated August 12, 2019 and September 6, 2019 informed its inability to maintain the electricity distribution system and requested MSEDCL to take over the Franchisee Area.

6.3.16 Accordingly, the Distribution franchisee of Nagpur is terminated as per the provisions of Distribution Franchisee Agreement (DFA) on September 8, 2019. The distribution operations of Nagpur DF have been taken over by MSEDCL on September 9, 2019.

6.3.17 MSEDCL further submitted that, Form "F1 MSEDCL Yearly Sales Forecast", MSEDCL has shown category wise sales of MSEDCL including DF. The category wise sales for DF is calculated in the respective form using the same methodology and CAGR for respective category used for MSEDCL. Since, MSEDCL has taken over the Nagpur DF, for the purpose of revenue estimation for the Control Period, MSEDCL has included the sales of Nagpur DF area in its own sales instead of input sales.

6.3.18 Considering the projected sales and estimated loss levels, MSEDCL has projected the input level sales of said DFs for the Control Period is shown in the following table:

Table 6-8: Input Sales for Bhiwandi DF for the Control Period (MU)

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
Bhiwandi					
Category Wise Sales	3,269	3,407	3,552	3,703	3,862
Distribution Loss	13.01%	12.76%	12.51%	12.26%	12.01%
Input Sales	3,758	3,906	4,060	4,220	4,389

6.3.19 Considering the decision of the Commission in its Order dated 18 June, 2014 in Case No. 85 of 2010, MSEDCL has considered area of supply of MPECS as merged in the area of supply of MSEDCL for present projections.

Approach for No. of Consumers Projection for Control Period

6.3.20 Like Sales projections, MSEDCL has adopted the historical trend method for projecting category wise No. of Consumers of MSEDCL. Wherever, it is observed that, the trend is unreasonable/unsustainable, the growth factors have been corrected to arrive at more realistic projections.

6.3.21 Historical trend in No. of Consumers in HT Category for MSEDCL (Excluding Bhiwandi Franchisee) is provided in the following table:

Table 6-9: Historical Growth and CAGR for No. of Consumers (HT Category)

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Year CAGR	3 Year CAGR	Y-O-Y Growth
HT-I Industries	12,730	12,932	13,257	13,560	13,998	14,353	2%	3%	3%
HT-II Commercial	2,910	3,053	3,072	3,098	3,137	3,165	2%	1%	1%
HT III Railways	44	44	10	24	79	82	13%	102%	4%
HT IV-PWW	847	941	963	995	967	983	3%	1%	2%
HT V Agricultural	1,292	1,338	1,380	1,430	1,435	1,446	2%	2%	1%
HT VI Bulk Supply (Housing Complex)	227	234	242	248	242	266	3%	3%	10%
HT Temporary	11	10	7	10	11	11	0%	16%	0%
HT-IX Public services	1,077	1,147	1,205	1,261	1,313	1,357	5%	4%	3%
MSPGCL AUX SUPPLY	14	23	24	28	28	27	14%	4%	-4%
HT EV Charging Stations	-	-	-	-	-	2			
Total -HT Sales	**19,152**	**19,722**	**20,160**	**20,654**	**21,210**	**21,692**	**3%**	**2%**	**2%**

6.3.22 Historical trend in No. of Consumers in LT Category for MSEDCL (Excluding Bhiwandi Franchisee) is provided in the following table:

Table 6-10: Historical Growth and CAGR for No. of Consumers (LT Category)

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Year CAGR	3 Year CAGR	Y-O-Y Growth
LT I -BPL	446,132	343,979	265,105	209,731	176,998	350,243	-5%	10%	98%
LT I Domestic	15,800,457	16,603,380	17,374,057	18,024,487	18,632,604	19,427,851	4%	4%	4%
LT II Non-Domestic	1,561,091	1,616,503	1,683,093	1,756,626	1,837,478	1,904,557	4%	4%	4%
LT III PWW	46,949	48,337	50,118	51,833	51,671	52,808	2%	2%	2%
LT IV Agriculture	3,666,591	3,831,998	3,987,916	4,103,781	4,179,004	4,244,685	3%	2%	2%
LT V Power loom	80,903	82,088	82,377	81,682	73,178	67,653	-4%	-6%	-8%
LT V Industrial General	302,400	310,683	319,330	316,776	307,183	315,673	1%	0%	3%
LT VI Streetlight	81,819	85,615	88,561	91,293	93,798	96,466	3%	3%	3%
LT VII- Temporary Connection	2,922	2,471	2,639	2,640	3,673	6,028	16%	32%	64%
LT VIII Advertisement Hoardings	2,015	2,027	2,203	2,527	2,543	2,742	6%	8%	8%
LT IX – Crematoriums Burial Grounds	104	126	152	180	244	229	17%	15%	-6%
LT X - Public services	41,230	73,782	78,942	83,487	92,691	104,129	20%	10%	12%

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Year CAGR	3 Year CAGR	Y-O-Y Growth
LT Prepaid	14,482	14,937	14,090	13,071	12,097	10,809	-6%	-8%	-11%
Total LT Consumers	**22,047,095**	**23,015,926**	**23,948,583**	**24,738,114**	**25,463,162**	**26,583,873**	**4%**	**4%**	**4%**
Total Consumers	**22,066,247**	**23,035,648**	**23,968,743**	**24,758,768**	**25,484,372**	**26,605,565**	**4%**	**4%**	**4%**

CAGR considered for Projection of No. of Consumer for Control Period

6.3.23 MSEDCL has considered the CAGR methodology for projections. Wherever, it is observed that, the trend is unreasonable or unsustainable, the growth factors have been corrected to arrive at more realistic projections considering year on year growth rate.

6.3.24 Following tables provide the CAGRs considered for projecting the number of consumers for the MYT 4th Control Period.

Table 6-11: CAGR considered for No. of Consumers Projections (HT Category)

Category	CAGR Considered	Justification/Rationale
HT-IND 11 KV	2%	5-yr & 3 year CAGR Negative. Realistic rate of 2%
HT-IND 22 KV	1%	Realistic Rate of 1% considered
HT-IND 33 KV	3%	YoY Growth rate of 3% considered
HT-IND EHV	6%	3 Year CAGR considered
HT-COMM 11 KV	2%	3 & 5 Year CAGR Negative. Realistic growth of 2%
HT-COMM 22 KV	3%	Realistic growth of 3% considered
HT-COMM 33 KV	2%	3 & 5 Year CAGR Negative. Realistic growth of 2%
HT-COMM EHV	0%	3 & 5 Year CAGR Negative. Realistic growth of 0% considered as the no. of consumers are very less
HT RAILWAY/METRO/MONO 11 KV	0%	3 & 5 year CAGR quite high. Realistic growth of 0%
HT RAILWAY/METRO/MONO 22 KV	0%	3 & 5 year CAGR quite high. Realistic growth of 0%
HT RAILWAY/METRO/MONO 33 KV	0%	3 & 5 year CAGR quite high. Realistic growth of 0%
HT RAILWAY/METRO/MONO EHV	0%	3 & 5 year CAGR negative. Realistic growth of 0%
HT-PWW 11 KV	0%	3 & 5 year CAGR negative. Realistic growth of 0%
HT-PWW 22 KV	0%	3 & 5 year CAGR negative. Realistic growth of 0%
HT-PWW 33 KV	3%	3 & 5 year CAGR quite high. Realistic growth of 3%
HT-PWW EHV	0%	3 & 5 year CAGR quite high. Realistic growth of 0%
HT-AGRICULTURE 11 KV	0%	3 & 5 year CAGR negative. Realistic growth of 0%
HT-AGRICULTURE 22 KV	0%	3 & 5 year CAGR negative. Realistic growth of 0%
HT-AGRICULTURE 33 KV	3%	3 Year CAGR considered
HT-AGRICULTURE EHV	9%	YoY Growth considered
HT-AGRICULTURE OTHERS 11 KV	0%	Inconsistent CAGR observed. Realistic growth of 0%
HT-AGRICULTURE OTHERS 22 KV	0%	Inconsistent CAGR observed. Realistic growth of 0%
HT-AGRICULTURE OTHERS 33 KV	0%	YoY Growth considered
HT-POULTRY 11 AND 22 KV	0%	Realistic rate of 0% considered

Category	CAGR Considered	Justification/Rationale
HT-POULTRY 33 KV	0%	Realistic rate of 0% considered
HT-POULTRY EHV	0%	Realistic rate of 0% considered
HT-AG HIGHTECH 11 AND 22 KV	0%	Realistic rate of 0% considered
HT-AG HIGHTECH 33 KV	0%	Realistic rate of 0% considered
HT-AG HIGHTECH EHV	0%	Realistic rate of 0% considered
HT-AG (COLD STORAGE) 11 AND 22 KV	0%	Realistic rate of 0% considered
HT-AG (COLD STORAGE) 33 KV	0%	Realistic rate of 0% considered
HT-AG (COLD STORAGE) EHV	0%	Realistic rate of 0% considered
HT-GROUP HOUSING 11 KV	0%	3 & 5 year CAGR negative. Realistic growth of 0%
HT-GROUP HOUSING 22 KV	0%	Realistic growth of 0% considered
HT-GROUP HOUSING 33 KV	0%	Realistic growth of 0% in line with other voltage level consumers
HT-PUBLIC SER.-GOVT 11 KV	0%	3 Year CAGR considered
HT-PUBLIC SER.-GOVT 22 KV	0%	Realistic rate of 0% considered
HT-PUBLIC SER.-GOVT 33 KV	10%	3 Year CAGR coming high. Realistic growth of 10%
HT-PUBLIC SER.-OTHER 11 KV	0%	CAGR Negative. Realistic growth of 0%
HT-PUBLIC SER.-OTHER 22 KV	0%	Realistic rate of 0% considered
HT-PUBLIC SER.-OTHER 33 KV	10%	Considering YoY Growth too high, realistic growth considered
HT-PUBLIC SER.-OTHER EHV	0%	3 Year CAGR considered
HT-EV CHARGING STATIONS 11 KV	0%	0% growth considered
HT-EV CHARGING STATIONS 22 KV	0%	0% growth considered

Table 6-12: CAGR Considered for No. of Consumers Projections (LT Category)

Consumer Category	CAGR Considered	Justification/Rationale
LT-I (A): LT- BPL	10%	Considering the GoI Schemes for Household Electrification, a realistic growth considered
LT-I (B) : LT-Residential(Other than BPL)	4%	3 year CAGR considered
LT-II : LT- Non Residential		
0-20 KW	4%	3 year CAGR considered
>20-<=50 KW	3%	3 & 5 year CAGR coming high. YoY growth of 3% considered
>50 KW	10%	Year on Year growth considered
LT-III : LT-Public Water Works		
0-20 KW	2%	5 Year CAGR considered
20-<=40 KW	9%	5 Year CAGR considered
> 40 KW	10%	3 & 5 year CAGR coming high. Realistic growth of 10%
LT-IV: LT-Agriculture		
*** LT-AG-Unmetered (Pumpsets)	0%	No new connections, hence 0%
LT-AG Metered (Pumpsets)	3%	3 & 5 year CAGR coming high. YoY growth of 3% considered
LT V(A) : LT Industry- Power Looms		

Consumer Category	CAGR Considered	Justification/Rationale
0-20 KW (Upto & including 27 HP)	0%	CAGR including YoY growth coming negative. Hence, realistic growth of 0%
Above 20 KW (above 27 HP)	0%	CAGR including YoY growth coming negative. Hence, realistic growth of 0%
LT V(B) : LT Industry- General		
0-20 KW (Upto & including 27 HP)	3%	CAGRs are varying. Considering the no. of consumers for Sept-19 and increase in FY 18-19, YoY Growth of 3% considered
Above 20 KW (above 27 HP)	3%	
LT X - Public services - Govt		
0-20 KW	10%	3 Year CAGR coming quite high. Realistic growth of 10%
>20-50 kW	10%	3 Year CAGR coming quite high. Realistic growth of 10%
>50 kW	10%	3 Year CAGR coming quite high. Realistic growth of 10%
LT X - Public services - Other		
0-20 KW	5%	3 Yr CAGR coming 0%. Realistic growth of 5%
>20-50 kW	5%	3 Yr CAGR coming quite high. Realistic growth of 5%
>50 kW	5%	3 Yr CAGR coming quite high. Realistic growth of 5%
Streetlight (LT-VI)		
Gram panchayat A, B & C Class Municipal Council	2%	Y-o-Y Considered
Municipal corporation Area	4%	Y-o-Y Considered
Temporary Connection (LT-VII)		
Temporary Connection (Religious)	10%	Varying CAGR. Realistic growth of 10%
Temporary Connection (Other Purposes)	10%	Varying CAGR. Realistic growth of 10%
LT-VIII : LT-Advertisements & Hoardings	8%	3 Yrs CAGR and Y-o-Y Growth 8%, hence 8% considered
LT-IX : LT-Crematorium and Burial Grounds	0%	Y-o-Y Growth negative, hence, realistic growth 0% considered

6.3.25 MSEDCL submitted that, at present as well as for the future period, there is enough power availability. Considering the same, MSEDCL has taken an optimistic view and considered positive or zero growth for most of the consumer categories.

Number of Consumers for the Control Period

6.3.26 MSEDCL has considered FY 2018-19 as the base year for projection of number of consumers for the ensuing years i.e. from FY 2020-21 to FY 2024-25. Based on the number of consumers for FY 2018-19 and CAGR shown the tables above, MSEDCL has projected the number of consumers (Excluding Bhiwandi DF) for various categories as shown in the following table:

Table 6-13: No. of Consumers projections (HT Category) for the Control Period

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
HT-I Industries	14,435	14,686	14,944	15,207	15,476

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
HT-II Commercial	3,244	3,324	3,406	3,490	3,576
HT III Railways	85	85	85	85	85
HT IV-PWW	992	995	998	1,001	1,004
HT V Agricultural	1,465	1,475	1,485	1,496	1,507
HT VI Bulk Supply	384	384	384	384	384
HT Temporary	17	17	17	17	17
HT-IX Public services	1,385	1,389	1,394	1,399	1,405
MSPGCL AUX SUPPLY	27	27	27	27	27
HT EV Charging Stations	3	3	3	3	3
Total -HT Consumers	**22,037**	**22,385**	**22,743**	**23,109**	**23,484**

Table 6-14: No. of Consumer Projections (LT Category) for the Control Period

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
LT I -BPL	400,905	440,996	485,096	533,606	586,967
LT I Domestic	20,553,868	21,431,116	22,345,805	23,299,533	24,293,967
LT II Non-Domestic	1,983,984	2,056,468	2,131,626	2,209,559	2,290,372
LT III PWW	55,230	56,508	57,825	59,183	60,584
LT IV Agriculture	4,346,007	4,444,834	4,547,091	4,652,897	4,762,375
LT V Power loom	34,424	34,424	34,424	34,424	34,424
LT V Industrial General	319,725	328,565	337,652	346,994	356,597
LT VI Streetlight	99,945	102,805	105,756	108,801	111,942
LT VII- Temporary Connection	9,589	10,549	11,605	12,766	14,043
LT VIII Advertisement & Hoardings	3,175	3,424	3,692	3,981	4,293
LT IX – Crematoriums & Burial Grounds	228	228	228	228	228
LT X - Public services	116,717	124,776	133,461	142,825	152,925
LT XI EV Charging Stations	10,334	10,334	10,334	10,334	10,334
Total LT Consumers	**27,934,131**	**29,045,027**	**30,204,595**	**31,415,131**	**32,679,051**
Total Consumers (Excl. DF)	**27,956,168**	**29,067,412**	**30,227,338**	**31,438,240**	**32,702,535**

Approach for Connected Load/Contract Demand Projection for Control Period

6.3.27 Like Sales projections, MSEDCL has adopted the historical trend method for projecting category wise load. Wherever, it is observed that, the trend is unreasonable/unsustainable, the growth factors have been corrected to arrive at more realistic projections.

6.3.28 Historical trend in Billing Demand in HT Category for MSEDCL (Excluding Bhiwandi Franchisee) is provided in the following table:

Table 6-15: Historical Growth and CAGR connected load/Contract Demand (HT Category) (kVA)

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Year CAGR	3 Year CAGR	Y-O-Y Growth
HT-I Industries	6,701,808	6,789,400	6,914,477	7,197,960	7,436,493	8,029,222	4%	5%	8%
HT-II Commercial	618,413	657,341	606,933	571,287	548,172	552,821	-2%	-3%	1%

Category	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Year CAGR	3 Year CAGR	Y-O-Y Growth
HT III Railways	605,769	616,026	31,746	4,678	28,100	16,453	-51%	-20%	-41%
HT IV-PWW	215,651	263,199	256,739	282,643	287,390	294,493	6%	5%	2%
HT V Agricultural	335,227	329,307	405,702	449,457	426,420	429,748	5%	-1%	1%
HT VI Bulk Supply (Housing Complex)	51,231	53,112	53,512	53,240	50,610	53,235	1%	0%	5%
HT Temporary	2,025	2,167	1,377	1,059	1,666	2,528	0%	0%	52%
HT-IX Public services	209,576	234,456	247,570	261,479	255,960	256,986	4%	1%	0%
MSPGCL AUX SUPPLY	1,787	45,140	50,901	105,477	80,504	80,156	0%	0%	0%
HT EV Charging Stations	-	-	-	-	-	1,004			
Total -HT Consumers	**8,741,487**	**8,990,148**	**8,568,957**	**8,927,280**	**9,115,315**	**9,716,646**	**2%**	**4%**	**7%**

6.3.29 Historical trend in Billing Demand in LT Category for MSEDCL (Excluding Bhiwandi Franchisee) is provided in the following table:

Table 6-16:Historical Growth and CAGR connected load/Contract Demand (LT Category)

Category	Unit	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Yr CAGR	3 Yr CAGR	Y-O-Y Growth
LT-I (A): LT-BPL	KW	46,757	35,281	26,872	21,246	18,548	40,894	-3%	15%	120%
LT-I (B) : LT-Residential(Other than BPL)	KW	15,164,833	16,233,621	17,358,053	18,334,050	19,357,845	20,842,559	7%	6%	8%
LT-II : LT- Non Residential										
0-20 KW	KW	2,528,071	2,672,479	2,823,343	3,078,782	3,397,369	3,627,431	7%	9%	7%
>20-<=50 KW	KVA	243,831	250,900	283,429	295,751	286,895	333,682	6%	6%	16%
>50 KW	KVA	129,753	133,018	152,961	167,158	168,933	205,625	10%	10%	22%
LT-III : LT-Public Water Works										
0-20 KW	KVA	79,871	80,662	88,211	89,632	94,161	95,257	4%	3%	1%
20-<=40 KW	KVA	15,332	15,577	18,733	113,720	20,053	24,025	9%	9%	20%
> 40 KW	KVA	11,518	12,363	12,681	14,521	14,179	29,855	21%	33%	111%
*** LT-AG-Unmetered (Pump sets)		8,474,115	8,394,300	8,342,017	7,832,143	7,539,616	7,422,998	-3%	-4%	-2%
LT-AG Metered (Pump sets)	HP	10,138,096	10,893,862	11,647,924	12,702,797	13,537,753	14,069,165	7%	6%	4%
LT-AG Metered (Others)	HP	173,400	179,956	120,662	128,126	143,306	310,250	0%	0%	0%
LT V(A) : LT Industry- Power Looms										

Category	Unit	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	5 Yr CAGR	3 Yr CAGR	Y-O-Y Growth
0-20 KW (Upto & including 27 HP)	KW	246,201	255,612	261,701	261,236	259,654	259,618	1%	0%	0%
Above 20 KW (above 27 HP)	KVA	136,133	161,164	164,574	187,563	197,979	226,718	11%	11%	15%
LT V(B) : LT Industry- General										
0-20 KW (Upto & including 27 HP)	KW	1,938,252	2,013,535	2,058,722	2,040,403	1,956,730	2,014,870	1%	-1%	3%
Above 20 KW (above 27 HP)	KVA	1,339,134	1,363,675	1,401,915	1,433,786	1,358,172	1,655,184	4%	6%	22%
Street Light (LT-VI)										
Grampanchayat A, B & C Class Municipal Council	KW	219,008	230,403	192,475	204,649	196,357	196,980	-2%	1%	0%
Municipal corporation Area	KW	138,014	142,547	185,695	182,535	194,167	202,475	8%	3%	4%
Temporary Connection (LT-VII)	KW									
Temporary Connection (Religious)	KW	2,015	2,113	3,447	3,333	2,841	4,276	16%	7%	50%
Temporary Connection (Other Purposes)	KW	13,889	12,374	11,701	12,477	15,589	26,168	14%	31%	68%
LT-VIII : LT-Advertisements & Hoardings	KW	5,350	5,357	5,700	6,285	6,477	6,619	4%	5%	2%
LT-IX : LT-Crematorium and Burial Grounds	KW	786	841	1,225	1,446	1,609	1,748	17%	13%	9%
LT X - Public services - Govt										
0-20 KW	KW	-	-	15,601	21,207	26,577	41,610	0%	39%	57%
>20-50 kW	KVA	-	-	1,896	2,586	3,317	4,352	0%	32%	31%
>50 kW	KVA	-	-	1,665	2,820	2,773	3,756	0%	31%	35%
LT X - Public services - Other		-	-	-	-	-	-	0%	0%	0%
0-20 KW	KW	56,318	114,349	119,200	133,989	151,854	160,581	0%	10%	6%
>20-50 kW	KVA	4,620	16,248	22,955	26,091	28,161	33,636	0%	14%	19%
>50 kW	KVA	5,982	16,530	20,552	23,763	28,256	34,810	0%	19%	23%

CAGR Considered for Connected Load/Contract Demand Projections

6.3.30 Like sales and no. of consumers. MSEDCL used the CAGR methodology for projecting the connected load, billing demand/contract demand. Wherever, it is observed that, the trend is unreasonable/unsustainable, the growth factors have been corrected to arrive at more realistic projections.

6.3.31 Following tables shows the CAGR considered for projection of Connected Load, billing demand/contract demand.

Table 6-17: CAGR considered for Contract Demand Projections (HT Category)

Category	CAGR Considered
HT-IND 11 KV	1%
HT-IND 22 KV	1%
HT-IND 33 KV	1%
HT-IND EHV	1%
HT-COMM 11 KV	2%
HT-COMM 22 KV	2%
HT-COMM 33 KV	2%
HT-COMM EHV	2%
HT-III RAILWAYS/Metro/Mono	0%
HT RAILWAY/METRO/MONO 11 KV	2%
HT RAILWAY/METRO/MONO 22 KV	2%
HT RAILWAY/METRO/MONO 33 KV	5%
HT RAILWAY/METRO/MONO EHV	0%
HT-PWW 11 KV	3%
HT-PWW 22 KV	3%
HT-PWW 33 KV	2%
HT-PWW EHV	0%
HT-AGRICULTURE 11 KV	0%
HT-AGRICULTURE 22 KV	0%
HT-AGRICULTURE 33 KV	5%
HT-AGRICULTURE EHV	7%
HT-GROUP HOUSING 11 KV	1%
HT-GROUP HOUSING 22 KV	1%
HT-GROUP HOUSING 33 KV	1%
HT-GROUP HOUSING EHV	0%
HT-PUBLIC SER.-GOVT 11 KV	5%
HT-PUBLIC SER.-GOVT 22 KV	5%
HT-PUBLIC SER.-GOVT 33 KV	5%
HT-PUBLIC SER.-GOVT EHV	0%
HT-PUBLIC SER.-OTHER 11 KV	0%
HT-PUBLIC SER.-OTHER 22 KV	0%
HT-PUBLIC SER.-OTHER 33 KV	2%
HT-PUBLIC SER.-OTHER EHV	2%

Table 6-18: CAGR considered for Contract Demand Projections (LT Category)

Category	CAGR Considered
LT-I (A): LT- BPL	1%
LT-I (B) : LT-Residential(Other than BPL)	5%
LT-II : LT- Non Residential	
0-20 KW	4%
0-200 Units	0%
Above 200 units	0%
>20-<=50 KW	4%
>50 KW	4%
LT-III : LT-Public Water Works	
0-20 KW	3%
20-<=40 KW	5%

Category	CAGR Considered
> 40 KW	5%
LT-AG Metered (Pump sets)	2%
LT-AG Metered (Others)	0%
LT Poultry/High-tech	5%
LT V(A) : LT Industry- Power Looms	
0-20 KW (Upto & including 27 HP)	1%
Above 20 KW (above 27 HP)	5%
LT V(B) : LT Industry- General	
0-20 KW (Upto & including 27 HP)	1%
Above 20 KW (above 27 HP)	4%
LT X - Public services – Govt	
0-20 KW	3%
>20-50 kW	3%
>50 kW	3%
LT X - Public services – Other	0%
0-20 KW	3%
>20-50 kW	3%
>50 kW	3%

Connected Load Projections for Control Period

6.3.32 MSEDCL submitted that, based on the connected load/contract demand or provisional billing demand for FY 2018-19 and CAGR shown the tables above, MSEDCL has projected the connected load/contract demand (Excluding Bhiwandi DF) for various categories as shown in the following table:

Table 6-19: Connected Load/Contract Demand projections (HT Category) for the Control Period (kVA)

Category	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
HT-I Industries	8,189,374	8,270,653	8,352,745	8,435,658	8,519,399
HT-II Commercial	575,160	586,665	598,400	610,370	622,580
HT III Railways	17,160	17,527	17,904	18,290	18,684
HT IV-PWW	310,195	318,381	326,800	335,457	344,360
HT V Agricultural	460,978	478,078	496,253	515,571	536,104
HT VI Bulk Supply (Housing Complex)	54,308	54,852	55,402	55,958	56,519
HT Temporary	2,528	2,931	3,079	3,234	3,396
HT-IX Public services	264,422	268,390	272,533	276,860	281,383
MSPGCL AUX SUPPLY	80,156	80,156	80,156	80,156	80,156
HT EV Charging Stations	1,004	1,004	1,004	1,004	1,004
Total -HT Consumers	**9,955,285**	**10,078,637**	**10,204,276**	**10,332,558**	**10,463,585**

Table 6-20: Connected Load/Contract Demand projections (LT Category) for the Control Period

Category	Unit	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
		Projected	Projected	Projected	Projected	Projected
LT-I (A): LT- BPL	KW	41,717	42,135	42,557	42,983	43,413

Category	Unit	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
		Projected	Projected	Projected	Projected	Projected
LT-I (B) : LT-Residential(Other than BPL)	KW	22,978,922	24,127,869	25,334,263	26,600,977	27,931,026
LT-II : LT- Non Residential						
0-20 KW	KVA	3,923,431	4,080,369	4,243,584	4,413,328	4,589,862
>20-<=50 KW	KVA	360,912	375,349	390,363	405,978	422,218
>50 KW	KVA	222,404	231,301	240,554	250,177	260,185
LT-III : LT-Public Water Works						
0-20 KW	KVA	103,031	105,705	108,448	111,262	114,149
20-<=40 KW	KVA	26,489	27,814	29,205	30,666	32,200
> 40 KW	KVA	32,916	34,562	36,291	38,106	40,012
LT-IV: LT-Agriculture						
*** LT-AG-Unmetered (Pump sets)	HP	7,422,999	7,422,999	7,422,999	7,422,999	7,422,999
LT-AG Metered (Pump sets)	HP	14,637,560	14,930,312	15,228,919	15,533,498	15,844,168
LT-AG Metered (Others)	HP	310,250	310,250	310,250	310,250	310,250
LT V(A) : LT Industry- Power Looms						
0-20 KW (Upto & including 27 HP)	KVA	265,188	268,018	270,878	273,769	276,690
Above 20 KW (above 27 HP)	KVA	249,957	262,455	275,578	289,357	303,825
LT V(B) : LT Industry- General						
0-20 KW (Upto & including 27 HP)	KVA	2,052,218	2,068,192	2,084,291	2,100,515	2,116,865
Above 20 KW (above 27 HP)	KVA	1,745,259	1,820,809	1,899,630	1,981,863	2,067,656
Streetlight (LT-VI)						
Gram panchayat A, B & C Class Municipal Council	KW	200,623	202,176	203,742	205,320	206,910
Municipal corporation Area	KW	210,624	216,787	223,130	229,659	236,379
LT Temporary	KW	32,308	33,924	35,621	37,403	39,274
LT-VIII : LT-Advertisements & hoardings	KW	6,838	6,989	7,144	7,302	7,464
LT-IX : LT-Crematorium and Burial Grounds	KW	1,855	1,948	2,046	2,149	2,257
LT X - Public services - Govt						
0-20 KW	KVA	43,316	44,616	45,955	47,334	48,755
>20-50 kW	KVA	4,531	4,667	4,808	4,808	4,953
>50 kW	KVA	3,910	4,028	4,149	4,149	4,274
LT X - Public services - Other						
0-20 KW	KVA	167,164	172,179	177,345	177,345	182,666
>20-50 kW	KVA	35,015	36,066	37,148	37,148	38,263
>50 kW	KVA	36,237	37,325	38,445	38,445	39,599

6.3.33 For the purpose of Revenue Estimation, MSEDCL has considered the average number of consumers, connected load, billing demand of the year end since the consumers gets added throughout the year.

Commission's Analysis and Rulings

6.3.34 For the purpose of time series analysis of growth rates (sales, number of consumers and connected load/contract demand), the historical data and actual figures of FY 2019-20 (Sales, Number of consumers, Connected Load/Contract Demand) were available only upto first half i.e. FY 2019-20 (H1) as part of MYT Petition, whereas the Sales for the

remaining six months i.e. FY 2019-20 (H2) were estimated. Hence, for the purpose of projections of Sales, the Commission has considered the approved Category-wise Sales for FY 2018-19 as the base year including approved AG Sales, as per rationale elaborated under True-up section for assessment of AG Sales for FY 2018-19.

6.3.35 Further, the Commission has analysed category-wise CAGR (5-yr, 3-yr and yr-to-yr) and also compared the actual growth vis-à-vis growth rates approved in earlier Order. The Commission also notes that as the period of projection spans tenure of 5 years, it would be appropriate to consider 5-yr CAGR instead of 3-yr CAGR except in cases where significant variation is observed in yr-to-yr growth in recent times. Thus, the Commission has applied, in most cases 5 years CAGR for projections of sales for the 4th Control Period i.e. for FY 2020-21 to FY 2024-25. Where it is considered necessary because of aberrations in the reported year-on-year growth rates of certain categories, the Commission has applied the correction in growth rate projections, or considered MSEDCL's projection upon reviewing the rationale/justification provided by MSEDCL, to arrive at more realistic projections. Detailed rationale and category-wise growth factors considered for sales projections is covered in subsequent paragraphs.

6.3.36 Further, as per MSEDCL's submission, the Franchisee Agreement of Nagpur DF has been terminated on September, 2019. Thus, the Commission while projecting Sales for the 4th Control Period has merged the Category wise Sales of Nagpur DF area along with MSEDCL's Sales similar to the approach adopted by MSEDCL for projection purpose. The Commission notes that MSEDCL has not submitted any details of the upcoming franchisee in their distribution area. The Commission assumes that since the new franchisee agreements are likely to come into effect now, the details of the same with changes in numbers of all the parameters will be submitted by MSEDCL during MTR. The growth rates considered by the Commission are discussed in the following paragraphs:

HT I – Industry

6.3.37 The Commission has considered a growth rate of 4% for the 4th Control Period, which is same as considered by MSEDCL. The 5-year CAGR observed for this category works out to 5.8% considering FY 2018-19 as base year for computation of CAGR. However, the Commission has also observed the reverse migration of the OA Sales during FY 2018-19, which would have contributed to the increase in HT – Industry sales during FY 2018-19 and CAGR computation to that extent. However, yr-to-yr growth for sales in HT-Industry category in the subsequent year during FY 2019-20 (based on actual sales during H1 and estimated sales in H2) is only marginal. Further, with proposed measures of rebate for incremental consumption, tariff revisions etc, it

is expected that industrial sales would increase. Hence, the Commission has considered moderate growth rate of 4% in line with MSEDCL's projections.

HT II – Commercial

6.3.38 The 5 years weighted average CAGR for HT Commercial category works out to be negative. Hence, the Commission has considered the growth rate of 2% across the HT Commercial Category, which is same as considered by MSEDCL.

HT III – Metro/Monorail/Railways

6.3.39 The 5 years weighted average CAGR for HT Metro/Monorail/Railway category works out to be negative and y-o-y growth is more than 50%. Hence, the Commission has considered the growth rate of 2% across the HT Metro/Monorail/Railways Category, which is same as considered by MSEDCL.

HT IV – Public Water Works (PWW)

6.3.40 5 years weighted average CAGR works out to be 2.5% as compared to MSEDCL's assumption of 5%. Thus, Commission has considered the 5 years CAGR growth rate for HT PWW.

HT V – Agriculture

6.3.41 High aberrations were observed in 5 years weighted average CAGR, thus Commission has considered 3 years CAGR of 3.1%.

HT VI – Group Housing Society

6.3.42 The 5 years weighted average CAGR works out to be 0.9%, which the Commission has considered for projecting the sales.

HT VIII – Temporary Supply

6.3.43 As regards the HT Temporary Supply Religious, the Commission expects zero growth rate for the ensuing years, which is same as considered by MSEDCL. Further, for HT Temporary Supply Others, the Commission has considered the 3 years weighted average CAGR, which works out to be 3.4%. Further, with rationalisation of tariff categories, these categories would no longer be under operation, however, for the purpose of sales projections, the sales under these categories have been projected as such.

HT IX Public Services

6.3.44 The 5 years weighted average CAGR works out to be 4.6%, which is considered by the Commission across the entire sub-categories of HT IX Public Services.

HT X MSPGCL Aux. Supply

6.3.45 The Commission expects no growth in case of this category, hence, 0% growth rate considered in line with MSEDCL's submission.

HT EV Charging Stations 22 kV

6.3.46 The Commission expects no growth in case of this category, hence, 0% growth rate considered in line with MSEDCL's submission.

LT I – Residential

6.3.47 The 5 years weighted average CAGR works out to be 4.9%, which is considered by the Commission across LT Residential category and for projection of slab-wise consumption.

LT II – Non-Residential

6.3.48 The 5 years weighted average CAGR works out to be 8.5%, which is considered by the Commission across LT Non-Residential Category and for projection of slab-wise consumption.

LT III - PWW

6.3.49 The 5 years weighted average CAGR works out to be 6.2%, which is considered by the Commission across LT PWW Category and for projection of slab-wise consumption. .

LT IV – Agriculture

6.3.50 The Commission has elaborated under True-up chapter, its views and detailed rationale for assessment of AG consumption norm upon taking into account/modifying the methodology recommended in the Final Report by the AG Working Group. Accordingly, the revised AG consumption norm (kWh/HP/annum) as approved by the Commission for FY 2018-19 has been considered for the purpose of projection of AG sales, which are estimated upon multiplication of AG consumption norm and projected connected load taking into account growth in projected number of AG consumers over 4th Control Period.

LT V – Industry

6.3.51 As regards the LT Industry – Power Loom the Commission has considered the 5 years

CAGR of 4.8% as against the 4% growth rate considered by MSEDCL. For LT Industry -General the Commission has considered the 5 years CAGR of 3.3% as against 4% CAGR considered by MSEDCL.

LT VI – Street Light

6.3.52 The 5 years CAGR growth rate showed significant aberration, thus the Commission has considered the weighted average of 3 years CAGR of 6.4% for the LT VI Street Light.

LT VII – Temporary Supply

6.3.53 The Commission expects no growth in case of this category, hence, 0% growth rate considered in line with MSEDCL's submission.

LT VIII – Advertisement Hoardings and LT IX - Crematorium and Burial Grounds

6.3.54 The Commission has considered the 5 years CAGR which is 5.6% and 4% for LT VIII - Advertisement Hoardings and LT IX - Crematorium and Burial Grounds, respectively, which is in line with MSEDCL projections. Further, with rationalisation of tariff categories, these categories would no longer be under operation and would be merged with LT Commercial and LT Residential (0-100) respectively, however, for the purpose of sales projections, the sales under these categories have been projected as such.

LT X Public Services

6.3.55 These consumer category/classification has been created in the recent past, hence historical 5 years CAGR showed very abnormal high growth rate, thus the Commission has considered the growth rate of 6% across sub-categories of LT Public Services, which is same as considered by MSEDCL.

6.3.56 The Commission has applied the Category-wise growth rates as above for projecting the Sales of single operating DF area of Bhiwandi.

6.3.57 Following table sets out the HT and LT sales projections approved by the Commission Excluding DF Sales for FY 2020-21 to FY 2024-25.

Table 6-21: Sales for FY 2020-21 to FY 2024-25 (Excluding DF Sales) as approved by the Commission (MU)

Consumer Category & Consumption Slab	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT Category					
HT-I Industries	33,577	34,916.20	36,309	37,757	39,263
HT-II Commercial	1,854	1,893.14	1,933	1,974	2,015
HT-III RAILWAYS/Metro/Mono	80	82.07	84	85	87

Consumer Category & Consumption Slab	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT-IV Public Water Works (PWW)	1,663	1,704.67	1,747	1,791	1,836
HT -V AGRICULTURE	1,244	1,282.89	1,323	1,365	1,408
HT-VI GROUP HOUSING SOCIETY	239	240.86	243	245	247
HT VIII-Temporary Supply	6	5.78	6	6	6.36
HT-IX Public Services	1,098	1,148.74	1,202	1,257	1,315
HT-XV MSPGCL AUX SUPPLY	184	183.74	184	184	184
HT AG Others (Poultry)	259	267.54	276	285	294
H.T. EV CHARGING STATIONS 22 KV	0	0.31	0	0	0
TOTAL HT Category	**40,205**	**41,726**	**43,307**	**44,949**	**46,655**
LT-I (A): LT- BPL	45	47	50	52	55
LT-I (B) : LT-Residential(Other than BPL)	22,602	23,704	24,859	26,070	27,340
LT - II Non-Domestic	6,753	7,309	7,912	8,565	9,274
LT - III PWW	891	940	992	1,047	1,106
LT-AG-Unmetered (Pump sets)	8,783	8,783	8,783	8,783	8,783
LT-AG Metered (Pump sets)	17,564	18,076	18,604	19,147	19,706
LT-AG Metered (Others)	137	137	137	137	137
LT V(A) : LT Industry- Power Looms	2,166	2,271	2,381	2,496	2,616
Total LT V(B) : LT Industry- General	5,349	5,608	5,879	6,164	6,462
LT Street Light	2,258	2,402	2,556	2,719	2,892
LT Temporary Supply	24	24	24	24	24
LT-VIII : LT-Advertisements & Hoardings	5	5	5	6	6
LT-IX : LT-Crematorium and Burial Grounds	2	2	2	2	2
LT - X - Public services	565	602	641	683	728
T L.T. EV Charging Stations	0	0	0	0	0
Total LT Category	**67,145**	**69,910**	**72,823**	**75,894**	**79,130**
MSEDCL Incl. Fran. Total sales	**107,349**	**111,636**	**116,130**	**120,843**	**125,785**

6.3.58 Following Table summarizes the projections approved by the Commission (including DF area Sales) from FY 2020-21 to FY 2024-25:

Table 6-22: Sales for 4th Control Period (Including DF Areas), as approved by Commission (MU)

Particulars	MYT Petition					Approved in this Order				
	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Sales excl. DF	1,11,241	1,15,477	1,19,954	1,24,695	1,29,719	107,349	111,636	116,130	120,843	125,785
Sales(Bhiwandi DF)	3,269	3,407	3,552	3,703	3,861	3,273	3,427	3,589	3,759	3,938
Total Sales	**1,14,510**	**1,18,884**	**1,23,506**	**1,28,397**	**1,33,580**	**110,622**	**115,063**	**119,719**	**124,602**	**129,723**

6.3.59 As regards, the projection of Number of Consumers, Billing Demand/Contract Demand, the Commission has noted the submissions and its rationale provided across the consumer categories. The Commission for the purposed of projections has considered the 5 years CAGR for most of the consumers categories, wherever negative growth rates were observed, the Commission has considered the zero-growth rate for such consumer categories.

6.4 Distribution Loss for Fourth Control Period

MSEDCL's Submission

6.4.1 MSEDCL submitted that it has been achieving a significant reduction in distribution losses and these efforts shall be continued and will further be enhanced. However, the loss reduction is a slow process and as the loss levels come down, further reduction in loss becomes difficult. MSEDCL has considered the distribution losses (excl. EHV) for the Control Period FY 2020-21 to FY 2024-25 considering year on year reduction of 0.25% from the approved Distribution losses of FY 2019-20 i.e. 13.26%.

Table 6-23: Proposed Distribution Losses (%) for 4th Control period as submitted by MSEDCL

Particulars	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
Distribution Losses (Excluding EHV)	13.01%	12.76%	12.51%	12.26%	12.01%

Commission's Analysis and Ruling

6.4.2 For determining the energy requirement for the 4th Control Period, the Commission has projected energy requirement by grossing up the projected sales with distribution loss trajectory for respective years. The Distribution Loss is a performance parameter and its reduction trajectory would be monitored through the revised reporting requirements specified for 4th Control Period.

6.4.3 For the Distribution Loss reduction trajectory, the Commission has taken the Loss level after excluding EHV sales approved for FY 2018-19 as the base for setting the year-wise trajectory for the 4th Control Period.

6.4.4 The revision in sales in FY 2018-19 consequent to the correction in Agriculture sales has resulted in a significant upward revision of Distribution Loss to 20.54% for FY 2018-19. The Loss trajectory for the 4th Control Period is set considering this restated base Loss level of FY 2018-19, gradually reducing over the five years from FY 2020-21 to FY 2024-25. Hence, the trajectory now approved and shown in the Table below has a targeted reduction of 2% in first 3 years of the 4th Control Period starting from FY 2020-21 to FY 2022-23 and a targeted reduction of 1% in last 2 years of the 4th Control Period i.e., in FY 2023-24 and FY 2024-25.

Table 6-24: Distribution Losses (%) for 4th Control period as approved by the Commission

Particulars	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Projected	Projected	Projected	Projected	Projected
Distribution Losses (Excluding EHV)	18.00%	16.00%	14.00%	13.00%	12.00%

6.5 Energy Balance for 4th Control Period from FY 2020-21 to FY 2024-25

6.5.1 MSEDCL stated that the quantum of sales in MU shown in the above sections of sales represent the sales of MSEDCL excluding the sales in the area served by Distribution Franchisees. As per the methodology adopted by Commission for calculating energy balance of MSEDCL as a whole, the sale to the consumers within the Distribution Franchisee area has also been considered. Therefore, total energy sale for Control Period FY 2020-21 to FY 2024-25 computed by MSEDCL is as shown below:

Table 6-25: Total Energy Sales for 4th Control period as submitted by MSEDCL (MU)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Energy Sales by MSEDCL	1,11,240.53	1,15,476.39	1,19,954.32	1,24,694.41	1,29,719.00
Add: Category wise sales in DF area (Bhiwandi)	3,269.49	3,407.40	3,551.80	3,703.03	3.861.50
Add: OA Sales (Conventional)	3,983.40	3,983.40	3,983.40	3,983.40	3,983.40
Add: OA Sales (Non-Conventional)	859.4	859.4	859.4	859.4	859.40
Total Energy Sales	**1,19,352.82**	**1,23,726.59**	**1,28,348.92**	**1,33,240.24**	**1,38,423.29**

6.5.2 The MSEDCL submitted the Energy Balance for FY 2020-21 to FY 2024-25 as summarised in the table below:

Table 6-26: Energy balance for 4th Control period as submitted by MSEDCL (MUs)

Sr. No.	Particulars	Calculation	UoM	FY 2020-21 Projected	FY 2021-22 Projected	FY 2022-23 Projected	FY 2023-24 Projected	FY 2024-25 Projected
1	LT Sales (Including D.F)	a	MU	73,257.14	75,873.96	78,640.63	81,568.68	84,670.74
2	HT Sales excluding EHV level sales (Including D.F)	b	MU	30,637.19	31,832.18	33,078.18	34,377.83	35,733.94
3	HT/LTIP Credit Sales and HT/LT Offset Export Solar	c	MU	-	-	-	-	-
4	Total Sales including D.F (Excluding EHV Sales)	d=a+b+c	MU	1,03,894.33	1,07,706.14	1,11,718.81	1,15,946.51	1,20,404.69

Sr. No.	Particulars	Calculation	UoM	FY 2020-21 Projected	FY 2021-22 Projected	FY 2022-23 Projected	FY 2023-24 Projected	FY 2024-25 Projected
5	OA Sales (Renewables)	e	MU	859.4	859.4	859.4	859.4	859.4
6	OA Sales (Conventional)	f	MU	3,983.40	3,983.40	3,983.40	3,983.40	3,983.40
7	Retail Energy Sale to Consumers (Excluding EHV Sales)	A=d+e+f	MU	1,08,737.12	1,12,548.93	1,16,561.61	1,20,789.31	1,25,247.48
8	Total Power Purchase	B=g+h	MU	1,36,888.13	1,41,650.83	1,46,645.40	1,51,950.32	1,57,572.78
9	Power Purchase Quantum from Intra-State sources	g	MU	98,545.25	1,02,239.58	1,07,158.54	1,11,560.85	1,15,981.20
10	Power Purchase Quantum from Inter-State sources	h	MU	38,342.88	39,411.25	39,486.86	40,389.47	41,591.58
11	Inter-State Losses	i	%	3.07%	3.07%	3.07%	3.07%	3.07%
12	Power Purchase Quantum from Inter-State sources at MS Periphery	j=h*(1-i)	MU	37,166.08	38,201.66	38,274.96	39,149.86	40,315.08
13	Add: FBSM	k	MU	-	-	-	-	-
14	Power Quantum handled at Maharashtra Periphery	l=g+j+k	MU	1,35,711.33	1,40,441.24	1,45,433.49	1,50,710.71	1,56,296.28
15	Infirm Non-PPA Wind Power	m	MU	914.25	914.25	914.25	914.25	914.25
16	Input for OA Consumption	n=f/(1-6%)	MU	4,237.66	4,237.66	4,237.66	4,237.66	4,237.66
17	Total Power Purchase Quantum Handled	o=l+m+n-w	MU	1,40,289.97	1,45,019.88	1,50,012.13	1,55,289.35	1,60,874.91
18	Surplus Power Traded	p	MU	-	-	-	-	-
19	Energy Requirement at G<>T Periphery	q=o-p	MU	1,40,289.97	1,45,019.88	1,50,012.13	1,55,289.35	1,60,874.91
20	Intra-State Transmission Loss	r	%	3.74%	3.73%	3.71%	3.70%	3.69%
21	Intra-State Transmission Loss	s=q*r	MU	5,248.75	5,405.59	5,570.41	5,745.20	5,930.38
22	Net Energy requirement at T<>D Periphery	t=q-s	MU	1,35,041.22	1,39,614.29	1,44,441.72	1,49,544.15	1,54,944.54
23	EHV Sales	u	MU	10,615.69	11,177.65	11,787.31	12,450.93	13,175.81
24	Net Energy Available for Sale at 33kV	v=t-u	MU	1,24,425.53	1,28,436.64	1,32,654.41	1,37,093.21	1,41,768.73
25	Energy injected and drawn at 33kV	w	MU	573.27	573.27	573.27	573.27	573.27
26	Total Energy Available for Sale at 33kV (Metered Energy at EHV and 33 kV Input)	C=v+w	MU	1,24,998.80	1,29,009.91	1,33,227.68	1,37,666.49	1,42,342.00
27	**Distribution Loss (Excl. EHV Sales)**	**D=C-A**	**MU**	**16,261.68**	**16,460.98**	**16,666.07**	**16,877.18**	**17,094.52**
28	**% Distribution Loss (Excl. EHV Sales)**	**E=D/C**	**%**	**13.01%**	**12.76%**	**12.51%**	**12.26%**	**12.01%**

Commission's Analysis and Ruling

6.5.3 The Commission has followed a bottom-up approach while approving the Energy Balance for Control Period FY 2020-21 and FY 2024-25. The quantum of sales to consumers is projected first. This energy requirement provides the basis for further grossing up for Distribution Loss, Intra-State loss and Inter-State loss to arrive at the actual energy input requirement to be procured.

6.5.4 Considering the total sales as approved earlier in this Chapter, the Commission has approved the pro-rata voltage-wise sales (Excluding Surplus Energy Trade projections) for the 4th Control Period from FY 2020-21 to FY 2024-25 for calculating the Energy Balance. As the surplus energy traded is difficult to access the voltage at which it gets consumed, therefore, the Commission has not included in voltage-wise sales considered below. Accordingly, the voltage-wise sale (Excluding Surplus Energy Trade projections) approved for the Energy Balance is shown in the following Table:

Table 6-27: Voltage-wise sales considered in Energy Balance for FY 2020-21, FY 2021-22 & FY 2022-23 as approved by the Commission (MU)

Voltage Level	FY 2020-21		FY 2021-22		FY 2022-23	
	MYT Petition	Approved in this order	MYT Petition	Approved in this order	MYT Petition	Approved in this order
Sales at > 66 kV (EHV Sales)	**10,616**	**10,357**	**11,178**	**10,751**	**11,787**	**11,159**
HT Sales (Excl. EHV)	**30,637**	**30,565**	**31,832**	**31,718**	**33,078**	**32,916**
LT Sales (Excl. AG Sales)	42,012	43,345	43,818	45,727	45,742	48,249
LT AG Sales	31,245	26,354	32,056	26,867	32,899	27,395
LT Sales - Total	***73,257***	***69,700***	***75,874***	***72,595***	***78,641***	***75,644***
Total Sales	**114,510**	**110,622**	**118,884**	**115,063**	**123,506**	**119,719**

Table 6-28: Voltage-wise sales considered in Energy Balance for FY 2023-24 & FY 2024-25 as approved by the Commission (MU)

Voltage Level	FY 2023-24		FY 2024-25	
	MYT Petition	Approved in this order	MYT Petition	Approved in this order
Sales at > 66 kV (EHV Sales)	**12,451**	**11,584**	**13,176**	**12,026**
HT Sales (Excl. EHV)	**34,378**	**34,160**	**35,734**	**35,452**
LT Sales (Excl. AG Sales)	47,793	50,919	49,983	53,747
LT AG Sales	33,776	27,939	34,688	28,498
LT Sales - Total	***81,569***	***78,858***	***84,671***	***82,245***

Voltage Level	FY 2023-24		FY 2024-25	
	MYT Petition	Approved in this order	MYT Petition	Approved in this order
Total Sales	**128,397**	**124,602**	**133,580**	**129,723**

6.5.5 The Commission has considered the approved sales comprising sales in the DF areas for calculation of the Energy Balance of 4th Control Period from FY 2020-21 and FY 2024-25. The Commission has considered a Distribution Loss reduction trajectory as approved in the earlier Section. As regards Intra-State transmission losses, the Commission has considered the actual intra-state transmission loss levels of FY 2019-20 of 3.18% as per the data submitted by the SLDC upto the month of January, 2020. As regards Inter-State losses, the Commission has considered the actual inter-state transmission losses of 3.10% for import of inter-state power upto the state periphery for FY 2018-19 as per the data submitted by MSEDCL in reply to the data gap query sought, which is Full Schedule and Net Schedule of Inter-State generating Units upto Maharashtra State Periphery as per WRLDC web based scheduling software available at WRLDC website.

Table 6-29: Inter-State Loss for 4th Control Period as approved by the Commission

Source of Power	At Regional Periphery (MUs)	Received at State Periphery (MUs)	Inter-state Loss (MUs)	Inter-state Loss (%)
NTPC	29,665.17	28,578.84	1,086.33	3.66%
NPCIL	4,475.32	4,389.33	85.99	1.92%
SSP	153.63	150.11	3.52	2.29%
Pench	43.71	41.97	1.74	3.98%
Mundra UMPP	4,854.00	4,699.78	154.22	3.18%
EMCO Power	1,313.25	1,267.38	45.87	3.49%
Total IPP & CS Hydro station	6,364.59	6,159.25	205.34	3.23%
Short Term Power Purchase including Banked Energy	6,022.64	5,963.42	59.22	0.98%
Total Power Scheduled from Inter State Source	**52,892.31**	**51,250.08**	**1,642.23**	**3.10%**

6.5.6 For the purpose of Energy Balance for 4th Control Period, the Commission has considered the Conventional Open Access Sales and Renewable Open Access Sales as approved in this Order for FY 2019-20 for 4th Control Period. In addition, the Commission has projected sale of surplus energy trading volume as 1% of the Total Sales (Including DF and excluding OA Sales), which amounts to around 1100 MU to 1300 MU over 4th Control Period. While this quantum has been estimated for the purpose of projections, it is neither a ceiling volume nor minimum trading volume being stipulated as such, MSEDCL should judiciously evaluate trading opportunities and engage in trading activities as deemed appropriate in the overall interest of optimisation of power purchase cost and enhancement of revenue. The rationale for projecting

surplus energy trade is elaborated under following paragraph.

6.5.7 With surplus contracted energy available at its disposal, the Commission opines that MSEDCL should explore avenues for increasing sales within its distribution area as well as it should explore opportunities of surplus trading of power through power exchanges and inter-utility exchange within state. Trading of such surplus power would help MSEDCL gainfully utilise surplus /stranded power generation/contracted capacity available with it instead of backing down. So long as the opportunity for revenue recovery from such sources exceed the variable/incremental cost of sourcing of such power, it would only benefit MSEDCL to reduce burden of surplus/stranded power capacity. Further, the Commission observes that MSEDCL has engaged in short term power procurement and trading in the past as well. However, it needs to more vigilant in terms of opportunities for gains/revenue enhancement and optimisation of power purchase cost. It is also worthwhile to mention here that power exchange and market based trading operations is undergoing change with expected introduction of Real time market, and many more innovations in the Day Ahead/Term Ahead contracts through introduction of power exchange based products. MSEDCL should further improve its internal capability/capacity and deploy analytical tools to explore such opportunities in its own interest as well as in the long term interest of the consumers. MSEDCL should maintain separate account of its market operations and should regularly undertake analysis of market information/transactions for future learning. The Commission shall scrutinise and undertake prudence check of such trading activities for efficacy of trading contracts, optimisation power purchase cost and shall also scrutinise reasons for missed opportunities (if any), at the time of MTR.

6.5.8 For projecting the revenue from sale of surplus power traded for 4th Control period, the Commission has considered the rate of sale at weighted average variable cost of power sources the respective year plus mark-up of Rs. 0.05 per kWh. The Commission has considered this additional revenue through surplus power trade in the ARR section.

6.5.9 Accordingly, Total Energy Sales to MSEDCL is approved for 4th Control Period as below:

Table 6-30: Total Energy Sales for FY 2020-21, FY 2021-22 & FY 2022-23 approved by the Commission (MU)

Particulars	FY 2020-21		FY 2021-22		FY 2022-23	
	MYT Petition	Approved in this Order	MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
Energy Sales by MSEDCL	111,241	100,265	115,476	104,319	119,954	108,573
Add: Sales in DF area	3,269	10,357	3,407	10,744	3,552	11,146

Particulars	FY 2020-21		FY 2021-22		FY 2022-23	
	MYT Petition	Approved in this Order	MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
Energy Sales including DF	**114,510**	**110,622**	**118,884**	**115,063**	**123,506**	**119,719**
Add: OA Sales (Conventional)	3,983	3,983	3,983	3,983	3,983	3,983
Add: OA Sales (Non-Conventional)	859	859	859	859	859	859
Add: Sale due to Surplus Energy Traded		1,106		1,151		1,197
Total Energy Sales	**119,353**	**116,571**	**123,727**	**121,057**	**128,349**	**125,759**

Table 6-31: Total Energy Sales for FY 2023-24 & FY 2024-25 approved by the Commission (MU)

Particulars	FY 2023-24		FY 2024-25	
	MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
Energy Sales by MSEDCL	124,694	113,038	129,719	117,725
Add: Sales in DF area	3,703	11,564	3,861.50	11,998
Energy Sales including DF	**128,397**	**124,602**	**133,581**	**129,723**
Add: OA Sales (Conventional)	3,983	3,983	3,983	3,983
Add: OA Sales (Non-Conventional)	859	859	859	859
Add: Sale due to Surplus Energy Traded		1,246		1,297
Total Energy Sales	**133,240**	**130,691**	**138,423**	**135,863**

6.5.10 Based on the revised estimate of Sales by the Commission as approved in the above tables for 4th Control Period, the Energy Balance for 4th Control Period is approved as shown in below tables:

Table 6-32: Energy Balance for FY 2020-21 & FY 2021-22 as approved by the Commission

Sr	Particulars	Calculation	UoM	FY 2020-21		FY 2021-22	
				MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
1	LT Agriculture Sales (Including D.F)	A	MU	31,385	26,354	32,196	26,867
2	LT Sales excluding Agriculture Sales (Including D.F)	B	MU	41,872	43,345	43,678	45,727
3	HT Sales excluding EHV level sales (Including D.F)	C	MU	30,637	30,565	31,832	31,718
4	**Total Sales including D.F (Excluding EHV Sales)**	**d=a+b+c**	**MU**	**103,894**	**100,265**	**107,706**	**104,313**
5	OA Sales (Renewables)	E	MU	859	859	859	859
6	OA Sales (Conventional)	F	MU	3,983	3,983	3,983	3,983

Sr	Particulars	Calculation	UoM	FY 2020-21		FY 2021-22	
				MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
7	**Retail Energy Sale to Consumers (Excluding EHV Sales)**	**A=d+e+f**	**MU**	**108,737**	**105,108**	**112,549**	**109,155**
8	Sale due to Surplus Energy Traded	B=1%*(d+t)	MU		1,106		1,151
9	**Retail Energy Sale including surplus traded (Excluding EHV Sales)**	**C=A+B**	**MU**		**106,214**		**110,306**
10	**Total Power Purchase**	**D=g+h**	**MU**	**136,888**	**139,584**	**141,651**	**141,940**
11	*Power Purchase Quantum from Intra-State sources*	g	MU	98,545	98,524	102,240	101,459
12	*Power Purchase Quantum from Inter-State sources*	h	MU	38,343	41,060	39,411	40,481
13	**Inter-State Losses**	**I**	**%**	**3.07%**	**3.10%**	**3.07%**	**3.10%**
14	*Power Purchase Quantum from Inter-State sources at MS Periphery*	j=h*(1-i)	MU	37,166	39,786	38,202	39,224
15	**Power Quantum handled at Maharashtra Periphery**	**k=g+j**	**MU**	**135,711**	**138,310**	**140,441**	**140,683**
16	Infirm Non-PPA Wind Power	l=e/(1-q)	MU	914	888	914	888
17	Input for OA Consumption	m=f/(1-q)	MU	4,238	4,114	4,238	4,114
18	**Total Power Purchase Quantum Handled**	**n=k+l+m-v**	**MU**	**140,290**	**142,738**	**145,020**	**145,112**
19	Surplus Power Traded	o=B	MU	-	1,106	-	1,151
20	**Energy Requirement at G<>T Periphery**	**p=n-o**	**MU**	**140,290**	**141,632**	**145,020**	**143,961**
21	**Intra-State Transmission Loss**	**Q**	**%**	**3.74%**	**3.18%**	**3.73%**	**3.18%**
22	Intra-State Transmission Loss	r=p*q	MU	5,249	4,502	5,406	4,576
23	Net Energy requirement at T<>D Periphery	s=p-r	MU	135,041	137,130	139,614	139,385
24	EHV Sales	T	MU	10,616	10,357	11,178	10,751
25	Net Energy Available for Sale at 33kV	u=s-t	MU	124,426	126,773	128,437	128,635
26	Energy injected and drawn at 33kV	V	MU	573	573	573	573
27	**Total Energy Available for Sale at 33kV**	**E=u+v**	**MU**	**124,999**	**127,346**	**129,010**	**129,208**
28	**Energy Available for Sale including Surplus traded (excluding OA Sales)**	**F=E-l-m+o**	**MU**		**123,451**		**125,357**
29	**Distribution Loss (Excl. EHV Sales and OA Sales)**	**G=E-A**	MU	**16,262**	**22,238**	**16,461**	**20,052**
30	**% Distribution Loss (Excl. EHV Sales and OA Sales)**	**H=G/F**	**%**	**13.01%**	**18.0%**	**12.76%**	**16.0%**

Table 6-33: Energy Balance for FY 2022-23 & FY 2023-24 as approved by the Commission

Sr	Particulars	Calculation	UoM	FY 2022-23		FY 2023-24	
				MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
1	LT Agriculture Sales (Including D.F)	A	MU	33,039	27,395	33,916	27,939
2	LT Sales excluding Agriculture Sales (Including D.F)	B	MU	45,602	48,249	47,653	50,919
3	HT Sales excluding EHV level sales (Including D.F)	C	MU	33,078	32,916	34,378	34,160
4	**Total Sales including D.F (Excluding EHV Sales)**	**d=a+b+c**	**MU**	**111,719**	**108,560**	**115,947**	**113,018**
5	OA Sales (Renewables)	E	MU	859	859	859	859
6	OA Sales (Conventional)	F	MU	3,983	3,983	3,983	3,983
7	**Retail Energy Sale to Consumers (Excluding EHV Sales)**	**A=d+e+f**	**MU**	**116,562**	**113,403**	**120,789**	**117,860**
8	Sale due to Surplus Energy Traded	B=1%*(d+t)	MU		1,197		1,246
9	**Retail Energy Sale including surplus traded (Excluding EHV Sales)**	**C=A+B**	**MU**		**114,600**		**119,106**
10	**Total Power Purchase**	**D=g+h**	**MU**	**146,645**	**144,484**	**151,950**	**148,759**
11	*Power Purchase Quantum from Intra-State sources*	g	MU	107,159	104,046	111,561	107,573
12	*Power Purchase Quantum from Inter-State sources*	h	MU	39,487	40,438	40,389	41,186
13	**Inter-State Losses**	**I**	**%**	**3.07%**	**3.10%**	**3.07%**	**3.10%**
14	*Power Purchase Quantum from Inter-State sources at MS Periphery*	j=h*(1-i)	MU	38,275	39,183	39,150	39,907
15	**Power Quantum handled at Maharashtra Periphery**	**k=g+j**	**MU**	**145,433**	**143,229**	**150,711**	**147,480**
16	Infirm Non-PPA Wind Power	l=e/(1-q)	MU	914	888	914	888
17	Input for OA Consumption	m=f/(1-q)	MU	4,238	4,114	4,238	4,114
18	**Total Power Purchase Quantum Handled**	**n=k+l+m-v**	**MU**	**150,012**	**147,657**	**155,289**	**151,909**
19	Surplus Power Traded	o=B	MU	-	1,197	-	1,246
20	**Energy Requirement at G<>T Periphery**	**p=n-o**	**MU**	**150,012**	**146,460**	**155,289**	**150,663**
21	**Intra-State Transmission Loss**	**q**	**%**	**3.71%**	**3.18%**	**3.70%**	**3.18%**
22	Intra-State Transmission Loss	r=p*q	MU	5,570	4,655	5,745	4,789
23	Net Energy requirement at T<>D Periphery	s=p-r	MU	144,442	141,805	149,544	145,874
24	EHV Sales	t	MU	11,787	11,159	12,451	11,584

Sr	Particulars	Calculation	UoM	FY 2022-23		FY 2023-24	
				MYT Petition	Approved in this Order	MYT Petition	Approved in this Order
25	Net Energy Available for Sale at 33kV	u=s-t	MU	132,654	130,645	137,093	134,290
26	Energy injected and drawn at 33kV	v	MU	573	573	573	573
27	**Total Energy Available for Sale at 33kV**	**E=u+v**	**MU**	**133,228**	**131,219**	**137,666**	**134,863**
28	**Energy Available for Sale including Surplus traded (excluding OA Sales)**	**F=E-l-m+o**	**MU**		**127,414**		**131,107**
29	**Distribution Loss (Excl. EHV Sales and OA Sales)**	**G=E-A**	MU	**16,666**	**17,816**	**16,877**	**17,002**
30	**% Distribution Loss (Excl. EHV Sales and OA Sales)**	**H=G/F**	**%**	**12.51%**	**14.0%**	**12.26%**	**13.0%**

Table 6-34: Energy Balance for FY 2024-25 as approved by the Commission

Sr.	Particulars	Calculation	UoM	FY 2024-25	
				MYT Petition	Approved in this Order
1	LT Agriculture Sales (Including D.F)	a	MU	34,828	28,498
2	LT Sales excluding Agriculture Sales (Including D.F)	b	MU	49,843	53,747
3	HT Sales excluding EHV level sales (Including D.F)	c	MU	35,734	35,452
4	**Total Sales including D.F (Excluding EHV Sales)**	**d=a+b+c**	**MU**	**120,405**	**117,698**
5	OA Sales (Renewables)	e	MU	859	859
6	OA Sales (Conventional)	f	MU	3,983	3,983
7	**Retail Energy Sale to Consumers (Excluding EHV Sales)**	**A=d+e+f**	**MU**	**125,247**	**122,540**
8	Sale due to Surplus Energy Traded	B=1%*(d+t)	MU		1,297
9	**Retail Energy Sale including surplus traded (Excluding EHV Sales)**	**C=A+B**	**MU**		**123,838**
10	**Total Power Purchase**	**D=g+h**	**MU**	**157,573**	**153,204**
11	*Power Purchase Quantum from Intra-State sources*	g	MU	115,981	112,105
12	*Power Purchase Quantum from Inter-State sources*	h	MU	41,592	41,099
13	**Inter-State Losses**	**i**	**%**	**3.07%**	**3.10%**
14	*Power Purchase Quantum from Inter-State sources at MS Periphery*	j=h*(1-i)	MU	40,315	39,823
15	**Power Quantum handled at Maharashtra Periphery**	**k=g+j**	**MU**	**156,296**	**151,928**
16	Infirm Non-PPA Wind Power	l=e/(1-q)	MU	914	888
17	Input for OA Consumption	m=f/(1-q)	MU	4,238	4,114

Sr.	Particulars	Calculation	UoM	FY 2024-25	
				MYT Petition	Approved in this Order
18	**Total Power Purchase Quantum Handled**	**n=k+l+m-v**	**MU**	**160,875**	**156,357**
19	Surplus Power Traded	o=B	MU	-	1,297
20	**Energy Requirement at G<>T Periphery**	**p=n-o**	**MU**	**160,875**	**155,059**
21	**Intra-State Transmission Loss**	**q**	**%**	**3.69%**	**3.18%**
22	Intra-State Transmission Loss	r=p*q	MU	5,930	4,929
23	Net Energy requirement at T<>D Periphery	s=p-r	MU	154,945	150,131
24	EHV Sales	t	MU	13,176	12,026
25	Net Energy Available for Sale at 33kV	u=s-t	MU	141,769	138,105
26	Energy injected and drawn at 33kV	v	MU	573	573
27	**Total Energy Available for Sale at 33kV**	**E=u+v**	**MU**	**142,342**	**138,678**
28	**Energy Available for Sale including Surplus traded (excluding OA Sales)**	**F=E-l-m+o**	**MU**		**134,974**
29	**Distribution Loss (Excl. EHV Sales and OA Sales)**	**G=E-A**	MU	**17,095**	**16,138**
30	**% Distribution Loss (Excl. EHV Sales and OA Sales)**	**H=G/F**	**%**	**12.01%**	**12.0%**

6.6 Power Purchase Expenses for 4th Control Period FY 2020-21 to FY 2024-25

MSEDCL's Submission

6.6.1 MSEDCL has considered the following sources of firm power for projecting the power purchase expenses for the 4th Control Period:

- MSPGCL
- Central Generating Stations
- JSW (Ratnagiri)
- Mundra UMPP - CGPL
- Adani Power Ltd.
- Rattanindia Ltd.
- Emco Power Ltd.; etc.

6.6.2 MSEDCL submitted that it also buys power from Sardar Sarovar Project (SSP) and Pench Hydro project, renewable energy sources including co-generation, wind and solar. MSEDCL may also purchase the power from the Power trading Companies,

Power exchanges in case of shortfall from regular sources or increase in demand depending on the availability.

6.6.3 Assumptions for power purchase for 4th Control Period

6.6.4 MSEDCL submitted that it has procured power from different sources on Merit Order Dispatch Principle for optimum utilization of the sources at least cost. For projection of availability, MSEDCL has considered the entire power available from all the tied-up sources during this period to meet the demand. Considering the capacity available and the demand projection, no power procurement from Traders or power exchange has been projected by MSEDCL for the Control period FY 20-21 to FY 24-25.

6.6.5 Further, MSEDCL submitted that a realistic approach has been adopted in projecting the power purchase availability based on the actual availability and considering upcoming projects in the period FY 2020-21 to FY 2024-25.

6.6.6 Further, MSEDCL submitted that for estimating the power purchase cost, merit order principles have been considered. As per the provisions of MYT Regulations 2019, MSEDCL has projected the monthly power requirement using the monthly sales projections and applying monthly MOD. While full fixed (capacity) charges have been considered for all the plants, the variable charges corresponding to the cheaper sources of power have been considered, whereas no variable charges have been considered in respect of energy not scheduled for power purchase (according to the merit order dispatch principles).

6.6.7 MSEDCL further submitted that for power procurement from competitive bidding route, the tariff has been considered based on the rate quoted as per the terms of the PPA with the escalation based on the CERC rates, wherever applicable.

6.6.8 Sources wise Power Purchase Projection for 4th Control Period

6.6.9 **IPPs**- MSEDCL submitted that it procures power from 9 Independent Power Producers (IPPs) though 9 long term Power Purchase Agreements (PPAs) whose tariff is determined through competitive bidding process. For the projection of variable charges for the MYT Control Period, CAGR of last four financial years with FY 2018-19 as a base has been considered.

MSEDCL further submitted that for the computation of Capacity charges, MSEDCL has projected the escalable component of Capacity Charges considering CAGR of last four financial years with FY 2018-19 as a base. Non-escalable component of Capacity Charges has been considered as quoted in the PPA of respective IPPs.

6.6.10 **MSPGCL**- MSEDCL submitted that it has considered the operational parameters as

well as variable charges for MSPGCL Stations as per the MYT Petition filed by MSPGCL in Case No. 296 of 2019. MSPGCL in its petition had made submissions regarding Mine specific prices and overall impact of such increase in coal price. Therefore, MSEDCL submitted that it has considered the revised operational parameters as well as variable charges as per the revised Petition filed by MSPGCL on 10th December 2019.

6.6.11 MSEDCL further submitted that for projection of capacity charges for the control Period, MSEDCL has considered AFC as claimed by MSPGCL in its petition. However, AFC and power purchase towards retiring units i.e. Bhusawal 03 & Nashik 03 have not been considered by MSEDCL as the said units are set to retire in May 2022 and April, 2020. In addition, impact of additional capitalization against FGD installation in the form interest on Long Term Loan, Depreciation & RoE for Khaparkheda 01 to 04 and Koradi 06, 07 has not been considered. Further, Capacity charges for Parli 04 & 05 has not been considered as the units are under RSD.

6.6.12 **NTPC**- MSEDCL submitted that the variable charges for existing NTPC stations have been projected based on the CAGR of actual variable rate for last 4 financial years. For new NTPC stations like Lara, Gadarwara, Solapur Unit – II & Khargone, variable charges have been adopted as submitted by NTPC in its tariff petition with CERC and the same has been projected for FY 2020-21 to FY 2024-25 considering same CAGR of NTPC Solapur – I. Further, Projection of Capacity Charges for 4th Control period from FY 2020-21 to FY 2024-25 is worked out based on CAGR considering the capacity charges of last 4 Financial Years on Normative basis.

6.6.13 **Power Procurement from Renewable Energy Sources** - MSEDCL submitted that it has projected the generation from solar and non-solar energy sources based on estimated capacity addition and expected CUFs to meet the RPO Targets set by the Commission. The following table provides the details of expected capacity addition during the Control Period.

Table 6-35: Expected RE Capacity Addition as submitted by MSEDCL (MW)

Particulars	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Capacity Addition	2527	974	3134	1684	1000	1400
Wind EPA expiring	562	282	214	137	137	569
Net Capacity Addition	1965	692	2920	1547	863	831

6.6.14 MSEDCL submitted that the Commission has notified MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2019. As per the said Regulations, the RPO targets have been

revised drastically as per the table given below. In addition, MSEDCL submitted that the Commission in RPO Regulations, 2019 has specified that total consumption of electricity for specifying RPO percentage shall exclude the electricity procured from Hydro power. Hence, MSEDCL submitted that it would fulfil renewable purchase obligations (Both Solar as well as Non-Solar) considering the total consumption of electricity after excluding the consumption met from Hydro Power for 4th Control Period.

Table 6-36: RPO Targets for 4th Control Period as set in RPO Regulations, 2019 as submitted by MSEDCL

Year	Quantum of Purchase (in %) from Renewable Energy Sources (in terms of energy equivalent in kWh)		
	Solar	Non-Solar	Total
2020-21	4.50%	11.50%	16.00%
2021-22	6.00%	11.50%	17.50%
2022-23	8.00%	11.50%	19.50%
2023-24	10.50%	11.50%	22.00%
2024-25	13.50%	11.50%	25.00%

6.6.15 MSEDCL submitted that Source-wise power purchase from renewable energy sources is projected for 4th Control Period as summarised in following table.

Table 6-37: Source-wise power purchase from RE sources for 4th Control Period as submitted by MSEDCL (MU)

Source	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Bagasse/Biomass (a)	5,082	5,259	5,324	5,324	5,324
Wind(b)	8,202	9,050	10,128	10,128	10,128
Non Solar (a)+(b)	***13,284***	***14,309***	***15,452***	***15,452***	***15,451***
Solar	***6,988***	***9,855***	***14,699***	***18,430***	***21,051***
Total	**20,272**	**24,164**	**30,151**	**33,882**	**36,503**

6.6.16 **Inter-State Transmission Charges** – MSEDCL submitted that the PGCIL charges have been increasing considerably in last 4-5 years after implementation of POC mechanism. MSEDCL has projected the PGCIL charges for FY 2020-21 to FY 2024-25 considering a growth of 5% per annum over the estimated charges for FY 19-20.

6.6.17 **Power Purchase from Short Term Markets**: MSEDCL submitted that during the higher demand or shortage from regular sources due to various reasons including break downs, fuel shortage etc., MSEDCL may require to purchase power from exchanges and through short term power purchase tenders throughout the year. Hence it is

submitted that, considering the volatile nature of short term power market and uncertainty in supply of power from long term sources on account of various reasons, MSEDCL requested the Commission to accord in principle approval for procurement of power on DEEP e-bidding portal/ power exchange based on the projected average power purchase rate. MSEDCL also requested the Commission to revise the ceiling rate for procurement of power on DEEP e-bidding portal/ power exchange considering the projected power purchase rate during the Control Period.

6.6.18 Following tables provide the summary of source wise power purchase quantum and cost for the Period FY 20-21 to FY 24-25 as submitted by MSEDCL.

Table 6-38: Source wise Power Purchase quantum and cost for FY 2020-21 to FY 2022-23 as submitted by MSEDCL

Particulars	FY 2020-21			FY 2021-22			FY 2022-23		
	Quantum	Cost	Rate	Quantum	Cost	Rate	Quantum	Cost	Rate
	MU	Rs Cr.	Rs./ Unit	MU	Rs Cr.	Rs./ Unit	MU	Rs Cr.	Rs./ Unit
MSPGCL	55,307.12	24,806.74	4.49	55,262.53	25,654.11	4.64	55,144.56	26,397.72	4.79
NTPC	25,598.81	9,815.06	3.83	26,667.17	10,389.47	3.9	26,742.79	10,611.73	3.97
NPCIL	4,884.58	1,396.92	2.86	4,884.58	1,430.57	2.93	4,884.58	1,465.12	3
SSP	1,209.94	248.05	2.05	1,209.94	248.06	2.05	1,209.94	248.06	2.05
Pench	136.5	27.98	2.05	136.5	27.98	2.05	136.5	27.98	2.05
Dodson	115.72	17.78	1.54	115.72	17.92	1.55	115.72	18.11	1.57
JSW	1,913.18	692.67	3.62	1,913.18	731.78	3.82	810.03	417.68	5.16
CGPL (Mundra UMPP)	5,157.89	1,515.68	2.94	5,157.89	1,568.26	3.04	5,157.89	1,623.54	3.15
Adani Power	20,937.22	7,869.57	3.76	20,784.14	7,962.99	3.83	20,937.22	8,254.69	3.94
EMCO Power	1,355.17	613.16	4.52	1,355.17	650.26	4.8	1,355.17	679.87	5.02
Rattan India	-	692.48	-	-	692.48	-	-	692.48	-
Renewable	20,272.00	9,862.29	4.86	24,164.00	10,660.92	4.41	30,151.00	12,965.83	4.3
PGCIL Charges	-	3,676.18	-	-	3,859.99	-	-	4,052.99	-
Total Power Purchase	**136,888.13**	**61,234.57**	**4.47**	**141,650.83**	**63,894.79**	**4.51**	**146,645.40**	**67,455.81**	**4.6**

Table 6-39: Source wise Power Purchase quantum and cost for FY 2023-24 to FY 2024-25 as submitted by MSEDCL

Particulars	FY 2023-24			FY 2024-25		
	Quantum	Cost	Rate	Quantum	Cost	Rate
	MU	Rs Cr.	Rs./ Unit	MU	Rs Cr.	Rs./ Unit
MSPGCL	55,908.76	27,636.92	4.94	57,779.78	28,717.14	4.97
NTPC	27,610.48	11,094.73	4.02	28,847.51	11,759.78	4.08
NPCIL	4,897.96	1,504.72	3.07	4,884.58	1,537.05	3.15
SSP	1,213.26	248.75	2.05	1,209.94	248.07	2.05
Pench	136.87	28.06	2.05	136.5	27.98	2.05

Particulars	FY 2023-24			FY 2024-25		
	Quantum	Cost	Rate	Quantum	Cost	Rate
	MU	Rs Cr.	Rs./ Unit	MU	Rs Cr.	Rs./ Unit
Dodson	116.04	27.68	2.39	115.72	32.93	2.85
JSW	736.28	410.6	5.58	413.29	334.63	8.1
CGPL (Mundra UMPP)	5,172.02	1,684.98	3.26	5,157.89	1,742.82	3.38
Adani Power	20,917.77	8,265.39	3.95	20,937.22	8,050.30	3.84
EMCO Power	1,358.88	712.34	5.24	1,355.17	744.72	5.5
Rattan India	-	692.48	-	142.19	748.55	
Renewable	33,882.00	14,355.53	4.24	36,593.00	15,405.57	4.21
PGCIL Charges	-	4,255.64	-	-	4,468.42	-
Total Power Purchase	**1,51,950.32**	**70,917.81**	**4.67**	**1,57,572.78**	**73,817.97**	**4.68**

Commission's Analysis and Ruling

6.6.19 As set out in the Section on Energy Balance, the Commission has approved the following Energy Input requirement at G<>T periphery for the 4th Control Period FY 2020-21 and FY 2024-25, as against MSEDCL's projection.

Table 6-40: Energy Input for FY 2020-21 to FY 2024-25 as approved by the Commission (MU)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Energy Input Requirement at G<>T periphery **(MSEDCL MYT Petition)**	136,888	141,651	146,645	151,950	157,573
Energy Input Requirement at G<>T periphery **(Approved in this Order)**	139,584	141,940	144,484	148,759	153,204

6.6.20 Accordingly, for estimating the power purchase quantum and cost for the 4th Control Period FY 2020-21 to FY 2024-25, the Commission has adopted the following two-step approach:

Step-1: Station-wise analysis of projection of energy quantum and rates, as against the MSEDCL projections.

Step-2: Approval of Station-wise energy quantum and cost based on MOD principles for each month of the Control Period, and approval of total power purchase quantum and cost for respective periods.

6.6.21 Step-1 Analysis: Projection of available Power Purchase Quantum and Rate

MSPGCL

6.6.22 MSEDCL has provided the break-up of Station-wise power purchase quantum and cost of MSPGCL that it has considered for its projections. In its recent MYT Order for MSPGCL in Case No.296 of 2019, the Commission has approved the cost and quantum of power purchase of its existing Stations/Units for the Control Period FY 2020-21 and

FY 2024-25 as shown below.

Table 6-41: Generation Quantum of MSPGCL Stations for 4th Control Period as approved in Case No. 296 of 2019 (in MU)

Station/Unit	FY 2020-21 to FY 2022-23		FY 2023-24		FY 2024-25	
	Gross Gen.	Net Gen.	Gross Gen.	Net Gen.	Gross Gen.	Net Gen.
Bhusawal	1290.47	1149.03	1294.01	1152.18	1290.47	1149.03
Chandrapur	11359.44	10473.40	11390.56	10502.09	11359.44	10473.40
Khaperkheda	4947.06	4467.19	4960.61	4479.43	4947.06	4467.19
Koradi	1310.46	1168.80	1314.05	1172.00	1310.46	1168.80
Nashik	4415.04	3940.42	4427.14	3951.22	4415.04	3940.42
Uran	2991.14	2898.42	2999.34	2906.36	2991.14	2898.42
Paras Units 3 & 4	3499.22	3173.79	3508.81	3182.49	3499.22	3173.79
Parli Units 6 & 7	3449.09	3128.32	3458.54	3136.89	3449.09	3128.32
Khaperkheda Unit 5	3566.33	3352.35	3576.11	3361.54	3566.33	3352.35
Bhusawal Units 4 & 5	7446.00	6999.24	7466.40	7018.42	7446.00	6999.24
Koradi Units 8, 9 & 10	10409.76	9785.17	10438.28	9811.98	10409.76	9785.17
Chandrapur Units 8 & 9	7281.79	6844.89	7301.74	6863.64	7281.79	6844.89
Parli Unit 8	1614.34	1477.12	1618.77	1481.17	1614.34	1477.12
Total	**63580.14**	**58858.15**	**63754.33**	**59019.41**	**63580.14**	**58858.15**

Table 6-42: Generation Cost of MSPGCL Stations for 4th Control Period as approved in Case No. 296 of 2019 (in MU)

Station/Unit	FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		FY 2024-25	
	AFC	ECR	AFC	ECR	AFC	ECR	AFC	ECR	AFC	ECR
	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh
Bhusawal	144.29	3.915	132.48	4.007	138.05	4.102	148.46	4.199	153.33	4.298
Chandrapur	838.63	2.539	835.44	2.539	865.59	2.658	880.08	2.720	893.20	2.783
Khaperkheda	447.87	2.808	454.08	2.876	465.23	2.945	470.65	3.016	474.67	3.087
Koradi	186.38	3.136	184.66	3.225	190.80	3.311	196.56	3.399	201.96	3.489
Nashik	479.32	3.394	472.92	3.480	486.95	3.569	500.56	3.660	497.29	3.753
Uran	188.37	2.683	197.07	2.764	211.19	2.847	212.89	2.932	213.65	3.020
Paras Units 3 & 4	543.31	2.989	524.39	3.067	441.17	3.146	432.88	3.227	436.55	3.311
Parli Units 6 & 7	511.53	4.000	501.62	4.118	424.05	4.240	417.73	4.360	421.20	4.482
Khaperkheda Unit 5	540.62	2.458	530.16	2.520	520.88	2.583	511.98	2.649	501.83	2.713
Bhusawal Units 4 & 5	1131.42	3.267	1094.29	3.350	1074.51	3.436	1052.44	3.524	1029.04	3.615
Koradi Units 8, 9 & 10	1577.09	2.284	1541.49	2.340	1519.07	2.398	1492.82	2.457	1462.80	2.518
Chandrapur Units 8 & 9	1125.62	2.453	1107.43	2.512	1096.20	2.573	1081.74	2.636	1064.01	2.700

Station/Unit	FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		FY 2024-25	
	AFC	ECR	AFC	ECR	AFC	ECR	AFC	ECR	AFC	ECR
	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh	Rs. Crore	Rs./kWh
Parli Unit 8	341.49	3.830	337.63	3.943	336.41	4.060	333.48	4.174	328.88	4.290
Hydro	276.64	-	268.92	-	286.43	-	291.62	-	294.97	-
Lease Rent	567.32		555.84		555.84		533.76		525.55	
Total	**8899.91**		**8738.42**		**8612.38**		**8557.66**		**8498.94**	

6.6.23 For projecting the power purchase quantum and cost of existing Stations of MSPGCL, the Commission has taken the rates, available quantum and cost approved under in the MSPGCL MYT Order in Case No. 296 of 2019, as shown above. The Commission observes that while approving the ECR (Energy Charge Rate), average fuel cost escalation upto 3% p.a. has already been factored in estimation of ECR. It may be noted that exact figures of escalation factors and ECR rate for each station has been stipulated under MSPGCL MYT Order in Case 296 of 2019.

6.6.24 In addition, the Commission has approved the Lease rent of the Hydro Plants as per MSPGCL's MYT Order in Case No. 296 of 2019 as other charges, and not included in the AFC component of the Hydro stations for 4th Control Period.

6.6.25 Further, in Case No. 296 of 2019, the Commission has approved AFC for the Units to be retired for the whole 4th control period from FY 2020-21 to FY 2024-25. The Commission further has directed MSPGCL that pursuant to COD of the upcoming Units, MSPGCL should retire the old Units and stop raising the bills towards approved ARR for the retired Units. Further, the Commission in Case No. 296 of 2019 has not considered new Units of Bhusawal Unit 6 and Koradi Unit 11 and 12 expected to be commissioned in FY 2022-23 and FY 2023-24 respectively at this stage. However, the same may be considered by the Commission at the time of MTR process. Accordingly, the Commission has considered the AFC and quantum for the 4th Control Period for the Units to be retired in line with the MSPGCL's Order in Case No. 296 of 2019.

6.6.26 The projected quantum of energy generation of MSPGCL Stations and their Variable Cost has been limited to the extent of application of MOD principles for the 4th Control Period FY 2020-21 and FY 2024-25 for allowing the power purchase quantum and cost for the year.

NTPC

6.6.27 The units from NTPC Stations are projected at a PLF of 85% for thermal Stations, as per the CERC Tariff Regulations, 2019.

6.6.28 For the upcoming NTPC Units, viz., Solapur STPS 2, Gadarwara STPS 2, Lara

Chhatisgarh 2 and Khargone STPP 2, the Commission has approved the expected COD of the said units as per monthly Central Electricity Authority (CEA) report on 'Broad Status of Thermal Power Projects in the Country' for November 2019. The expected COD as considered by the Commission on the basis of the CEA report are shown in the Table below:

Table 6-43: COD of upcoming NTPC Stations as considered by Commission

Station/Unit	Expected COD considered by Commission as per CEA Report
Solapur STPS 2	29.03.2019
Gadarwara STPS 2	01.03.2020
Lara Chhatisgarh 2	01.03.2020
Khargone STPP 2	01.03.2020

6.6.29 The projected generation from these new Generating Units has been computed on a provisional basis considering the number of operating days post the expected COD in the Control period. The Commission has approved the Fixed Charges and variable cost payable to the NTPC Plants as projected by MSEDCL.

6.6.30 The power purchase quantum and Variable Charge of the NTPC Generating Stations have been limited to the extent of application of MOD Principles.

NPCIL

6.6.31 The Commission has approved the power purchase quantum and cost for NPCIL Generating Stations as submitted by MSEDCL. NPCIL Stations have been considered as 'Must Run' while applying MOD principles for the Control Period FY 2020-21 to FY 2024-25. Truing-up will be undertaken considering actuals, subject to prudence check at the time of MTR process.

SSP, Pench, Dodson I & II

6.6.32 The Commission has approved the power purchase quantum and cost of power purchase from SSP, Pench, and Dodson I & II as proposed by MSEDCL. These Stations are included as Must Run Stations while applying the MOD principles for approval of power purchase for the Control Period FY 2020-21 and FY 2024-25. Truing-up will be undertaken considering actuals, subject to prudence check at the time of MTR process.

Renewable Purchase Obligation

6.6.33 The Commission has specified the RPO targets for the Control period FY 2020-21 to FY 2024-25 under the RPO regulation, 2019.

6.6.34 The Commission asked the MSEDCL to submit the detailed break-up of its MOD workings. As per the MOD workings as submitted by MSEDCL, MSEDCL had projected the month-wise Solar and Non-Solar purchases for FY 2020-21 to FY 2024-

25. The Commission had approved the month-wise Solar and Non-Solar purchases as claimed by MSEDCL for the first 2 years of 4th Control Period i.e., FY 2020-21 and FY 2021-22. Accordingly, the yearly Solar and Non-Solar compliance w.r.t Total Power Purchase excluding Hydro purchase as per the MOD workings of the Commission was projected for FY 2020-21 and FY 2021-22. As per the Commission's analysis, it was found that the projected Solar Compliance was 5.18% against the Solar Target of 4.50% for FY 2020-21 and projected Solar Compliance of 7.18% against the Solar Target of 6% for FY 2021-22. Further, there was a shortfall in FY 2020-21 and FY 2021-22 in Non-Solar purchase. Hence, in line with provisions under MERC RPO Regulations, 2019 the Commission decided to adjust the additional solar purchases to the Non-Solar Purchases for FY 2020-21 and FY 2021-22 and the balance Non-Solar to be met through REC Purchase. As per the MOD workings, the Commission has approved non-solar REC purchase equivalent of 1,300 MU for FY 2020-21. The cost of REC purchase is accounted as per the Floor Price of Rs. 1 per kWh.

6.6.35 Further, for FY 2022-23 to FY 2024-25, the Commission has approved the RE purchase as per the RPO targets set for FY 2022-23 to FY 2024-25. For projecting the cost of RE Purchase for 4th Control Period, the Commission has considered the weighted average rate of existing RE purchases at the existing cost and the latest competitively bid discovered price for solar and Non-Solar for incremental projected purchases. Table below shows the RPO Purchase for 4th Control Period as approved by the Commission for 4th Control Period. It is clarified that the estimation RE procurement (solar/non-solar and inter-se adjustments thereof) has been considered for the projection purpose of Energy Balance and estimating power purchase requirement. Any shortfall/excess in RPO compliance (Solar/Non-solar) shall be dealt with in accordance with the provisions of MERC RPO Regulations, 2019.

Table 6-44: Purchase against RPO for 4th Control Period approved by the Commission

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Power Purchase Excluding Hydro	MU	134,826	137,181	139,726	143,996	148,445
Solar	%	5.18%	7.18%	8.00%	10.50%	13.50%
Non-Solar	%	9.85%	10.43%	11.50%	11.50%	11.50%
Non-Solar REC Purchase	%	0.96%	-			
Total RE purchase Quantum	**%**	**16.00%**	**17.61%**	**19.50%**	**22.00%**	**25.00%**
Solar	MU	6,988	9,855	11,178	15,120	20,040
Non-Solar	MU	13,284	14,309	16,068	16,560	17,071
Non-Solar REC Purchase	MU	1,300	-	-	-	-
Total RE purchase Quantum	**MU**	**21,572**	**24,164**	**27,246**	**31,679**	**37,111**
Solar Tariff	Rs/kWh	3.62	3.52	3.49	3.44	3.40
Non-Solar Tariff	Rs/kWh	4.93	4.76	4.52	4.46	4.40
Non-Solar REC Purchase	Rs/kWh	1.00	1.00	1.00	1.00	1.00
Solar	Rs. Crore	2,528	3,471	3,907	5,203	6,822
Non-Solar	Rs. Crore	6,554	6,812	7,255	7,379	7,508

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Non-Solar REC Purchase	Rs. Crore	130	-	-	-	-
Total RE purchase Cost	**Rs. Crore**	**9,212**	**10,283**	**11,162**	**12,583**	**14,330**
RE purchase Cost Per Unit	**Rs/kWh**	**4.27**	**4.26**	**4.10**	**3.97**	**3.86**

Traders

6.6.36 MSEDCL has not projected any power purchase from these sources, and the Commission has accepted its submission accordingly.

IPPs and Ultra Mega Power Projects (UMPPs)

6.6.37 MSEDCL has considered power purchase from Mundra UMPP and IPPs, viz., JSW, EMCO Power, RattanIndia Amravati and Adani Power, with PPA capacity as shown in the following Table.

Table 6-45: Capacity contracted under PPA with IPPs by MSEDCL (MW)

Station/Unit	PPA Capacity Contracted (MW)
CGPL UMPP Mundra	760
Adani Power 1320 MW	1320
Adani Power 1200 MW	1200
EMCO Energy	200
Rattan India (Previously India Bulls Power)	1200
Adani Power 125 MW	125
Adani Power 440 MW	440
JSW Energy	300

6.6.38 The Commission sought basis of workings of the Variable Charges and Fixed Charges for 4th Control Period as claimed towards power purchase cost vis-à-vis that covered in Tariff Schedule for IPP as per PPAs. As per the submissions provided by MSEDCL for all the IPPs for the past period, the projected Energy Charges are adjusted for the escalation factors, since the Quoted Rates under PPA are linked to various factors such as variation in monthly exchange rate, CERC index for inland handling of imported fuel, CERC index for inland transportation of fuel, etc. For the projection of variable charges for the 4th Control Period, CAGR of last four financial years with that of FY 2018-19 as a base has been considered. For the computation of Capacity charges, the Commission has projected the escalable component of Capacity Charges considering CAGR of last four financial years with that of FY 2018-19 as a base. Non-escalable component of Capacity Charges has been considered as quoted in the PPA of respective IPPs.

6.6.39 Further, the Commission observes that, the MSEDCL has factored in the part of compensatory Tariff as per Change-in Law claims in 4th Control period. As per the Commission's analysis, the projected values of Fixed and Variable Charges for 4th control period are found to be in order. However, the Commission found that there was an error while projecting the variable charge for Adani Power Maharashtra Station-

1320 MW for FY 2024-25 as per MSEDCL's claim. The Commission found that there was an abrupt downfall of around 8% w.r.t previous year while projecting variable charge for APML 1320 MW for FY 2024-25 as submitted by MSEDCL. The commission has rectified the same while projecting by considering 5% growth w.r.t. previous year excluding the non-escalable component.

6.6.40 The power purchase quantum and variable cost of these Generating Stations have been limited to the extent of application of MOD Principles for 4th Control Period FY 2020-21 to FY 2024-25. This will be trued-up considering actuals at the MTR Period, subject to prudence check.

Short-term Power Purchase and FBSM

6.6.41 The Commission has not considered any projection of short-term purchase in line with submissions made by MSEDCL since the entire projected energy requirement would be met through the projected sources of power.

6.6.42 However, the Commission will consider the actual short-term power purchase and FBSM adjustment, if any, subject to prudence check at the time of true-up.

6.6.43 Clause 11.4 of the MoP Guidelines for short-term procurement of power by Distribution Licensees through tariff-based bidding provides that:

> "*11.4 If the quantum of power procured and tariff determined are within the blanket approval granted by the Appropriate Commission in Annual Revenue Requirement (ARR) of the respective year, then the same will be considered to have been adopted by the Appropriate Commission.*
> *In all other cases, the Procurer(s) shall submit a petition to the Appropriate Commission for adoption of tariff within 2 days from the date of signing of PPA. Appropriate Commission should communicate the decision within 7 days from the date of submission of petition."*

6.6.44 In this context, the Commission notes that, considering the volatile nature of short term power market and uncertainty in supply of power from long term sources on account of various reasons, MSEDCL had requested the Commission to accord in principle approval for procurement of power on DEEP e-bidding portal/ power exchange based on the projected average power purchase rate. Further, MSEDCL requested the Commission to revise the ceiling rate for procurement of power on DEEP e-bidding portal/ power exchange considering the projected power purchase rate during the Control Period.

6.6.45 The Commission observes that in FY 2018-19, the weighted average rate of power procured by MSEDCL from Power Exchanges was 4.32 Rs/kWh. The average power purchase cost approved for each year of the 4th Control Period is in the range of Rs. 4.24 /kWh to Rs. 4.36 /kWh. Based on these, the Commission approves a ceiling rate

of Rs. 4.50 per kWh for power procurement from short-term sources over the 4th Control Period, if required and subject to the conditions that all short-term power to be procured additionally as the need arises, through competitive bidding in accordance with the above said MoP Guidelines, except in case of power procured from the Power Exchanges or under the Banking mechanism.

Transmission Charges

6.6.46 MSEDCL has projected the PGCIL charges for the 4th Control Period FY 2020-21 and FY 2024-25 considering the 5 % growth over FY 2019-20 as claimed by MSEDCL for past trend and quantum of energy flow. However, the ISTS charges from PGCIL is restated for FY 2019-20 as discussed in the provisional truing-up section. Accordingly, the Commission approves Transmission Charges for 4th Control period, subject to subsequent true-up based on actuals.

Step-2 Analysis: Application of Merit Order Despatch Principle

6.6.47 In Step-2, the Commission has applied the MOD principles and prepared a MOD Order Stack of all thermal Generating Stations/sources in the ascending order of their per unit Energy Charges. The quantum of energy generation from each source is provisionally allowed along with the corresponding Variable Charge until the projected Energy Input requirement as approved, as per the Energy Balance, is met as per the MOD Stack.

6.6.48 The Commission has also worked out the monthly MOD stack for each month of the Control Period FY 2020-21 and FY 2024-25. For running the monthly MOD stack, the projected annual Energy Input requirement as approved is translated into the monthly requirement based on the monthly consumption pattern as submitted by MSEDCL.

6.6.49 Although the despatch from Generating Stations shall be subjected to the Merit Order, the recovery of Fixed Cost of such Stations shall be linked to its Availability. In view of this, the Commission has provisionally allowed the Fixed Charges for all the Stations as approved in Step-1 above.

6.6.50 The following Table sets out the details of the power purchase approved from Stations/Units to be treated as 'Must Run' during the Control Period FY 2020-21 to FY 2024-25.

Table 6-46: Power Purchase from 'Must Run' Station units in 4th Control Period approved by the Commission

Station/Unit	FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		FY 2024-25	
	Energy Charges (Rs/kWh)	Power Purchase Approved (MU)	Energy Charges (Rs/kWh)	Power Purchase Approved (MU)	Energy Charges (Rs/kWh)	Power Purchase Approved (MU)	Energy Charges (Rs/kWh)	Power Purchase Approved (MU)	Energy Charges (Rs/kWh)	Power Purchase Approved (MU)
Must Run Stations										
KAPP	2.39	979	2.42	979	2.45	979	2.48	982	2.51	979
TAPP 1 & 2	2.13	1,096	2.15	1,096	2.18	1,096	2.21	1,099	2.23	1,096
TAPP 3&4	3.31	2,809	3.41	2,809	3.51	2,809	3.62	2,817	3.72	2,809
SSP	2.05	1,210	2.05	1,210	2.05	1,210	2.05	1,213	2.05	1,210
Pench	2.05	136	2.05	136	2.05	136	2.05	137	2.05	136
Dodson I	1.68	52	1.68	52	1.68	52	1.68	52	1.68	52
Dodson II	-	64	-	64	-	64	-	64	-	64
Renewable - Solar	4.00	6,988	3.58	9,855	3.56	14,699	3.55	18,430	3.54	21,141
Renewable - Non- Solar	5.32	13,284	4.98	14,309	5.00	15,452	5.06	15,452	5.13	15,452
Hydro (MSPGCL)*	-	3,882	-	3,882	-	3,882	-	3,890	-	3,882

** Includes Koyna, Bhira, Tillari and other HydroStations of MSPGCL*

6.6.51 The power purchase from Thermal Generating Stations/Units as per MOD principles followed in the 4th Control Period, as approved by the Commission, is shown in the Tables below:

Table 6-47: Approved Power Purchase from Thermal Stations/Units for FY 2020-21

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
BHUSAWAL – 3	-	144.29	3.92	-	-	144.29	-
BHUSAWAL 4	2,878.32	565.71	3.27	940.25	-	1,505.97	5.23
BHUSAWAL 5	2,535.73	565.71	3.27	828.34	-	1,394.05	5.50
KHAPARKHEDA -1	1,116.80	111.97	2.81	313.64	-	425.61	3.81
KHAPARKHEDA - 2	1,116.80	111.97	2.81	313.64	-	425.61	3.81
KHAPARKHEDA - 3	1,116.80	111.97	2.81	313.64	-	425.61	3.81
KHAPARKHEDA - 4	1,116.80	111.97	2.81	313.64	-	425.61	3.81
KHAPARKHEDA 5	3,352.22	540.62	2.46	823.96	-	1,364.59	4.07
NASHIK- 3	777.01	159.77	3.39	263.74	-	423.51	5.45
NASHIK- 4	680.07	159.77	3.39	230.83	-	390.61	5.74
NASHIK- 5	550.58	159.77	3.39	186.88	-	346.66	6.30
CHANDRAPUR - 3	1,145.55	167.73	2.54	290.90	-	458.63	4.00
CHANDRAPUR - 4	1,145.55	167.73	2.54	290.90	-	458.63	4.00
CHANDRAPUR - 5	2,727.51	167.73	2.54	692.63	-	860.36	3.15
CHANDRAPUR - 6	2,727.51	167.73	2.54	692.63	-	860.36	3.15
CHANDRAPUR - 7	2,727.51	167.73	2.54	692.63	-	860.36	3.15
Chandrapur 8	3,422.63	562.81	2.45	839.52	-	1,402.33	4.10
Chandrapur 9	3,422.63	562.81	2.45	839.52	-	1,402.33	4.10
Paras - 3	1,586.88	271.66	2.99	474.36	-	746.02	4.70

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Paras - 4	1,586.88	271.66	2.99	474.36	-	746.02	4.70
PARLI UNIT-6	-	255.76	4.00	-	-	255.76	-
PARLI UNIT-7	-	255.76	4.00	-	-	255.76	-
KORADI - 6	584.43	93.19	3.14	183.26	-	276.45	4.73
KORADI - 7	584.43	93.19	3.14	183.26	-	276.45	4.73
Koradi R U-8	3,261.91	525.70	2.28	744.89	-	1,270.58	3.90
Koradi 9	3,261.91	525.70	2.28	744.89	-	1,270.58	3.90
Koradi10	3,261.91	525.70	2.28	744.89	-	1,270.58	3.90
Parli replacement U 8	246.85	341.49	3.83	94.55	-	436.04	17.66
GTPS URAN	2,898.32	188.37	2.68	777.66	-	966.02	3.33
KSTPS	4,222.49	316.76	1.49	630.00	-	946.76	2.24
KSTPS VII	755.30	117.01	1.45	109.37	-	226.38	3.00
KhSTPS II	1,033.69	114.21	2.20	227.80	-	342.01	3.31
VSTP I	2,778.10	265.49	1.78	495.79	-	761.28	2.74
VSTP II	2,226.82	169.33	1.68	374.05	-	543.38	2.44
VSTP III	1,801.00	203.60	1.72	309.73	-	513.34	2.85
VSTP IV	1,888.12	329.63	1.71	322.27	-	651.90	3.45
VSTP V	1,028.26	198.62	1.71	176.12	-	374.73	3.64
SIPAT TPS 1	3,560.12	514.47	1.43	507.46	-	1,021.93	2.87
SIPAT TPS 2	1,801.00	240.08	1.44	258.89	-	498.96	2.77
MSTPS-I	933.85	529.19	3.34	312.28	-	841.47	9.01
MSTPS-II	3,390.27	565.19	3.07	1,039.46	-	1,604.65	4.73
Gadarwara - I	28.62	31.68	3.52	10.08	-	41.76	14.59
Gadarwara - II	28.62	31.68	3.52	10.08	-	41.76	14.59
Lara Chattisgarh - Stg. I - I	789.98	108.34	2.38	188.36	-	296.70	3.76
Lara Chattisgarh - Stg. I - II	789.98	108.34	2.38	188.36	-	296.70	3.76
Khargone - I	171.26	36.23	3.03	51.90	-	88.13	5.15
Khargone - II							
Solapur - I	251.00	486.54	3.75	94.10	-	580.64	23.13
Solapur - II	-	486.54	3.75	-	-	486.54	-
KAWAS	348.10	130.65	2.93	102.06	-	232.71	6.69
GANDHAR	256.03	162.02	2.89	73.92	-	235.94	9.22
IPP - JSW	1,934.21	157.99	2.79	540.55	-	698.54	3.61
Adani power 125 MW	870.25	121.56	2.84	246.88	-	368.44	4.23
Adani power 1320 MW	9,189.85	1,045.31	1.84	1,689.10	-	2,734.41	2.98
Adani power 1200 MW	7,862.98	1,166.94	2.84	2,230.64	-	3,397.58	4.32
Adani power 440mw	3,063.28	440.98	2.90	888.11	-	1,329.09	4.34
EMCO Power	1,370.06	172.95	2.50	341.93	102.00	616.88	4.50
Rattanindia Amravati	2,085.63	692.48	3.46	721.71	-	1,414.19	6.78
Mundra UMPP	5,157.89	480.40	2.01	1,034.98	0.30	1,515.68	2.94
REC Purchase			1.00	130.01		130.01	-

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Interstate Transmission Charges	-	3,321.46	-	-	-	3,321.46	-
Total Power purchase	**139,413.23**	**21,087.4**	**2.68**	**37,369.0**	**669.62**	**59,126.1**	**4.24**

Table 6-48: Approved Power Purchase from Thermal Stations/Units for FY 2021-22

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
BHUSAWAL - 3	-	132.48	4.01	-	-	132.48	-
BHUSAWAL 4	2,607.94	547.14	3.35	873.58	-	1,420.73	5.45
BHUSAWAL 5	2,377.64	547.14	3.35	796.44	-	1,343.58	5.65
KHAPARKHEDA -1	1,116.80	113.52	2.88	321.18	-	434.70	3.89
KHAPARKHEDA - 2	1,116.80	113.52	2.88	321.18	-	434.70	3.89
KHAPARKHEDA - 3	1,116.80	113.52	2.88	321.18	-	434.70	3.89
KHAPARKHEDA - 4	1,116.80	113.52	2.88	321.18	-	434.70	3.89
KHAPARKHEDA 5	3,352.22	530.16	2.52	844.72	-	1,374.89	4.10
NASHIK- 3	662.69	157.64	3.48	230.64	-	388.28	5.86
NASHIK- 4	658.54	157.64	3.48	229.20	-	386.84	5.87
NASHIK- 5	569.66	157.64	3.48	198.26	-	355.91	6.25
CHANDRAPUR - 3	1,145.55	167.09	2.54	290.90	-	457.99	4.00
CHANDRAPUR - 4	1,145.55	167.09	2.54	290.90	-	457.99	4.00
CHANDRAPUR - 5	2,727.51	167.09	2.54	692.63	-	859.72	3.15
CHANDRAPUR - 6	2,727.51	167.09	2.54	692.63	-	859.72	3.15
CHANDRAPUR - 7	2,727.51	167.09	2.54	692.63	-	859.72	3.15
Chandrapur 8	3,422.63	553.71	2.51	859.83	-	1,413.55	4.13
Chandrapur 9	3,422.63	553.71	2.51	859.83	-	1,413.55	4.13
Paras - 3	1,586.88	262.20	3.07	486.63	-	748.83	4.72
Paras - 4	1,504.27	262.20	3.07	461.30	-	723.49	4.81
PARLI UNIT-6	-	250.81	4.12	-	-	250.81	-
PARLI UNIT-7	-	250.81	4.12	-	-	250.81	-
KORADI - 6	534.79	92.33	3.22	172.46	-	264.79	4.95
KORADI - 7	534.79	92.33	3.22	172.46	-	264.79	4.95
Koradi R U-8	3,261.91	513.83	2.34	763.28	-	1,277.11	3.92
Koradi 9	3,261.91	513.83	2.34	763.28	-	1,277.11	3.92
Koradi10	3,261.91	513.83	2.34	763.28	-	1,277.11	3.92
Parli replacement U 8	246.85	337.63	3.94	97.34	-	434.97	17.62
GTPS URAN	2,898.32	197.07	2.76	800.99	-	998.06	3.44
KSTPS	4,222.49	330.29	1.56	657.25	-	987.53	2.34
KSTPS VII	755.30	115.78	1.48	111.96	-	227.74	3.02
KhSTPS II	1,033.69	114.33	2.22	229.92	-	344.25	3.33

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
VSTP I	2,778.10	278.17	1.84	512.28	-	790.45	2.85
VSTP II	2,226.82	173.26	1.72	382.86	-	556.13	2.50
VSTP III	1,801.00	203.41	1.78	321.19	-	524.60	2.91
VSTP IV	1,888.12	331.69	1.76	331.49	-	663.18	3.51
VSTP V	1,028.26	208.75	1.77	182.47	-	391.22	3.80
SIPAT TPS 1	3,560.12	512.54	1.47	523.32	-	1,035.86	2.91
SIPAT TPS 2	1,801.00	239.68	1.48	266.33	-	506.01	2.81
MSTPS-I	817.15	532.69	3.41	278.49	-	811.18	9.93
MSTPS-II	3,167.84	570.32	3.14	994.70	-	1,565.02	4.94
Gadarwara - I	28.62	31.68	3.61	10.32	-	42.01	14.68
Gadarwara - II	28.62	31.68	3.61	10.32	-	42.01	14.68
Lara Chattisgarh - Stg. I - I	789.98	108.34	2.44	192.92	-	301.26	3.81
Lara Chattisgarh - Stg. I - II	789.98	108.34	2.44	192.92	-	301.26	3.81
Khargone - I	156.71	36.13	3.10	48.64	-	84.77	5.41
Khargone - II	156.71	36.13	3.10	48.64	-	84.77	5.41
Solapur - I	69.46	486.54	3.84	26.67	-	513.21	73.88
Solapur - II	-	486.54	3.84	-	-	486.54	-
KAWAS	318.53	132.42	2.98	94.78	-	227.20	7.13
GANDHAR	256.03	164.40	2.90	74.33	-	238.73	9.32
IPP - JSW	1,934.21	157.11	3.00	580.98	-	738.09	3.82
Adani power 125 MW	870.25	119.69	2.94	256.24	-	375.94	4.32
Adani power 1320 MW	9,189.85	1,045.31	1.88	1,724.02	-	2,769.33	3.01
Adani power 1200 MW	7,862.98	1,149.07	2.94	2,315.23	-	3,464.29	4.41
Adani power 440mw	3,063.28	434.43	3.01	921.77	-	1,356.20	4.43
EMCO Power	1,370.06	180.61	2.68	366.53	107.10	654.24	4.78
Rattanindia Amravati	1,855.61	692.48	3.57	663.01	-	1,355.49	7.30
Mundra UMPP	5,157.89	479.93	2.11	1,088.01	0.32	1,568.26	3.04
REC Purchase			1.00	-		-	-
Interstate Transmission Charges	-	3,487.53	-	-	-	3,487.53	-
Total Power purchase	**141,940.0**	**21,171.16**	**2.73**	**38,734.50**	**663.26**	**60,568.92**	**4.27**

Table 6-49: Approved Power Purchase from Thermal Stations/Units for FY 2022-23

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
BHUSAWAL - 3	-	138.05	4.10	-	-	138.05	-
BHUSAWAL 4	2,607.94	537.26	3.44	896.14	-	1,433.40	5.50
BHUSAWAL 5	2,248.82	537.26	3.44	772.74	-	1,310.00	5.83

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
KHAPARKHEDA -1	1,116.80	116.31	2.95	328.91	-	445.22	3.99
KHAPARKHEDA - 2	1,116.80	116.31	2.95	328.91	-	445.22	3.99
KHAPARKHEDA - 3	1,116.80	116.31	2.95	328.91	-	445.22	3.99
KHAPARKHEDA - 4	1,116.80	116.31	2.95	328.91	-	445.22	3.99
KHAPARKHEDA 5	3,352.22	520.88	2.58	866.03	-	1,386.91	4.14
NASHIK- 3	637.69	162.32	3.57	227.58	-	389.90	6.11
NASHIK- 4	480.49	162.32	3.57	171.48	-	333.80	6.95
NASHIK- 5	442.62	162.32	3.57	157.96	-	320.28	7.24
CHANDRAPUR - 3	1,145.55	173.12	2.66	304.50	-	477.62	4.17
CHANDRAPUR - 4	1,145.55	173.12	2.66	304.50	-	477.62	4.17
CHANDRAPUR - 5	2,727.51	173.12	2.66	725.00	-	898.12	3.29
CHANDRAPUR - 6	2,727.51	173.12	2.66	725.00	-	898.12	3.29
CHANDRAPUR - 7	2,727.51	173.12	2.66	725.00	-	898.12	3.29
Chandrapur 8	3,422.63	548.10	2.57	880.67	-	1,428.77	4.17
Chandrapur 9	3,422.63	548.10	2.57	880.67	-	1,428.77	4.17
Paras - 3	1,586.88	220.59	3.15	499.23	-	719.81	4.54
Paras - 4	1,586.88	220.59	3.15	499.23	-	719.81	4.54
PARLI UNIT-6	-	212.03	4.24	-	-	212.03	-
PARLI UNIT-7	-	212.03	4.24	-	-	212.03	-
KORADI - 6	584.43	95.40	3.31	193.49	-	288.88	4.94
KORADI - 7	584.43	95.40	3.31	193.49	-	288.88	4.94
Koradi R U-8	3,261.91	506.36	2.40	782.14	-	1,288.50	3.95
Koradi 9	3,261.91	506.36	2.40	782.14	-	1,288.50	3.95
Koradi10	3,261.91	506.36	2.40	782.14	-	1,288.50	3.95
Parli replacement U 8	-	336.41	4.06	-	-	336.41	-
GTPS URAN	2,898.32	211.19	2.85	825.02	-	1,036.21	3.58
KSTPS	4,222.49	344.40	1.62	685.67	-	1,030.07	2.44
KSTPS VII	755.30	114.56	1.52	114.62	-	229.18	3.03
KhSTPS II	1,033.69	114.46	2.24	232.06	-	346.51	3.35
VSTP I	2,778.10	291.45	1.91	529.32	-	820.78	2.95
VSTP II	2,226.82	177.29	1.76	391.88	-	569.18	2.56
VSTP III	1,801.00	203.22	1.85	333.06	-	536.28	2.98
VSTP IV	1,888.12	333.75	1.81	340.98	-	674.73	3.57
VSTP V	1,028.26	219.41	1.84	189.05	-	408.46	3.97
SIPAT TPS 1	3,560.12	510.61	1.52	539.68	-	1,050.29	2.95
SIPAT TPS 2	1,801.00	239.29	1.52	273.99	-	513.28	2.85
MSTPS-I	847.30	536.21	3.47	294.27	-	830.48	9.80
MSTPS-II	2,863.76	575.50	3.22	920.99	-	1,496.48	5.23
Gadarwara - I	28.62	31.68	3.69	10.57	-	42.26	14.76
Gadarwara - II	28.62	31.68	3.69	10.57	-	42.26	14.76

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Lara Chattisgarh - Stg. I - I	789.98	108.34	2.50	197.58	-	305.93	3.87
Lara Chattisgarh - Stg. I - II	789.98	108.34	2.50	197.58	-	305.93	3.87
Khargone - I	171.26	35.75	3.18	54.44	-	90.20	5.27
Khargone - II	171.26	35.75	3.18	54.44	-	90.20	5.27
Solapur - I	241.90	486.54	3.93	95.12	-	581.65	24.05
Solapur - II	-	486.54	3.93	-	-	486.54	-
KAWAS	348.10	134.22	3.02	105.12	-	239.34	6.88
GANDHAR	256.03	166.81	2.92	74.74	-	241.55	9.43
IPP - JSW	1,934.21	156.17	3.23	624.44	-	780.61	4.04
Adani power 125 MW	870.25	117.83	3.06	265.96	-	383.79	4.41
Adani power 1320 MW	9,189.85	1,045.31	2.03	1,866.37	-	2,911.68	3.17
Adani power 1200 MW	7,862.98	1,131.20	3.06	2,403.02	-	3,534.22	4.49
Adani power 440mw	3,063.28	427.88	3.12	956.72	-	1,384.60	4.52
EMCO Power	1,370.06	178.77	2.87	392.91	112.46	684.14	4.99
Rattanindia Amravati	1,884.11	692.48	3.69	695.11	-	1,387.59	7.36
Mundra UMPP	5,157.89	479.47	2.22	1,143.74	0.33	1,623.54	3.15
Interstate Transmission Charges	-	3,661.91	-	-	-	3,661.91	-
Total Power purchase	**144,484.3**	**21,242.84**	**2.80**	**40,426.10**	**668.63**	**62,337.57**	**4.31**

Table 6-50: Approved Power Purchase from Thermal Stations/Units for FY 2023-24

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
BHUSAWAL - 3	-	148.46	4.20	-	-	148.46	-
BHUSAWAL 4	2,529.33	526.22	3.52	891.42	-	1,417.64	5.60
BHUSAWAL 5	1,939.91	526.22	3.52	683.69	-	1,209.91	6.24
KHAPARKHEDA -1	1,119.86	117.66	3.02	337.77	-	455.43	4.07
KHAPARKHEDA - 2	1,119.86	117.66	3.02	337.77	-	455.43	4.07
KHAPARKHEDA - 3	1,119.86	117.66	3.02	337.77	-	455.43	4.07
KHAPARKHEDA - 4	1,119.86	117.66	3.02	337.77	-	455.43	4.07
KHAPARKHEDA 5	3,361.41	511.98	2.65	890.32	-	1,402.30	4.17
NASHIK- 3	442.62	166.85	3.66	161.98	-	328.83	7.43
NASHIK- 4	442.62	166.85	3.66	161.98	-	328.83	7.43
NASHIK- 5	419.39	166.85	3.66	153.48	-	320.33	7.64
CHANDRAPUR - 3	1,148.69	176.02	2.72	312.41	-	488.43	4.25
CHANDRAPUR - 4	1,148.69	176.02	2.72	312.41	-	488.43	4.25
CHANDRAPUR - 5	2,734.98	176.02	2.72	743.83	-	919.85	3.36
CHANDRAPUR - 6	2,734.98	176.02	2.72	743.83	-	919.85	3.36

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
CHANDRAPUR - 7	2,734.98	176.02	2.72	743.83	-	919.85	3.36
Chandrapur 8	3,432.01	540.87	2.64	904.51	-	1,445.38	4.21
Chandrapur 9	3,432.01	540.87	2.64	904.51	-	1,445.38	4.21
Paras - 3	1,591.23	216.44	3.23	513.56	-	730.00	4.59
Paras - 4	1,591.23	216.44	3.23	513.56	-	730.00	4.59
PARLI UNIT-6	-	208.87	4.36	-	-	208.87	-
PARLI UNIT-7	-	208.87	4.36	-	-	208.87	-
KORADI - 6	586.03	98.28	3.40	199.18	-	297.46	5.08
KORADI - 7	586.03	98.28	3.40	199.18	-	297.46	5.08
Koradi R U-8	3,270.85	497.61	2.46	803.69	-	1,301.30	3.98
Koradi 9	3,270.85	497.61	2.46	803.69	-	1,301.30	3.98
Koradi10	3,270.85	497.61	2.46	803.69	-	1,301.30	3.98
Parli replacement U 8	-	333.48	4.17	-	-	333.48	-
GTPS URAN	2,906.26	212.89	2.93	852.10	-	1,064.98	3.66
KSTPS	4,234.06	359.11	1.69	717.28	-	1,076.39	2.54
KSTPS VII	757.37	113.36	1.55	117.66	-	231.01	3.05
KhSTPS II	1,036.52	114.58	2.27	234.86	-	349.44	3.37
VSTP I	2,785.71	305.37	1.97	548.43	-	853.81	3.06
VSTP II	2,232.92	181.42	1.80	402.21	-	583.63	2.61
VSTP III	1,805.94	203.03	1.92	346.32	-	549.35	3.04
VSTP IV	1,893.29	335.83	1.86	351.69	-	687.53	3.63
VSTP V	1,031.08	230.60	1.90	196.41	-	427.02	4.14
SIPAT TPS 1	3,569.87	508.68	1.56	558.08	-	1,066.76	2.99
SIPAT TPS 2	1,805.94	238.90	1.57	282.64	-	521.54	2.89
MSTPS-I	1,081.26	539.75	3.54	382.77	-	922.52	8.53
MSTPS-II	3,405.49	580.72	3.29	1,121.77	-	1,702.49	5.00
Gadarwara - I	28.62	31.68	3.78	10.83	-	42.51	14.85
Gadarwara - II	28.62	31.68	3.78	10.83	-	42.51	14.85
Lara Chattisgarh - Stg. I - I	792.14	108.34	2.56	202.92	-	311.26	3.93
Lara Chattisgarh - Stg. I - II	792.14	108.34	2.56	202.92	-	311.26	3.93
Khargone - I	171.73	35.17	3.26	55.91	-	91.08	5.30
Khargone - II	171.73	35.17	3.26	55.91	-	91.08	5.30
Solapur - I	113.83	486.54	4.03	45.84	-	532.38	46.77
Solapur - II	-	486.54	4.03	-	-	486.54	-
KAWAS	349.05	136.05	3.06	106.98	-	243.03	6.96
GANDHAR	256.73	169.25	2.94	75.37	-	244.62	9.53
IPP - JSW	1,462.47	155.12	3.47	507.46	-	662.58	4.53
Adani power 125 MW	872.64	115.97	3.17	276.80	-	392.77	4.50
Adani power 1320 MW	9,215.03	925.06	2.06	1,896.36	-	2,821.42	3.06

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Adani power 1200 MW	7,884.52	1,113.33	3.17	2,500.97	-	3,614.30	4.58
Adani power 440mw	3,071.68	421.32	3.24	995.71	-	1,417.04	4.61
EMCO Power	1,373.82	176.53	3.07	422.33	118.08	716.93	5.22
Rattanindia Amravati	1,920.81	692.48	3.81	731.71	-	1,424.19	7.41
Mundra UMPP	5,172.02	479.00	2.33	1,205.63	0.35	1,684.98	3.26
Interstate Transmission Charges	-	3,845.01	-	-	-	3,845.01	-
Total Power purchase	**148,759.1**	**21,306.84**	**2.86**	**42,595.89**	**652.19**	**64,554.92**	**4.34**

Table 6-51: Approved Power Purchase from Thermal Stations/Units for FY 2024-25

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
BHUSAWAL - 3	-	153.33	4.30	-	-	153.33	-
BHUSAWAL 4	2,636.78	514.52	3.61	953.14	-	1,467.66	5.57
BHUSAWAL 5	2,253.57	514.52	3.61	814.62	-	1,329.14	5.90
KHAPARKHEDA -1	1,116.80	118.67	3.09	344.81	-	463.48	4.15
KHAPARKHEDA - 2	1,116.80	118.67	3.09	344.81	-	463.48	4.15
KHAPARKHEDA - 3	1,116.80	118.67	3.09	344.81	-	463.48	4.15
KHAPARKHEDA - 4	1,116.80	118.67	3.09	344.81	-	463.48	4.15
KHAPARKHEDA 5	3,352.22	501.83	2.71	909.50	-	1,411.34	4.21
NASHIK- 3	442.62	165.76	3.75	166.10	-	331.86	7.50
NASHIK- 4	390.64	165.76	3.75	146.59	-	312.36	8.00
NASHIK- 5	331.07	165.76	3.75	124.24	-	290.00	8.76
CHANDRAPUR - 3	1,145.55	178.64	2.78	318.79	-	497.43	4.34
CHANDRAPUR - 4	1,145.55	178.64	2.78	318.79	-	497.43	4.34
CHANDRAPUR - 5	2,727.51	178.64	2.78	759.03	-	937.67	3.44
CHANDRAPUR - 6	2,727.51	178.64	2.78	759.03	-	937.67	3.44
CHANDRAPUR - 7	2,727.51	178.64	2.78	759.03	-	937.67	3.44
Chandrapur 8	3,422.63	532.01	2.70	923.95	-	1,455.96	4.25
Chandrapur 9	3,422.63	532.01	2.70	923.95	-	1,455.96	4.25
Paras - 3	1,586.88	218.28	3.31	525.43	-	743.71	4.69
Paras - 4	1,586.88	218.28	3.31	525.43	-	743.71	4.69
PARLI UNIT-6	-	210.60	4.48	-	-	210.60	-
PARLI UNIT-7	-	210.60	4.48	-	-	210.60	-
KORADI - 6	534.79	100.98	3.49	186.61	-	287.59	5.38
KORADI - 7	526.99	100.98	3.49	183.89	-	284.86	5.41
Koradi R U-8	3,261.91	487.60	2.52	821.35	-	1,308.95	4.01
Koradi 9	3,261.91	487.60	2.52	821.35	-	1,308.95	4.01
Koradi10	3,261.91	487.60	2.52	821.35	-	1,308.95	4.01

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Parli replacement U 8	-	328.88	4.29	-	-	328.88	-
GTPS URAN	2,898.32	213.65	3.02	875.26	-	1,088.91	3.76
KSTPS	4,222.49	374.45	1.77	746.25	-	1,120.70	2.65
KSTPS VII	755.30	112.17	1.59	120.11	-	232.28	3.08
KhSTPS II	1,033.69	114.71	2.29	236.39	-	351.10	3.40
VSTP I	2,778.10	319.95	2.03	565.13	-	885.09	3.19
VSTP II	2,226.82	185.64	1.84	410.56	-	596.20	2.68
VSTP III	1,801.00	202.84	1.99	358.14	-	560.98	3.11
VSTP IV	1,888.12	337.92	1.91	360.77	-	698.69	3.70
VSTP V	1,028.26	242.37	1.97	202.94	-	445.31	4.33
SIPAT TPS 1	3,560.12	506.77	1.61	573.95	-	1,080.72	3.04
SIPAT TPS 2	1,801.00	238.51	1.61	289.97	-	528.48	2.93
MSTPS-I	1,228.24	543.32	3.61	443.03	-	986.34	8.03
MSTPS-II	3,375.58	585.99	3.37	1,138.92	-	1,724.91	5.11
Gadarwara - I	28.62	31.68	3.88	11.09	-	42.78	14.95
Gadarwara - II	23.80	31.68	3.88	9.23	-	40.91	17.19
Lara Chattisgarh - Stg. I - I	789.98	108.34	2.62	207.26	-	315.61	4.00
Lara Chattisgarh - Stg. I - II	789.98	108.34	2.62	207.26	-	315.61	4.00
Khargone - I	171.26	34.58	3.33	57.11	-	91.69	5.35
Khargone - II	171.26	34.58	3.33	57.11	-	91.69	5.35
Solapur - I	14.47	486.54	4.13	5.97	-	492.51	340.26
Solapur - II	-	486.54	4.13	-	-	486.54	-
KAWAS	348.10	137.90	3.11	108.27	-	246.17	7.07
GANDHAR	256.03	171.73	2.95	75.58	-	247.31	9.66
IPP - JSW	651.80	180.50	3.73	243.08	-	423.58	6.50
Adani power 125 MW	870.25	95.87	3.29	286.51	-	382.38	4.39
Adani power 1320 MW	9,189.85	925.06	2.08	1,907.43	-	2,832.48	3.08
Adani power 1200 MW	7,862.98	920.33	3.29	2,588.72	-	3,509.04	4.46
Adani power 440mw	3,063.28	414.77	3.36	1,030.67	-	1,445.44	4.72
EMCO Power	1,370.06	174.17	3.30	451.48	123.98	749.62	5.47
Rattanindia Amravati	1,830.93	692.48	3.93	720.18	-	1,412.66	7.72
Mundra UMPP	5,157.89	478.53	2.45	1,263.93	0.36	1,742.82	3.38
Interstate Transmission Charges	-	4,037.26	-	-	-	4,037.26	-
Total Power purchase	**153,204.2**	**21,313.19**	**2.93**	**44,856.52**	**649.89**	**66,819.60**	**4.36**

6.6.52 The total power purchase cost and quantum approved by the Commission over the 4th Control Period is summarised below, subject to truing-up for the respective years considering the actuals and after prudence check.

Table 6-52: Approved Power Purchase Cost for FY 2020-21

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Must Run Plants	29,962.95	285.78	3.60	10,773.62	567.32	11,626.72	3.88
MSPGCL Total	49,833.52	8,055.95	2.67	13,289.44	-	21,345.38	4.28
NTPC Total	28,082.61	5,145.61	1.95	5,482.07	-	10,627.68	3.78
IPP and UMPP Total	31,534.15	4,278.61	2.44	7,693.90	102.30	12,074.80	3.83
REC Purchase	-	-	1.00	130.01	-	130.01	-
Interstate Transmission Charges	-	3,321.46	-	-	-	3,321.46	-
Total Power purchase	**139,413.2**	**21,087.40**	**2.68**	**37,369.04**	**669.62**	**59,126.06**	**4.24**

Table 6-53: Approved Power Purchase Cost for FY 2021-22

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Must Run Plants	33,854.95	278.20	3.55	12,008.94	555.84	12,842.98	3.79
MSPGCL Total	49,106.39	7,913.66	2.71	13,317.96	-	21,231.63	4.32
NTPC Total	27,674.55	5,233.13	1.98	5,491.81	-	10,724.94	3.88
IPP and UMPP Total	31,304.13	4,258.64	2.53	7,915.79	107.42	12,281.85	3.92
REC Purchase	-	-	1.00	-	-	-	-
Interstate Transmission Charges	-	3,487.53	2.11	-	-	3,487.53	-
Total Power purchase	**141,940.0**	**21,171.16**	**2.73**	**38,734.50**	**663.26**	**60,568.92**	**4.27**

Table 6-54: Approved Power Purchase Cost for FY 2022-23

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Must Run Plants	36,937.44	295.90	3.50	12,922.29	555.84	13,774.03	3.73
MSPGCL Total	48,582.53	7,770.11	2.78	13,509.79	-	21,279.90	4.38
NTPC Total	27,631.72	5,285.82	2.04	5,645.75	-	10,931.57	3.96
IPP and UMPP Total	31,332.64	4,229.11	2.66	8,348.27	112.79	12,690.16	4.05
Interstate Transmission Charges	-	3,661.91	-	-	-	3,661.91	-
Total Power purchase	**144,484.3**	**21,242.84**	**2.80**	**40,426.10**	**668.63**	**62,337.57**	**4.31**

Table 6-55: Approved Power Purchase Cost for FY 2023-24

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Must Run Plants	41,387.66	310.63	3.48	14,383.37	533.76	15,227.76	3.68
MSPGCL Total	48,054.37	7,732.28	2.84	13,647.91	-	21,380.19	4.45
NTPC Total	28,344.05	5,340.13	2.13	6,027.62	-	11,367.75	4.01
IPP and UMPP Total	30,972.98	4,078.80	2.76	8,536.98	118.43	12,734.21	4.11
Interstate Transmission Charges	-	3,845.01	-	-	-	3,845.01	-
Total Power purchase	**148,759.1**	**21,306.84**	**2.86**	**42,595.89**	**652.19**	**64,554.92**	**4.34**

Table 6-56: Approved Power Purchase Cost for FY 2024-25

Generator Name	Energy Purchase (ex-bus) (MUs)	Capacity Charges (Rs Crore)	Variable Cost per unit (Rs/kWh)	Total Variable Charges (Rs Crore)	Net Other charges (Rs Crore)	Total Cost (Rs. Crore)	Rate per unit of power procured (Rs/kWh)
Must Run Plants	46,802.31	319.26	3.45	16,162.82	525.55	17,007.62	3.63
MSPGCL Total	48,112.58	7,678.42	2.91	14,016.65	-	21,695.07	4.51
NTPC Total	28,292.23	5,396.56	2.19	6,185.06	-	11,581.62	4.09
IPP and UMPP Total	29,997.05	3,881.70	2.83	8,491.99	124.34	12,498.03	4.17
Interstate Transmission Charges	-	4,037.26	-	-	-	4,037.26	-
Total Power purchase	**153,204.2**	**21,313.19**	**2.93**	**44,856.52**	**649.89**	**66,819.60**	**4.36**

6.6.53 Considering the above, the Commission observes that significant quantum of surplus power is expected in the 4th Control Period, in case all contracted generating capacity is considered to be available. MSEDCL should ascertain that necessary fuel tie-up arrangements for such contracted generating capacity is in place or take necessary actions/remedial measures as per provisions of the contracts/PPA. The following Table shows the projected energy availability as against the energy requirement, and the corresponding surplus available which may have to be subjected to backing down/reserve shutdown over long/short duration or for few months during the 4th Control Period in order to optimise its power purchase cost of operations.

Table 6-57: Surplus Energy Availability in 4th Control Period as estimated by Commission (MU)

Particulars	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Energy Available (Est.)	MU	160,753	164,645	167,728	172,536	177,592
Energy Requirement (Est.)	MU	139,413	141,940	144,484	148,759	153,204
Surplus Energy Available (Est)	MU	21,340	22,705	23,243	23,777	24,388
Per Unit Average Power Purchase Cost	Rs/kWh	4.24	4.27	4.31	4.34	4.36

Surplus Cost (Est.)	Rs. Crore	9,050	9,689	10,028	10,318	10,637

6.6.54 Thus, surplus energy of around 21,000 MU in the first year and increasing up to around 24,000 MU in the last year is estimated to be available in the 4th Control Period. Considering per unit average power purchase cost for the respective year, the yearly revenue could be around Rs. 9,050 Crores in the first year and increasing upto around Rs. 10,600 crores in the last year of 4th Control Period as per estimates. Hence, MSEDCL should explore various options for selling the surplus power through short-term/ medium-term bilateral contracts or through Power Exchanges in an optimal and efficient manner such that the revenue from surplus trade of power can help in optimising effective cost of power procurement. In any case, in view of the likely surplus, any future long-term/medium-term contracting for power procurement during the 4th Control Period (except of renewable power procurement to meet RPO target) will have to be demonstrated how it meets the test of efficacy of power procurement and further optimisation of overall cost of power procurement. Further, MSEDCL should also review its PPAs and explore options to optimise the impact of the fixed cost of the contracted capacity, including deferment in cases where no significant work execution has taken place so far.

6.7 Intra State Transmission Charges and MSLDC Charges

MSEDCL's Submission

6.7.1 MSEDCL submitted that Mumbai Utilities are already benefitted due to present transmission infrastructure. N-2 mechanism is basically to strengthen the network from reliability point of view. This will enhance the power supply and will only be benefitting to Mumbai Utilities. Therefore, the transmission charges considered for strengthening of Infrastructure for Mumbai Utilities need to be recovered from Mumbai Consumers only and should not be burdened on MSEDCL.

6.7.2 MSEDCL also submitted that the STU has filed the Petition for determination of Intra-State Transmission Tariff for the MYT Control Period from FY 2020-21 to FY 2024-25. As per the said Petition MSEDCL will have following share in the Total Transmission System Cost.

Table 6-58: MSEDCL's share of InSTS charges as per MSETCL's Petition (Rs. Crore)

Particulars	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
MSEDCL (Rs. Crore)	10,293.78	6,352.56	6,715,36	7,344.34	7,999.76

6.7.3 MSEDCL submitted that in the said Petition, a steep rise in the transmission tariff from existing Rs. 0.30 per unit for FY 19-20 to Rs. 0.77 per unit in FY 20-21 is proposed. Further, the transmission charges for the remaining years of the Control Period are almost more than 50% higher than the existing transmission charges.

6.7.4 MSEDCL further submitted that there is a wide difference in the historical trend in Intra State Transmission Charges and Petition filed by the STU. The historical trend in the Intra State Transmission Charges for the last 4 years is shown in following table.

Table 6-59: Historical trend in InSTS share to MSEDCL (Rs. Crore)

Particulars	FY 15-16	FY 16-17	FY 17-18	FY 18-19	3 Year CAGR
	Actual	Actual	Actual	Actual	
Intra State Transmission Charges (Rs. Crore)	4,070	3,793	4,812.17	4,775.50	5.47 %

6.7.5 MSEDCL has considered the MSEDCL share in the Total transmission System Cost (TTSC) as submitted by the State Transmission Utility as summarized in following table. MSEDCL requested the Commission to allow the Intra State Transmission charges as shown below:

Table 6-60: Intra State Transmission charges for 4th Control Period as submitted by MSEDCL

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Intra State Transmission Charges (Rs. Cr.)	10,293.78	6,352.56	6,715.36	7,344.34	7,999.76

Commission's Analysis and Ruling

6.7.6 The Commission has approved the MSEDCL's share of InSTS Charges and MSLDC Charges for the Control Period FY 2020-21 to FY 2024-25 based on the respective Order of the Commission approving the InSTS Charges (Case No. 327 of 2019) consequent to MYT Orders of the transmission licensees and based on the MYT Order issued for approving the AFC of SLDC (Case No. 291 of 2019)

Table 6-61: MSEDCL's share of InSTS Charges and MSLDC Charges for the 4th Control Period as approved by Commission (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Intra-State Transmission Charges	5,671.59	5,782.39	5,885.89	5,977.94	6,004.23

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
MSLDC Charges	28.33	26.86	29.18	31.57	32.54
Total Transmission Charges	**5,699.92**	**5,809.25**	**5,915.07**	**6,009.51**	**6,036.77**

6.8 O&M Expenses for Fourth Control Period from FY 2020-21 to FY 2024-25

MSEDCL's Submission

6.8.1 MSEDCL worked out normative O&M as per Regulation 75 and 84 of the MERC MYT Regulations, 2019.

6.8.2 MSEDCL has submitted that for projecting the O&M Expenses for future years it has considered the efficiency factor to be equal to zero for computing the escalation rate, since the growth of consumers of MSEDCL for the past three years is more than 3% as per the proviso of Regulation 75.3 of MERC MYT Regulations, 2019.

6.8.3 The base normative O&M Expenses for FY 2019-20 has been computed by escalating twice over the O&M Expenses for FY 2019-20.

6.8.4 The Submission of MSEDCL is as shown in the Table below for normative O&M Expenses for the Fourth Control Period is as shown in the table below:

Table 6-62: Normative O&M Expenses for Fourth Control Period from FY 2020-21 to 2024-25 submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
O&M Expenditure (Wires Business)	4,536.29	4,710.13	4,890.63	5,078.04	5,272.64
O&M Expenditure (Supply Business)	2,442.62	2,536.22	2,633.42	2,734.33	2,839.12
Operation & Maintenance Expenses	**6,978.91**	**7,246.35**	**7,524.04**	**7,812.38**	**8,111.76**

Commission's Analysis and Ruling

6.8.5 Commission has worked out normative O&M as per Regulation 75 and 84 of the MERC MYT Regulations, 2019. The relevant extract of the regulations are as given below for easy reference:

> *The Operation and Maintenance expenses shall be derived on the basis of the average of the Trued-up Operation and Maintenance expenses after adding/deducting the share of efficiency gains/losses, for the three Years ending March 31, 2019, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:*

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2018, and shall be escalated at the respective escalation rate for FY 2018-19 and FY 2019-20, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2020:

Provided further that the escalation rate for FY 2018-19 and FY 2019-20 shall be computed by considering 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years as per the Labour Bureau, Government of India:

6.8.6 To work out O&M expense norms for 4th Control Period, Commission has taken the average of Net Entitlement O&M expense of FY 2016-17,FY 2017-18 and FY 2018-19 as shown in the below tables.

Table 6-63: Net Entitlement of O&M expense for FY 2016-17, FY 2017-18 & FY 2018-19 (Rs. Crore)

Particulars	Normative O&M	Actuals	Gains/ (Loss)	2/3 of Efficiency gains/Losses	1/3 of Efficiency Gains/Losses	Net Entitlement after sharing
O&M Expenses for FY 16-17	6,678.07	5,796.69	881.38	587.59	293.79	6,090.48
O&M Expenses for FY 17-18	6,843.69	5,658.28	1,185.41	790.27	395.14	6,053.42
O&M Expenses for FY 18-19	6,959.36	6,401.01	558.35	372.23	186.12	6,587.13

6.8.7 It is pertinent to note that, Commission has taken actuals of FY 2018-19 including Rs. 582.11 Crores, so that while deriving the norms for 4th Control Period impact of wage revision would be captured. Average of Net Entitlement O&M expense of FY 2016-17, FY 2017-18 and FY 2018-19 will give new base normative O&M expense for FY 2017-18.

6.8.8 The Commission, for projecting the O&M Expenses for future years has considered the efficiency factor to be equal to zero for computing the escalation rate, since the growth of consumers of MSEDCL for the past three years is more than 3% as per the proviso of Regulation 75.3. The proviso is provided below for easy reference:

Provided further that the efficiency factor shall be considered as zero, in case there is an increase in the number of consumers including Open Access consumers connected to the Distribution Wires of at least 2 percent annually over the last 3 years:

6.8.9 The escalation factor for O&M expenses is to be worked out on the inflation factor considering 30% and 70 % weightage for actual point-to-point WPI and CPI, respectively, in the previous five year which comes out at 3.83%, as shown in the flowing table :

Table 6-64: O&M expense escalation for 4th Control Period

Year	WPI	WPI Inflation	CPI	CPI Inflation
FY 2014-15	113.88	1.26%	250.83	6.29%
FY 2015-16	109.72	-3.65%	265.00	5.65%
FY 2016-17	111.62	1.73%	275.92	4.12%
FY 2017-18	114.88	2.92%	284.42	3.08%
FY 2018-19	119.79	4.28%	299.92	5.45%
Average from FY15 to FY19		1.31%		4.92%
Weight		30%		70%
Escalation Factor				**3.83%**

6.8.10 New base normative expense for FY 2017-18 is escalated by 3.83% by two years to give New base Normative O&M expense for FY 2019-20. Then new base Normative O&M expense for FY 2019-20 is escalated by 3.83% year by year to derive new O&M norms 4th Control Period. .

6.8.11 The Commission sought data regarding actual disbursal of arrears and corresponding amount paid by MSEDCL on account of pay revision till date. MSEDCL in its reply submitted that first installment of pay revision has been given in the month of November 2019. However, the provision for FY 2018-19 is already included in the Annual Accounts. As per the MSEDCL Administrative Circular dated 18-09-2019, the Second and Third Installment of the arrears shall be paid to the employees within next 18 month period. In view of the above, Commission has deducted Rs. 582.11 Crore from the actual O&M expense of FY 2018-19, as Rs. 582.11 Crore is provisioning for the arrears pertaining to wage revision which was paid in the month of November 2019. Commission added Rs. 291.06 Crore to the derived O&M norms of FY 2019-20 to include the impact of arrears since actual payment has already been made as reported. Now as regards second and third installment of the arrears, it is proposed to be paid in FY 2020-21, as per MSEDCL submission. Regulation 75.4 (Wire) & 84.4 (Supply) and 75.5 (Wire) & 84.5 (Supply) of MYT Regulations, 2019 specifies provisions for allowing wage revision. The relevant extract of the same is reproduced for ease of reference:

"75.4 The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner:
Provided that if actual employee expenses are higher than normative expenses on this account, then no sharing of efficiency losses shall be done to that extent:
Provided further that efficiency gains shall not be allowed by deducting the impact of Wage Revision and comparison of such reduced value with normative value.
75.5 Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered."

6.8.12 As per above referred Regulations, the impact of wage revision has to be considered at the time of true-up of any year. However, as the impact would be significant and would entail allowing for carrying cost in future, the Commission upon due consideration of the fact that wage agreement is already signed and one instalment is already disbursed, has decided to allow this arrears invoking its power to relax under Regulation 105 of MYT Regulations, 2019, for deviating from the norms in this case. The relevant extract of the MYT Regulations, is reproduced as under.

"105 Power to relax
The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected by grant of relaxation, may relax any of provisions of these Regulations on its own motion or on an application made before it by an interested person."

6.8.13 In view of the above, the Commission has added Rs. 582.11 Crores in FY 2020-21 to include the impact of arrears on account of wage revision. The total Normative O&M expense for Fourth Control Period from FY 2020-21 to FY 2024-25 approved by the Commission is shown in the table below.

Table 6-65: Normative O&M Expenses for Fourth Control Period from FY 2020-21 to 2024-25 approved by Commission (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
O&M Expenditure w.r.t Wires Business	378.37	-	-	-	-
O&M Expenditure w.r.t Supply Business	203.74	-	-	-	-
Sub Total (A)	**582.11**	-	-	-	-
O&M Expenditure for Wires Business	4,543.31	4,717.50	4,898.36	5,086.16	5,281.17
O&M Expenditure for Supply Business	2,446.40	2,540.19	2,637.58	2,738.70	2,843.71

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Operation & Maintenance Expenses (B)	6989.70	7,257.69	7,535.94	7,824.87	8,124.87
Total O&M Expense allowed (C = A +B)	7,571.81	7,257.69	7,535.94	7,824.87	8,124.87

6.8.14 The Commission approves Rs. 7571.81 Crore, Rs. 7257.69 Crore, Rs. 7535.94 Crore, Rs. 7824.87 Crore and Rs. 8124.87 Crore for FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25, respectively.

6.9 Opex for the Fourth Control Period from FY 2020-21 to FY 2024-25

MSEDCL's Submission

6.9.1 MSEDCL has submitted that as per the Regulation 75.7 and 84.7 of the MYT Regulations, 2019 the distribution licensee is allowed to undertake Opex schemes for wires and supply business for system automation, new technology and IT Implementation etc. and such expenses may be allowed over and above normative O&M Expenses.

6.9.2 MSEDCL has submitted that the details of the Opex schemes as stated in the proviso of the Regulation including detailed justification are provided by MSEDCL in the petition.

6.9.3 The revenue expenditure details of the Opex schemes as provided by MSEDCL is shown in the table below:

Table 6-66: Opex for Fourth Control Period from FY 2020-21 to 2024-25 submitted by MSEDCL(Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Opex Schemes (Wire Business)					
Substation Monitoring System (SMS)	69.53	69.53	69.53	69.53	69.53
SMS Services	2.72	2.72	2.72	2.72	2.72
MSEDCL Cloud Project	8.32	8.32	8.32	8.32	8.32
Annual Technical Support of SAP/HANA/Oracle Software Licenses	5.94	5.94	5.94	5.94	5.94
Vehicle Tracking System	0.53	0.53	0.53	0.53	0.53
Sub-Total	**87.03**	**87.03**	**87.03**	**87.03**	**87.03**
Opex Schemes (Supply Business)					
Customer Care Center	6.6	6.6	6.6	6.6	6.6
SMS Services	2.72	2.72	2.72	2.72	2.72

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
RF-DCU (Expression of Interest & Tender)	4.8	4.8	4.8	4.8	4.8
Go Green Initiative	1.28	1.47	1.69	1.95	2.24
MSEDCL Cloud Project	8.32	8.32	8.32	8.32	8.32
Annual Technical Support of SAP/HANA/Oracle Software Licenses	5.94	5.94	5.94	5.94	5.94
Vehicle Tracking System	0.53	0.53	0.53	0.53	0.53
Sub-Total	**30.18**	**30.37**	**30.59**	**30.85**	**31.14**
Total	**117.21**	**117.4**	**117.62**	**117.88**	**118.17**

Commission's Analysis

6.9.4 As per the Regulation 75.7 and 84.7 of the MYT Regulations, 2019 the distribution licensee is allowed to undertake Opex schemes for wires and supply business for system automation, new technology and IT Implementation etc. and such expenses may be allowed over and above normative O&M Expenses. The relevant extract of the regulation is provided as below:

> *A Distribution Licensee may undertake Opex schemes for system automation, new technology and IT implementation, etc., and, such expenses may be allowed over and above normative O&M Expenses, subject to prudence check by the Commission:*
> *Provided that the Distribution Licensee shall submit detailed justification, cost benefit analysis of such schemes as against capex schemes, and savings in O&M expenses, if any.*

6.9.5 The Commission sought brief note on selection of service provider for various Opex schemes as claimed in the petition and how cost competitiveness is ensured in the selection process followed. MSEDCL in its reply to data gap submitted that the selection of service provider for various Opex Schemes as claimed in the Petition is done through tendering process and for ensuring competitiveness, the least cost based selection method (L1 Method) is used for selection of successful bidder. Commission further asked MSEDCL to submit letter of award for the various schemes as mentioned in the Opex Schemes. MSEDCL has submitted the letter of award of various schemes as an annexure to the reply of data gap and the Commission reviewed the same.

6.9.6 The Commission has sought Cost benefit analysis of the savings in O&M against each of the Opex scheme due to implementation of such schemes projected for 4th Control Period. MSEDCL submitted scheme-wise Cost Benefit Analysis of the Opex schemes. The Commission is of the view that an enabling proviso has been added for allowing O&M expenses under Opex schemes is specially designed for linkage of deliverables,

wherein the payments will be linked to the performance and deliverables throughout the contract period, especially for system automation, maintenance, new technology and IT implementation, etc. O&M expenses on account of such schemes shall be allowed over and above normative O&M Expenses. Instead of owning an asset, service model is being allowed to infuse latest technologies. While the Utilities would get benefit of the services for efficiency gains, the associated cost of capitalization would be saved.

6.9.7 The Commission has reviewed the Opex Schemes based on the parameters explained in the above Para. Below are the Observation of Commission on the Opex schemes as submitted by MSEDCL.

Customer Care Center

In addition to address the consumer complaints for which Customer Care Centre has been established, MSEDCL has utilized Centre for follow up of payments and achievements of Outbound Campaign for payment follow-ups. For the period April-2018 to March-2019 total number of calls made to defaulting consumers were 5,67,046 (Monthly average 47,253) and payment received was of Rs. 461.36 Crore (Monthly average Rs. 38.44 Crore). For the period Apr-2019 to Dec-2019 total no. of calls made to defaulting consumers were 1,50,515 nos. (Monthly average 16,723) and payment received is of Rs. 89.02 Crore (Monthly average Rs. 9.89 Crore). Outbound Campaign for payment follow-ups with defaulting consumers, helped MSEDCL in realization of revenue. The other benefits are faster handling and quicker resolution of Consumer's calls as BPO companies maintain trained manpower backups & redundant telecom lines to avoid disruptions. Letter of award for "Providing Customer care Service to MSEDCL" for the period of three years is issued on 25.01.2018 for Rs. 19.94 Crores. Benefit of this scheme to Consumer are:

- Better and Professional Customer Care service
- Faster call handling and quicker resolution of Consumer Calls
- Easy capacity addition with similar service level during monsoon and other critical times.

Go Green Initiative

Under Go Green Initiative MSEDCL has decided to offer a rebate of Rs. 10/- on every electricity bill to the consumer who opted for electronic copy of the bill instead of hard copy. For the period April-2018 to March-2019 number of complaints for "Non receipt of Bills" were 83,829 (monthly average of 6,986). For the period April-2019 to December-2019 number of complaints for "Non receipt of Bills" are 36,249 (Monthly

average of 4,027). It is observed that there is reduction in number of complaints of "Non receipt of Bills". During the period Apr-2019 to Dec-2019 the no. of Go-Green registered consumers who have availed Prompt Payment Discount are 3,38,355 and bill amount paid is of Rs.49.69 Crore. Therefore, Go Green Initiative helped MSEDCL in realisation of Revenue.

While the Commission appreciates the efforts of MSEDCL in undertaking such initiatives, the Commission is of the view that such services have to be anyway taken up the Utilities as part of their regular O&M activities and expenses thereof should form part of their O&M expenses. In this context, Commission has not considered such proposed expenses under opex scheme, but same shall be undertaken by MSEDCL based on the normative O&M expenses allowed in this Order.

SMS Services

MSEDCL has issued Letter of Award to the lowest cost (L1) bidder M/s Karix Mobile Pvt. Ltd of the tender for Providing SMS Services to MSEDCL for Rs. 30.20 Crores including GST @ 7.90 paise per SMS (excluding GST) for three years. MSEDCL is spending Rs. 0.84 Crore per month on SMS services. MSEDCL send SMS service to its consumer and for internal purpose for:

- Bill Alert and reminders
- Payment acknowledgement for all payments.
- Acknowledgement for New Connection.
- Verification of Employee Portal
- Notification for day to day work (paid pendency for new connection)

While the Commission appreciates the efforts of MSEDCL in undertaking such initiatives, the Commission is of the view that such services have to be anyway taken up the Utilities as part of their regular O&M activities and expenses thereof should form part of their O&M expenses. In this context, Commission has not considered such proposed expenses under opex scheme, but same shall be undertaken by MSEDCL based on the normative O&M expenses allowed in this Order.

RF-DCU (Expression of Interest & Tender)

In order to reduce the manual intervention in taking meter reading, MSEDCL submitted that, it has implemented RF-DCU as to achieve 100% accuracy of readings as it will

reduce the existing Rs. 6 to 8.25 per consumer/meter reading charges to 7.20 Rs/reading. Further, MSEDCL has implemented RF-DCU project in high loss town of Jalgaon, Nanded and Latur Zone on pilot basis. MSEDCL submitted that the detailed analysis has shown rise of 12% in sale after RF DCU based meter installation amongst above Zone. MSEDCL is planning to implement RF-DCU all across Maharashtra and expected to get 1741.49 MUs annually, which can yield additional revenue of Rs. 115.28 Crore and additional saving of meter reading cost of Rs.21.68 Crore. Benefit of this scheme to consumers are:

- Accuracy of reading is 100%.
- Reading downloaded by DCUs can be seen online through web based data collection.

Station Monitoring System

Implementing Substation Monitoring System will help MSEDCL in controlling outage by bringing effective Outage Management System of feeders and health monitoring of equipment's. MSEDCL submitted that, at present the revenue loss due to forced outage is approx. Rs. 339.77 Crore/year, with the help of Station Monitoring System saving of nearly 20% of revenue loss is envisaged. Vide Board Resolution no 1489 dated 12th Oct 2018, MSEDCL Competent Authority has approved floating the tender for Substation Monitoring System across Maharashtra with an estimate of Rs. 330.54 Crore. Tender with an estimate of Rs 360.54 Crore for 5 year is floated on Opex basis for implementing Substation Monitoring System for 3289 numbers of 33/22/11 kV substations & switching stations across MSEDCL. Benefit of this schemes to Consumers are:

- Quick action from MSEDCL to reduce the downtime and improve consumer satisfaction.
- SMS alert facilities can be extended to consumers so that the consumers will know that the feeder is under breakdown.

MSEDCL Cloud Project

MSEDCL submitted that, vide Maharashtra Government Circular 060/3/2017 dated 29th January 2018 on Cloud Computing policy, instruction were given to Government departments, Local Bodies & PSUs to mitigate all their existing IT application onto

Cloud platform. In pursuance to this, MSEDCL competent authority vide board resolution 1242 dated 07.04.2018 has accorded approval to mitigate all MSEDCL IT application onto Cloud Platform. Further MSEDCL submitted that, on premise IT infrastructure estimated cost for 5 years approximate cost is Rs 205.79 Crores i.e. Rs 41.15 Crores per year. As per latest LOA awarded by MSEDCL the cost of cloud computing for availing same type of service is approx.. Rs. 21.65 Crores per year thus saving Rs. 19.50 Crore per year. Benefit of this schemes are:

- Less operational issues than on premise IT infrastructure
- Cloud is more securer than on premise IT infrastructure server

Annual Technical Support of SAP/HANA/Oracle Software Licences

The Annual Technical Support covers product updates, maintenance release, support related to ERP products/ERP database/Oracle Database for smooth functioning of SAP ERP, Oracle database & Other IT system. LOA for "Annual Technical Support of SAP Software user licenses" is issued to M/s SAP India Pvt Ltd. of amount Rs. 5.36 Crore. LOA for "Supply of SAP- HRMS licenses" including AMC is issued to M/s SAP India Pvt Ltd. of amount Rs. 11.96 Crore out of which AMC licenses cost is Rs. 2.16 Crores.

Vehicle Tracking System

The fitment of GPS device for vehicles shall enable on-line, real-time monitoring of their movement and effective enforcement through a web based Vehicle Tracking application. This application will be used by approximate 250 vehicles. Benefit of this schemes are:

- Provide effective monitoring, better decision making and planning of MSEDCL vehicle.
- Identify the vehicle doing violation based on time of travel, distance and destination.

6.9.8 The Commission has noted that in addition to Normative O&M expense, MSEDCL has requested the Commission to allow additional estimated Opex of approx.. Rs. 118 Crs /year till FY 2024-25 to carry out the Opex schemes explained above. As per Regulation 75.7 and 84.7 of the MYT Regulations, 2019 Licensee may undertake Opex schemes for wire and supply business respectively for system automation, new technology and IT implementation and such expense may be allowed over and above normative O&M expense.

6.9.9 The Commission notes that expenses proposed on scheme such as SMS Services, Go Green Initiatives and annual technical support of SAP/HANA/Oracle Software Licenses are of recurring expenses and is in nature of A&G expenses. The Commission's intend of introducing Opex scheme in MYT Regulations is to promote licensees to take service from service providers instead of investing as capital expenditure. Although schemes mentioned are important initiatives and needs to be promoted, it needs to be categorized under O&M expenses. It is also a fact that these are not new schemes and MSEDCL is already booking expenses on these schemes in O&M expenses. Same needs to be continued for future also.

6.9.10 Other schemes such as Substation Monitoring System, RF-DCU, Cloud Project, Vehicle Tracking System and Consumer Care Center can be allowed as OPex Schemes. Expenses on these schemes needs to be allowed under Opex Scheme which would be over and above normative O&M expense. However, the estimation of the Opex schemes expenses claimed by MSEDCL is based on the estimation and selection of vendor, award of contract and other factors. Such expense being specific in nature may have to be assessed based on actual expenses, subject to necessary prudence check. This is however subject to truing up and Petitioner filing certain additional information namely (i) Audited actual expenditure incurred for Opex (ii) Bid evaluation Report with cost benefit analysis (iii) Board Resolutions, etc.

Table 6-67: Opex for Fourth Control Period from FY 2020-21 to 2024-25 as approved by Commission (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Opex Schemes (Wire Business)					
Substation Monitoring System (SMS)	69.53	69.53	69.53	69.53	69.53
MSEDCL Cloud Project	8.32	8.32	8.32	8.32	8.32
Vehicle Tracking System	0.53	0.53	0.53	0.53	0.53
Sub-Total	**84.31**	**84.31**	**84.31**	**84.31**	**84.31**
Opex Schemes (Supply Business)					
Customer Care Center	6.6	6.6	6.6	6.6	6.6
RF-DCU (Expression of Interest & Tender)	4.8	4.8	4.8	4.8	4.8
MSEDCL Cloud Project	8.32	8.32	8.32	8.32	8.32

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Vehicle Tracking System	0.53	0.53	0.53	0.53	0.53
Sub-Total	**26.18**	**26.18**	**26.18**	**26.18**	**26.18**
Total	**110.49**	**110.49**	**110.49**	**110.49**	**110.49**

6.9.11 The Commission approves Rs. 110.49 Crore as expense towards Opex for each year of the 4th Control period from 2020-21 to 2024-25 subject to truing up.

6.10 Capital Expenditure and Capitalization for 4th Control Period

MSEDCL's Submission

6.10.1 MSEDCL has summarized the projection of capital expenditure and capitalization for the Fourth Control Period from FY 2020-21 to FY 2024-25 as shown in the table below. MSEDCL has submitted the scheme wise details of the Capital expenditure and capitalization for the control period along with the petition.

Table 6-68: Capitalisation and Capital Expenditure for Fourth Control Period submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Capital Expenditure					
DPR Scheme	6339.73	2164.16	1728.23	1773.09	1856.44
Non DPR Scheme	347.51	347.51	34.51	34.51	30.00
Total	**6687.24**	**2511.67**	**1762.74**	**1807.60**	**1886.44**
Capitalization					
DPR Scheme	6565.59	4720.69	1914.45	1774.09	1847.44
Non DPR Scheme	274.72	347.51	124.51	34.51	30.00
Total	**6840.31**	**5068.20**	**2038.96**	**1808.60**	**1877.44**

Commission's Analysis and Ruling

6.10.2 MSEDCL has claimed excess capitalization over and above the in-principle approved cost for certain schemes in some years. The Commission observed that in some schemes projected capitalization in the 4th Control Period is exceeding the Commission's approved DPR amount. In those cases the Capitalization is capped to the approved amount of that scheme.

6.10.3 Due to excess capitalisation, an undue burden of excess IDC is being passed on to consumers, which is not justifiable. Further, the Commission observes that MSEDCL

does not maintain scheme-wise IDC computations. Instead IDC is computed on a notional basis as a percentage of the total capitalisation of each scheme. In case of schemes with excess capitalisation over and above the in-principle approved capital cost, in such cases the Commission has deducted 100 % of claimed IDC. Excess Capitalisation and IDC not allowed by the Commission for 4th Control period from FY 2020-21 to FY 2024-25 is summarized under following table.

Table 6-69: Excess Capitalisation and IDC not allowed by the Commission for 4th Control Period

Schemes	Capitalisation / IDC	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
IPDS in 45 Circles	Excess Capitalisation	352.79	352.79	-	-	-
	Excess IDC	0.81	0.80	-	-	-
DDUGJY	Excess Capitalisation	-	6.28	-	-	-
	Excess IDC	-	0.01	-	-	-
National Cyclone Risk Mitigation Project	Excess Capitalisation	-	12.19	-	-	-
	Excess IDC	-	-	-	-	-
Evacuation Of Power from EHV	Excess Capitalisation	-	-	-	-	25.80
	Excess IDC	-	-	-	-	0.05
Total	**Excess Capitalisation**	**352.79**	**371.26**	**-**	**-**	**25.80**
	Excess IDC	**0.81**	**0.82**	**-**	**-**	**0.05**

6.10.4 Further, in line with the regulatory provisions under Regulation 24.6 and 24.7 of MYT Regulations, 2019 quoted below for reference specifies to limit the capitalization of non-DPR schemes within 20% of capitalization allowed for DPR schemes, the Commission has accordingly limited the capitalization claimed towards non-DPR schemes for 4th Control Period.

24.6 The Commission may approve, for each year of the Control Period, an additional amount equivalent to 20% of the total capital expenditure approved for that year, towards planned or unplanned capital expenditure that is yet to be approved by the Commission.

24.7 The cumulative amount of capitalisation against non-DPR schemes for any Year shall not exceed 20% or such other limit as may be stipulated by the Commission through an Order, of the cumulative amount of capitalisation approved against DPR schemes for that Year:

Provided that the Commission may allow capitalisation against non-DPR schemes for any Year in excess of 20% or such other limit as may have been

stipulated by the Commission through Order, on a request made by the Generating Company or Licensee or MSLDC:

Provided further that the Generating Company or Licensee or MSLDC should ensure that expenses that would normally be classified as O&M expenses are not categorised under non-DPR schemes.

6.10.5 The Commission has noted that MSEDCL has claimed Rs, 1101.58 Crore, Rs. 1606.05 Crore, Rs. 1269.22 Crore, Rs 1118 Crore and Rs. 1169 Crore as yet to approve DPR schemes for the 4th Control Period from 2020-21 to 2024-25. The Commission is of the view that in respect to yet to approve DPR schemes Commission has taken last 5 year moving average of pending/yet to approve DPR and allowed the same for FY 2021-22 to FY 2024-25.

Table 6-70: Capitalisation for Fourth Control Period submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	MSEDCL (proj.)	MSEDCL (proj.)	MSEDCL (proj.)	MSEDCL (proj.)	MSEDCL (proj.)
Approved DPR Capitalisation amount	5454.84	3109.20	645.17	656.07	678.37
IDC claimed	9.19	5.45	0.06	0.03	0.07
Pending/ yet to approve DPR	1101.58	1606.05	1269.22	1118.0	1169.000
Sub-total	6565.61	4720.70	1914.45	1774.10	1847.44
NDPR	274.72	347.51	124.51	34.51	30.00
%of NDPR to DPR	5.03%	11.16%	19.30%	5.26%	4.42%
Allowable NDPR Capped	274.72	347.51	124.51	34.51	30.00
Total Captalisation	**6840.33**	**5068.21**	**2038.96**	**1808.61**	**1877.44**

Table 6-71: Capitalisation for Fourth Control Period considered for approval by Commission (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved in this Order	Approved in this Order	Approved in this Order	Approved in this Order	Approved in this Order
Approved DPR Capitalisation amount	5102.06	2737.95	645.17	656.07	652.57
IDC claimed	8.39	4.63	0.06	0.03	0.02
Pending/ yet to approve DPR	0.00	548.52	129.05	131.22	130.52
Sub-total	5110.44	3291.09	774.28	787.32	783.11
Non DPR	274.72	347.51	124.51	34.51	30.00
%of Non DPR to DPR	5.38%	10.56%	19.30%	5.26%	4.60%
Allowable Non DPR Capped	274.72	347.51	124.51	34.51	30.00
Total Captalisation	**5385.16**	**3638.60**	**898.79**	**821.83**	**813.11**

6.10.6 Commission noted that in later part of the 4th Control period (i.e. FY 2022-23 to FY 2024-25) projected Capitalisation is far lower less that the average approved capitalization of last five year. This has arisen due to fact that DPR schemes for capex schemes implementation in these years are yet to be submitted for scrutiny and approval. The Commission is of the view that projections of capex/capitalization need to be realistic particularly since MSEDCL has projected growth in the number of consumers, contract demand and sales along with several other schemes for improvements/augmentation of existing infrastructure. Projecting capex/capitalization in future years to be far lower than existing trend of capitalization just because DPR schemes for these years not being in place would amount to underestimating capex/capitalization and deferring the burden of such capex/capitalization along with carrying cost in future years. Hence, by invoking Regulation 106 (Power to remove difficulties) of MYT Regulation, 2019 which is reproduced below for reference

> *"If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by general or specific order, make such provisions not inconsistent with the provisions of the Act, as may appear to be necessary for removing the difficulty."*

6.10.7 Hence, the Commission is of the view that in years in which Capitalisation projected by MSEDCL is lower than the last five year average of allowed Capitalisation, maximum of Capitalization equivalent to the last five year average of allowed Capitalisation has been considered for the purpose of projections. Accordingly, the capitalization approved for 4th Control Period for FY 2020-21 and FY 2024-25 is as shown in the table below:

Table 6-72: Capitalisation for Fourth Control Period Approved by Commission (Rs. Crore)

Particulars	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
	Approved in this Order	Approved in this Order	Approved in this Order	Approved in this Order	Approved in this Order
Approved DPR Capitalisation amount	5102.06	2737.95	645.17	656.07	652.57
IDC claimed	8.39	4.63	0.06	0.03	0.02
Pending/ yet to approve DPR	0.00	548.52	129.05	131.22	130.52
Sub-total	5110.44	3291.09	774.28	787.32	783.11
NDPR	274.72	347.51	124.51	34.51	30.00
%of NDPR to DPR	5.38%	10.56%	19.30%	5.26%	4.60%
Allowable NDPR Capped	274.72	347.51	124.51	34.51	30.00
Total Captalisation	**5385.16**	**3638.60**	**898.79**	**821.83**	**813.11**
5 Year average of allowed Capitalisation	2090.36	2090.36	2090.36	2090.36	2090.36
Allowed Capitalisation	**5385.16**	**3638.60**	**2090.36**	**2090.36**	**2090.36**

6.10.8 Thus, for 4th Control Period the Commission allows Capitalisation of Rs. 5385.16 Crore and Rs. 3638.60 Crore for FY 2020-21 and FY 2021-22 and for remaining period Commission allows Capitalisation of Rs. 2090.36 Crores.

6.11 Depreciation for Fourth Control Period from FY 2020-21 to FY 2024-25

MSEDCL's Submission

6.11.1 MSEDCL has stated in the petition that it has computed the depreciation in accordance with regulation 28 of MYT Regulation, 2019, As per regulation 28.1(b) of the MYT Regulations, the individual asset is to be depreciated to the extent of 70% on the straight line basis as per the rates specified in the Regulations and remaining depreciable value as on 31st March of the year closing shall be spread over the balance useful life of the asset. The relevant extract of the regulation is provided below for easy reference.

> *(b) Depreciation shall be computed annually based on the straight line method at the rates specified in the Annexure I to these Regulations:*
>
> *Provided that the Generating Company or Licensee or MSLDC shall ensure that once the individual asset is depreciated to the extent of seventy percent, remaining depreciable value as on 31st March of the year closing shall be spread over the balance Useful Life of the asset including the Extended Life, as provided in this Regulation:*

6.11.2 MSEDCL has submitted that depreciation has been computed by taking into account the opening balance of the assets ibn the beginning of the year and projected capitalization. It has further added that considering the actual weighted average of depreciation for FY 2018-19 as in line with the practice adopted by the Commission, the depreciation has been computed as shown in the table below:

Table 6-73: Depreciation for Fourth Control Period submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Opening GFA	55,675.32	59,904.48	63,719.61	65,061.48	66,258.47
Depreciation	2,756.88	2,966.30	3,155.21	3,221.66	3,280.93
% Depreciation	4.95%	4.95%	4.95%	4.95%	4.95%

6.11.3 MSEDCL has requested the Commission to allow depreciation as shown in above table.

Commission's Analysis and Ruling

6.11.4 The Commission has taken the Opening GFA as the closing GFA approved for FY 2019-20 in the provisional truing-up for computing the depreciation for pursuing years. Further, as per Regulation 25.2 (c), depreciation has not been allowed to the extent of GFA established through Consumer Contribution and Grants. The depreciation rates are as per MYT Regulations, 2019 comes at 4.95%. The depreciation amount approved

for 4th Control Period is as shown in Table below:

Table 6-74: Depreciation for Fourth Control Period as approved by the Commission (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Opening GFA	55286.46	58529.35	61185.77	62438.45	63677.44
Depreciation	**2817.91**	**2963.97**	**3060.76**	**3122.45**	**3183.82**
% Depreciation	4.95%	4.95%	4.95%	4.95%	4.95%

6.11.5 The Commission approves Depreciation of Rs. 2817.91 Crore, Rs. 2663.97 Crore, Rs. 3060.76 Crore, Rs. 3122.25 Crore and Rs. 3183.82 Crore for 4th Control Period from FY 2020-21 to FY 2024-25.

6.12 Interest on Long-Term Loan for Fourth Control Period

MSEDCL's Submission

6.12.1 MSEDCL has submitted that the calculation of interest expenses on long term loans depends in the outstanding loan, repayments and prevailing interest rates and hence the projected capital expenditure and funding of the same have a major bearing on the long-term expenditure.

6.12.2 MSEDCL has computed the interest on Long-Term Loan according the provisions stated out in Regulation 30 of MYT Regulations, 2019. The repayment of loan is computed as per Regulation 30.3 the extract of which is given below for reference:

> *"30.3 The loan repayment during each year of the Control Period from FY 2020- 21 to FY 2024-25 shall be deemed to be equal to the depreciation allowed for that year."*

6.12.3 MSEDCL has considered the interest rate on opening balance of loan for all years of the control period as equal to weighted average interest rate of loan computed for FY 2018-19. Considering the opening loan, normative loan addition during the year and loan repayment equal to depreciation and the interest rate, the interest Expenses for the period for the fourth control period from FY 2020-21 to FY 2024-25 as projected by MSEDCL is shown below:

Table 6-75: Interest Expenses for Fourth Control Period submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Normative Outstanding Loan at the beginning of the year	13,263.75	14,126.71	14,361.24	12,061.34	9,590.07
Loan Drawl	3,619.85	3,200.82	855.31	750.39	779.51

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Loan Repayment	2,756.88	2,966.30	3,155.21	3,221.66	3,280.93
Normative Outstanding Loan at the end of the year	14,126.71	14,361.24	12,061.34	9,590.07	7,088.66
Interest Rate	10.28%	10.28%	10.28%	10.28%	10.28%
Gross Interest Expenses	1,407.20	1,463.59	1,357.48	1,112.36	856.88

6.12.4 MSEDCL has requested the Commission to allow the interest on long term loans as submitted in above table.

Commission's Analysis

6.12.5 The Commission has considered the funding pattern for capitalization for 4th Control Period from FY 2020-21 to FY 2021-22 in the same ratio as for the funding of proposed capital expenditure, in line with the methodology adopted by MSEDCL, and after considering the approved quantum of capitalization. This would be subject to prudence check and reviewed during the Final Truing Up and at the end of the Control Period.

Table 6-76: Funding Pattern approved by Commission for Fourth Control Period (Rs. Crore)

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Total Capitalisation	5,385.16	3,638.60	2,090.36	2,090.36	2,090.36
Less: Consumer Contribution	80.53	144.87	118.59	115.64	110.81
Less: Grants	2,061.75	837.31	719.10	735.73	739.67
Balance to be funded	**3,242.88**	**2,656.43**	**1,252.68**	**1,238.99**	**1,239.89**
Equity	499.31	499.31	375.80	371.70	371.97
Debt	2,743.57	2,157.12	876.88	867.29	867.92
Equity %	15%	19%	30%	30%	30%
Debt %	85%	81%	70%	70%	70%

6.12.6 Accordingly, as per provisions under the Regulations, the Commission has considered last available rate i.e., the weighted average Rate of interest as approved for FY 2018-19 which is 10.28%. The same has been allowed accordingly. The Opening loan for FY 2020-21 is considered same as closing balance of FY 2019-20 approved by the Commission. The approved interest expenses for Fourth Control Period from FY 2020-21 to FY 2024-25.

Table 6-77: Interest Expenses approved by the Commission for Fourth Control Period (Rs. Crore)

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Opening Balance of Net Normative Loan	12,892.08	12,817.74	12,010.89	9,827.01	7,571.85

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Less: Reduction of Normative Loan due to retirement or replacement of assets	-	-	-	-	-
Addition of Normative Loan due to capitalisation during the year	2,743.57	2,157.12	876.88	867.29	867.92
Repayment of Normative Loan during the year	2,817.91	2,963.97	3,060.76	3,122.45	3,183.82
Closing Balance of Net Normative Loan	12,817.74	12,010.89	9,827.01	7,571.85	5,255.96
Average Balance of Net Normative Loan	12,854.91	12,414.31	10,918.95	8,699.43	6,413.91
Weighted average Rate of Interest on actual Loans (%)	10.28%	10.28%	10.28%	10.28%	10.28%
Interest Expenses	**1,320.86**	**1,275.59**	**1,121.94**	**893.88**	**659.04**

6.12.7 The Commission approves Interest expense of Rs. 1320.86 Crores, Rs. 1275.59 Crores, Rs. 1121.94 Crores, Rs. 893.88 Crores and Rs. 659.04 Crores for 4th Control Period from FY 2020-21 to FY 2024-25.

6.13 Return on Equity for Fourth Control Period

MSEDCL's Submission

6.13.1 MSEDCL submitted that it has proposed RoE in accordance with Regulation 29.1 and 29.2 of the MYT Regulations, 2019 for both wire and supply business.

6.13.2 The methodology of computation as followed by MSEDCL is as laid out in the Regulation 29.3 of the MYT Regulation, 2019 , the relevant extract of which is provided below:

> *"29.3 The Base Return on Equity shall be computed in the following manner:*
> *(a) Return at the allowable rate as per this Regulation, applied on the amount of equity capital at the commencement of the Year; plus*
> *(b) Return at the allowable rate as per this Regulation, applied on 50 per cent of the equity capital portion of the allowable capital cost, for the investments put to use in Generation Business or Transmission Business or Distribution Business or MSLDC, for such Year: …"*

6.13.3 The funding pattern as considered by MSEDCL is as shown in the table below:

Table 6-78: Funding Pattern for Fourth Control Period as submitted by MSEDCL

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Funding pattern of capital expenditure					
Total Capital Expenditure	6,687.24	2,511.67	1,762.74	1,807.60	1,886.44
Consumer Contribution	100	100	100	100	100

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Grants received during the year	2,560.26	577.98	606.39	636.21	667.51
Equity	499.31	499.31	400	400	400
Debt	3,527.67	1,334.38	656.35	671.39	718.93
Funding pattern of capitalization					
Total Capitalization	6,840.31	5,068.20	2,038.96	1,808.60	1,877.44
Consumer Contribution	102.29	201.79	115.67	100.06	99.52
Grants received during the year	2,618.86	1,166.29	701.41	636.56	664.33
Balance to be funded	4,119.16	3,700.13	1,221.88	1,071.99	1,113.59
Equity amount	499.31	499.31	366.56	321.6	334.08
Debt amount	3,619.85	3,200.82	855.31	750.39	779.51
Equity (%)	12%	13%	30%	30%	30%
Debt (%)	88%	87%	70%	70%	70%

6.13.4 MSEDCL has submitted that the return on equity capital is allocated on the proposed ratio of fixed assets between wires and retail supply business i.e. 90% to wires business and 10% to supply business as per the allocation matrix provided in MYT Regulations, 2019. Therefore, the capital expenditure, grants, equity and capitalization is divided into Wires and Supply business in the ratio of 90:10.

6.13.5 MSEDCL has submitted the funding for various schemes in form 4.4 in the regulatory formats submitted as annexure to the MYT Petition has shown the details of year wise funding of various schemes, wherein MSEDCL has considered the details the debt equity portion is arranged. However, MSEDCL has submitted that there are few capital works which could be funded by consumers through consumer contribution which would be reconciled at the time of finalisation of accounts. MSEDCL has submitted that it will be difficult to project and allocate the consumer contribution to any particular scheme. Therefore, MSEDCL has not submitted the consumer contribution in Form 4.4. However, for the purpose of computation on RoE, MSEDCL has projected the consumer contribution based on historical experience and capital expenditure as shown in above table.

6.13.6 As per Regulation 34 of MYT Regulation 2019, the income tax shall be allowed on return on equity and the effective rate of return of equity shall be computed by grossing up with the applicable income tax rate for the Licensee Company. The relevant clause of the regulation 34 is provided below for the purpose of quick reference:

> *"34.1 The Income Tax for the Generating Company or Licensee or MSLDC for the regulated business shall be allowed on Return on Equity, including Additional Return on Equity through the Tariff charged to the Beneficiary/s, subject to the conditions stipulated in Regulations 34.2 to 34.6:……..*

34.2 The rate of Return on Equity, including additional rate of Return on Equity as allowed by the Commission under Regulation 29 of these Regulations shall be grossed up with the effective tax rate of respective financial year.

34.3 The base rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:
Rate of pre-tax return on equity = Base rate of Return on Equity / (1-t),
Where "t" is the effective tax rate

34.4 The effective tax rate shall be considered on the basis of actual tax paid in respect of financial year in line with the provisions of the relevant Finance Acts by the concerned Generating Company or Licensee or MSLDC, as the case may be:"

6.13.7 However MSEDCL has submitted that though it has paid income tax for FY 2018-19 it is not expecting any income tax for the Fourth control period and has not projected any income tax for the period. It has further submitted income in case of actual tax incurred it shall submit the same during the mid-term review process.

6.13.8 Accordingly, the RoE for wires and supply business for the Fourth Control Period from FY 2020-21 to FY 2024-25 for the wire and supply business is presented in the tables below:

Table 6-79: ROE for Wires business for the 4th Control Period (MSEDCL) (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Regulatory Equity at the beginning of the year	10,848.57	11,297.95	11,747.33	12,077.24	12,366.67
Capitalization during the year	3,707.24	3,330.12	1,099.69	964.79	1,002.23
Equity portion of capitalization during the year	449.38	449.38	329.91	289.44	300.67
Reduction in Equity Capital on account of retirement /replacement of assets	0	0	0	0	0
Regulatory Equity at the end of the year	11,297.95	11,747.33	12,077.24	12,366.67	12,667.34
Return on Equity Computation					
Base Rate of Return on Equity	14.00%	14.00%	14.00%	14.00%	14.00%
Pretax Return on Equity after considering effective Tax rate	14.00%	14.00%	14.00%	14.00%	14.00%
Return on Regulatory Equity at the beginning of the year	1,518.80	1,581.71	1,644.63	1,690.81	1,731.33
Return on Regulatory Equity addition during the year	31.46	31.46	23.09	20.26	21.05
Interest on Equity portion above 30%	0	0	0	0	0
Total Return on Equity	**1,550.26**	**1,613.17**	**1,667.72**	**1,711.07**	**1,752.38**

Table 6-80: ROE for Supply business For the 4th Control Period (MSEDCL) (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Regulatory Equity at the beginning of the year	1,173.03	1,222.96	1,272.89	1,309.55	1,341.71
Capitalization during the year	411.92	370.01	122.19	107.2	111.36
Equity portion of capitalization during the year	49.93	49.93	36.66	32.16	33.41
Reduction in Equity Capital on account of retirement /replacement of assets	0	0	0	0	0
Regulatory Equity at the end of the year	**1,222.96**	**1,272.89**	**1,309.55**	**1,341.71**	**1,375.11**
Return on Equity Computation					
Base Rate of Return on Equity	15.50%	15.50%	15.50%	15.50%	15.50%
Pretax Return on Equity after considering effective Tax rate	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Regulatory Equity at the beginning of the year	181.82	189.56	197.30	202.98	207.96
Return on Regulatory Equity addition during the year	3.87	3.87	2.84	2.49	2.59
Interest on Equity portion above 30%	0	0	0	0	0
Total Return on Equity	**185.69**	**193.43**	**200.14**	**205.47**	**210.55**

6.13.9 MSEDCL has requested the Commission to approve the return on equity for both wheeling and supply business as per above projections.

Commission's Analysis and Ruling

6.13.10 The Commission approves the RoE for 4th Control Period from FY 2020-21 to FY 2024-25 at the regulated rate of 15.5% and 14.0% for the Supply and Wires Business, respectively, as per Regulation 29.1 and 29.2 of MYT Regulations, 2019. The relevant extract from the regulation is reproduced below for reference.

> *"29.2 Base Return on Equity for the Generating Company, Transmission Licensee, Distribution Wires Business and MSLDC shall be allowed on the equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of 14 per cent per annum in Indian Rupee terms, and for the Retail Supply Business, Return on Equity shall be allowed on the amount of equity capital determined in accordance with Regulation 27 at the rate of 15.5 per cent per annum in Indian Rupee terms"*

6.13.11 As per Regulation 34 of MYT Regulation 2019, the income tax shall be allowed on return on equity and the effective rate of return of equity shall be computed by grossing up with the applicable income tax rate for the Licensee Company. The relevant clause of the regulation 34 is provided below for the purpose of quick reference:

" 34.1 The Income Tax for the Generating Company or Licensee or MSLDC for the regulated business shall be allowed on Return on Equity, including Additional Return on Equity through the Tariff charged to the Beneficiary/s, subject to the conditions stipulated in Regulations 34.2 to 34.6:……..

34.2 The rate of Return on Equity, including additional rate of Return on Equity as allowed by the Commission under Regulation 29 of these Regulations shall be grossed up with the effective tax rate of respective financial year.

34.3 The base rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:
Rate of pre-tax return on equity = Base rate of Return on Equity / (1-t),
Where "t" is the effective tax rate

34.4 The effective tax rate shall be considered on the basis of actual tax paid in respect of financial year in line with the provisions of the relevant Finance Acts by the concerned Generating Company or Licensee or MSLDC, as the case may be:"

6.13.12For projection over 4th control period, RoE has been considered at Return on Equity base rate at 14% and 15.50% for wire and supply business, in accordance with MYT regulation 2019. For the purpose of projections of pre-Tax RoE, the Commission observes that MSEDCL has not considered a tax rate which is the MAT rate for grossing up of return on Equity for 4th Control Period. However, Commission has considered the actual MAT rate notified for FY 2019-20 as per Finance Act is 17.47% which is lower than that compared to MAT rate prevalent in the past period. The Commission observes that it would only be appropriate to consider the latest notified Tax Rate for the purpose of projections rather than Tax Rate applicable in FY 2018-19 for grossing up of RoE. Accordingly, for the purpose of approval of projections of pre-Tax RoE, the Commission has considered a pre-Tax RoE of 16.96% (for wire business) and 18.78% (for supply business) considering 14% and 15.50% as the RoE of wire and supply business after grossing base rate RoE with 17.47% as the MAT rate.

6.13.13The Commission has considered the funding pattern as discussed in the previous Section of Interest expense for approving the RoE for the ensuing years. The approved closing balance of equity for FY 2018-19 in this Order is taken as the opening balance for FY 2019-20. Closing equity for Wire and Supply for FY 2019-20 is Rs. 10,848.57 Crore and Rs. 1,205.85 Crore respectively and the same is considered as opening balance of equity for FY 2020-21 for wire and Supply business.

6.13.14The following Tables show the RoE approved by the Commission for the 3rd Control Period for the Wires and Supply Business:

Table 6-81: Return on Equity (Wires) for 4th Control Period approved by Commission (Rs. Crore)

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Equity at the beginning of the year	10,848.57	11,297.95	11,747.33	12,085.55	12,420.08
Equity portion of Assets Capitalisation	449.38	449.38	338.22	334.53	334.77
Equity at the end of the year	11,297.95	11,747.33	12,085.55	12,420.08	12,754.85
Return on Equity Computation at 16.96%					
Return on Equity at the beginning of the year	1,840.30	1,916.53	1,992.76	2,050.14	2,106.88
Return on Normative Equity portion of Asset Capitalisation	38.12	38.12	28.69	28.37	28.39
Total Return on Equity	**1,878.42**	**1,954.65**	**2,021.45**	**2,078.51**	**2,135.28**

Table 6-82: Return on Equity (Supply) for 4th Control Period approved by Commission (Rs. Crore)

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Equity at the beginning of the year	1,205.85	1,255.78	1,305.71	1,343.29	1,380.46
Equity portion of Assets Capitalisation	49.93	49.93	37.58	37.17	37.20
Equity at the end of the year	1,255.78	1,305.71	1,343.29	1,380.46	1,417.65
Return on Equity Computation at 18.78%					
Return on Equity at the beginning of the year	226.47	235.85	245.23	252.28	259.26
Return on Normative Equity portion of Asset Capitalisation	4.69	4.69	3.53	3.49	3.49
Total Return on Equity	**231.16**	**240.54**	**248.75**	**255.77**	**262.76**

Table 6-83: Summary of RoE (Wires and Supply) approved by the Commission (Rs. Crores)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Return on Equity (Wires Business)	1,878.42	1,954.65	2,021.45	2,078.51	2,135.28
Return on Equity (Supply Business)	231.16	240.54	248.75	255.77	262.76

6.14 Interest on Working Capital for Fourth Control Period

MSEDCL's Submission

6.14.1 MSEDCL has worked out interest on working capital as per Regulation 32 of the MYT Regulations, 2019 which provides for IoWC for the Wires Business. The Regulation 32.3 of MYT Regulations, 2019 states that the interest rate on working capital shall be equal to Base rate on the date at which the petition is filed plus 150 basis points. Based

on the above regulations MSEDCL has computed the interest rate as 9.5% for wires business.

6.14.2 MSEDCL has submitted that the interest on security deposit from consumers is has been computed on the basis of Regulation 30.11 of the MYT Regulation, 2019. The relevant extract of the regulation is as provided below:

> *"30.11 Interest shall be allowed only on the amount held in cash as security deposit from Transmission System Users, Distribution System Users and Retail consumers at the Bank Rate as on 1st April of the Year for which the interest is payable:"*

6.14.3 Accordingly the interest rate on consumer security deposit has been estimated by MSEDCL as 6.50%. The security deposit collected from consumers for the future years of the control period has been decided considering a growth rate of 5%.

6.14.4 Detailed Computation of interest on working Capital for wires business for the Fourth Control Period is as shown in the table below:

Table 6-84: Interest on Working Capital and Security Deposit for Wires Business for 4th Control Period (MSEDL) (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Computation of Working Capital Requirement					
O&M expenses for a month	378.02	392.51	407.55	423.17	439.39
Maintenance Spares at 1% of Opening GFA	530.83	593.38	640.03	659.46	676.86
One and half months equivalent of the expected revenue from charges for use of Distribution Wires	1,292.24	1,355.82	1,397.71	1,408.14	1,417.19
Less: Amount held as Security Deposit from Distribution System Users	-831.67	-873.25	-916.91	-962.76	-1,010.90
Total Working Capital Requirement	1,369.42	1,468.46	1,528.38	1,528.01	1,522.55
Computation of Working Capital Interest					
Interest Rate (%) - SBI Base Rate +150 basis points	9.50%	9.50%	9.50%	9.50%	9.50%
Interest on Working Capital	**130.1**	**139.5**	**145.2**	**145.16**	**144.64**
Computation of Interest on Security Deposit					
Interest Rate (%) - Bank Rate	6.50%	6.50%	6.50%	6.50%	6.50%
Interest on Security Deposit	**54.06**	**56.76**	**59.6**	**62.58**	**65.71**

6.14.5 MSEDCL has submitted that the interest on working capital for supply business has been computed on the basis of Regulation 32.3 and 32.4 of MYT Regulations, 2019 which provides normative interest on working capital shall be equal to Base rate as on date on which the Petition for determination of tariff is filled plus 150 basis points. The relevant extract of the regulation is provided below for easy reference:

> *"Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate as on the date on which the Petition for determination of Tariff is filed, plus 150 basis points:"*

6.14.6 Based on the above regulations has computed the interest on working capital for supply business at an interest rate equal to 9.5% for supply business for the fourth control period.

6.14.7 MSEDCL has further submitted that the Regulation 30.11 of the MYT Regulations, 2019 has computed the interest on security deposit shall be Bank Rate as on 1st April of the year for which the interest is payable as provided for the wires business. Based on the above the Interest on working Capital for supply business as computed by MSEDCL is as provided in the table below:

Table 6-85: Interest on Working Capital and Security Deposit for Supply Business for 4th Control Period (MSEDCL) (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Computation of Working Capital Requirement					
O&M expenses for a month	203.55	211.35	219.45	227.86	236.59
Maintenance Spares at 1% of Opening GFA	106.25	113.20	118.38	120.54	122.47
One and half months equivalent of the expected revenue from sale of revenue from CSS and Additional Surcharge electricity	9,734.33	10,102.93	10,491.73	10,905.85	11,345.05
Less: Amount held as security deposit	-7,485.02	-7,859.27	-8,252.23	-8,664.84	-9,098.09
Less: One month equivalent of cost of power purchase, transmission charges and MSLDC Charges	-5,960.70	-5,853.95	-5,853.95	-6,521.85	-6,818.14
Total Working Capital Requirement	(3,401.59)	(3,285.73)	(3,276.61)	(3,932.44)	(4,212.12)
Computation of Working Capital Interest					
Interest Rate (%) - SBI Base Rate +150 basis points	9.50%	9.50%	9.50%	9.50%	9.50%
Interest on Working Capital	-	-	-	-	-
Interest on Security Deposit					

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Interest Rate (%) - Bank Rate	6.50%	6.50%	6.50%	6.50%	6.50%
Interest on Security Deposit	**486.53**	**510.85**	**536.40**	**563.21**	**591.38**

6.14.8 MSEDCL has requested the Commission to allow the interest on working capital for wires and retail supply business as submitted in the table above.

Commission's Analysis and Ruling

6.14.9 The Commission has reworked the IoWC in accordance with the norms specified in the MYT Regulations, 2019 and based on the parameters such as O&M Expenses, Wires ARR and Supply ARR approved in this Order.

6.14.10 The Commission computed IoWC for Wire Business as per Regulation 32.3 of MERC MYT Regulations, 2019 which states that the interest rate on working capital shall be equal to Base rate on the date at which the petition is filed plus 150 basis points. The relevant extract of the said regulations is provided below:

Distribution Wires Business
(a) The working capital requirement of the Distribution Wires Business shall cover:
(i) Normative Operation and maintenance expenses for one month;
(ii) Maintenance spares at one per cent of the opening Gross Fixed Assets for the Year; and
(iii) One and half months equivalent of the expected revenue from charges for use of Distribution Wires at the Tariff approved by the Commission for ensuing year/s;
minus
(iv) Amount held as security deposits in cash from Distribution System Users:

…
Retail Supply of Electricity
(a) The working capital requirement of the Retail Supply Business shall cover:

(i) Normative Operation and maintenance expenses for one month;

(ii) Maintenance spares at one per cent of the opening Gross Fixed Assets for the Year; and

(iii) One and half months equivalent of the expected revenue from sale of electricity at the Tariff approved by the Commission for ensuing year/s, and including revenue from cross-subsidy surcharge and additional surcharge, if any;

minus
(iv) Amount held as security deposits in cash from retail supply consumers;

(v) One month equivalent of cost of power purchased, including the Transmission Charges and SLDC Charges, based on the annual power procurement plan:

Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate as on the date on which the Petition for determination of Tariff is filed, plus 150 basis points:

6.14.11As per Regulation 30.11 of the MYT Regulations, 2019 interest on security deposit shall be allowed at the bank rate as on 1st April of the year for which interest is payable. The relevant Regulation is quoted below for reference

"*Interest shall be allowed only on the amount held in cash as security deposit from Transmission System Users, Distribution System Users and Retail consumers at the Bank Rate as on 1stApril of the Year for which the interest is payable".*

6.14.12Further, in Regulation 2.1 (10) bank rate is defined as Bank Rate as declared by the Reserve Bank of India from time to time.

"*(10) "**Bank Rate**" shall mean the Bank Rate as declared by the Reserve Bank of India from time to time;"*

6.14.13As regards the rate for computing the IoWC and interest on Consumer Security Deposit for 4th Control Period from FY 2020-21 to FY 2024-25, the Commission has considered the same as 9.50% and 6.50% respectively. Considering the negative impact of security deposit, the normative working capital requirement works out to be negative and considered as nil for supply business.

6.14.14The IoWC approved for the Wires and Supply Business for 4th Control Period from FY 2020-21 to FY 2024-25 is shown in the following Tables.

Table 6-86: Interest on Working Capital and Security Deposits for Wires Business, for 4th Control Period as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
O&M expenses for a month	370.76	384.98	399.74	415.07	430.98
Maintenance Spares at 1% of Opening GFA	567.22	615.69	648.43	667.25	686.06
One and half months equivalent of the expected revenue from sale of electricity including revenue from CSS and Additional Surcharge	1,377.42	1,374.84	1,401.14	1,414.00	1,426.93
Less: Amount of Security Deposit	-831.67	-873.25	-916.91	-962.76	-1,010.90
Total Working Capital Requirement	1,484.08	1,502.60	1,532.74	1,533.90	1,533.42
Computation of Working Capital Interest					
Rate of Interest (%) = SBI Base Rate + 150 basis points	9.50%	9.50%	9.50%	9.50%	9.50%
Interest on Working Capital	140.96	142.71	145.58	145.69	145.64
Interest on Security Deposit					

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Rate of Interest (%) = RBI Bank Rate + 150 basis points	6.50%	6.50%	6.50%	6.50%	6.50%
Interest on Security Deposit	**54.06**	**56.76**	**59.60**	**62.58**	**65.71**

Table 6-87: Interest on Working Capital and Security Deposits for Supply Business, for 4th Control Period, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
O&M expenses for a month	199.64	207.30	215.24	223.50	232.07
Maintenance Spares at 1% of Opening GFA	63.02	68.41	72.05	74.14	76.23
One and half months equivalent of the expected revenue from sale of electricity including revenue from CSS and Additional Surcharge	9,734.33	10,102.93	10,491.73	10,905.85	11,345.05
Less: Amount of Security Deposit	-7,485.02	-7,859.27	-8,252.23	-8,664.84	-9,098.09
Less: One month equivalent of cost of power purchase, Transmission Charges and MSLDC Charges	-5,960.70	-5,853.95	-6,180.93	-6,521.85	-6,818.14
Total Working Capital Requirement	**-3,448.72**	**-3,334.58**	**-3,654.14**	**-3,983.20**	**-4,262.89**
Computation of Working Capital Interest					
Rate of Interest (%) = SBI Base Rate + 150 basis points	9.50%	9.50%	9.50%	9.50%	9.50%
Interest on Working Capital	-	-	-	-	-
Interest on Security Deposit					
Rate of Interest (%) = SBI Base Rate + 150 basis points	6.50%	6.50%	6.50%	6.50%	6.50%
Interest on Security Deposit	**486.53**	**510.85**	**536.40**	**563.21**	**591.38**

6.15 Other Finance Charges for Fourth Control Period

MSEDCL's Submission

6.15.1 MSEDCL has submitted that the regulation 30.8 of MYT Regulations, 2019 provides that the finance charges shall be allowed at the time of True-up. The relevant extract of the Regulations is reproduced below:

> *"30.8 The finance charges incurred for obtaining loans from financial institutions for any Year shall be allowed by the Commission at the time of Truing-up, subject to prudence check."*

6.15.2 Therefore, in line with the above regulations, MSEDCL has not projected any finance charges for the Fourth Control Period from FY 2020-21 to FY 2024-25.

Commission's Analysis and Ruling

6.15.3 The Commission shall consider the Other Finance Charges at the time of truing-up of the respective years of the 4th Control Period, in accordance with Regulation 30.8 of the MYT Regulations, 2019.

6.16 Provision for Bad Debts for Fourth Control Period

MSEDCL's Submission

6.16.1 MSEDCL has submitted that provision of bad and doubtful debts of the Fourth Control Period from FY 2020-21 to FY 2024-25 as per Regulation 76 and 85 of MYT Regulations, 2019 which provides that provision for bad and doubtful debt may be allowed up to 1.50% of the amount shown as trade receivables or receivables from sale of electricity in the audited accounts of the distribution licensee duly allocated for wires and supply business. As per the allocation matrix provided in the MYT Regulations, 2019. MSEDCL has separated the provision of bad and doubtful debts into wire and supply category.

6.16.2 MSEDCL has submitted that for the projection of receivables it considered a y-o-y rise of 2% and 10% for the interest part of Non-AG and AG and for the principle part it has considered a y-o-y rise of 2% and 5% respectively.

6.16.3 MSEDCL has also submitted that it will write-off the bad debts as submitted on receiving the approval of the Commission. Thus projection of Receivable and provision of bad debts for the fourth control period from FY 2020-21 to FY 2024-25 is as shown in the tables below:

Table 6-88: Provision for Bad and Doubtful Debt for Wires Business For Fourth Control Period, as submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Bad Debt Provision for Wire Business	89.16	94.11	99.42	105.13	111.27
Receivables	5,943.92	6,273.98	6,628.29	7,008.91	7,418.13
% of Receivables	1.50%	1.50%	1.50%	1.50%	1.50%

Table 6-89: Provision for Bad and Doubtful Debt for Supply Business for Fourth Control Period, as submitted by MSEDCL (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Bad Debt Provision for Supply Business	802.43	846.99	894.82	946.20	1,001.45
Receivables	53,495.27	56,465.81	59,654.57	63,080.22	66,763.18
% of Receivables	1.50%	1.50%	1.50%	1.50%	1.50%

Commission's Analysis and Ruling

6.16.4 The Commission observed that there is significant increase in total receivable of MSEDCL in FY 2019-20 compared to previous years. As per Audited accounts of FY 2018-19 Trade Receivables is Rs. 48,842 Crores and MSEDCL FY 2019-20 estimated is Rs. 56363 Crore which is 15% increase from the previous year and as per estimated of MSEDCL in FY 2020-21 the receivables further increases to Rs. 59,439.19 Crore which is increase of 5.50 % over FY 2019-20 and in FY 2024-25 it reaches to Rs. 74,181 Crores with a CAGR of 5.65%. The below table shows the assumption of Receivables for 4th Control Period by MSEDCL

Table 6-90: Receivables Projected by MSEDCL for 4th Control Period

Period	Particulars	Principal	Interest	Total
up to 31.03.2021	Non AG	12,887.54	5,681.51	18,569.05
	AG	23,155.83	17,714.30	40,870.13
	Total	**36,043.37**	**23,395.81**	**59,439.18**
up to 31.03.2022	Non AG	13,145.29	5,795.14	18,940.43
	AG	24,313.63	19,485.70	43,799.33
	Total	**37,458.92**	**25,280.84**	**62,739.76**
up to 31.03.2023	Non AG	13,408.20	5,911.05	19,319.25
	AG	25,529.31	21,434.30	46,963.61
	Total	**38,937.51**	**27,345.35**	**66,282.86**
up to 31.03.2024	Non AG	13,676.36	6,029.27	19,705.63
	AG	26,805.77	23,577.73	50,383.50
	Total	**40,482.13**	**29,607.00**	**70,089.13**
up to 31.03.2025	Non AG	13,949.89	6,149.85	20,099.74
	AG	28,146.06	25,935.50	54,081.56
	Total	**42,095.95**	**32,085.35**	**74,181.30**

6.16.5 The Commission observes that in view of the collection efficiency as reported by MSEDCL of around 95% and will be going to increase in the ensuing years, the estimates of receivables for 4th Control Period is very high. Besides, stringent measures should be initiated by MSEDCL to improve collection efficiency reduce receivable incl. recovery of past dues. As can be observed the total receivable as projected by MSEDCL for FY 2020-21 is around Rs. 59,000 Crore which is almost 80% of the annual ARR of MSEDCL. This is an alarming situation. In view of the above, MSEDCL should strengthen its collection drive and put every efforts in clearing its receivable in a time bound manner. Any action/inactions that are detrimental to enhance collection efficiency otherwise pose undue burden on paying consumers and affects day to day cash flow management of MSEDCL itself. The Commission also observes that during the public consultation process of the present petition, many consumers had highlighted

about the mounting arrears/receivables position of MSEDCL and suggested for urgent action on the same in time bound manner. Thus, Commission is not inclined to pass on such effect to the consumers, for which MSEDCL will have to demonstrate significant efforts and results to the Commission. In this context, for projection of 4th Control Period the Commission has considered the receivables at Rs. 48,842 Crores same as FY 2018-19 against as claimed by MSEDCL.

Table 6-91: Provision for Bad and Doubtful Debts for Wires Business, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Receivables for the year	4884.20	4884.20	4884.20	4884.20	4884.20
Provision of Bad Debt for wire business	73.26	73.26	73.26	73.26	73.26
% of Receivables	1.50%	1.50%	1.50%	1.50%	1.50%

Table 6-92: Provision for Bad and Doubtful Debts for Supply Business, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Receivables	43957.82	43957.82	43957.82	43957.82	43957.82
Bad Debt Provision for Supply Business	659.37	659.37	659.37	659.37	659.37
% of Receivables	1.50%	1.50%	1.50%	1.50%	1.50%

6.17 Other Expenses for Fourth Control Period

MSEDCL's Submission

6.17.1 MSEDCL has claimed 'Other Expenses' comprising expenditure on account of Non-Moving items written off, interest to suppliers/contractors, Incentive to distribution franchisee and other expenses viz. compensation for injuries to staff and outsiders.

6.17.2 MSEDCL has submitted the nature of claims of various expenses under other expenses as following:

- MSEDCL has submitted that the Interest to suppliers/contractors represents the expense on security deposits collected from collection agencies.
- Non-Moving items written off included items of stores which are lying as non-moving for 2 years the realizable value of which is completely deprecated

- Incentive to distribution Franchisee is the incentive given to Distribution Franchisee for recovery of MSEDCL's arears from live and PD consumers.

6.17.3 The projections for the onward years of the control period has been made on the basis of 5% increase over the previous year.

Table 6-93: Other Expenses for Fourth Control Period, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Other Expenses	52.58	55.21	57.97	60.87	63.91

Commission's Analysis and Ruling

6.17.4 For the purpose of approval of other expense for Fourth Control Period from FY 2020-21 to FY 2024-25, the Commission has noted the past trend of "Other Expense" and found the present claim of MSEDCL under "Other Expense" to be on similar lines. Thus for the purpose of projections of 4th Control Period, the Commission approved the other expense as shown in the below table, which shall be trued-up subject to prudence check at the time of truing up of respective years of 4th Control Period.

6.17.5 The Commission has approved the Other Expenses as shown in the Table below:

Table 6-94: Other Expenses for Fourth Control Period, as approved by Commission (Rs. crore)

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
compensation for injuries, death to staff	1.32	1.39	1.45	1.53	1.60
compensation for injuries, death to others	15.98	16.78	17.62	18.50	19.43
loss on obsolescence of fixed Assets	1.72	1.81	1.90	1.99	2.09
Sundry debit balances written off	1.90	1.99	2.09	2.19	2.30
Non Moving Items	17.74	18.62	19.56	20.53	21.56
Other Expenses for previous years	5.79	6.08	6.39	6.70	7.04
Other Sundry Expenses	8.13	8.54	8.97	9.41	9.88
Expected Credit loss on other receivables	-	-	-	-	-
TOTAL	**52.58**	**55.21**	**57.97**	**60.87**	**63.91**

6.18 Contribution to Contingency Reserves for FY 2018-19 and FY 2019-20

MSEDCL's Submission

6.18.1 MSEDCL has submitted that contribution to contingency reserve has been computed on the basis of regulation 35 of the MYT Regulations, 2019. The relevant extract of the regulation is as provided below:

"35.1 Where the Licensee has made a contribution to the Contingency Reserve,

a sum not less than 0.25 per cent and not more than 0.5 per cent of the original cost of fixed assets shall be allowed annually towards such contribution in the calculation of Aggregate Revenue Requirement:
Provided that where the amount of such Contingency Reserves exceeds five (5) per cent of the original cost of fixed assets, no further contribution shall be allowed:
Provided further that such contribution shall be invested in securities authorized
under the Indian Trusts Act, 1882 within a period of six months of the close of the Year:……"

6.18.2 Accordingly MSEDCL has projected the contribution to contingency reserves for the onward years of the control period at 0.25% of the GFA of the respective years. The gross contribution computed for each year has been separated to wires and supply components based on the allocation matrix provided in MYT Regulations, 2019.

6.18.3 The Computation of contribution to contingency reserve as submitted by MSEDCL for the Fourth Control Period is as presented in the Table below

Table 6-95: Contribution to Contingency Reserve for Fourth Control Period, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Contribution to Contingency Reserves (Wire Business)	143.34	158.98	170.64	175.5	179.85
Contribution to Contingency Reserves (Supply Business)	15.93	17.66	18.96	23.82	28.17
Total contribution to Contingency Reserves	**159.27**	**176.64**	**189.6**	**199.32**	**208.02**

Commission's Analysis and Ruling

6.18.4 Regulation 35 of the MYT Regulations, 2019 provides for appropriation to the Contingency Reserve of not less than 0.25 per cent and not more than 0.5 per cent of the original cost of Fixed Assets annually towards in the calculation of ARR. The amount is to be invested in securities authorized under the Indian Trusts Act, 1882 within six months of the close of the financial year.

6.18.5 The Commission observes that MSEDCL has not claimed contribution to contingency reserve since FY 2011-12 and therefore no investment have been made subsequent to FY 2011-12. In the MTR Order 195 of 2017 Commission has not allowed Contingency Reserve for FY 2019-20 and passed the following order:

"The Commission observes that MSEDCL has not claimed contribution to contingency reserve since FY 2011-12 and therefore no investment have been made subsequent to FY 2011-12. However, for projection purpose Commission

has been allowing regularly, but no investments are made out of it. Since MSEDCL is not making any investments even after allowing such expenses in the past, the Commission has not allowed any Contingency Reserve in line with the claim of MSEDCL"

6.18.6 In data gaps, quoting the above Order the Commission sought justification of estimates towards contribution to contingency reserve. In reply to data gaps MSEDCL submitted that as per the Regulation 34 of the MYT Regulations 2015, MSEDCL has made the investment for FY 2018-19. Considering this, MSEDCL has claimed the contribution to contingency reserve for ensuing years. Once the approval is available, MSEDCL shall make the necessary investments.

6.18.7 Thus, the Commission has provisionally approved the Contribution contingency reserves at 0.25% of the estimated opening GFA (including grants and consumer contributions) subject to truing up, as shown in the following table

Table 6-96: Contribution to Contingency Reserve as approved by Commission for Fourth Control Period (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Contribution to Contingency Reserves (Wire Business)	141.81	153.92	162.11	166.81	171.52
Contribution to Contingency Reserves (Supply Business)	15.76	17.10	18.01	18.53	19.06
Total contribution to Contingency Reserves	**157.56**	**171.02**	**180.12**	**185.35**	**190.57**

6.19 Incentives and Discounts for Fourth Control Period

MSEDCL's Submission

6.19.1 MSEDCL submitted that for the Fourth Control Period from FY 2020-21 to FY 2024-25, the Incentives and Discounts are projected considering a nominal rise of 5% over previous year.

6.19.2 The incentives and discounts for the fourth control period as computed by MSEDCL is presented in the table below:

Table 6-97: Incentives and Discounts Fourth Control Period as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Incentives and Discounts	322.38	338.5	355.43	373.2	391.86

Commission's Analysis and Ruling

6.19.3 The Commission noted the past trend of incentive and discount approved to MSEDCL as summarized under following table.

Table 6-98: Past trends of Incentive and Discounts

(Rs Crore)

Particulars	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Incentives and Discounts	249	239	242	287	307

6.19.4 The Commission in the MTR Order dated 12th September 2018 allowed "Incentives & Discount" for FY 2015-16 and FY 2017-18 at Rs. 249 Crore and 239 Crore respectively, after verifying it from the audited accounts. In this order for truing up of FY 2017-18 and FY 2018-19, the Commission approved Rs 242 Crore and Rs. 287 Crore after verifying it from the audited accounts. For provisional truing up based on the available information of six months the Commission approves Rs. 307 Crore for FY 2019-20. The annual escalation of 5% for projecting Incentives and Discounts by MSEDCL appears to be reasonable. The Commission has thus approved the projection of Incentives/Discounts accordingly, as shown in the Table below:

Table 6-99: Incentives and Discounts as approved by Commission for Fourth Control Period

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Incentives and Discounts	322.38	338.5	355.43	373.2	391.86

6.20 Non-Tariff Income for Fourth Control Period

MSEDCL's Submission

6.20.1 MSEDCL has submitted that it has certain sources of Non-Tariff Income namely; interest on arrears of consumers, interest on staff loans and advances, sale of scrap, interest on investment etc. It has further submitted that an annual increase of 5% over the previous year has been considered for projecting non-Tariff Income for the 4th Control Period.

6.20.2 However, Regulation 37.3 of the MERC MYT Regulations, 2019 provides for non-inclusion of the Delayed Payment Charge and Interest on Delayed Payment in Non-Tariff Income. The relevant Regulation is reproduced below for reference:

"Such Delayed Payment Charge and Interest on Delayed Payment earned by the Generating Company or the Licensee shall not be considered under its Non-Tariff Income."

6.20.3 In accordance with the above Regulation MSEDCL has submitted that it has not projected any delayed payment charges and interest on the same. Following table shows the projected non-tariff income for the period FY 2020-21 to FY 2024-25

Table 6-100: Non-Tariff Income for the Fourth Control Period, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Rents of land or buildings	1.09	1.14	1.2	1.26	1.32
Sale of Scrap	54.65	57.39	60.25	63.27	66.43
Income from investments	19.43	20.4	21.42	22.49	23.61
Income from sale of tender documents	9.37	9.83	10.33	10.84	11.38
Prompt payment discount from REC/PFC	12.77	13.41	14.08	14.78	15.52
Other/Miscellaneous receipts	282.45	296.57	311.4	326.97	343.32
Total	**379.75**	**398.73**	**418.67**	**439.6**	**461.59**

Commission's Analysis and Ruling

6.20.4 The Commission has examined various heads under which MSEDCL has proposed under Non-Tariff Income. These heads have been projected by MSEDCL with an increase of 5% over the income projected for previous years. The Commission reviewed the past trend of major heads of Non-Tariff Income and found them to be mostly in line with the projections against those heads. Commission has accepted the projections against these heads subject to truing up of respective years of 4th Control Period.

6.20.5 In view of the above, the Commission has approved the following Non-Tariff Income for 4th Control Period.

Table 6-101: Non-Tariff Income as approved by Commission for Fourth Control Period (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Rents of land or buildings	1.09	1.14	1.2	1.26	1.32
Sale of Scrap	54.65	57.39	60.25	63.27	66.43
Income from investments	19.43	20.4	21.42	22.49	23.61
Income from sale of tender documents	9.37	9.83	10.33	10.84	11.38

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Prompt payment discount from REC/PFC	12.77	13.41	14.08	14.78	15.52
Other/Miscellaneous receipts	282.45	296.57	311.4	326.97	343.32
Total	**379.75**	**398.73**	**418.67**	**439.6**	**461.59**

6.21 Impact of Payment to MPECS for the Fourth Control Period

MSEDCL's submission

6.21.1 MSEDCL has submitted that the Commission in its order dated 02 May 2016 in Case no. 24 of 2012 on the determination of charges to Mula Pravara Co-Operative Society (MPECS) in pursuance of the ATE's judgement in Appeal no. 221 of 2014, has directed MSEDCL to pay the user charges to MPECS.

6.21.2 The monthly user charges approved by the Commission in the order has been considered by MSEDCL to determine the charges to be paid in the 4th Control Period. The charges claimed by MSEDCL to be paid to MPECS in the period from FY 2020-21 to FY 2024-25 is as shown in the Table below:

Table 6-102: Impact of Payment to MPECS submitted by MSEDCL for Fourth Control Period (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Impact of Payment to MPECS	37.16	34.15	31.14	28.13	21.14

Commission' s Analysis and Ruling

6.21.3 Commission vide its Order dated 2nd May 2016, has determined the monthly user charges to be paid to MPECS by MSEDCL. The Commission shall consider the actual amount towards this head at the time of truing up of respective years of 4th Control Period.

Table 6-103: Impact of Payment to MPECS Approved by the Commission for Fourth Control Period (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Impact of Payment to MPECS	37.16	34.15	31.14	28.13	21.14

6.22 Income from Open Access Charges

MSEDCL's Submission

6.22.1 MSEDCL has projected the income from CSS with prevailing CSS which is inclusive of the income from wheeling charges has been established at current level, which is the figure as per Audited Accounts of FY 2018-19 without any escalation.

6.22.2 The following table shows the income from Open Access Charges for the control period from FY 2020-21 to FY 2024-25.

Table 6-104: Income from Open Access Charges for the Fourth Control Period, as submitted by MSEDCL (in Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Income from Open Access Charges	388.89	388.89	388.89	388.89	388.89

Commission's Analysis and Ruling

6.22.3 The Commission has noted the submissions of MSEDCL, as discussed in the True-up sections above, the MSEDCL has proposed to retain the Income towards the Transmission Charges of Partial Open Access consumers. The same is disallowed by the Commission, where the detailed rationale is discussed in the above referred sections of this MYT Order.

6.22.4 Thus, a similar treatment is adopted while projecting the income from OA charges for 4th Control Period from FY 2020-21 to FY 2024-25. It is observed that, the same level of transmission charges as in FY 2018-19 i.e. Rs. 182 Crore is expected to be included in the estimated income from OA charges for the ensuing years.

6.22.5 As regards, the revenue from CSS, MSEDCL has provided the CSS revenue working as part of the replies to the data gaps, where MSEDCL has estimated the same by considering the CSS proposed for the respective ensuing years, which is without ceiling of 20%. The Commission for the purpose of projections has estimated the revenue from CSS based on the category wise OA quantum provided by MSEDCL with the category wise CSS approved by the Commission in this MYT Order. The detailed rationale of estimating CSS is provided in the subsequent chapter of Tariff Philosophy.

6.22.6 Thus, the Commission has not considered income towards the Transmission Charges proposed to be retained with MSEDCL to be a part of income from OA Charges for the 4th Control Period and estimated the income from CSS for the respective financial years. The present approval are on projection basis and the same shall approved on the actual basis at the time of true-up, subject to prudence check. The summary of the approved revenue from OA charges is provided in the following table.

Table 6-105: Income from Open Access Charges for Fourth Control Period, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Income from Open Access Charges	215.71	214.92	216.69	214.76	216.60

6.23 Revenue from Projected Sales for the Fourth Control Period

MSEDCL's Submission

6.23.1 Considering the projected sales, number of consumers, and Connected Load/ Contract/Billing Demand and prevailing tariff, MSEDCL has projected the year-wise revenue for the control period from FY 2020-21 to FY 2024-25 as summarized in the following Table.

Table 6-106: Revenue at existing Tariff for Projected sales of Fourth Control Period, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Revenue from Sale of Power at Existing Tariff	76,997.55	79,927.39	83,017.87	86,309.90	89,801.46

Commission's Analysis and Ruling

6.23.2 Considering the approved projected sales, number of consumers, and Connected Load/ Contract Demand as discussed in the above section of the MYT Order and with prevailing tariff, the Commission has estimated the Revenue from the existing Tariff for Fourth Control Period from FY 2020-21 to FY 2024-25.

6.23.3 In addition, the Commission has also estimated the revenue from FAC Charges by considering the latest FAC Rate for the month of February, 2020 (Available on the MSEDCL's Website under General Commercial Circular). Thus, the total Revenue from the existing tariff including the FAC Revenue is as shown in the following Table:

Table 6-107: Revenue at existing Tariff at Projected Sales for the Fourth Control Period, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Revenue from Sale of Power at Existing Tariff	77,235.99	80,512.44	83,934.95	87,550.06	91,351.55
FAC Revenue	7,784.70	8,154.61	8,544.12	8,954.39	9,386.64
Total Revenue at Existing Tariff	**85,020.69**	**88,667.05**	**92,479.07**	**96,504.45**	**100,738.19**

6.24 Income from Additional Surcharge

6.24.1 MSEDCL has estimated the income from Additional Surcharge on the estimated at the current level figure as per the Audited accounts for FY 2018-19. The summary of projected incomes from Additional Surcharge projected by MSEDCL for the Fourth Control Period from FY 2020-21 to FY 2024-25 is as shown in the table below:

Table 6-108: Income from Additional Surcharge for Fourth Control Period as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Income from Additional Surcharge	108.44	108.44	108.44	108.44	108.44

Commission's Analysis and Ruling

6.24.2 The detailed analysis of the Additional Surcharge as proposed by MSEDCL is elaborated in the Chapter on Tariff Philosophy. However, it is observed that, the income from such charges would vary depending on the actual OA volume of the applicable category of OA consumers.

6.24.3 The Commission in the Data Gaps had sought the estimates of incremental revenue from Additional Surcharge claimed by MSEDCL, where MSEDCL had provided it excel workings for the same. It was observed that, MSEDCL while estimating the revenue from Additional Surcharges for the ensuing year, MSEDCL has considered the Additional Surcharge income from Captive Power Plant (CPP) and Independent Power Producers (IPP).

6.24.4 Thus, for the purpose of approval of projection, the Commission has estimated the Income of Additional Surcharge based on the approved Additional Surcharge applied on the projected quantum of IPPs provided by MSEDCL. The approved income from Additional Surcharge for Fourth Control Period from FY 2020-21 to FY 2024-25 as shown in the following Table.

Table 6-109: Income from Additional Surcharge for Fourth Control Period, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Approved	Approved	Approved	Approved	Approved
Income from Additional Surcharge	119.65	117.28	115.52	112.63	109.46

6.25 Incremental Consumption & Bulk Consumption Rebate

MSEDCL submission

6.25.1 MSEDCL in its Petition has proposed to provide incentive to the existing HT consumers for incremental consumption, with a rebate of Rs.1 /kVAh in energy charges for additional consumption over a threshold limit, provided the effective variable charge of such consumer should not be less than Rs.4 Per kVAh after considering all charges, rebates, incentives etc. Aggregate Revenue Requirement for 4th Control Period from FY 2020-21 to FY 2024-25.

Commission's Rulings and Analysis

6.25.2 The Commission notes the submission and rationale provided by MSEDCL for offering rebate for incremental consumption. With surplus contracted energy available at its disposal, the Commission opines that MSEDCL should explore avenues for increasing sales within its distribution area as well as it should explore opportunities of surplus trading of power through power exchanges and inter-utility exchange within state.

6.25.3 Detailed modalities for operationalization of rebate for incremental consumption alongwith relevant conditions for applicable consumer categories and eligible consumers etc. have been discussed under Tariff philosophy section separately. However, impact of such rebate has been estimated based on sales projections with some assumptions to be recovered as part of ARR component in line with regulatory accounting treatment given in case of discounts/prompt payment rebate etc.

6.25.4 Thus, in line with the MSEDCL's Proposal and Commission's view on allowing rebate for incremental consumption, the Commission accepts the proposal of MSEDCL. The summary of the approved costs towards Incremental Rebate is provided in the following table.

Table 6-110: Cost from Incremental Rebate for HT Consumers as approved by the Commission (Rs. Crore)

Particular	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Additional Cost towards Incremental Rebate	439.66	548.50	661.65	426.45	548.77

6.26 Aggregate Revenue Requirement from FY 2020-21 to FY 2024-25

MSEDCL's Submission

6.26.1 The Allocation Matrix for segregation of the ARR between the Wires and Supply Business has been specified in Regulation 71 of the MYT Regulations, 2019. Based on this, MSEDCL has projected the Wires and Supply ARRs for Fourth Control Period from FY 2020-21 to FY 2024-25 as shown in the following Tables:

Table 6-111: Aggregate Revenue Requirement for Wires Business, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Operation & Maintenance Expenses	4536.29	4710.13	4890.63	5078.04	5272.64
Depreciation	2481.19	2669.67	2839.69	2899.49	2952.83
Interest on Loan Capital	1266.48	1317.23	1221.73	1001.12	771.19
Interest on Working Capital	130.10	139.50	145.20	145.16	144.64
Interest on deposit from Consumers and Distribution System Users	54.06	56.76	59.60	62.58	65.71
Other Finance Charges	0.00	0.00	0.00	0.00	0.00
Provision for bad and doubtful debts	89.16	94.11	99.42	105.13	111.27
Opex Schemes	87.03	87.03	87.03	87.03	87.03
Contribution to contingency reserves	143.34	158.98	170.64	175.50	179.85
Income Tax	0.00	0.00	0.00	0.00	0.00
Return on Equity Capital	1550.26	1613.17	1667.72	1711.07	1752.38
Aggregate Revenue Requirement	**10337.91**	**10846.58**	**11181.66**	**11265.13**	**11337.55**

Table 6-112: Aggregate Revenue Requirement for Supply Business, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Power Purchase Expenses (including Inter-State Transmission Charges)	61,234.57	63,894.79	67,455.81	70,917.81	73,817.97
Operation & Maintenance Expenses	2,442.62	2,536.22	2,633.42	2,734.33	2,839.12
Depreciation	275.69	296.63	315.52	322.17	328.09
Interest on Loan Capital	140.72	146.36	135.75	111.24	85.69
Interest on Working Capital	-	-	-	-	-

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Interest on Consumer Security Deposit	486.53	510.85	536.40	563.21	591.38
Other Finance Charges	-	-	-	-	-
Provision for bad and doubtful debts	802.43	846.99	894.82	946.20	1,001.45
Other Expenses	52.58	55.21	57.97	60.87	63.91
Income Tax	-	-	-	-	-
Intra-State Transmission Charges	10,293.78	6,352.56	6,715.36	7,344.34	7,999.76
Incentives/Discounts	322.38	338.50	355.43	373.20	391.86
Contribution to contingency reserves	15.93	17.66	18.96	23.82	28.17
DSM Expenses	-	-	-	-	-
Return on Equity Capital	185.69	193.43	200.14	205.47	210.55
RLC refund	-	-	-	-	-
ASC refund	-	-	-	-	-
Effect of sharing of gains/losses	-	-	-	-	-
Past Period Surplus	-	-	-	-	-
Revenue Gap Recovery Allowed	-	-	-	-	-
Impact of payment to MPECS in future years	37.16	34.15	31.14	28.13	21.14
Opex Scheme	30.18	30.37	30.59	30.85	31.14
Total Revenue Expenditure	**76,320.25**	**75,253.72**	**79,381.29**	**83,661.63**	**87,410.22**
Revenue from Sale of Power	76,997.55	79,927.39	83,017.87	86,309.90	89,801.46
Non-Tariff Income	379.75	398.73	418.67	439.60	461.59
Income from Additional Surcharge	108.44	108.44	108.44	108.44	108.44
Income from Wheeling Charges	-	-	-	-	-
Income from Open Access Charges	388.89	388.89	388.89	388.89	388.89
Income from Trading of Surplus Power	-	-	-	-	-
Total Revenue	**77,874.63**	**80,823.46**	**83,933.87**	**87,246.84**	**90,760.38**
Revenue Gap	**-1,554.37**	**-5,569.74**	**-4,552.58**	**-3,585.20**	**-3,350.17**

Table 6-113: Aggregate Revenue Requirement for Wires + Supply Business, as submitted by MSEDCL (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Power Purchase Expenses	61,234.57	63,894.79	67,455.81	70,917.81	73,817.97
Operation & Maintenance Expenses	6,978.91	7,246.35	7,524.04	7,812.38	8,111.76
Depreciation Expenses	2,756.88	2,966.30	3,155.21	3,221.66	3,280.93
Interest on Loan Capital	1,407.20	1,463.59	1,357.48	1,112.36	856.88

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Projected	Projected	Projected	Projected	Projected
Interest on Working Capital	130.10	139.50	145.20	145.16	144.64
Interest on Consumers Security Deposit	540.58	567.61	595.99	625.79	657.08
Other Finance Charges	-	-	-	-	-
Provision for bad and doubtful debts	891.59	941.10	994.24	1,051.34	1,112.72
Other Expenses	52.58	55.21	57.97	60.87	63.91
Income Tax	-	-	-	-	-
Intra-State Transmission Charges MSLDC charge	10,293.78	6,352.56	6,715.36	7,344.34	7,999.76
Incentives/Discounts	322.38	338.50	355.43	373.20	391.86
Contribution to Contingency Reserves	159.27	176.64	189.60	199.32	208.02
Opex Scheme	117.21	117.40	117.62	117.88	118.17
DSM expenses	-	-	-	-	-
Return on Equity Capital	1,735.95	1,806.60	1,867.86	1,916.55	1,962.93
RLC refund	-	-	-	-	-
ASC refund	-	-	-	-	-
Effect of sharing of gains/losses	-	-	-	-	-
Past Period Adjustment by Commission	-	-	-	-	-
Revenue Gap Recovery Allowed	-	-	-	-	-
Add: Impact of payment to MPECS in future years	37.16	34.15	31.14	28.13	21.14
Aggregate Revenue Requirement	**86,658.16**	**86,100.30**	**90,562.95**	**94,926.77**	**98,747.77**
Revenue from Sale of Power	76,997.55	79,927.39	83,017.87	86,309.90	89,801.46
Non-Tariff Income	379.75	398.73	418.67	439.60	461.59
Income from Open Access Charges	388.89	388.89	388.89	388.89	388.89
Income from Trading of Surplus Power	-	-	-	-	-
Income from Wheeling Charges	-	-	-	-	-
Income from Additional Surcharge	108.44	108.44	108.44	108.44	108.44
Total Revenue	**77,874.63**	**80,823.46**	**83,933.87**	**87,246.84**	**90,760.38**
Revenue Gap/(Surplus)	**8,783.54**	**5,276.84**	**6,629.08**	**7,679.93**	**7,987.39**

Commission's Analysis and Ruling

6.26.2 As elaborated in earlier paragraphs, the Commission has undertaken component-wise analysis of the ARRs for FY 2020-21 to FY 2024-25 in accordance with the Regulations, and has approved them as set out earlier.

6.26.3 As regards the Revenue at exiting tariff from Wires Business, the Commission has considered the Wheeling Revenue estimated at prevailing Wheeling Charges, which is summarized in the following table.

6.26.4 On that basis, the ARRs determined for each year of the Fourth Control Pare as shown in the following Tables:

Table 6-114: Aggregate Revenue Requirement for Wires Business, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Operation & Maintenance Expenses	4,921.68	4,717.50	4,898.36	5,086.16	5,281.17
Depreciation	2,536.12	2,667.58	2,754.68	2,810.20	2,865.44
Interest on Loan Capital	1,188.77	1,148.03	1,009.74	804.49	593.13
Interest on Working Capital	140.96	142.71	145.58	145.69	145.64
Interest on deposit from Consumers and Distribution System Users	54.06	56.76	59.60	62.58	65.71
Other Finance Charges	-	-	-	-	-
Provision for bad and doubtful debts	73.26	73.26	73.26	73.26	73.26
Opex	84.31	84.31	84.31	84.31	84.31
Contribution to contingency reserves	141.81	153.92	162.11	166.81	171.52
Total Revenue Expenditure	**9,140.97**	**9,044.07**	**9,187.65**	**9,233.51**	**9,280.18**
Return on Equity Capital	1,878.42	1,954.65	2,021.45	2,078.51	2,135.28
Aggregate Revenue Requirement	**11,019.38**	**10,998.72**	**11,209.09**	**11,312.02**	**11,415.46**
Income from Wheeling Charges	-	-	-	-	-
Income from Open access Charges	215.71	214.92	216.69	214.76	216.60
Aggregate Revenue Requirement from Distribution Wires	**10,803.67**	**10,783.79**	**10,992.41**	**11,097.26**	**11,198.85**
Revenue from Wires Business	9792	10190	10609	11049	11512
Revenue Gap/(Surplus)	1,011.31	593.59	383.73	48.27	-313.57

Table 6-115: Aggregate Revenue Requirement for Supply Business approved by the Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Power Purchase Expenses (including Inter-State Transmission Charges)	59,126.06	60,568.92	62,337.57	64,554.92	66,819.60
Operation & Maintenance Expenses	2,650.13	2,540.19	2,637.58	2,738.70	2,843.71
Depreciation	281.79	296.40	306.08	312.24	318.38
Interest on Loan Capital	132.09	127.56	112.19	89.39	65.90
Interest on Working Capital	-	-	-	-	-
Interest on Consumer Security Deposit	486.53	510.85	536.40	563.21	591.38
Other Finance Charges	-	-	-	-	-
Provision for bad and doubtful debts	659.37	659.37	659.37	659.37	659.37
Other Expenses	52.58	55.21	57.97	60.87	63.91
Income Tax	-	-	-	-	-
Intra-State Transmission Charges	5,699.92	5,809.25	5,915.07	6,009.51	6,036.77
Incentives/Discounts	322.38	338.50	355.43	373.20	391.86
Contribution to contingency reserves	15.76	17.10	18.01	18.53	19.06
DSM Expenses	-	-	-	-	-
Impact of payment to MPECS in future years	37.16	34.15	31.14	28.13	21.14
Opex Scheme	26.18	26.18	26.18	26.18	26.18

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Incremental Consumption Rebate	439.66	548.50	661.65	426.45	548.77
Total Revenue Expenditure	**69,929.61**	**71,532.17**	**73,654.63**	**75,860.71**	**78,406.02**
Return on Equity Capital	231.16	240.54	248.75	255.77	262.76
Aggregate Revenue Requirement	**70,160.77**	**71,772.71**	**73,903.39**	**76,116.48**	**78,668.77**
Less:					
Non-Tariff Income	379.75	398.73	418.67	439.60	461.59
Income from Additional Surcharge	119.65	117.28	115.52	112.63	109.46
Income from Trading of Surplus Power	302.05	319.75	340.96	363.02	386.30
Net Aggregate Revenue Requirement	**69,359.33**	**70,936.94**	**73,028.25**	**75,201.22**	**77,711.43**
Revenue from Retail Supply Business	**75,228.33**	**78,476.85**	**81,870.39**	**85,455.45**	**89,225.76**
Revenue Gap	**(5,869.01)**	**(7,539.91)**	**(8,842.14)**	**(10,254.23)**	**(11,514.34)**

Table 6-116: Aggregate Revenue Requirement for Wires + Supply Business, as approved by Commission (Rs. crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Power Purchase Expenses	59,126.06	60,568.92	62,337.57	64,554.92	66,819.60
Operation & Maintenance Expenses	7,571.81	7,257.69	7,535.94	7,824.87	8,124.87
Depreciation Expenses	2,817.91	2,963.97	3,060.76	3,122.45	3,183.82
Interest on Loan Capital	1,320.86	1,275.59	1,121.94	893.88	659.04
Interest on Working Capital	140.96	142.71	145.58	145.69	145.64
Interest on Consumers Security Deposit	540.58	567.61	595.99	625.79	657.08
Other Finance Charges	-	-	-	-	-
Provision for bad and doubtful debts	732.63	732.63	732.63	732.63	732.63
Other Expenses	52.58	55.21	57.97	60.87	63.91
Income Tax	-	-	-	-	-
Intra-State Transmission Charges MSLDC charge	5,699.92	5,809.25	5,915.07	6,009.51	6,036.77
Incentives/Discounts	322.38	338.50	355.43	373.20	391.86
Contribution to Contingency Reserves	157.56	171.02	180.12	185.35	190.57
Opex Scheme	110.49	110.49	110.49	110.49	110.49
DSM expenses	-	-	-	-	-
Impact of payment to MPECS in future years	37.16	34.15	31.14	28.13	21.14
Incremental Consumption Rebate	439.66	548.50	661.65	426.45	548.77
Total Revenue Expenditure	**79,070.57**	**80,576.24**	**82,842.28**	**85,094.21**	**87,686.19**
Return on Equity Capital	2,109.58	2,195.18	2,270.20	2,334.28	2,398.04
Aggregate Revenue Requirement	**81,180.15**	**82,771.43**	**85,112.48**	**87,428.50**	**90,084.23**
Less:					
Non-Tariff Income	379.75	398.73	418.67	439.60	461.59
Income from Open Access Charges	215.71	214.92	216.69	214.76	216.60
Income from Trading of Surplus Power	302.05	319.75	340.96	363.02	386.30
Income from Wheeling Charges	-	-	-	-	-
Income from Additional Surcharge	119.65	117.28	115.52	112.63	109.46

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Net Aggregate Revenue Requirement	**80,163.00**	**81,720.73**	**84,020.65**	**86,298.49**	**88,910.28**
Revenue from Sale of Power	85,020.69	88,667.05	92,479.07	96,504.45	1,00,738.19
Revenue Gap/(Surplus)	**(4,857.69)**	**(6,946.32)**	**(8,458.42)**	**(10,205.96)**	**(11,827.91)**

7 ADDITIONAL CLAIMS AND REVENUE GAP

7.1 Impact of Reinstatement of GFA

MSEDCL's Submissions

7.1.1 MSEDCL has claimed reinstatement of GFA of Rs. 815 crore in FY 2007-08 and Rs. 112 Crore in FY 2011-12. The impact on account of such reinstatement of GFA comprise revision in claims of depreciation, interest expenses and return on equity for future period from the date of such reinstatement. MSEDCL has also claimed the carrying cost of total impact. The total impact as claimed by MSEDCL amounts to Rs. 606.55 Crore, comprising Rs.165.57 Crore towards depreciation, Rs. 399.99 Crore towards interest expenses and Rs. 40.99 Crore towards Return on Equity.

Commission's Analysis and Rulings

7.1.2 Upon detailed scrutiny of MSEDCL's submissions and computation of impact towards depreciation, interest expenses and Return on Equity expenses from addition of Rs. 927 Crore on the GFA has been elaborated in Chapter 3 of this Order. Based on the above the Commission has allowed a total impact amounting to Rs. 50.21 Crore with individual contributions of Rs. 75.05 Crore from interest expenses and Rs. (24.83) Crore from Return on Equity. Further for the reasons stated in the Chapter 3, no carrying cot is allowed on such impact.

7.2 Impact of Capitalization of DPDC for FY 2016-17 in MTR Order

MSEDCL's submission

7.2.1 MSEDCL has submitted that in accordance with Regulation 23.6 of the MYT Regulation 2015 the Commission has in the past only allowed capitalization towards non-DPR schemes up to the threshold level.

7.2.2 MSEDCL has submitted that following its submission of DPR for the DPDC scheme, the Commission accorded post-facto approval to the scheme on 28 November 2019. In accordance with this MSEDCL has requested the Commission to allow the impact of the DPDC scheme as presented in the Table below:

Table 7-1: Summary of Impact of DPDC disallowance for FY 2016-17 as submitted MSEDCL

Particulars	Approved	Revised	Impact claimed
Total DPR Allowed in MTR	2,110.39	2,110.39	
Add: Capitalization for DPDC Schemes		423.22	
Revised Total DPR Allowed		2,533.61	
Total Excess Capitalization in the year	300.69	300.69	

Particulars	Approved	Revised	Impact claimed
50% of IDC of excess capitalization	1.31	1.31	
Net DPR Allowed after adjusting IDC of Excess capitalization	**2,109.08**	**2,532.30**	
Allowable non-DPR capitalization (considering 20% cap)	421.82	506.46	
Total Non-DPR Grant schemes	1,195.05	771.83	
Net Non-DPR capitalization approved	**421.82**	**506.46**	
Total (DPR + non-DPR Capitalization) for loan	2,530.89	3,038.76	
Capitalization-Other Assets	58.38	58.38	
Net Capitalization allowed (for depreciation)	**2,589.27**	**3,097.14**	**507.86**

Commission's Analysis and Ruling

7.2.3 The Commission in the MTR Order had disallowed Rs. 423.22 Crore against DPDC as claimed by MSEDCL under Non-DPR schemes as no in-principle approval of the same was in place at the time of claim. However based on subsequent submission made by MSEDCL for in-principle approval, the Commission had scrutinized the DPR of the scheme and post-facto approval was granted to MSEDCL (vide Letter No. MERC/Capex/2019-20/1108 dated 28th November, 2019), allowing it to claim the capitalization incurred under the scheme.

7.2.4 The Commission notes that based on the in-principle approval granted, capitalisation of DPDC scheme to be allowed in FY 2016-17 is Rs. 423.22 Crore. Accordingly, incremental capitalisation allowable towards non-DPR (20% of capitalisation allowed for DPR) works out to Rs. 84.64 Crore. Thus, the Commission approves a total additional capitalisation of Rs. 507.86 Crore in FY 2016-17. The revised capitalisation for FY 2016-17 is as shown in the following table.

Table 7-2: Summary of Impact of DPDC disallowance for FY 2016-17 as approved by the Commission

Particulars	MTR Petition	MTR Approved	MYT Petition	Allowed in this order
DPR	2110.39	2109	2533.61	2532.22
Non-DPR	1195.05	422	771.83	506.44
Total	**3305.44**	**2531**	**3305.44**	**3038.66**

7.2.5 The impact of the above is considered in the opening GFA of FY 2017-18 as approved in this Order.

7.3 Impact of Review Order

MSEDCL's Submission

7.3.1 MSEDCL has submitted that it had filed a petition to review certain aspects of the MTR order in Case no. 195 of 2017 dated 12 September 2018. The Commission issued an order in Case no. 321 of 2018 dated 24 December 2018 and partly allowed the contentions of MSEDCL. MSEDCL has submitted the impact of the said order in the present Petition.

7.3.2 **Calculation of Normative Expenses for FY 2015-16:** MSEDCL has submitted that the Commission had not considering the impact of Rs. 927 Crore in the opening Balance of GFA while computing O&M Expenses. Accordingly, MSEDCL has computed the impact of revised opening balance of GFA on the normative O&M expenses for FY 2015-16 and FY 2016-17

Table 7-3: Impact of Revised O&M Expenses for FY 2015-16 and FY 2016-17

Particulars	Revised Normative	Actual	Gains/ (loss)	2/3 of efficiency gains/losses	1/3 of efficiency gains/losses	Net Entitlement after sharing
O&M Expenses For FY 2015-16						
Approved in MTR order	6,792.34	5,417.68	1,374.66	916.44	458.22	6,334.12
Now Revised	6,826.16	5,417.68	1,408.48	938.99	469.49	6,356.66
Impact passed on to ARR						**22.54**
O&M Expenses For FY 2016-17						
Approved in MTR order	6,654.74	5,796.69	858.05	572.04	286.02	6,082.71
Now Revised	6,678.07	5,796.69	881.38	587.59	293.79	6,090.48
Impact passed on to ARR						**7.78**

7.3.3 **Correction of Distribution Loss of FY 2016-17:** MSEDCL stated in the MYT Petition that Commission in the Order dated 24th December 2018 stated that the metered value of input at the T<>D periphery cannot be replaced by a derived quantity and hence is to be maintained as it is. Therefore addressing an error apparent on the face of records the Commission revised the input at the T<>D periphery for FY 2016-17 to 1,16,300 MU. MSEDCL submitted as a result of this revision the distribution loss was revised from 15.33% to 15.95% approved in the impugned order. MSEDCL has submitted that the Commission had ruled that impact of Rs. 178 Crore in sharing of loss needs to be allowed to MSEDCL. Accordingly the impact of correction in distribution

loss as computed by MSEDCL for FY 2016-17 is as given in the table below:

Table 7-4: Impact of Revised O&M Expenses for FY 2015-16 and FY 2016-17

Particulars	Units	Approved	Now Revised	Impact to be passed on to ARR
MTR Approved Distribution Loss Trajectory	%	15.95%	15.33%	
MYT approved Loss Trajectory	%	13.50%	13.50%	
Sales Excl. EHV sales	MU	86,252	86,252	
EHV Sales	MU	5,480	5,480	
Total Sales	MU	91,732	91,732	
Intra STS loss (Approved)	%	3.63%	3.63%	
Power Requirement at Ex-Bus Periphery (Actual)	MU	1,12,171	1,11,392	
Power Requirement at Ex-Bus Periphery (Normative)	MU	1,09,155	1,09,155	
Additional/ (lower) Power purchase due to higher distribution loss	MU	3,016	2,236	
Marginal Variable Cost of Power Purchase	Rs/ kWh	3.43	3.43	
Additional Power purchase Cost due to higher distribution loss	Rs. Crore	1,035	767	
Efficiency Loss to be retained by MSEDCL	Rs. Crore	689.9	511.54	**178.36**
Efficiency Loss to be borne by the consumers	Rs. Crore	344.95	255.77	

7.3.4 **Loss on obsolescence of fixed assets for FY 2015-16:** MSEDCL has submitted that the Commission in the order dated 24 December 2018 had not disallowed Rs. 8 Crore on account of "loss of obsolescence of fixed assets and on account of natural calamities." However the Commission in the MYT Order dated 3 November 2016, the same expenses were allowed by the Commission and had accepted that there was an apparent error from the face of records. MSEDCL has requested the Commission to allow the same in the current petition.

7.3.5 Considering the above submissions the summary of impact of review order as submitted by MSEDCL is as shown in the below:

Table 7-5: Impact of Review Order submitted by MSEDCL

Particulars	Amount
Impact of O&M Expenses for FY 15-16 and FY 16-17	30.32
Correction in Distribution Loss for FY 2016-17	178.36
Loss of obsolescence of fixed assets for FY 15-16	8
Total Impact of Review Order	**216.68**

Commission's Analysis and Ruling

7.3.6 **Calculation of Normative Expenses for FY 2015-16**: Commission in the MTR Order in Case No. 195 of 2017 had allowed Rs. 927 Crore on the opening balance of GFA revising the opening balance from Rs. 39,641 Crore to Rs. 40,568 Crore. However while allowing the operation and maintenance expenses for the financial year the revised opening balance of GFA was not considered. The Commission has noted the same in Case no. 321 of 2018 dated 24 December 2018 in the matter of review filed by MSEDCL against the MTR order, that there was an apparent error in the computation of O&M Expenses.

7.3.7 MSEDCL in the MYT petition has submitted the computation of O&M Expenses for wires and supply business by considering the revised opening balance of GFA. The Commission has verified the computation submitted by MSEDCL and has approved the reinstatement of O&M expense computation as per the norms laid out for FY 2015-16 in Regulation 78.4.1 of MYT Regulation, 2011.

7.3.8 The reinstatement of Operation and Maintenance Expenses as approved by the Commission is as given in the Table below:

Table 7-6: Re computation of O&M Expenses for Wires Business for FY 2015-16 as approved (Rs. Crore)

Particulars	Units	FY 2015-16		
		MTR Order	MSEDCL Petition	Approved in this Order
Composite O&M Norms				
O&M Expenses Norm specified in Regulations				
For Wheeled Energy	paise/kWh	14.34	14.34	14.34
For No. of Consumers in Wires Business	Rs Lakh/ '000 Consumers	7.40	7.40	7.40
For R&M Expenses	% of GFA	0.04	0.04	0.04
Parameters for O&M Expenses				
Wheeled Energy	MU	109,543.00	109,543.29	109,543.00
No. of Consumers in Wires Business	'000 Consumers	23,151.00	23,150.97	23,151.00
Opening GFA	Rs. Crore	35,677.00	36,511.30	36,511.30
Total O&M Expenses	**Rs. Crore**	**4,711.10**	**4,744.47**	**4,744.47**

7.3.9 The re-computation of O&M expenses for supply business for FY 2015-16 allowed as per the norms laid out in Regulation 92.7.1 of MYT Regulations, 2011 is given in the table below:

Table 7-7: Re computation of O&M Expenses for Supply Business for FY 2015-16 as approved (Rs. Crore)

Particulars	Units	FY 2015-16		
		MTR Order	MSEDCL Petition	Approved in this Order
Composite O&M Norms				
O&M Expenses Norm specified in Regulations				
For Sales in Supply Business	paise/kWh	9.94	9.94	9.94
For No. of Consumers in Supply Business	Rs Lakh/ '000 Consumers	5.13	5.13	5.13
For R&M Expenses	% of GFA	0.50%	0.50%	0.50%
Parameters for O&M Expenses				
Sales	MU	87,903.00	87,902.89	87,902.89
No. of Consumers in Supply Business	'000 Consumers	23,151.00	23,150.97	23,150.97
				-
Opening GFA	Rs. Crore	3,964.00	4,056.70	4,056.70
				-
Total O&M Expenses	**Rs. Crore**	**2,081.22**	**2,081.68**	**2,081.68**

7.3.10 The sharing of gains/losses of the revised normative O&M Expenses with the actual value of O&M Expenses is computed as per Regulation 14 of the MYT Regulations 2011. The relevant extract of the regulation is provided below for easy reference:

> *"14.1 The approved aggregate gain to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*
> *(a) One-third of the amount of such gain shall be passed on as a rebate in tariff over such period as may be stipulated in the Order of the Commission under Regulation 11.6;*
> *(b) The balance amount, which will amount to two-third of such gain, may be utilized at the discretion of the Generating Company or Transmission Licensee or Distribution Licensee.*
>
> *14.2 The approved aggregate loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*
> *(a) One-third of the amount of such loss may be passed on as an additional charge in tariff over such period as may be stipulated in the Order of the Commission under Regulation 11.6; and*
> *(b) The balance amount of loss shall be absorbed by the Generating Company or Transmission Licensee or Distribution Licensee*."

7.3.11 As the O&M Expenses for FY 2015-16 form the base for computing the expenses for the rest of the years of the third control period, the sharing of gains and losses as approved by the commission for FY 2015-16 and FY 2016-17 is as given in the tables below:

Table 7-8: Re computation of sharing of gains of O&M Expenses for Supply Business for FY 2015-16 and FY 2016-17 as approved by Commission (Rs. Crore)

Particulars	FY 2015-16	FY 2016-17	Total
MTR Approved Net Entitlement	**6,334.00**	**6,083.00**	
Normative O&M Approved	6,826.16	6,678.07	
Actual	5,417.68	5,796.69	
Gains/ (Loss)	1,408.48	881.38	
2/3 of Efficiency gains/Losses	938.98	587.59	
1/3 of Efficiency Gains/Losses	469.49	293.79	
Net Entitlement after sharing	**6,356.66**	**6,090.48**	
Difference to be approved	**22.66**	**7.48**	**30.14**

7.3.12 Thus, the value of O&M Expenses approved for FY 2015-16 for wires and supply business are Rs. 4744.47 Crore and Rs. 2081.68 Crore respectively and the total difference allowed for O&M Expenses after sharing of gains and losses to MSEDCL is Rs. 30.14 Crore.

7.3.13 Correction of Distribution Loss of FY 2016-17: Commission in the order dated 24 December 2018 in the matter of review of MTR order in Case no. 195 of 2017 dated 12 September 2018 had ruled that as the input at T< >D periphery was metered, it needed to be considered as such. Replacing such metered value by a derived number was not appropriate. The relevant extract of the ruling below for quick reference:

> *"…input at T< >D periphery for FY 2016-17 is revised to 116300 MU which is based on metered energy. This leads to revision in Distribution Loss to 15.33% from 15.95% approved in impugned MTR Order.* ***On account of revision of distribution loss level, impact of Rs. 178 crore on sharing of loss needs to be allowed to MSEDCL.****"*

7.3.14 Based on the above ruling of the Commission, the impact on account of revision of energy at T<>D periphery considered in the energy balance and consequent revision of distribution loss in FY 2016-17, which works out to a difference of Rs. 178.36 Crore is allowed to MSEDCL.

7.3.15 **Loss on obsolescence of fixed assets for FY 2015-16:** Commission in same order had also allowed the addition of Rs. 8 Crore in the Annual Revenue Requirement of MSEDCL on account of Loss of obsolescence of assets. The relevant extract of the same is provided below for reference:

> *While considering the other expenses for FY 2015-16, the Commission has not approved Rs. 8 Crore on account of "loss of obsolescence of fixed assets and*

on account of natural calamities." However, In MYT Order dated 3 November, 2016, the Commission has allowed such expenses. Hence, it is an error apparent from the face of records, and therefore, other expenses of Rs. 8 Crore needs to be allowed.

7.3.16 In pursuance of its earlier ruling in the review Order, the Commission in the present order has allowed Rs. 8 Crore for recovery on account of Loss of obsolescence of assets to MSEDCL.

7.3.17 The summary of impact of review order as approved by Commission is as shown in the below:

Table 7-9: Impact of Review Order allowed by Commission

Particulars	Amount (Rs Cr)
Impact of O&M Expenses for FY 15-16 and FY 16-17	30.32
Correction in Distribution Loss for FY 2016-17	178.36
Loss of obsolescence of fixed assets for FY 15-16	8
Total Impact of Review Order	**216.68**

7.4 Impact of Change in Law in Power Purchase

MSEDCL's Submission

7.4.1 MSEDCL has submitted that Supreme Court in the Energy Watchdog matter in Civil Appeal No. 5399-5400 vide its Judgement dated 11.04.2017 ruled that NCDP 2013 is a "Change in Law' and further elaborated that the party affected due to the Change in law be restituted to its' same economical position. In line with this order, the orders passed by Commission in the matters if change in law as submitted by MSEDCL include:

- Order in Case no. 189 of 2013 and 140 of 2014 dated 07 March 2018 on NCDP policy as change in law for the impacted period of 4 years from June 2013 to 31 March 2017.
- Order in Case no. 290 of 2018 dated 07 February 2019 on SHAKTI policy as change in law for the impacted period of 2.5 years from 01 April 2017 till date of filing of petition.
- Order in Case no. 68 of 2012 and Case no. 140 of 2014 dated 06 September 2019 on Cancellation of Lohara Coal Block as change in law from the Date of Commissioning till date of filing of petition i.e. 5 years

- Order in Case no. 295 of 2018 dated 18 December 2018 on Claim for carrying cost for the impacted period of 4 years from June 2013 to 31 March 2017.

7.4.2 MSEDCL has submitted that the Commission in the orders stated above passed over a period of last 1.5 years have provided relief to APML on account of change in law for the past period from 2013. Thus the claim raised by MSEDCL subsequent to the issue of orders by APML as submitted by MSEDCL is shown in the table below:

Table 7-10: Claims against change in law raised by APML as submitted by MSEDCL

Change in Law Event	Claim Type	Claim in Rs. Crore
NCDP Policy	Main Bill	3,094.00
	Carrying Cost	1,442.88
SHAKTI Policy	Main Bill	2,451.05
	Carrying Cost	242.7
Cancellation Lohara Coal Block	Main Bill	3,280.61
	Carrying Cost	2,406.00
	Total	**12,917.24**

7.4.3 MSEDCL has submitted that it has principally challenged the orders in Case no. 290 of 2018 and Case no. 68 of 2012 before APTEL while APML has challenged Case No. 189 of 2013, Case No. 140 of 2014, Case no. 68 of 2019 and Case no. 290 of 2018 demanding consideration of operational parameters such as normative SHR and GCV on as received basis along with compensation for 100 % shortfall.

7.4.4 CERC has also issued order dated 31 May 2018 in Petition No.97/MP/2017 and Petition no.269/MP/2018 regarding Inter Plant Transfer (IPT) of coal, i.e. utilization of linkage coal of APL, Mundra to APML, Tiroda. In the said order CERC has ruled that supply of coal under the FSA shall remain unchanged for the commercial purpose and shall be on account of the original Power Plant.

7.4.5 As the present matters are sub judice before APTEL and there is no stay on the order have been issued and hence MSEDCL is liable to make the payments.

7.4.6 In the similar developments Rajasthan Electricity Regulatory Commission has issued order dated 17 May 2018 allowing NCDP 2013 as change in law to Adani Rajasthan. Rajasthan Discoms had filed appeal before APTEL and APTEL by interim order in Appeal No. 202 of 2018 passed the directives to Rajasthan Discoms to make payment of 70% of the compensation claims to M/s. Adani Rajasthan. Rajasthan Discoms had filed a Civil appeal against APTEL Judgement before Hon'ble Supreme Court bearing no. 10188 / 2018. Hon'ble Supreme Court passed the order dated 29.10.2018 and directed Rajasthan Discoms to make payment of 50% of claim payments to M/s. APRL

within two months from the date of order. APTEL has also issued order in Appeal no. 202 of 2018 allowing SHAKTI and NCDP policy as change in law and directed Rajasthan Discoms to pay balance claims to M/s. APRL within 2 and 3 months respectively.

7.4.7 In line with the Hon'ble Supreme Court Judgment in the matter of Rajasthan Discoms to make payment of 50% of claimed amount and considering the already paid amount of Rs. 2266 Crore, MSEDCL is liable to pay amount of Rs. 4192 Crore to avoid carrying cost impact and contempt of Court Order.

7.4.8 Further, MSEDCL has also provided reference to Petition No. 8/MP/2014 filed by M/s GMR before CERC in response to which CERC disallowed the claim on Change in Law events claimed by M/s GMR and subsequently GMR aggrieved by the CERC order filed Appeal No. 111 of 2017 before Hon'ble APTEL. APTEL in its order dated 14 August 2018 remanded back the matter to CERC to pass consequential orders regarding Busy Season Surcharge, Development Surcharge, MOEF Notification on coal quality, change in NCDP and Carrying Cost.

7.4.9 MSEDCL stated that GMR has also filed a fresh petition No. 284/MP/2018 whereby GMR included all its previous disallowed Change in Law along with fresh claim regarding SHAKTI Policy with a prayer of declaration of the same as a change in law event. CERC issued Order on 16.05.2019 and has allowed all the claims considering SHR as per CERC regulation and GCV on as received basis. MSEDCL has filed appeal on 26.07.2019 (bearing DFR No. 2221 of 2019) against CERC Order dated 16.05.2019 before APTEL. MSEDCL has submitted that the abovementioned petition is sub judice before APTEL and the impugned order has not been stayed.

7.4.10 The claims raised by GMR Warora on account on change in law amounts to Rs. 162.80, the details of which as submitted by MSEDCL is given the table below:

Table 7-11: Claims against change in law raised by GMR as submitted by MSEDCL

Description	Claim in Rs. Crore
Coal Shortfall May14 to Aug19	74.62
BSS & DS May14 to June18	35.37
Carrying cost	40.46
Late Payment Surcharge	12.23
Total	**162.68**

7.4.11 APTEL had directed to release 50% of payment of total claim by GMR after adjusting

payments made within one week and consequently MSEDCL has made a payment of Rs. 81.34 Crore equivalent 50% of the claim made.

7.4.12 MSEDCL has also submitted that the remaining amount of RS. 4192 Crore is added to the revenue gap of MSEDCL. MSEDCL has also submitted that whenever various orders on different grounds currently sub judice before the respective Courts get finality, MSEDCL shall pass on or recover such impact through FAC mechanism from consumers.

Commissions Analysis and Ruling

7.4.13 The Commission has examined the submissions of MSEDCL on the matter of Change in Law on account of the NCDP and Shakti Policy and cancellation of Lohara coal block and also the Supreme court Judgment in the similar matter. The Commission has through various orders in the past has approved charges on account of Change in Law. The Commission notes that earlier Orders on the subject matter are under various stages of appeal before Hon'ble ATE.

7.4.14 However, the Commission also notes the views expressed by Hon'ble Supreme Court in the similar matter of Rajasthan Discoms, wherein it had ruled that Distribution Utilities in Rajasthan are liable to pay 50% of claimed payment to Adani Power Rajasthan Limited (APRL).

7.4.15 GMR has also filed a petition raising claims on account of Change in Law in the matter of Shakti Policy. Based on the claims made by APML and GMR and the views expressed by Hon'ble Supreme Court in the matter of Rajasthan Distribution Utilities, the Commission has noted MSEDCL's claim regarding its liability to pay and amount of Rs. 6458 Crore of which according to its submission, MSEDCL has paid an amount equivalent to Rs. 2266 Crore. Hence in the current petition it has claimed the balance amount of Rs. 4192 Crore.

7.4.16 Considering the fact that MSEDCL has challenged Commission's orders in the matter of Shakti Policy and Cancellation of Lohara Coal block, the exact quantum of liability (incl. carrying cost thereof) can be ascertained only after outcome of the current proceedings. Pending clarity on legal proceedings and not considering any liability at this stage, particularly when the tariff process for 4th Control Period is underway and as these liabilities pertain to past period, would amount to deferment would increase burden of carrying cost further. Further, considering views expressed by Hon'ble Supreme Court in the similar related matter to allow for 50% of such claims, the Commission is of the considered view that allowing for such claim at this stage through tariff process would be appropriate and such claims would be subject to prudence check as and when clarity on pending legal proceedings in instant cases emerges.

Accordingly, the Commission has considered amount equivalent to Rs 4192 Crore as claimed by MSEDCL under this Order.

7.5 Carrying Cost on Previous Gap and other claims

MSEDCL's submission

7.5.1 MSEDCL has requested the Commission to allow carrying cost/holding cost on revenue gap/surplus in line with the past practice of the Commission.

7.5.2 MSEDCL has submitted that APTEL in its order dated 08 April 2015 in Reliance Infrastructure Limited vs MERC and others has stated that carrying cost should be calculated for the past from the middle of the financial year in which the revenue gap had occurred up to the middle of the financial year in which the recovery has been proposed as the expenditure is incurred throughout the year and its recovery is also spread out throughout the year.

7.5.3 MSEDCL has submitted that the Commission in its MTR Order approved revenue gap of Rs. 20,651 Crore. However of the approved value a recovery of only Rs. 8,268 Crore was allowed over a period of 2 years resulting in the creation of Regulatory Asset of Rs. 12, 382 Crore. MSEDCL submitted that it was also directed that it should submit its proposal for planned recovery of Regulatory Asset along with carrying cost for the ensuing years in the next Control Period during the time of next ARR/Tariff filling process for final true-up of ARR of 3rd Control Period in such a way that recovery of such Regulatory Asset and adjustment of on account of final true up of Revenue Gap/(Surplus) (if any) shall not exceed for the period of two years beyond the current Control Period (i.e. 3rd Control Period).

7.5.4 In line with the Commission's Directive the Carrying cost computed on the regulatory assets, revenue gap of FY 2016-17 to FY 2019-20 along with the additional claims considering an interest rate equivalent to the interest rate on working capital as submitted by MSEDCL is given in following table:

Table 7-12: Carrying Cost against regulatory assets, past gaps and other claims as submitted computed by MSEDCL

Particulars	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	Total
Impact of Reinstatement of GFA	97.78	94.44	92.19	55.95	54.17	97.07	64.45	23.86	26.65				
Impact of Review Order								30.54	186.14				
Revenue Gap										-1,677	2,835	2,288	
Regulatory Assets											12,382.45		
Total	**97.78**	**94.44**	**92.19**	**55.95**	**54.17**	**97.07**	**64.45**	**54.40**	**212.79**	**-1,677.05**	**15,217.66**	**2,288.19**	**16,652.03**
Interest Rate	12.25%	12.25%	11.75%	13%	14.75%	14.45%	14.75%	14.75%	10.20%	10.19%	9.89%	9.50%	9.50%
From	01-10-08	01-10-09	01-10-10	01-10-11	01-10-12	01-10-13	01-10-14	01-10-15	01-10-16	01-10-17	01-10-18	01-10-19	01-10-20
To	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20
FY 08-09	5.99												
FY 09-10	11.98	5.78											
FY 10-11	11.49	11.10	5.42										
FY 11-12	12.71	12.28	11.99	3.64									
FY 12-13	14.42	13.93	13.60	8.25	4.00								
FY 13-14	14.13	13.65	13.32	8.08	7.83	7.01							
FY 14-15	14.42	13.93	13.60	8.25	7.99	14.32	4.75						
FY 15-16	14.42	13.93	13.60	8.25	7.99	14.32	9.51	4.01					
FY 16-17	9.97	9.63	9.40	5.71	5.53	9.90	6.57	5.55	10.85				
FY 17-18	9.96	9.62	9.39	5.70	5.52	9.89	6.56	5.54	21.67	-85.41			
FY 18-19	9.67	9.34	9.12	5.53	5.36	9.60	6.37	5.38	21.05	-165.87	752.56		
FY 19-20	9.29	8.97	8.76	5.31	5.15	9.22	6.12	5.17	20.21	-159.32	1,176.33	108.69	
Total	**138.45**	**122.15**	**108.19**	**58.73**	**49.35**	**74.26**	**39.89**	**25.65**	**73.79**	**-410.60**	**1,928.89**	**108.69**	**2,317.44**

Commission's Analysis and Ruling

7.5.5 The MSEDCL has claimed carrying cost on revenue gap arising from Truing-up requirement as submitted in the present MYT Petition for the years FY 2017-18 and FY 2018-19 and provisional True-up of FY 2019-20. The resultant carrying cost has been spread over all the years of the control period.

7.5.6 As stated in the Chapter 3 of the order the Commission has disallowed the carrying cost on past gaps due to impact of reinstatement of GFA on account of MSEDCL having delayed the submission of computation of impact as directed by the Commission.

7.5.7 In the MTR order dated 12th September 2018 to avoid tariff shock across all consumer categories due to approved revenue gap of Rs. 20,651 Crore for FY 2018-19 and FY 2019-20, the commission had created Regulatory Asset of Rs. 12,382.45 Crore. MSEDCL in the current petition has claimed carrying cost on the regulatory asset for all years of the Fourth Control Period. The Commission has allowed the carrying cost on Regulatory Assets on half yearly basis for FY 2020-21.

7.5.8 Commission has verified the computations submitted by MSEDCL and has re computed the allowable carrying cost. The carrying cost as claimed by MSEDCL based on the provisional True-up of FY 2019-20 has been disallowed in the current order and shall be allowed during the Truing-up of FY 2019-20, in line with the treatment of the Commission in earlier Orders.

7.5.9 The carrying cost allowed by the Commission for FY 2017-18, FY 2018-19 and the Regulatory Assets in as shown in the Table below:

Table 7-13: Carrying Cost against regulatory assets and past gaps as allowed by the Commission

Particulars	FY 2017-18	FY 2018-19	Total
Impact of Reinstatement of GFA			
Impact of Review Order			
Revenue Gap	-3,111	1,950	
Regulatory Assets		12,382.45	
Total	**-3,111.39**	**14,332.20**	**12,042.94**
Interest Rate	10.19%	9.89%	9.50%
From	01-10-17	01-10-18	01-10-20
To	30-03-20	30-03-20	30-03-20

Particulars	FY 2017-18	FY 2018-19	Total
FY 2017-18	-158.46		
FY 2018-19	-307.73	739.12	
FY 2019-20	-295.58	1,176.33	
FY 2020-21	-147.79	680.78	
Total	-909.56	**2,565.88**	**1,656.32**

7.6 Carrying Cost on unrecovered revenue gap during the control period

MSEDCL's submission

7.6.1 MSEDCL has submitted that the full amount of recovery of revenue gap in the initial years would lead to tariff shock and to avoid the same it has deferred revenue recovery. However MSEDCL also submitted that the deferred revenue recovery will require funding for the same. In accordance to the same the carrying cost on the unrecovered revenue gap and regulatory assets as submitted by MSEDCL is shown in following table:

Table 7-14: Carrying Cost against regulatory assets, past gaps and other claims as submitted by MSEDCL

Revenue Recovery	Formula	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	Total
Total Revenue Gap for previous years	**a**	**16,652**	**18,804**	**14,353**	**8,154**	**-65**	
Revenue Gap for current year	b	8,784	5,277	6,629	7,680	7,987	36,357
Total Revenue Gap up to current year	**c=a + b**	**25,436**	**24,080**	**20,982**	**15,834**	**7,922**	
Recovery from Addl. CSS	d	-175	-223	-232	-243	-257	
Recovery from Addl. AS	e	-530	-545	-563	-576	-571	
Net Revenue Gap up to current year	**f=c +d+ e**	**24,731**	**23,312**	**20,187**	**15,014**	**7,094**	
Less: Recovery from Tariff hike	g	5,928	8,960	12,033	15,080	18,358	60,358
Revenue gap to be carried forward	h=f-g	**18,804**	**14,353**	**8,154**	**-65**	**-11,264**	
Interest Rate	i	9.50%	9.50%	9.50%	9.50%	9.50%	
Carrying Cost on unrecovered Gap	j=a*i	791	1,786	1,364	775	-6	4,709
Carrying Cost on previous claims till FY 19-20	k	2,317					
Total Carrying Cost	**l=j + k**	**3,108**	**1,786**	**1,364**	**775**	**-6**	**7,027**

Commission's Analysis and Ruling

7.6.2 The carrying cost on the Revenue gap at the beginning of the control period for FY 2020-21 resulting from revenue gap for past years and regulatory assets for FY 2018-

19 and FY 2019-20 has been spread by carrying forward the net revenue gap/surplus considering the recovery at existing rates and the incremental recovery from the hike in tariff proposed by MSEDCL.

7.6.3 Based on the tariff approved the in the current order the carrying cost on revenue gap carried forward in the future years of the control period as computed by the Commission for approval is given in the Table below:

Table 7-15: Carrying Cost against regulatory assets, past gaps and other claims as allowed by the Commission

Revenue Recovery	Formula	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	Total
Total Revenue Gap for previous years	**a**	**12,043**	**11,634**	**9,136**	**5,126**	**-632**	
Revenue Gap for current year	b	-4,858	-6,946	-8,458	-10,206	-11,828	-42,296
Total Revenue Gap up to current year	**c=a+b**	**7,185**	**4,687**	**677**	**-5,080**	**-12,459**	
Recovery from Addl.CSS	d	-	-	-	-	-	-
Recovery from Addl. AS	e	-	-	-	-	-	-
Net Revenue Gap up to current year	**f=c+d+e**	**7,185**	**4,687**	**677**	**-5,080**	**-12,459**	
Less: Recovery from Tariff hike/decrease	g	-4,448	-4,448	-4,448	-4,448	-4,448	-22,242
Revenue gap to be carried forward	h=f-g	**11,634**	**9,136**	**5,126**	**-632**	**-8,011**	
Interest Rate	i	9.50%	9.50%	9.50%	9.50%	9.50%	
Carrying Cost on unrecovered Gap	j=a*i	572	1,105	868	487	-60	2,972
Carrying Cost on previous claims till FY 19-20	k	1,656					
Total Carrying Cost	**l=j+k**	**2,228**	**1,105**	**868**	**487**	**-60**	**4,628**

7.7 Incremental Revenue from CSS and additional Surcharge

MSEDCL's Submission

7.7.1 MSEDCL has submitted that it has considered the impact of incremental revenue from CSS and Additional Surcharge as per the proposed CSS and proposed Additional Surcharge for the Control Period. Accordingly claimed a revenue of Rs. 1129.33 Crore and Rs. 2785.00 Crore respectively under these heads while working out the overall revenue gap.

Commission's Analysis and Ruling

7.7.2 Based on submissions of MSEDCL it is understood that present incremental revenue from CSS is on account of fact that MSEDCL has computed the cross subsidy surcharge based on the formula without considering the ceiling of 20% and has claimed the

incremental income as obtained from CSS over and above the specified threshold.

7.7.3 However, Commission in the present order has allowed the income from cross subsidy surcharge, only up to the level of cross subsidy surcharge with the ceiling of 20% in line with its earlier Orders and has disallowed the rest. [The CSS workings have been detailed in Chapter 8 of this Order. In view of the same, Commission does not allow any incremental revenue on account of CSS.

7.7.4 As regards, incremental income from Additional Surcharge, it is understood that the same is projected by MSEDCL considering the applicability of such charges on Group Captive Users in line with ruling of the Commission in the MTR Order in Case 195 of 2017, which was set aside by way of ATE's Judgment in the matter. The relevant extracts of the ATE's Judgement in Appeal No. 311 of 2018 & IA Nos. 1531, 1468 & 1467 of 2018 dated 27th March 2019, is reproduced below for reference:

"83. The scope of Mid Term Review proceedings is understood from the above regulations. As seen from the above Regulations, the Commission cannot deviate from the principles adopted in the Multi Year Tariff order. Fundamental principles adopted in the MYT proceedings cannot be reopened and challenged at the stage of MTR proceeding, the scope of which is very limited.

…

85. There is one more flaw in the manner in which the Respondent Commission proceeded with Mid-Term-Performance Review. Having come to conclusion that captive consumers are not liable to pay additional surcharge in MYT proceedings, which was implemented by MSEDCL, MERC opines in Review Proceedings that additional surcharge is payable by captive consumers of captive power plant. But this is without giving an opportunity of being heard to the Appellants. This is nothing but violation of principles of natural justice. Firstly, Mid-Term Review is nothing but a comparison between the actual operational performances (factual) vis-a-vis the approved forecast in terms of MERC regulations of 2015. This is nothing but ignoring its own regulations.

…

88. In the light of the above discussion and reasoning, we are of the opinion that there cannot be any distinction between an individual captive consumer and group captive consumers or original captive consumers and converted captive consumers. For the above mentioned reasons, the above appeals deserve to be allowed and accordingly allowed. The impugned order dated 12.09.2018 passed by Maharashtra Electricity Regulatory Commission is hereby set aside. All the pending IAs shall stand disposed of. No order as to costs."

7.7.5 It is also understood that the said ATE Judgment was further challenged before Hon'ble Supreme Court, which was pleased to grant stay on said ATE Order and it is understood that the matter is further pending before Hon'ble Supreme Court. The Hon'ble Supreme Court in its Record of Proceedings dated 1st July 2019 in Civil Appeal No(s). 5074-5075/2019 has put stay on operation and implementation of ATE's Judgement in Appeal No. 311 of 2018 & IA Nos. 1531, 1468 & 1467 of 2018 dated 27th March 2019. As matter is sub-judice at this stage, the Commission has not considered any incremental revenue towards Additional Surcharge as claimed by MSEDCL. The Commission has determined additional surcharge for the 4th Control Period and the associated conditions for same is elaborated in chapter 8 of the order along with its applicability.

7.8 Impact of MSPGCL True-up of past years

7.8.1 The Commission has trued-up the Annual Fixed Cost of MSGPCL of FY 2017-18 and FY 2018-19, as part of its Order in MSPGCL MYT Petition No. 296 of 2019. Impact of the same works out to surplus of Rs. (308) Crore, which is considered to be allowed to MSEDCL as part of the Revenue Gap.

7.9 Net Recovery from Tariff

MSEDCL's Submission

7.9.1 Considering the submissions made above the net recovery from tariff computed by MSEDCL is as shown in the table below:

Table 7-16: Net Recovery of Tariff as submitted by MSEDCL

Particulars	Amount Rs. Cr
Final True Up Requirement for FY17-18	(1,677)
Final True Up Requirement for FY 18-19	2,835
Provisional True Up Requirement for FY 19-20	2,288
Projected Revenue Gap for FY 20-21	8,784
Projected Revenue Gap for FY 21-22	5,277
Projected Revenue Gap for FY 22-23	6,629
Projected Revenue Gap for FY 23-24	7,680
Projected Revenue Gap for FY 24-25	7,987
Impact of Review Order on MTR Order	217
Impact of Reinstatement of GFA of Rs. 927 Crores	607
Carrying Cost for previous gaps/impact and unrecovered gaps during Control Period	5,850
Total Revenue Gap for the MYT Period	**46,477**

Particulars	Amount Rs. Cr
Impact of Change in Law	4,192
Regulatory Assets	
Carrying Cost on Regulatory Assets up to Mar-20	1,176
Recovery for Regulatory Assets	12,382
Total Recovery	**64,227**
Incremental Revenue from Cross Subsidy Surcharge	(1,129)
Incremental Revenue from Additional Surcharge	(2,785)
Net recovery from Tariff	**60,313.10**

Commission's Analysis and Ruling

7.9.2 Based on the above rulings the net recovery of tariff as computed by the Commission to be approved in this order is as given in the table below:

Table 7-17: Net Recovery of Tariff as approved by the Commission

Particulars	MSEDCL Petition	Approved in this Order
Final True Up Requirement for FY17-18	(1,677)	(3,111)
Final True Up Requirement for FY 18-19	2,835	1,950
Provisional True Up Requirement for FY 19-20	2,288	54
Projected Revenue Gap for FY 20-21	8,784	(4,858)
Projected Revenue Gap for FY 21-22	5,277	(6,946)
Projected Revenue Gap for FY 22-23	6,629	(8,458)
Projected Revenue Gap for FY 23-24	7,680	(10,206)
Projected Revenue Gap for FY 24-25	7,987	(11,828)
Impact of Review Order on MTR Order	217	217
Impact of Reinstatement of GFA of Rs. 927 Crore	607	50.21
Carrying Cost for previous gaps/impact and unrecovered gaps during Control Period	5,850	2,864
Total Revenue Gap for the MYT Period	**46,477**	**(40,273)**
Impact of Change in Law	4,192	4,192
True-up adjustment for past years (FY18 to FY20) - MSPGCL	-	(308)
Regulatory Assets		
Carrying Cost on Regulatory Assets up to Mar-20	1,176	1,764
Recovery for Regulatory Assets	12,382	12,382
Total Recovery	**64,227**	**(22,242)**
Incremental Revenue from Cross Subsidy Surcharge	(1,129)	
Incremental Revenue from Additional Surcharge	(2,785)	
Net recovery from Tariff	**60,313**	**(22,242)**

8 TARIFF PHILOSOPHY, TARIFF DESIGN AND CATEGORY-WISE TARIFFS FROM FY 2020-21 TO FY 2024-25

8.1 Overall Approach for Tariff Design

8.1.1 The Commission has kept in view the main objects of the Electricity Act, 2003 ("EA, 2003"), as set out in its Preamble, including the protection of the interest of consumers, the supply of electricity to all areas, promoting reliability, encouraging factors that would improve collection efficiency and the rationalisation of tariffs. The EA, 2003 also enjoins the Commission to maintain a healthy balance between the interest of the Utilities and the reasonableness of the cost of power being supplied to consumers. The Commission has also kept in view the principles of tariff determination set out in Sections 61 and Section 62 of the EA, 2003, the Tariff Policy, 2016 and the MYT Regulations, 2019, and also taken into considerations MSEDCL's submissions as well as the Public responses in these MYT proceedings.

8.1.2 The provision of electricity is an essential driver for development and influences social and economic change. The Commission has endeavoured to ensure that, industry and commerce is promoted, and at the same time interest of various consumer segments of society is protected. The Commission has also sought to ensure regulatory consistency for all stakeholders and a reasonable return for the Licensee.

8.1.3 Apart from tariff levels, the complexity of the tariff structure plays an important role in building transparency and limiting the discretionary power of Distribution Licensees (Discoms). A simpler tariff structure helps easy understanding by consumers and on the other hand, creation of many different categories gives discretionary power to Discoms while charging tariffs.

8.1.4 It is felt that the complexity in the tariff structure across the States needs to be reduced and accordingly efforts are required to simplify and rationalize the tariff structure, and also to make it harmonious across States. Draft proposed Amendments to Tariff Policy suggests that new tariff structure should have maximum five categories having different slabs in Sanction Load and units consumed. It also suggests providing rebate to incentivise bulk customers to take power at higher voltage category, adopt kW and kWh or kVA and kVAh based tariff linked to the load, create EV category, etc. among other suggestions.

8.1.5 As a progressive step towards simpler and rationalized tariff structure, the Commission intends to reduce the number of categories from the existing tariff structure. MSEDCL

has also proposed rationalisation of tariff categories and consumption slabs, which has been considered by Commission alongwith views expressed consumers through public consultation process, before finalising its views on rationalisation of tariff categories/slabs, as elaborated in subsequent sections of the Order.

8.1.6 In this context, the Commission notes that Hon'ble Appellate Tribunal of Electricity (APTEL), vide its Order in Appeal No. 106 of 2008, has ruled that the Commission has the power to design the tariff as per its own wisdom. It also mentions that the Commission does not need to seek public comments before announcement of the tariff. The relevant part of the APTEL Order in Appeal No. 106 of 2008 is reproduced below:

> "…
> *14) It is not the case of the appellant that the Commission had no power to create a tariff design different from the one proposed by the licensee. The Commission has the power to design the tariff as per its own wisdom. The Commission need not, before issuing the actual order, publicly announce the tariff it proposed and call for public comments. In fact this is not even the appellant's contention.*
> *15) The rule of natural justice requires the Commission to issue a public notice about the ARR and Tariff petition of the licensee and to allow the public to make its submissions on the ARR and Tariff proposals. The Commission has, thereafter, to design the scheme for recovery of the ARR keeping in view various relevant factors. If the classification of the consumers can be supported on any of the grounds mentioned in section 62(3) it would not be proper to say that the tariff fixing was violative of principles of natural justice because the Commission did not issue a public notice of the tariff categories which the Commission had intended to create."*

8.1.7 In view of above judgement, the Commission is proceeding with its intended approach of reducing the number of categories and slabs by merging similarly placed consumer categories while ensuring that the existing consumers in these categories are not significantly impacted.

8.1.8 In addition to the above, the Commission has also addressed issues pertaining to change in definition of billing demand, changes in the methodology for computation of load factor incentives and creation of stabilising mechanism for the variation on account of FAC in consumer bills.

8.1.9 More importantly, in line with the intentions of the Commission expressed in the last MTR Order in Case 195 of 2017 and also as proposed by MSEDCL, the Commission is going ahead with implementation of the kVAh based billing for all the HT Consumers of MSEDCL.

8.1.10 Some of the main tariff-related features of this Order are summarized below:

A] Rationalisation of Tariff categories and Slabs within Tariff categories:

8.1.11 Rationalisation of Tariff categories and simplification of the tariff slabs has been an endeavour of the Commission for long, as elaborated in earlier Orders. However, for various reasons, several categories and consumption slabs have been in operation for many years. At present, there are 11 LT Tariff categories with 40 sub-categories/consumption slabs and 9 HT Tariff categories with 13 sub-categories/consumption slabs. Tariff determination for the 4th Control period as per MYT Regulations, 2019 offers an opportunity to revisit and review the options for tariff category rationalisation and simplification of slabs. These sentiments have also been echoed through public hearing and public consultation process. The draft Tariff Policy 2018 has also advocated rationalisation of Tariff categories and suggested not more than five major categories such as Domestic, Commercial, Agriculture, Industrial, Institutional with allowance for sub-categorisation based on supply voltage at LT/HT. Accordingly, the Commission has undertaken merging of few consumer categories and rationalisation of consumption slabs/sub-categories. The Commission recognises that any such rationalisation should not cause undue burden on any particular consumer category/consumption slab and hence such rationalisation and tariff design has been undertaken in gradual manner.

B] Introduction of Division-wise Incentive/Dis-incentive linked to loss and collection efficiency:

8.1.12 Distribution loss and collection efficiency has always been a major concern for Utility as well as for consumers, as voiced during public hearings. Higher distribution loss and lower collection efficiency affects the Utility cashflow, which ultimately affects consumers in terms of quality and reliability of supply apart from higher tariff to share burden of such inefficient/ sub-optimal performance on these important controllable performance parameters. During 4th Control period, the Commission has set out target of reduction in Distribution loss trajectory from current level of 20.54% (FY2018-19) to 18% (FY 2020-21) and upto 12% (FY 2024-25). However, setting target would not be sufficient unless it is accompanied by specific measures to encourage improvement in collection efficiency and disincentivise poor performance. Licensee and consumers, both can play important role in addressing this challenge. Besides, collection efficiency of some of the consumer categories, particularly at LT level in few circles/division is very low (below 80%) leading to increase in receivables year after year. Though the Regulatory Accounting for the Distribution Licensees is on accrual basis, the inefficiency in receivables adversely impacts the cash flow and the functioning of the

Distribution Licensee. All the consumers are required to bear effects of these systemic inefficiencies.

8.1.13 There are large variations in performance on these parameters across circles/divisions. For example, loss level at sub-distribution level (below 11 kV /LT level) varies from 11.5% to as high as 42.5% with average loss level of around 20%. As per statistics for FY 2018-19, there are around 10 circles with sub-distribution (below 11 kV/LT level) loss level (< 15%), around 15 circles with loss level (in range of 15% to 20%) and around 19 circles with loss level (>20%). Besides, even within circles with loss level <15%, there are divisions with higher loss levels. A part of this loss can be attributed to commercial loss, apart from technical loss.

8.1.14 In this context, the Commission notes the judgment of Hon'ble Bombay High court dated 11 Feb 2004, which has upheld levy of T&D loss charge, linked to T&D loss level in the past. Relevant extracts of the said Judgment is as follows:

> *"29. The Commission appears to have made a sincere effort for improving the social culture and ethos and encouraging the consumers to report thefts of power which happen to their knowledge. After analysing the data carefully, the Commission has noted that in certain areas of the State, T & D losses are much higher than the other areas. This would probably be in account of higher theft of electricity in certain pockets. Certain areas have reported much lesser T & D losses probably on account of better culture in the Society and less thefts. The Commission has also noted that it will be improper to require the consumers in areas which show better compliances to pay for the thefts by the consumers in other areas which show less compliances and higher thefts. The Commission has therefore, proposed that it would be proper to fix higher energy charges in less complying areas than the energy charges in better complying areas". The Commission has proposed to do this by fixing basic fixed tariff and additional variable charge on account of T & D losses. in an area where T & D losses are more, probably on account of theft, variable T & D charges would be more and in better complying areas the variable charge would be less. This would achieve two purposes. Firstly, the consumers would know that they are required to pay more for higher T & D losses on account of thefts and they would report thefts of neighbours. Secondly, it would help in improving culture of the society wherein the consumer would know that he would be required to pay less if he and his neighbours accurately report the consumption.*
>
> *30. We are inclined to ignore the criticism that the Commission has proposed to do something which has not been done before. When a first precedent is made, it is always new. It breaks path from the existing traditions. Law and Society are not static, they change. New remedies must be found for new menaces. An effort to find a remedy for a new growing wrong of electricity theft cannot be criticised on the ground that the approach is unorthodox and the remedy has never been tried before. If the method adopted on experience is proved to be ineffective, it can be modified in future and we have no doubt that*

the Commission would do so in future but we cannot prevent adoption of the new method only on the ground that it was not done before."

8.1.15 The Commission also notes that in the past, load shedding protocol or reliability charge measures were implemented based on Division wise Distribution Loss and Collection Efficiency. However, with surplus power situation in the State, Load Shedding is no more relevant and hence, Distribution and Collection Loss is no longer relevant for consumers as irrespective of loss level, consumer are not subjected to load shedding or there is no differentiation in tariff approved by the Commission. In order to create social awareness about the losses, as upheld by the Bombay High Court, there is an option of introducing incentive/disincentive mechanism based on LT Distribution Loss and LT Collection efficiency at Division level. Under that mechanism consumers under Division having losses above threshold limit could be subjected to higher tariff and those in Division having lower losses may get discount in Tariff.

8.1.16 Meanwhile, for reducing Distribution Loss, the Commission has already stipulated trajectory in this Order. For remaining part i.e. Collection Efficiency, the Commission is also inclined to provide a trajectory. Regulation 23.3 of MYT Regulations 2019 emphasizes improvement of collection efficiency and reduction in arrears/receivable from beneficiaries/consumer as some of the parameters for checking financial prudence. Further, Regulation 22.2, empowers the Commission to disallow a part of the ARR, as an efficiency measure, if it finds the exercise of such prudence and measures for improvement in performance on this count by Licensee have been deficient.

8.1.17 The Commission notes that MSEDCL in its submission has reported LT collection efficiency for FY 2018-19 as 92.74% and for FY 2019-20, MSEDCL has estimated same at lower level of 89.58%. Such deteriorating performance is not acceptable. Hence, the Commission is laying downing following trajectory for improvement in LT collection efficiency:

Year	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024 - 25
LT Collection Efficiency	93.50%	94.00%	94.50%	95.00%	95.50%

8.1.18 In case, MSEDCL fails to achieve above targets, the Commission may reduce 1% RoE of Supply Business and at the same time if it is able to improve collection efficiency 1% more than the target specified above, MSEDCL would be get 1% more RoE on

Supply Business.

8.1.19 The Commission at present has only introduced incentive/dis-incentive mechanism for MSEDCL. The Commission is aware that the situation cannot improve, without the proactive participation of the consumers and thus expects co-operation from the consumers. In order to garner support of consumers to achieve the envisaged loss reduction trajectory and improvement in its collection efficiency, the Commission may introduce LT Distribution and Collection loss-based tariff differential at Division level in Mid Term Review Order.

C] Reduction in Tariff for Industries and Commercial categories:

8.1.20 The Commission has taken note of the views expressed during the public consultation process that the MSEDCL tariff for industries is considerably higher than that of industries in neighbouring States. The price of electricity, both in absolute and in relative terms, is an important factor in the competitiveness of industry. With the increase in availability of power (generation) in the State, a robust transmission network for a reliable supply and with a projected revenue surplus, the Commission deems it fit to reduce the overall tariff by reducing the Energy Charges, albeit with a marginal increase in Fixed Charges. Further, the Commission has introduced kVAh based metering/billing for HT consumer categories in the 4th Control Period. For LT consumers with contract demand/sanctioned load more than 20 kW, kVAh based metering/billing is expected to be introduced at the time of MTR. The Commission has also ensured that the benefit of PF incentive earlier enjoyed by eligible consumers/consumer categories is adequately reflected while re-designing Energy Charge component of the Tariff for such categories. Besides, Fuel Cost Adjustment as prevalent on the date of issuance of the Order is also merged into Energy Charge and accordingly, there is significant reduction in Energy Charge for these consumers as against prevalent Tariff component of Energy Charge including FAC component. In addition, the Commission has continued the concessions on billing demand for steel and Ferro alloy industries and has introduced Rebate on incremental consumption and Bulk Supply Rebate linked to consumption (with a reverse telescopic slabs), which would further benefit such industrial and commercial category consumers, subject to stipulated conditions. Apart from reducing the tariff of Industrial and Commercial categories, these incentives will also avoid the creation of sub categories (Ferro and steel industry) in the Industry category.

8.1.21 It is envisaged that the overall average price of electricity for industry would be significantly lower than the prevailing prices, and that the ABR for industry (HT and

LT) would reduce by around 10%. In addition, the Commission has introduced concept of Rebate on incremental consumption above threshold value to promote additional consumption which will benefit utilisation of stranded capacity and incremental revenue earned by Utility through such measure would in turn benefit all consumers at large. Such rebate would also be available for partial open access consumers and to new consumers added into the system, subject to conditions as stipulated.

D] Tariff for domestic category:

8.1.22 The tariff for domestic category is below ACoS, which needs to be increased gradually. However, the Commission has reduced Energy Charges for domestic/residential consumers particularly for consumers with consumption below 100 units per month, and only marginal increase for consumption upto 300 units per month, with marginal increase in Fixed Charges for all the consumers. Further, the Commission has retained the benefit of telescopic slabs, which will benefit all domestic consumers. In addition, the Commission has done away with slab of 500 to 1000 units and above 1000 units and created slab above 500 units consistent with that prevalent for Mumbai distribution licensees.

8.1.23 During the public hearings, many consumers pointed out the differentiation between Urban and Rural Areas in terms of investment in capex schemes and delays in accruing benefit of higher capitalization scheme in rural areas as compared to urban areas. This has unintended fallouts in terms of returns on the investment. It is generally expected that a higher investment in infrastructure caters to a higher quantum of power handling. This in turn needs to be reflected in recovery from those areas where a higher capital cost is incurred. This recovery cannot be solely dependent on the consumption pattern as the expenditure and the associated costs are fixed in nature. Such distinction due to capital cost needs to be reflected in terms of tariff differentiation as well. The Act and MYT Regulations, 2019 allow for differentiation or categorisation for the purpose of tariff based on geographical position of the Area. Further, SOP Regulations have recognised the distinction in performance standards for Class-I cities, Urban Areas and Rural Areas. As urban areas get comparatively better quality of supply than that in rural area, they need to pay slightly higher charges than rural area. Therefore, to start with, the Commission is introducing Additional Fixed Charge of Rs 10 per connection per month to be applicable for LT-Domestic category consumers in Urban Divisions of MSEDCL . However, to make further distinction in terms of tariff pricing, the Commission opines that it would require more detailed analysis of reliability indices across circles/divisions and of other service parameters in Urban/Rural Areas. The

Commission shall consider the same at the time of MTR, if deemed appropriate, based on comprehensive study and due consideration to other factors influencing performance.

E] Protecting the interest of Powerloom industry:

8.1.24 During the proceedings, the Commission has received a number of suggestions for relaxation in tariff rise for Powerlooms considering present economic state of their operations. It is understood that, out of 24 lakh Powerlooms in India, around 8 lakh are in Maharashtra. These provide direct employment opportunities for nearly 10 lakh persons and around 50 lakh persons are dependent on the Powerloom business. A separate category for powerloom was introduced in June 2015 through MYT Order for 2nd Control Period. Further, anomaly was pointed out during public hearing that Energy Charge component of Tariff for Powerloom (> 20 kW) is higher than Energy Charge component of Tariff applicable for LT-Industry (General)(> 20kW). Hence, in order to avoid such un-intended anomalies, while rationalising and reducing the number of tariff categories, the Commission has proposed to merge LT-Industry(General) and LT-Industry (Powerloom) sub-categories, however, lower tariff (discount/rebate) of (2.5%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for Powerloom as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.

F] Encouragement to Cold Storages:

8.1.25 The Commission recognizes that cold storages play an important role in various segments of economic activities for preserving the nutritional and economic value of various products and commodities such as agricultural produce (fruits/vegetables), dairy products, meat and fish products, pharmaceuticals and vaccines, horticultural products, beverages, etc. Cold storages are an important link in the chain for adding value and reducing the large wastage of agricultural and allied products by expanding the scope for storage and sale, with or without further processing, for local or export markets. Accordingly, under earlier Order at the time of MTR, the Commission has broadened the tariff treatment of cold storages and classified them in two categories, namely (a) Cold Storages for Agriculture Products; processed or otherwise and (b) Cold Storages for other purposes. While the tariff of Agriculture – Others (Metered) category was extended for Cold Storages for Agriculture products, the latter was covered under the Industry instead of the Commercial category as prevalent then. However, there had been demand from many stakeholders during public hearing to further clarify the scope of the term ‘agriculture products processed or otherwise’, to remove any ambiguity or

interpretation with reference to 'Agriculture produce as defined under APMC Act, 1963 – processed or otherwise'. The Commission has accepted the suggestion and the applicability conditions under Tariff Schedule has been modified accordingly.

G] Lower Tariff for Government Hospitals and Educational Institutions:

8.1.26 The Commission appreciates that there is a merit in having separate consumer category consisting of all Government Educational Institutions and Hospitals/Health Centres. Accordingly, the Commission continuing with its approach under earlier Orders has maintained the tariff differentiation for two sub-categories within Public Services i.e. (A) Government Educational Institutions and Hospitals and (B) Other Public Services. The Commission has approved a lower tariff for the former sub-category.

H] Public Sanitary/ public convenience facilities:

8.1.27 Public sanitation and public convenience facilities is crucial in maintaining public health, hygiene that aid in Swaccha Bharat initiatives undertaken by Municipalities and Urban local bodies. Therefore, the Commission has decided to classify these activities for purpose of tariff applicability under Public Service (Govt), category and expand the scope of applicability of tariff under this category to cover such public sanitation and public convenience facilities, which would benefit consumers/consumption for these categories. The applicable Tariff for this category is below Average Cost of Supply.

I] Domestic Water Supply

8.1.28 Considering the difficulties and challenges faced with regard to providing adequate water, particularly Rural Water Supply schemes in the rural areas, Public Water Works need to be facilitated and the tariff for this category has been maintained below the ACoS.

J] Metro / MonoRail/Railways

8.1.29 The Commission notes the ongoing development of Metro rail services in Maharashtra as a means of mass public transportation. Under earlier MTR Orders, the Tariff for such public transportation services (including Railway traction) was kept below the HT-Industrial tariff around ACoS. Continuing with similar approach in this order as well, the Commission has ensured that the Tariff/Energy Component of Tariff is below that applicable for HT-Industry category and around ACoS.

K] Payment discipline:

8.1.30 Based on the statistics presented for FY 2017-18 and FY 2018-19, the Commission notes that in respect of few consumer categories (viz. LT-AG, LT-PWW and LT-Streetlight), the collection efficiency is far lower and share of increment in yr-to-yr receivables is significantly higher. Tariff (Average Billing Rate) for these consumer

categories is also below Average Cost of Supply thereby resulting in significant burden on cashflow of Utility and impacts the all consumer segments in the long run. The Commission is concerned about the persistent delays in payments/ part payment by few consumers in these categories. While the issue of metering/billing for LT-Ag being addressed separately, there is need to remedy the situation and encourage these consumer categories for timely payment of bills as well as for liquidation of its arrears. In order to encourage the same, the Commission is introducing consistent payment rebate of 1% to the consumers in these three categories for consistently making payments within due date.

8.1.31 Such rebate would be monitored and offered on quarterly basis to only those consumers upon maintaining regular payment track record with the Utility. For example, if consumer makes regular payment of its monthly within due date during previous quarter then, such consumer shall be entitled to a rebate of 1% in its next monthly bill amount (excluding taxes and duties) for the subsequent quarter. In case of any default or non-adherence to bill payment within due date in previous quarter, such benefit of rebate shall be withdrawn for the full next billing quarter. However, the consumer shall be entitled to rebate in subsequent quarters in case it maintains payment track record within due date in the previous quarter. In case of consumer having quarterly billing, such scheme shall be monitored on six monthly basis and rebate shall be given in next quarterly bill.

L] Agriculture Metering and Billing:

8.1.32 As per Section 55 of the EA, 2003, Licensees are required to supply power to all consumers through correct meters. However, after even more than a decade, as many as 15 lakh out of 42 lakh (around 35%) agricultural consumers are being supplied through un-metered connections. Further, even in case of metered consumers, dismal state of metering and billing (compared to utility records, meters are present only 27% of metered AG consumers) has been highlighted by AG Working Group in its Report. Under the circumstance, an interim innovative approach using Feeder input based AG group metering and billing scheme will have to be adopted in future. Such approach can be easily implemented for 502 sample feeders that were selected for the study by AG Working Group constituted by the Commission, since the AMR/MRI feeder meter data and mapping of consumers/DTCs, indexing of AG/Non-AG consumers and framework for technical loss assessment on these feeders is already in place. Further, the billing based on Feeder input based Group metering scheme for identified 502 sample feeder shall be subject to ceiling of 3000 hours/HP/annum. Any shortfall/excess in billing in terms of 750 hours/HP/quarter shall be adjusted in subsequent quarters

subject to ceiling of 3000 hours/HP/annum on fiscal yearly basis.

8.1.33 For extending such Feeder based Group metering/billing scheme for all AG consumers across state would require detailed exercise of ensuring regular availability of AMR/MRI data for all feeders, addressing CT/PT errors, communication errors, mapping/indexing of consumers on feeders/DTCs, assessment of technical loss levels on these feeders, validating/updating records through field study and putting in place protocol for publishing feeder-wise energy accounting data in transparent manner in public domain. MSEDCL is directed to submit roadmap and timebound action plan for undertaking such exercise within two months from issuance of the Order. Meanwhile, existing practice of HP based Tariff in case of un-metered AG consumers and meter based Tariff for metered AG consumers (as per prevalent classification of zones) will have to be continued for some time for all other AG consumers connected on Feeders other than identified 502 feeders, subject to approval of roadmap/action plan to extend Feeder input based group metering scheme to cover all remaining feeders for the purpose of AG metering and billing. Once the feeder input based group metering scheme is operationalised to cover all such feeders as per roadmap to be approved, need for continuation of HP based Tariff for un-metered AG consumers or zone-based classification would not arise. The Commission shall review this arrangement at the time of MTR based on progress of feeder-input based Group metering scheme. The Commission has given certain directions to address this important issue.

M] Advice to State Government on subsidy to Agriculture consumers:

8.1.34 The Commission recognises the need to provide support to the Agriculture sector. Therefore, it has consistently kept the tariff for Agricultural consumers very low as compared to the ACoS. The Commission is aware of the fact that the policies mandate that the cross subsidy in tariffs between the categories need to be gradually reduced and finally brought in the range of +/- 20%. However considering the difficulties of the Agriculture consumers, the Commission is continuing with a high tariff cross subsidy for Agriculture. The Agricultural tariff is only around 50% of the ACoS. In addition, GoM is providing a substantial subsidy against even this lower tariff under Section 65 of the EA, 2003. The Commission has noticed that despite the subsidy the residual recovery from the Agriculture sector is low as only part of the billed amount is recovered leading to increase in arrears. Agriculture consumption is approximately 24% of total electricity sales of MSEDCL. The lower recovery here severely affects the finances of the Utility. The Commission opines that it is necessary for the Government to address the issue seriously and perhaps be more focussed in its distribution of subsidy. There is a possibility that the time has come for Government to consider

categorisation of Agriculture subsidy based on some transparent objective criteria.

N] Facilitative framework for Grid Support Charges for RTPV (net metered):

8.1.35 During public hearings, several consumers, developers and other stakeholders made representations regarding MSEDCL's proposal to levy Grid support charge on solar rooftop PV system (net metered) and argued against excessive levy and labeling it as a retrograde step that will hamper the future growth and deployment of RTPV systems in Maharashtra. On the other hand, some other consumers/consumer organisations favoured levy of such Grid Support Charges upon ensuring its reasonableness and assuring certainty of regulatory principle for determination of the same. The Commission is conscious of the fact that solar rooftop development is in nascent stage of development and national/state level policies favour its accelerated deployment; as also Commission's Regulations for Grid Interactive RTPV development supports the cause.

8.1.36 As per statistics presented by MSEDCL more than 460 MW of RTPV systems (245 MW at HT level and 215 MW at LT level) have been deployed within MSEDCL area as on January 2020 and several other RTPV systems are at an advanced stage of deployment or in pipeline. The Commission firmly believes that orderly development of the grid interactive RTPV system with certainty of regulatory and pricing principles is in the overall interest of the RTPV sector, utility and consumers at large. Accordingly, the Commission has formulated Regulations for deployment of Grid interactive RTPV systems and also specified conditions for applicability and determination of the Grid Support Charges.

8.1.37 Under this Order, the Commission has elaborated principles and basis for determination of various components of costs associated with Grid Support in case of RTPV systems and its applicability in certain cases with prospective effect subject to conditions outlined therein. Further, as promotional measure, the Commission has allowed only partial recovery of the Grid Support costs.

O] Stabilisation (buffer) for Fuel Cost Adjustment:

8.1.38 As per MYT Regulations, 2019, the aggregate gain or loss to a Distribution Licensee on account of variation in cost of fuel, power purchase, and inter-State Transmission Charges shall be passed through under the Fuel Adjustment Charge (FAC) component of the Z-factor Charge (ZFAC), as an adjustment in its tariff on a monthly basis. In the recent past (February 2020), the FAC component has increased significantly reaching

almost Rs 1 per unit for some consumer categories. Volatility in variable cost component of monthly bills on account of FAC adjustment, though un-avoidable due to variation in fuel costs and change in power purchase mix, should be minimal from consumer perspective.

8.1.39 During the Public hearings, many suggestions were received on this issue and the consumers requested that an appropriate revised mechanism should be put in place wherein there is minimum impact of FAC felt by the consumers. The Commission opines that this is a very reasonable expectation from the Consumers. To alleviate this issue to the extent possible and to minimise the impact of FAC, the Commission, while approving this Tariff Order, has built-in annual fuel cost escalation. The Commission is fully aware that in spite of approving this annual escalation rate, the possibility of FAC cannot be ruled out completely since this escalation covers only some sources that form a part of total FAC i.e. the power purchase cost primarily of the PPA's covered under section 62 of the EA, 2003.

8.1.40 To ensure stabilisation of tariffs to the extent possible, and to minimise the variation in FAC, the Commission has devised a mechanism and approved constitution of a FAC Fund with Distribution Licensee which can be built up over a period of time to be used for payment of FAC bills of Generating companies without immediately loading it on consumers. Detailed modalities of operationalising FAC Fund mechanism and for sharing relevant accounting information in transparent manner, the Commission has issued necessary directions, which are covered in relevant sections of the Order.

P] Improvements in Customer Service and consumer outreach:

8.1.41 The Commission notes and appreciates several consumer centric IT initiatives undertaken by MSEDCL in the recent past such as Consumer Care Centres, Go-Green Initiative, SMS alerts, automated meter reading/billing, RF-DCUs pilots, Substation automation project, Cloud project for faster response etc. Many of these initiatives have facilitated in faster handling & resolution of consumer calls/grievances, reducing complaints of non-receipt of bills, facilitating faster bill payment options for consumers, improvements in attending to line/cable faults, aligning back-end infrastructure and support team management functions etc.

8.1.42 However, the Commission has also taken note of several difficulties and challenges expressed by consumers regarding redressal of their grievances qua metering, billing and payment issues during public process. The Commission has advised MSEDCL to further improve upon their consumer outreach activities and extend use of technological solutions through mobile alerts, e-bills through emails and more payment options to

facilitate online payment & other modes of payment gateways. The Commission has also issued necessary directions as regards compliance to standard of performance and web publication key performance parameters on regular basis.

8.1.43 In general, the movement of tariffs towards the ACoS has been maintained such that inter-class cross-subsidy is reduced over the period. The Commission has also tried to ensure that even the intra-class cross-subsidy, i. e., the cross-subsidy provided by consumers in other slabs within the same category, is reduced, by reducing the difference between the highest and lowest slab rates.

8.1.44 The Commission therefore with the above key objectives has undertaken the Tariff determination process. The Commission observes that the inflation within our economy is close to 6% annually however, the Commission has endeavoured to keep the impact of Tariff to the minimal possible with the aim and object to promote economic development and socio- economic change. In fact, as compared to existing tariff (including FAC), there is reduction in tariff across most of the consumer categories. Further, long term tariff design over 4th Control Period has been adjusted in such a manner that there is marginal variation over the period so that no tariff category suffers significant tariff variation over the period, which will help consumers plan its energy related costs/other measures in a planned manner.

8.1.45 The Commission believes that, if the goal of speedy economic growth combined with 24 x 7 electricity for all is to be achieved, it has to be appreciated that there are upward pressures on electricity tariffs because of likely increases in input costs and the need to invest in strengthening and augmenting the network and other infrastructure. Commission has striven hard to address concerns of industrial and commercial consumers that tariff in the state, are relatively high compared to other neighbouring states. By ensuring significant reduction in the tariff for these consumer category vis-à-vis their existing tariff (including FAC), it may be noted that these categories will continue to be cross-subsidising categories during 4th Control Period, albeit at a lower rate, in order to cross-subsidise agriculture and lower end residential consumers so as to keep their tariffs relatively low and affordable.

8.1.46 Merging or elimination of existing consumer categories can be done considering the End Use, Energy Consumption, Socio-Economic Profile, Consumption Pattern/ Loan Factor etc. These factors have been examined by the Commission while deciding on merging of categories.

8.1.47 Merging of HT VIII (B) – Temporary Supply Others into HT II – Commercial

8.1.48 HT VIII (B) – Temporary supply Others has around 16 number of consumers with sale of 6 MU. HT VIII (B) – Temporary supply Others is not associated with any end usages as it is temporary in nature. As the electricity supply under HT VIII (B) – Temporary supply Others category used for purposes which are like those in the HT II Commercial category, the Commission has merged the HT VIII (B) – Temporary supply Others into HT II – Commercial. However, in order to maintain difference in rate on account of nature of supply i.e. temporary vs permanent supply, temporary supply consumer shall pay 1.5 times fixed charges and 1.25 times energy charge applicable for the category.

8.1.49 Merging of LT VIII – Advertisement & Hoardings into LT II – Commercial

8.1.50 LT VIII – Advertisement & Hoardings and LT II – Commercial category of consumers are involved into similar end use i.e. commercial activities. As both have similar end use, the Commission merges the LT VIII – Advertisement & Hoardings into LT II – Commercial as the later one has broader coverage of consumers who are into Commercial activities.

8.1.51 Merging of LT VII (A) – Temporary Supply (Religious) into LT I (B) – Residential

8.1.52 LT VII (A) – Temporary supply (religious) has around 1993 number of consumers with sale of ~3 MU. LT VII (A) – Temporary supply (religious)is not associated with any particular type of end usages as it is temporary in nature. As LT VII (A) – temporary supply (religious) category is consuming small quantum of energy, the Commission merges the LT VII (A) – Temporary supply (religious)into LT I (B) – Residential category. However, in order to maintain difference in rate on account of nature of supply i.e. temporary vs permanent supply, temporary supply consumer shall pay 1.5 times fixed charges.

8.1.53 Merging of LT VII (B) – Temporary Supply (Others) into LT II – Commercial

8.1.54 LT VII (B) – Temporary supply (others) has around 7610 number of consumers with sale of 21 MU. LT VII (B) – Temporary supply (others) is not associated with any particular type of end usages as it is temporary in nature. As the electricity supply under LT VII (B) – Temporary supply (others) category is used for purposes which are similar to those in the LT II Commercial category, the Commission merges the LT VII (B) – Temporary supply (others) into LT II – Commercial category. However, in order to maintain difference in rate on account of nature of supply i.e. temporary vs permanent supply, temporary supply consumer shall pay 1.5 times fixed charges and 1.25 time energy charge applicable for the category.

8.1.55 Merging of LT IX – Crematorium and Burial Grounds into LT I (B) – Residential

8.1.56 LT IX – Crematorium and Burial Grounds has around 248 number of consumers with sale of 2 MU. LT IX – Crematorium and Burial Grounds category of consumers are not associated with any commercial or industrial activity LT IX – Crematorium and Burial Grounds category is consuming small quantum of energy and it has tariff rates similar to LT I (B) – Residential. In view of the same, the Commission merges LT IX – Crematorium and Burial Grounds into LT I (B) – Residential.

8.1.57 Merging of HT VIII (A)- Temporary Supply Religious into LT I (B) – Residential

8.1.58 HT VIII (A)- Temporary Supply Religious has around 1 number of consumers with sale of ~0 MU. HT VIII (A)- Temporary Supply Religious category of consumers are not associated with any commercial or industrial activity HT VIII (A)- Temporary Supply Religious category is consuming small quantum of energy and it has tariff rates similar to LT I (B) – Residential. In view of the same, the Commission merge HT VIII (A)- Temporary Supply Religious into LT I (B) – Residential.

8.1.59 Based on the above changes, the summary of the categories merged by the Commission in this Order is given below:

Existing Category	Proposed Category
HT VIII(B) - Temporary Supply (others)	HT – Commercial
LT V - Advertisement and Hoardings	LT - Non-Residential or Commercial
LT VII - Temporary Supply (Religious)	LT – Residential
LT VII - Temporary Supply (Others)	LT - Non-Residential or Commercial
LT VIII - Crematoriums and Burial Grounds	LT – Residential
HT VIII (A) HT – Temporary Supply Religious	LT – Residential
LT-V(A) – Power Loom and LT-V(B) - Industry (General)	LT-Industry

8.2 Applicability of Tariffs

8.2.1 The revised Tariff as per this Order shall be applicable from 1 April, 2020. Where the billing cycle of a consumer is consumer is different from the date of applicability of the revised tariffs, the tariffs should be applicable for the consumption on pro-rat basis. The bills for the respective periods as per the existing and revised tariffs shall be calculated based on the pro rata consumptions (units consumed during the respective periods arrived on the basis of average unit consumption per day multiplied with number of days in the respective period falling under the billing cycle).

8.2.2 The Commission has determined the revenue from the revised tariff as if they were applicable for the entire year. Any shortfall or surplus in actual revenue vis-à-vis the approved revenue requirement will be trued-up during Final True-up, as specified in the MYT Regulations, 2019.

8.3 Average Cost of Supply

8.3.1 Considering the Wires and Supply ARR for the Ensuing Years, past period adjustments and Energy Sales as approved by the Commission, the following Table summarises the approved ACoS of MSEDCL for FY 2020-21 to FY 2024-25.

Table 8-1: Projected ARR and ACoS for FY 2020-21 to FY 2024-25, as approved by the Commission (Rs. Crore)

Particulars	Unit	Reference	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	SUM over 4th control period
Sales	MU	(a)	110,622	115,063	119,719	124,602	129,723	**5,99,730**
Net ARR	Rs. Cr	(b)	80,163	81,721	84,021	86,298	88,910	**4,21,113**
Revenue at Existing Tariff (Including FAC Component)	Rs. Cr	(c)	85,021	88,667	92,479	96,504	1,00,738	**4,63,409**
Revenue Gap/(Surplus)	Rs. Cr	(d) = (b) - (c)	(4,858)	(6,946)	(8,458)	(10,206)	(11,828)	**(42,296)**
Past Period Gap	Rs. Cr	(d1)	20,045	-	-	-	-	**20,045**
Cum. Revenue Gap/(Surplus) for Control Period	Rs. Cr	(d2)	15,196	8,250	(209)	(10,414)	**(22,242)**	
ACoS	**Rs/kWh**	**(e) = (b)/(a) x 10**	**7.25**	**7.10**	**7.02**	**6.93**	**6.85**	

8.4 Balancing of ABR and ACoS for Revenue Recovery over the Control Period

8.4.1 From above Table it can be observed that, the overall Standalone Revenue Surplus of Rs. 42,296 Crore is not evenly spread across the financial years of the Control Period. The revenue surplus in FY 2020-21 of Rs. 4858 Crore, which, when combined with the

net impact of past period Rs. 20,045 Crore works out to an approved Revenue Gap of Rs. 15,196 Crore for FY 2020-21. However, in the subsequent FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 the approved Revenue Surplus is Rs. (6,946) Crore, Rs. (8,458) Crore, Rs. (10,206) Crore and Rs. (11,828) Crore, for respective years. Thus, cumulative revenue surplus at Existing Tariff (incl. FAC) is estimated to be around Rs (22,242) Crore This variation from year to year is also evident in the ACoS figures shown in Table _ below.

8.4.2 However, while determining the tariff over the Control Period, the Commission has to ensure that several objectives are met simultaneously, such as

(a) revising the tariff to meet the approved ARR for the respective years alongwith recovery of approved past period gaps (incl. regulatory asset),

(b) smoothen the retail tariff revision trajectory to protect any consumer category from tariff shock,

(c) encourage efficient use consumption by industry, commerce, domestic, agriculture and various other consumer segments and to ensure that tariff rates are competitive to continue to attract investment in the state,

(d) to meet the goal of gradual reduction in cross-subsidy levels.

8.4.3 Considering these different objectives harmoniously, the Commission by re-adjusted the projected revenue surplus and spread the overall Revenue Surplus of Rs. (22,242) Crore more evenly over the 4th Control Period. It has reworked the modified ARR for revenue recovery and the modified ACoS thereof for each year accordingly, as summarised below:

Table 8-2: Modified ARR Recovery and Modified ACoS for 4th Control Period, as approved by the Commission (Rs. Crore)

Particulars	Units	Formula	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	SUM over 4th control period
Sales (Incl. of DF Sales)	MU	(a)	1,10,622	1,15,063	1,19,719	1,24,602	1,29,723	5,99,730
ARR	**Rs Cr**	**(b)**	**80,163**	**81,721**	**84,021**	**86,298**	**88,910**	**4,21,113**
Revenue at Existing Tariff (Including FAC Component)	Rs Cr	(c)	85,021	88,667	92,479	96,504	1,00,738	**4,63,409**
Revenue Gap/(Surplus)	Rs Cr	(d)=(b)-(c)	(4,858)	(6,946)	(8,458)	(10,206)	(11,828)	**(42,296)**
ACoS	**Rs/unit**	**(e)= (b)/(a) x 10**	**7.25**	**7.10**	**7.02**	**6.93**	**6.85**	

Particulars	Units	Formula	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	SUM over 4th control period
ABR at Existing Tariff	Rs/unit	(f)= (c)/(a) x 10	7.69	7.71	7.72	7.75	7.77	
PU Revenue Gap/(Surplus)	Rs/unit	(g)= (d)/(a) x 10	(0.44)	(0.60)	(0.71)	(0.82)	(0.91)	
Cum. Revenue Gap for past period incl. RA & Change in Law Impact & Carrying Cost (adjust)	Rs Cr	(h)	4,011	4,011	4,011	4,011	4,011	**20,054**
Total ARR (to be recovered)	**Rs Cr**	**(i)=(b)+(h)**	**84,174**	**85,732**	**88,031**	**90,309**	**92,921**	**4,41,167**
PU Adjustment of Cum. Revenue Gap of past period	Rs/unit	(j)=(h)/(a) x 10	0.36	0.35	0.34	0.32	0.31	
Modified ACoS	Rs/unit	**(k)=(e) + (j)**	**7.61**	**7.45**	**7.35**	**7.25**	**7.16**	
Revenue Gap/(Surplus) incl. adjustment of past period Revenue Gaps/ (Surplus) over Control Period	Rs Cr	**(l) = (h)+(d)**	(847)	(2,936)	(4,448)	(6,195)	(7,817)	(22,242)
Incremental Revenue at Proposed Tariff	Rs Cr	**(m)**	(4,103)	(4,267)	(4,440)	(4,621)	(4,811)	(22,242)
Projected Revenue at Proposed Tariff	Rs Cr	**(n)=(c)+(m)**	**80,918**	**84,400**	**88,039**	**91,883**	**95,927**	**4,41,167**
PU Revision in Tariff	Rs/unit	(o)=(m)/(a) x 10	(0.37)	(0.37)	(0.37)	(0.37)	(0.37)	
PU ABR (revised)	**Rs/unit**	**(P)=(f) + (o)**	**7.31**	**7.34**	**7.35**	**7.37**	**7.39**	
Revision in Tariff								
PU ABR	**Rs/unit**	**7.90#**	**7.31**	**7.34**	**7.35**	**7.37**	**7.39**	

(Note: # approved ABR (6.85 Rs/u) for FY 2019-20 as per MTR Order Case 195 of 2017, plus FAC (1.05 Rs/u) as on Feb 2020)

8.4.4 ARR including past period gaps and Modified ACoS has been worked out as above solely for the purpose of smoothening the revenue recovery while ensuring that, there is no significant variation in retail tariffs of any consumer category in any particular year over the 4th Control Period, and benefit of reduction in tariff vis-à-vis Existing Tariff (incl. FAC) is passed onto all consumer categories while maintaining the balance of all the objectives outlined above and in accordance with the regulatory principles practiced in the past and in conformity to the MERC MYT Regulations, 2019. Accordingly, overall objective of gradually reducing cross-subsidy levels is also met to large extent. While effecting tariff recovery based on this ARR including past period gaps, Modified ACoS and composite ABR thereof, the Commission has also taken into consideration the carrying / (holding) cost impact of the projected under/over-recovery for each year.

8.5 Key Consideration for Tariff Design

8.5.1 The Commission has ensured a gradual reduction in the cross-subsidy levels across all consumer categories in the 4th Control Period as compared to the levels determined in the previous MTR Order for FY 2019-20.

8.5.2 As against MSEDCL's projected total Revenue Gap of Rs. 60,313 Crore (without considering the y-o-y revenue of FAC Component) for the 4th Control Period, which is approximately 13% of its projected cumulative ARR, the Commission has determined the total Revenue Surplus of Rs. (22,242) Crore considering FAC component of revenue prevalent as on February 2020. This translates to reduction in tariff by around (3.2%) on an aggregate basis vis-à-vis Existing Tariff (incl. FAC).

8.5.3 MSEDCL had proposed an increase in Fixed Charges and Energy Charges for various categories in order to bridge the Revenue Gap over the Control Period. Increase in ACoS proposed by MSEDCL translates to 5.80% (FY2020-21), 3.25% (FY2021-22), 2.93% (FY2022-23), 2.61% (FY2023-24) and 2.54% (FY2024-25). MSEDCL has proposed to meet such increase in ACoS, by way of increase in Energy Charge and Demand Charge, revision in definition of Billing Demand, curtailment/rationalisation of incentives/rebates, introduction of Grid Support Charges, revision in Cross-subsidy Surcharge, Additional Surcharge and several other measures for performance improvement over the 4th Control Period from FY 2020-21 to FY 2024-25.

8.5.4 While determining the revised tariffs, the Commission has to consider the revision in the Demand Charges, Energy Charges and Wheeling Charge components and their impact on the overall ABR for any particular consumer category while keeping in view the principles outlined in the Tariff Policy, 2016 and MYT Regulations, 2019 for the reduction in the cross-subsidy levels.

8.5.5 For adjustment of projected revenue surplus, the Commission has ensured reduction in Energy Charges vis-à-vis prevalent Energy Charge (including FAC) across most of the categories and more specifically for HT-Industrial and HT-Commercial categories, where kVAh based billing has been introduced and benefit of PF incentive availed by these categories in the past, will no longer be available in the 4th Control Period.

8.5.6 Besides, as elaborated in the subsequent paragraphs, the regulatory principle necessitate wheeling charge should be determined so as to ensure recovery of approved wheeling ARR through wheeling charges, otherwise supply revenue would be cross-subsidising wire business of utility. In the past, there was cumulative under-recovery of wheeling

charges (from FY 2017-18 to FY 2019-20) to an extent of Rs 3288 Crore which alongwith projected increase in wire related costs as approved under Wire ARR needs to be recovered through wheeling charges to be determined over 4th Control Period.

8.5.7 The Commission has ensured recovery of the Wires ARR (including past gaps in recovery of Wire ARR) through Wheeling Charges, and the rationale for determination of Wheeling Charges has been elaborated in Section 8.28. The approved revision in Wheeling Charges has contributed towards meeting the entire Wheeling Cost alongwith past period wires business gaps, thereby further reducing/revising the Energy (Supply) Charge component of the tariff. The Energy (Supply) Charges have been revised such that the resultant ABR for any category is reduced or maintained at the level considering prevalent FAC (as on February 2020) to avoid any tariff shock, and the overall objective of cross-subsidy level reduction is met.

8.5.8 As elaborated in subsequent Sections, an upward revision in Demand Charges/Fixed Charges is necessary since, at their existing level, the revenue recovery from these Charges comprise only around 15% of total revenue whereas fixed cost of operations of licensee is around 55% of its total cost of operation. Thus, revenue though Fixed Charge/Demand Charge cover less than 27% of the Fixed Cost of MSEDCL"s operations. The Commission has approved an increase in Demand Charges / Fixed Charges of around 5% p.a. for FY 2020-21 to FY 2022-23 and 2-3% p.a. for FY 2023-24 and FY 2024-25. The detailed rationale for revision in Demand Charges/Fixed Charges is elaborated in Section 8.7. With proposed revision in Demand/Fixed Charges it is envisaged that revenue through Demand/Fixed Charge component of tariff shall gradually increase from present level of 15% to 18% by 2024-25.

Stabilisation (buffer) for Fuel Cost Adjustment

8.5.9 As per MYT Regulations, 2019, the aggregate gain or loss to a Distribution Licensee on account of variation in cost of fuel, power purchase, and inter-State Transmission Charges shall be passed through under the Fuel Adjustment Charge (FAC) component of the Z-factor Charge (ZFAC), as an adjustment in its tariff on a monthly basis. Relevant part of the MYT Regulation is reproduced below:

> *"10.2 The aggregate gain or loss to a Distribution Licensee on account of variation in cost of fuel, power purchase, and inter-State Transmission Charges, covered under Regulation 9.1, shall be passed through under the Fuel Adjustment Charge (FAC) component of the Z-factor Charge (ZFAC), as an adjustment in its Tariff on a monthly basis, as specified in these Regulations and as may be determined in orders of the Commission passed under these*

Regulations, and shall be subject to ex-post facto approval by the Commission on a quarterly basis:"

8.5.10 Similar arrangement for passing on the variation in fuel and power purchase cost existed in all previous Tariff Regulations of the Commission. Such mechanism is in line with the provision of the EA, 2003 which mandates recovery of the fuel cost in timely manner so that the Distribution Licensee are able to recover their legitimate power purchase cost variation. This has helped regular recovery of power purchase variations without accumulating it till next tariff revision. This provision also addresses the financial/cash flow issue of Distribution Licensee wherein the payment for power purchase is required to be made in timely manner at prevailing cost. At the same time it also helps in reducing carrying cost burden on consumer which otherwise would have to be borne if such monthly levy accumulates and the gap is recovered through tariff revision in MYT or MTR as the case may be. Although, consumers are now well aware of this mechanism, there is general and reasonable expectation that once the tariff is approved by the Commission, to the extent possible, it should remain constant during the year and there should not be large variations due to FAC. The unknown variation in the tariff on account of FAC has adverse financial implications on all the categories especially Industrial and Commercial categories where the impact of FAC is generally higher. Variation in tariff is magnified when there is negative FAC leading to reduction in tariff during a particular month and positive FAC in the immediate next month thereby increasing the tariff.

8.5.11 Variation in FAC is either on account of change in fuel related costs, changes in source of power procurement, alternate source of power procurement or change in mix of power procurement. During the Public hearings, many suggestions were received on this issue and the consumers requested that an appropriate revised mechanism should be put in place wherein there is an minimum impact of FAC felt by the consumers. The Commission opines that this is a very reasonable expectation of the Consumers. To alleviate this issue to the extent possible and to minimise the impact of FAC, the Commission, while approving this Tariff Order, has built-in annual fuel cost escalation. The Commission is fully aware that in spite of approving this annual escalation rate, the possibility of FAC cannot be ruled out completely since this escalation covers only some sources that form a part of total FAC i.e the power purchase cost primarily of the PPA's covered under section 62 of the EA, 2003. To ensure stabilisation of tariffs to the extent possible, and to minimise the variation in FAC, the Commission thinks it fit to approve constitution of a FAC Fund with Distribution Licensee which can be built up over a period of time to be used for payment of FAC bills of Generating companies

without immediately loading it on consumers. Though this action may not ensure zero FAC for all times, the impact of the same is likely to reduce to a large extent.

8.5.12 Therefore, using its powers for Removal of Difficulties under Regulations 106 of MYT Regulations, 2019, the Commission is making following changes in FAC mechanism stipulated under Regulation 10 of MYT Regulations, 2019:

Distribution Licensee shall undertake computation of monthly FAC as per Regulation 10 of the MYT Regulations, 2019 except for treatment to be given to negative FAC as follows:

- Negative FAC amount shall be carried forward to the next FAC billing cycle with holding cost.
- Such carried forward negative FAC shall be adjusted against FAC amount for the next month and balance negative amount shall be carried forward to subsequent month with holding cost.
- Such carry forward of negative FAC shall be continued till the accumulated negative FAC becomes 20 % of monthly tariff revenue approved by the Commission in Tariff Order. In case of MSEDCL such limit shall be Rs.1500 crore . Any accumulated amount above such limit shall be refunded to consumers through FAC mechanism.
- In case such FAC Fund is yet to be generated or such generated fund is not sufficient to adjust against FAC computed for given month, then Distribution Licensee can levy such amount to the consumers through FAC mechanism, upon seeking prior approval from the Commission.

8.5.13 In order to maintain transparency in management and use of such FAC Fund, the Distribution Licensee shall maintain monthly account of such FAC fund and upload it on its website for information of stakeholders. Further, till date, the Distribution Licensees have been levying FAC up to the prescribed limit of 20% of variable component of tariff without prior approval in accordance with the MYT Regulations, 2015, and submitting the FAC computations on a quarterly basis within 60 days of the close of each quarter, for post facto approval. However, as the Commission has now created a FAC fund as stated above to stabilise the increase in fuel prices and power purchase costs, the Commission has modified the FAC mechanism such that the Distribution Licensees shall submit the FAC computations on a monthly basis for prior approval, irrespective of whether FAC is chargeable in a month or whether some amount is accruing to the Fund on account of negative FAC.

8.5.14 The details of the FAC as per the Regulations, shall be submitted by the 15th of the every month prior to the month on which the FAC is proposed to be levied and the Commission will endeavour to decide on the same within 10 days so that the same can be levied from the 1st of the subsequent month. This prior approval will facilitate the addressing of any difficulties that may arise in giving effect to this fund. All the details will be submitted by the Distribution Licensee as is being done for approval of FAC on post facto basis. Thus the FAC to the consumers shall now be levied with prior approval of the Commission.

8.5.15 Based on the experience of implementing this mechanism, during the MTR Process, the Commission may decide to discontinue with prior approval process.

8.5.16 The comparison of the existing tariffs, the tariffs proposed by MSEDCL and the tariffs approved by the Commission, as well as the percentage increase for each consumer category and the cross-subsidy trajectory for the 4th Control Period are given in the Tables below:

Table 8-3: Average Billing Rate (ABR) and Cross Subsidy Trajectory as proposed by MSEDCL for FY 2020-21

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Existing Tariff for FY 2019-20	Proposed Tariff for FY 2020-21	Existing Tariff for FY 2019-20	Proposed Tariff for FY 2020-21		
HT I (A): HT – Industry		8.42	9.04	114%	125%	11%	7%
HT II: HT - Commercial		14.16	15.27	191%	211%	20%	8%
HT III: HT - Railways/Metro/Monorail Traction		8.89	10.57	120%	146%	26%	19%
HT IV: HT - Public Water Works (PWW)		7.49	8.21	101%	113%	12%	10%
HT V: HT - Agriculture		4.27	4.50	58%	62%	4%	5%
HT VI: HT - Group Housing Societies (Residential)		7.76	8.40	105%	116%	11%	8%
HT VIII: HT - Temporary Supply		13.29	16.85	180%	233%	53%	27%
HT IX : HT - Public Services Govt		9.63	10.73	130%	148%	18%	11%
HT IX : HT - Public Services Others		11.65	12.71	157%	175%	18%	9%
HT Total		**8.59**	**9.12**	**116%**	**126%**	**10%**	**6%**
LT I: LT – Residential	**7.24**	7.22	7.21	98%	100%	2%	0%
LT II: LT - Non-Residential		11.79	11.46	159%	158%	-1%	-3%
LT III: LT - Public Water Works (PWW)		4.17	4.18	56%	58%	2%	0%
LT IV: LT - Agriculture Metered		3.74	3.71	50%	51%	1%	-1%
LT V (A): LT - Industry - Power Looms		7.12	7.33	96%	101%	5%	3%
LT V (B): LT - Industry – General		8.61	8.82	116%	122%	6%	2%
LT VI: LT - Street Light		6.58	6.50	89%	90%	1%	-1%
LT VIII: LT - Advertisements and Hoardings		18.05	20.39	244%	282%	38%	13%
LT IX: LT - Crematorium and Burial Grounds		5.04	5.15	68%	71%	3%	2%
LT X- Public Services Govt.		8.71	7.10	118%	98%	-20%	-18%
LT X- Public Services Others		8.85	9.43	120%	130%	10%	7%
LT Total		**6.12**	**6.15**	**83%**	**85%**	**2%**	**0%**

Table 8-4: Average Billing Rate (ABR) and Cross Subsidy Trajectory as proposed by MSEDCL for FY 2021-22

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2020-21	Proposed Tariff for FY 2021-22	Proposed Tariff for FY 2020-21	Proposed Tariff for FY 2021-22		
HT I (A): HT - Industry	7.48	9.04	9.25	125%	124%	-1%	2%
HT II: HT - Commercial		15.27	15.44	211%	207%	-4%	1%
HT III: HT - Railways/Metro/Monorail Traction		10.57	11.00	146%	147%	1%	4%
HT IV: HT - Public Water Works (PWW)		8.21	8.50	113%	114%	0%	4%
HT V: HT - Agriculture Pumps		4.50	4.58	62%	61%	-1%	2%
HT VI: HT - Group Housing Societies (Residential)		8.40	8.81	116%	118%	2%	5%
HT VIII: HT - Temporary Supply		16.85	17.76	233%	238%	5%	5%
HT IX : HT - Public Services Govt		10.73	11.07	148%	148%	0%	3%
HT IX : HT - Public Services Others		12.71	12.98	175%	174%	-2%	2%
HT Total		**9.12**	**9.31**	**126%**	**124%**	**-2%**	**2%**
LT I: LT - Residential		7.21	7.47	100%	100%	0%	4%
LT II: LT - Non-Residential		11.46	11.72	158%	157%	-2%	2%
LT III: LT - Public Water Works (PWW)		4.18	4.30	58%	58%	0%	3%
LT IV: LT - Agriculture Metered		3.71	3.85	51%	51%	0%	4%
LT V (A): LT - Industry - Power Looms		7.33	7.52	101%	101%	-1%	3%
LT V (B): LT - Industry – General		8.82	9.23	122%	123%	2%	5%
LT VI: LT - Street Light		6.50	6.61	90%	88%	-1%	2%
LT VIII: LT - Advertisements and Hoardings		20.39	21.31	282%	285%	3%	5%
LT IX: LT - Crematorium and Burial Grounds		5.15	5.28	71%	71%	-1%	2%
LT X- Public Services Govt.		7.10	7.37	98%	99%	1%	4%
LT X- Public Services Others		9.43	9.82	130%	131%	1%	4%
LT Total		**6.15**	**6.40**	**85%**	**86%**	**1%**	**4%**

Table 8-5: Average Billing Rate (ABR) and Cross Subsidy Trajectory as proposed by MSEDCL for FY 2022-23

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2021-22	Proposed Tariff for FY 2022-23	Proposed Tariff for FY 2021-22	Proposed Tariff for FY 2022-23		
HT I (A): HT - Industry		9.25	9.46	124%	123%	-1%	2%
HT II: HT - Commercial		15.44	15.60	207%	203%	-4%	1%
HT III: HT - Railways/Metro/Monorail Traction		11.00	11.42	147%	148%	1%	4%
HT IV: HT - Public Water Works (PWW)		8.50	8.78	114%	114%	0%	3%
HT V: HT - Agriculture Pumps		4.58	4.66	61%	61%	-1%	2%
HT VI: HT - Group Housing Societies (Residential)		8.81	9.24	118%	120%	2%	5%
HT VIII: HT - Temporary Supply		17.76	18.72	238%	243%	6%	5%
HT IX : HT - Public Services Govt		11.07	11.41	148%	148%	0%	3%
HT IX : HT - Public Services Others		12.98	13.25	174%	172%	-1%	2%
HT Total		**9.31**	**9.49**	**124%**	**123%**	**-1%**	**2%**
LT I: LT - Residential	7.70	7.47	7.73	100%	100%	0%	3%
LT II: LT - Non-Residential		11.72	11.94	157%	155%	-1%	2%
LT III: LT - Public Water Works (PWW)		4.30	4.41	58%	57%	0%	3%
LT IV: LT - Agriculture Metered		3.85	3.96	51%	51%	0%	3%
LT V (A): LT - Industry - Power Looms		7.52	7.78	101%	101%	1%	4%
LT V (B): LT - Industry – General		9.23	9.63	123%	125%	2%	4%
LT VI: LT - Street Light		6.61	6.79	88%	88%	0%	3%
LT VIII: LT - Advertisements and Hoardings		21.31	22.24	285%	289%	4%	4%
LT IX: LT - Crematorium and Burial Grounds		5.28	5.39	71%	70%	-1%	2%
LT X- Public Services Govt.		7.37	7.62	99%	99%	1%	3%
LT X- Public Services Others		9.82	10.20	131%	132%	1%	4%
LT Total		**6.40**	**6.64**	**86%**	**86%**	**1%**	**4%**

Table 8-6: Average Billing Rate (ABR) and Cross Subsidy Trajectory as proposed by MSEDCL for FY 2023-24

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2022-23	Proposed Tariff for FY 2023-24	Proposed Tariff for FY 2022-23	Proposed Tariff for FY 2023-24		
HT I (A): HT - Industry	7.90	9.46	9.67	123%	122%	-1%	2%
HT II: HT - Commercial		15.60	15.76	203%	200%	-3%	1%
HT III: HT - Railways/Metro/Monorail Traction		11.42	11.84	148%	150%	2%	4%
HT IV: HT - Public Water Works (PWW)		8.78	9.05	114%	115%	0%	3%
HT V: HT - Agriculture Pumps		4.66	4.73	61%	60%	-1%	2%
HT VI: HT - Group Housing Societies (Residential)		9.24	9.68	120%	123%	2%	5%
HT VIII: HT - Temporary Supply		18.72	19.73	243%	250%	7%	5%
HT IX : HT - Public Services Govt		11.41	11.76	148%	149%	1%	3%
HT IX : HT - Public Services Others		13.25	13.52	172%	171%	-1%	2%
HT Total		**9.49**	**9.66**	**123%**	**122%**	**-1%**	**2%**
LT I: LT - Residential		7.73	7.96	100%	101%	0%	3%
LT II: LT - Non-Residential		11.94	12.14	155%	154%	-2%	2%
LT III: LT - Public Water Works (PWW)		4.41	4.50	57%	57%	0%	2%
LT IV: LT - Agriculture Metered		3.96	4.05	51%	51%	0%	2%
LT V (A): LT - Industry - Power Looms		7.78	8.03	101%	102%	1%	3%
LT V (B): LT - Industry – General		9.63	10.01	125%	127%	2%	4%
LT VI: LT - Street Light		6.79	6.94	88%	88%	0%	2%
LT VIII: LT - Advertisements and Hoardings		22.24	23.20	289%	294%	5%	4%
LT IX: LT - Crematorium and Burial Grounds		5.39	5.47	70%	69%	-1%	2%
LT X- Public Services Govt.		7.62	7.85	99%	99%	0%	3%
LT X- Public Services Others		10.20	10.55	132%	134%	1%	3%
LT Total		**6.64**	**6.86**	**86%**	**87%**	**1%**	**3%**

Table 8-7: Average Billing Rate (ABR) and Cross Subsidy Trajectory as proposed by MSEDCL for FY 2024-25

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2023-24	Proposed Tariff for FY 2024-25	Proposed Tariff for FY 2023-24	Proposed Tariff for FY 2024-25		
HT I (A): HT - Industry	8.10	9.67	9.85	122%	122%	-1%	2%
HT II: HT - Commercial		15.76	15.92	200%	197%	-3%	1%
HT III: HT - Railways/Metro/Monorail Traction		11.84	12.29	150%	152%	2%	4%
HT IV: HT - Public Water Works (PWW)		9.05	9.32	115%	115%	1%	3%
HT V: HT - Agriculture Pumps		4.73	4.81	60%	59%	-1%	2%
HT VI: HT - Group Housing Societies (Residential)		9.68	10.14	123%	125%	3%	5%
HT VIII: HT - Temporary Supply		19.73	20.83	250%	257%	7%	6%
HT IX : HT - Public Services Govt		11.76	12.14	149%	150%	1%	3%
HT IX : HT - Public Services Others		13.52	13.80	171%	170%	-1%	2%
HT Total		**9.66**	**9.81**	**122%**	**121%**	**-1%**	**2%**
LT I: LT - Residential		7.96	8.20	101%	101%	0%	3%
LT II: LT - Non-Residential		12.14	12.33	154%	152%	-1%	2%
LT III: LT - Public Water Works (PWW)		4.50	4.59	57%	57%	0%	2%
LT IV: LT - Agriculture Metered		4.05	4.14	51%	51%	0%	2%
LT V (A): LT - Industry - Power Looms		8.03	8.27	102%	102%	0%	3%
LT V (B): LT - Industry – General		10.01	10.39	127%	128%	2%	4%
LT VI: LT - Street Light		6.94	7.10	88%	88%	0%	2%
LT VIII: LT - Advertisements and Hoardings		23.20	24.18	294%	299%	5%	4%
LT IX: LT - Crematorium and Burial Grounds		5.47	5.55	69%	69%	-1%	1%
LT X- Public Services Govt.		7.85	8.10	99%	100%	1%	3%
LT X- Public Services Others		10.55	10.90	134%	135%	1%	3%
LT Total		**6.86**	**7.08**	**87%**	**87%**	**1%**	**3%**

Table 8-8: Average Billing Rate (ABR) and Cross Subsidy Trajectory as approved by the Commission for FY 2020-21

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Existing Tariff for FY 2019-20	Proposed Tariff for FY 2020-21	Existing Tariff for FY 2019-20	Proposed Tariff for FY 2020-21		
HT I (A): HT - Industry		9.40	8.50	120%	116%	-4%	-10%
HT II: HT - Commercial		15.84	13.47	187%	184%	-3%	-15%
HT III: HT - Railways/Metro/Monorail Traction		10.04	8.24	123%	113%	-11%	-18%
HT IV: HT - Public Water Works (PWW)		8.35	7.35	108%	100%	-8%	-12%
HT V: HT - Agriculture		4.80	4.51	62%	62%	-1%	-6%
HT VI: HT - Group Housing Societies (Residential)		8.74	7.06	103%	96%	-7%	-19%
HT VIII (A) : HT - Public Services Govt		10.78	9.28	134%	127%	-7%	-14%
HT VIII (B) : HT - Public Services Others		12.94	11.12	158%	152%	-6%	-14%
HT Total	**7.31**	**9.59**	**8.53**	**121%**	**117%**	**-5%**	**-11%**
LT I: LT - Residential		8.03	7.66	102%	105%	3%	-5%
LT II: LT - Non-Residential		13.16	11.61	161%	159%	-2%	-12%
LT III: LT - Public Water Works (PWW)		4.66	4.56	62%	62%	1%	-2%
LT IV: LT - Agriculture Metered		3.74	3.71	56%	51%	-5%	-1%
LT V: LT - Industry		9.62	8.70	117%	119%	2%	-10%
LT VI: LT - Street Light		7.35	6.84	96%	94%	-3%	-7%
LT VII (A)- Public Services Govt.		9.47	8.09	115%	111%	-5%	-15%
LT VII (B)- Public Services Others		9.84	8.77	134%	120%	-14%	-11%
LT Total		**6.77**	**6.63**	**92%**	**91%**	**-2%**	**-2%**

Table 8-9: Average Billing Rate (ABR) and Cross Subsidy Trajectory as approved by the Commission for FY 2021-22

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2020-21	Proposed Tariff for FY 2021-22	Proposed Tariff for FY 2020-21	Proposed Tariff for FY 2021-22		
HT I (A): HT - Industry		8.50	8.50	116%	116%	0%	0%
HT II: HT - Commercial		13.47	13.27	184%	181%	-3%	-2%
HT III: HT - Railways/Metro/Monorail Traction		8.24	8.38	113%	114%	2%	2%
HT IV: HT - Public Water Works (PWW)		7.35	7.52	100%	103%	2%	2%
HT V: HT - Agriculture		4.51	4.42	62%	60%	-1%	-2%
HT VI: HT - Group Housing Societies (Residential)		7.06	7.09	96%	97%	0%	0%
HT VIII (A) : HT - Public Services Govt		9.28	9.33	127%	127%	0%	0%
HT VIII (B): HT - Public Services Others		11.12	10.90	152%	149%	-3%	-2%
HT Total	**7.34**	**8.53**	**8.51**	**117%**	**116%**	**-1%**	**0%**
LT I: LT - Residential		7.66	7.58	105%	103%	-1%	-1%
LT II: LT - Non-Residential		11.61	11.43	159%	156%	-3%	-2%
LT III: LT - Public Water Works (PWW)		4.56	4.54	62%	62%	0%	0%
LT IV: LT - Agriculture Metered		3.71	3.72	51%	51%	0%	0%
LT V: LT - Industry		8.70	8.48	119%	116%	-3%	-3%
LT VI: LT - Street Light		6.84	6.88	94%	94%	0%	1%
LT VII (A)- Public Services Govt.		8.09	7.72	111%	105%	-5%	-5%
LT VII (B)- Public Services Others		8.77	8.47	120%	116%	-4%	-3%
LT Total		**6.63**	**6.61**	**91%**	**90%**	**-1%**	**0%**

Table 8-10: Average Billing Rate (ABR) and Cross Subsidy Trajectory as approved by the Commission for FY 2022-23

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2021-22	Proposed Tariff for FY 2022-23	Proposed Tariff for FY 2021-22	Proposed Tariff for FY 2022-23		
HT I (A): HT - Industry		8.50	8.48	116%	115%	0%	0%
HT II: HT - Commercial		13.27	13.08	181%	178%	-3%	-1%
HT III: HT - Railways/Metro/Monorail Traction		8.38	8.43	114%	115%	0%	1%
HT IV: HT - Public Water Works (PWW)		7.52	7.60	103%	103%	1%	1%
HT V: HT - Agriculture		4.42	4.43	60%	60%	0%	0%
HT VI: HT - Group Housing Societies (Residential)		7.09	7.12	97%	97%	0%	0%
HT VIII(A) : HT - Public Services Govt		9.33	9.37	127%	127%	0%	0%
HT VIII(B) : HT - Public Services Others		10.90	10.70	149%	146%	-3%	-2%
HT Total	**7.35**	**8.51**	**8.49**	**116%**	**115%**	**-1%**	**0%**
LT I: LT - Residential		7.58	7.52	103%	102%	-1%	-1%
LT II: LT - Non-Residential		11.43	11.29	156%	154%	-2%	-1%
LT III: LT - Public Water Works (PWW)		4.54	4.52	62%	61%	0%	-1%
LT IV: LT - Agriculture Metered		3.72	3.73	51%	51%	0%	0%
LT V: LT - Industry		8.48	8.59	116%	117%	1%	1%
LT VI: LT - Street Light		6.88	6.96	94%	95%	1%	1%
LT VII(A)- Public Services Govt.		7.72	7.70	105%	105%	-1%	0%
LT VII(B) - Public Services Others		8.47	8.38	116%	114%	-2%	-1%
LT Total		**6.61**	**6.64**	**90%**	**90%**	**0%**	**0%**

Table 8-11: Average Billing Rate (ABR) and Cross Subsidy Trajectory as approved by the Commission for FY 2023-24

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2022-23	Proposed Tariff for FY 2023-24	Proposed Tariff for FY 2022-23	Proposed Tariff for FY 2023-24		
HT I (A): HT - Industry		8.48	8.45	115%	115%	-1%	0%
HT II: HT - Commercial		13.08	12.85	178%	174%	-4%	-2%
HT III: HT - Railways/Metro/Monorail Traction		8.43	8.45	115%	115%	0%	0%
HT IV: HT - Public Water Works (PWW)		7.60	7.75	103%	105%	2%	2%
HT V: HT - Agriculture		4.43	4.53	60%	61%	1%	2%
HT VI: HT - Group Housing Societies (Residential)		7.12	7.15	97%	97%	0%	0%
HT VIII(A) : HT - Public Services Govt		9.37	9.38	127%	127%	0%	0%
HT VIII(B) : HT - Public Services Others		10.70	10.07	146%	137%	-9%	-6%
HT Total	**7.37**	**8.49**	**8.45**	**115%**	**115%**	**-1%**	**0%**
LT I: LT - Residential		7.52	7.43	102%	101%	-1%	-1%
LT II: LT - Non-Residential		11.29	11.18	154%	152%	-2%	-1%
LT III: LT - Public Water Works (PWW)		4.52	4.51	61%	61%	0%	0%
LT IV: LT - Agriculture Metered		3.73	3.73	51%	51%	0%	0%
LT V: LT - Industry		8.59	8.68	117%	118%	1%	1%
LT VI: LT - Street Light		6.96	7.02	95%	95%	1%	1%
LT VII (A)- Public Services Govt.		7.70	7.69	105%	104%	0%	0%
LT VII (B)- Public Services Others		8.38	8.34	114%	113%	-1%	0%
LT Total		**6.64**	**6.65**	**90%**	**90%**	**0%**	**0%**

Table 8-12: Average Billing Rate (ABR) and Cross Subsidy Trajectory as approved by the Commission for FY 2024-25

Category	Projected Average Cost of Supply (Rs/kWh)	Average Billing Rate (Rs/kWh)		Ratio of Average Billing Rate to Projected Average Cost of Supply (%)		% increase / decrease in Cross-subsidy	% increase in tariff (%)
		Proposed Tariff for FY 2023-24	Proposed Tariff for FY 2024-25	Proposed Tariff for FY 2023-24	Proposed Tariff for FY 2024-25		
HT I (A): HT - Industry		8.45	8.45	115%	114%	0%	0%
HT II: HT - Commercial		12.85	12.63	174%	171%	-4%	-2%
HT III: HT - Railways/Metro/Monorail Traction		8.45	8.43	115%	114%	-1%	0%
HT IV: HT - Public Water Works (PWW)		7.75	7.91	105%	107%	2%	2%
HT V: HT - Agriculture		4.53	4.57	61%	62%	0%	1%
HT VI: HT - Group Housing Societies (Residential)		7.15	7.27	97%	98%	1%	2%
HT VII(A) : HT - Public Services Govt		9.38	9.52	127%	129%	2%	1%
HT VII(B) : HT - Public Services Others		10.07	9.78	137%	132%	-4%	-3%
HT Total	**7.39**	**8.45**	**8.44**	**115%**	**114%**	**0%**	**0%**
LT I: LT - Residential		7.43	7.40	101%	100%	-1%	0%
LT II: LT - Non-Residential		11.18	11.11	152%	150%	-1%	-1%
LT III: LT - Public Water Works (PWW)		4.51	4.47	61%	60%	-1%	-1%
LT IV: LT - Agriculture Metered		3.73	3.70	51%	50%	-1%	-1%
LT V: LT - Industry		8.68	8.65	118%	117%	-1%	0%
LT VI: LT - Street Light		7.02	6.97	95%	94%	-1%	-1%
LT VII(A)- Public Services Govt.		7.69	7.53	104%	102%	-2%	-2%
LT VII(B)- Public Services Others		8.34	8.29	113%	112%	-1%	-1%
LT Total		**6.65**	**6.67**	**90%**	**90%**	**0%**	**0%**

8.6 Tariff Philosophy proposed by MSEDCL and Commission's Rulings

8.6.1 MSEDCL has proposed certain changes in the Tariff Philosophy and Tariff Design in the Petition. MSEDCL's submissions and the Commission's rulings are set out in the following sections.

8.7 Full Cost Recovery and Rationalisation of Fixed Cost

MSEDCL submissions

8.7.1 MSEDCL submitted that, the present Petition is based on full cost recovery of the total revenue gap computed for the previous years. Section 61 of the Act mandates that the Appropriate Commission, while determining tariff, shall not only ensure safeguarding of consumer's interests but shall also ensure the recovery of the cost of electricity in a reasonable manner.

8.7.2 MSEDCL referred to Clause 5.10 of the Tariff Policy, 2016 and thus proposed the following Tariff Philosophy which may be considered while deciding the retail tariffs as well as the terms and conditions of the tariff schedule.

8.7.3 Further, Petitioner stated that, the Commission in its first Tariff Order dated 5 May, 2000, while determining the Fixed Charge component of the Tariff, ruled that the recovery of the fixed costs should come from fixed charges. In the same Order, it was also observed that fixed charge component of tariff needs to be gradually increased in due course to cover the actual fixed costs incurred.

8.7.4 In the APR Order for FY 2007-08 for MSEDCL, the Commission observed

> *".....As and when sufficient power is available and contracted by the licensees, the fixed charges can again be increased, and energy charges reduced correspondingly."*

8.7.5 Similarly, in the Tariff Order dated September 12, 2010, the Commission has observed that

> *".... once sufficient power is available and contracted by the licensees, the fixed/demand charges can again be increased, and energy charges reduced correspondingly."*

8.7.6 In view of above, Petitioner submitted that, during that period, the power supplied to certain categories of consumers was maintained without any reduced supply, and the said reduction was unwarranted

8.7.7 In addition to it, Petitioner has further submitted that due to unavoidable circumstances in real time operations such as coal shortages, faults in generation units, transmission line tripping, etc. have led to load shedding for short duration. The load shedding is restored to safeguard the system from over-drawals and/or grid collapse; also, there is sufficient supply to match the consumer's demand. Hence, the fixed/demand charges should not be linked to the few instances of load shedding.

8.7.8 Petitioner stated that, at present, due to sufficient availability of power, there is no load shedding in the State. MSEDCL therefore categorically submits that it has sufficient power and has contracted enough power to meet the present and ever-increasing future demand of the State.

8.7.9 Petitioner further submitted that, all its expenditure excluding the variable cost (fuel related cost) of Power Purchase Expense is fixed in nature. Thus, ideally these fixed cost expenses should be recovered through Fixed/Demand Charges.

8.7.10 The Commission in the previous MTR Order dated 12th September 2018, had allowed recovery of only 18% through fixed charges as against 55% of recovery that should have been allowed then. This under-recovery has led to inadequacy of funds and unnecessary borrowings by MSEDCL. Further, the recovery from Fixed Charges is much lower which is against the basic principles of recovery of fixed costs through fixed charges as agreed by Hon'ble Commission in the previous Tariff Orders. Since the fixed charges are inadequate, MSEDCL is required to borrow some amount to meet its working capital requirements for discharging its fixed liabilities. Also, not increasing the Fixed Charges will result in a corresponding impact on Energy Charges which may not be sufficient enough to meet the fixed charges obligation as the same depends on the consumption of the consumers which is fluctuating and seasonal in nature.

8.7.11 The following table compares Demand Charges for HT Industrial category consumers among some of the states. MSEDCL submitted that, the fixed charges in the neighbouring states are relatively higher than those approved for MSEDCL. Such charges eventually lead to appropriate fixed charge recovery for these States.

FY 2019-20	EHV- Industries
MSEDCL	391
Madhya Pradesh	650
Andhra Pradesh	475
Gujarat	475
Himachal Pradesh	425
Telangana	390
Chhattisgarh	500

8.7.12 In the last MTR order dated 12th September 2018, the Commission has accepted the prayer of MSEDCL for increase in the Fixed Charges to certain extent and this may be considered as a gradual approach to ensure proper recovery process for MSEDCL. This may not result into any undue tariff burden on the consumers because, to maintain the full cost recovery, the tariff will either have a corresponding change on fixed charges or energy charges.

8.7.13 Therefore, MSEDCL has proposed increasing the Fixed/Demand Charges for various categories for each category of consumers every year as a step towards gradual balancing the fixed charges recovery with fixed charges obligation. This is in line with the Commission's observation that the recovery of fixed costs should come from fixed charges and the fixed charge component of tariff needs to be gradually increased in due course of time to cover the actual fixed costs incurred by the licensee.

8.7.14 MSEDCL further submitted that, the HT-Industrial consumers, running single shift operation shall be levied 60% of applicable demand charges. Single shift operation means running of operations at a stretch for maximum 10 Hrs. For illustration, a consumer running 4hrs.in one stretch and 6hrs.in another stretch cannot be considered as running in a single shift. However, a maximum of three instances of running beyond 10hrs up to 12hrs is permitted in a billing cycle. Consumer must declare in advance about one shift operation. In absence of such declaration, he shall be billed as per the applicable demand charges. Billing will be done based on MRI/AMR Data. MSEDCL humbly requests the Hon'ble Commission to charge 60% of approved fixed charges for single shift consumers as proposed by MSEDCL

8.7.15 Thus, in line with the view of the Commission, recommendations/discussions at various Committees and other references, specified in the above paragraphs, MSEDCL has

proposed to increase the Fixed/Demand Charges for each consumer categories as a step towards balancing the fixed charges recovery with its fixed cost obligations.

Commission's Analysis and Rulings

8.7.16 In its Order in Case No. 72 of 2007, the Commission had reduced the Fixed/ Demand Charges on account of the significant power deficit in MSEDCL's area. During the public consultation process, many consumers have opposed the proposal of MSEDCL to significant increase Fixed/ Demand Charges. However, it should be noted that the approved expenses of MSEDCL need to be recovered through the tariff, by way of Fixed Charges or Energy Charges or both. Therefore, not increasing the Fixed Charges will result in a corresponding impact on Energy Charges. With regard to the levy of Fixed Charges / Demand Charges, the Commission has explained the rationale in previous Tariff Orders including MTR Order in Case 195 of 2017. This is also in accordance with the EA, 2003 and the Tariff Policy. As against the ratio of fixed cost to total ARR of 55%, the revenue recovery through Fixed/Demand charges is less than 15%.

8.7.17 Levy of Fixed Charges and Demand Charges does not result in any gain to MSEDCL, since it is recovering only a part of its Fixed Costs through such Charges. With the increase now approved, revenue recovery from Fixed Charges is expected to increase gradually to around 18% of the total revenue. As rationalization of Energy Charges has also been undertaken simultaneously, the rationalization of Fixed Charges is unlikely to result in a significant tariff burden for consumers. The Commission has noted the increase in the supply availability of MSEDCL and, therefore, there is now a strong case for increase in the Fixed / Demand Charges, which were substantially reduced from the Order in Case No. 72 of 2007. However, such increase in Fixed Charges should be gradual and not steep. Therefore, the Commission has approved a gradual increase in Fixed / Demand Charges over the 4th Control Period, just sufficient to keep the revenue recovery from Fixed Charges at around 16% to 18% of the total revenue of MSEDCL. Besides, the current revision allowed in Fixed/Demand Charges through this Order is comparable or lower than similar Fixed/Demand Charges in other states.

8.7.18 Further, the Commission appreciates MSEDCL's proposal to give some relief to HT-industrial consumers operating in single shift by way levy only 60% of applicable Demand Charges subject to certain conditions. In order to facilitate such HT-industrial consumers during economic slowdown in few sectors, as pointed by some of the consumers during Public Hearings, the Commission accords its consent to proposal to levy 60% of Demand

Charges in case of HT-industrial consumers operating in single shift subject to conditions as outlined under MSEDCL proposal alongwith illustration thereof.

8.8 Revision in Billing Demand

MSEDCL submission

8.8.1 The Commission in its Tariff Order dated 5th May 2000 revised the definition of Billing demand to be the higher of the following for HT consumers:

a) Actual demand (During 0600 hours to 2200 hours)

b) 75% of the highest billing demand during preceding 11 months

c) 50% of the highest Contract Demand

d) 50 kVA

8.8.2 MSEDCL submitted that, the Commission modified the formula for Billing Demand for HT industrial consumers by removing the clause of 'minimum 50 kVA' since, in its Tariff Order dated 10th January 2002 for FY 2001-02, it observed that the minimum billing demand of 50 kVA may not give smaller industrial units any incentive to control their demand.

8.8.3 For that most of the Open Access consumers opt for partial open access and do not reduce the Contract Demand. The Licensee is not expected to purchase power for open access consumers.

8.8.4 Due to Universal Service Obligation, MSEDCL must be ready with requisite power including the Contract Demand of the Open Access consumers due to Universal Service Obligation which further makes purchase planning difficult. MSEDCL has been paying fixed charges for contracted power capacity and that the capacity blocking affects the overall tariff.

8.8.5 MSEDCL further submitted that, it must be ready with the power to the extent of Contract Demand and since contract demand utilization is low due to low actual billing demand (around 50%), power purchase planning becomes difficult. With higher Contract Demand and lower Billing Demand, the infrastructure is not utilized properly, many times it gets blocked for few consumers and optimum utilization of assets doesn't take place. In some case even with lower billing demand, additional infrastructure is required due to contract demand. If the consumers keep billing demand as close as possible to the contract demand, proper utilization

will occur and thereby reducing the overall tariff.

8.8.6 The recovery from fixed charges as approved by the Commission is not happening due to restriction on Billing Demand. MSEDCL suggested that, the Billing Demand definition may be amended to as proposed, stressing the fact that, MSEDCL's billing demand is low as compared to most of the States. State wise Billing Demand definition is summarised in the following table :

Table 8-13: State wise Billing Demand definition

	MSEDCL	**TN**	**MP**	**Gujarat**	**AP**	**Karnataka (BESCOM)**	**Chhattisgarh**
HT Category							
Highest of	Actual demand recorded during 0600 hours to 2200 hours	Actual demand	Actual demand	Actual demand	Actual demand	Actual demand	Actual demand
	75% of max billing demand during last 11 months	90% of Contract demand	90% of Contract demand	85% of CD	80% of contract demand	85% of Contract demand	75% of CD
	50% of CD			100 kVA			60 kVA
LT category							
Highest of	65% of the actual maximum demand recorded during 0600 hours to 2200 hours	Contracted demand	Actual maximum demand	Actual maximum demand	Actual demand	Maximum demand recorded	Actual Maximum demand
	40% of CD		90% of CD	85% of CD	Contract demand	Sanctioned load	75% of CD
				6kW			

8.8.7 MSEDCL further requested the Commission to revise the definition of Billing Demand to Actual Maximum Demand recorded OR 85% of the Contract Demand whichever is higher

which was not accepted by the Commission in its MTR Order 195 of 2017 citing that:

> *"9.22.10. Accordingly, the Commission has revised the eligibility conditions for applicability of LF incentive, which would hopefully address the concerns raised by MSEDCL. Hence, the Commission has not accepted MSEDCL's proposal for revision in definition of Billing Demand but has put restriction on the eligibility of LF incentive; in case Billing Demand exceeds Contract Demand in any of the time block duration through the day."*

8.8.8 The Commission's directive of putting restriction on the eligibility of LF incentive has put a check on the misuse of load factor incentive, it will not ensure the recovery of approved revenue from fixed charges. LF Incentive and Billing Demand are two different issues. Billing demand is for recovery of cost of licensee whereas LF Incentive is for effective utilisation of contracted demand. Only few consumers are availing LF incentive as it mostly depends on manufacturing process and to some extent operational strategy. In FY 2017-18, around 390 consumers have availed the load factor incentives of Rs. 350 Crs. Hence the concerns of MSEDCL still remain unaddressed.

8.8.9 MSEDCL therefore requested the Commission to consider the proposal of revision in definition of Billing Demand suitably as given below:

Table 8-14: State wise Billing Demand definition

	Existing	**Proposed**
	Maximum of	**Maximum of**
LT 3 phase	65% of actual MD recorded during 0600 to 2200 hours OR 40% of the Contract Demand	Actual MD recorded in a billing period OR 60% of the Contract Demand
HT	Actual MD recorded during 0600 to 2200 hours OR 75% of the highest Billing Demand OR 50% of the Contract Demand	Actual MD recorded in a billing period OR 85% of the Contract Demand

8.8.10 MSEDCL submitted that, the proposed changes in definition of Billing Demand shall also

be applicable to 3 phase consumers under 0-20 kVA category in addition to those belonging to >20 kVA category.

8.8.11 Petitioner submitted that it has computed the revenue from proposed Fixed/Demand charges for HT & LT category for FY 20-21 and FY 24-25 considering the proposed definition for Billing Demand and requested the Commission to allow the revision in the definition of Billing Demand so as to ensure the appropriate recovery from Fixed/Demand charges

8.8.12 Petitioner also requested that, the Commission may approve the kVA based Fixed Charges for 3 phase consumers having loads less than 20 kVA

Commission's Analysis and Rulings

8.8.13 The Commission has noted the submissions and concerns raised by MSEDCL in terms of actual power planning principles due to existing Billing Demand definition. Over the period, the Commission has been maintaining uniformity in basic tariff design principles across all Distribution Licensee, where the definition of Billing demand includes minimum threshold level at which consumer will be billed against its Contract Demand. Such minimum threshold in case of HT consumers at present is 50% of the Contract Demand, whereas for LT consumers is 40% of the Contract Demand.

8.8.14 The Power planning by the utilities depends generally on these parameters and at the same time distribution infrastructure needs optimal utilisation. The Power contracting by any Distribution Licensee is a function of Contract Demand and Billing Demand and with Universal Service Obligations (USO), utilities are bound to supply power upto the Contract Demand at any point in time.

8.8.15 For these reasons, it is very important for the consumers and also the DL to have a Contract Demand as close as possible to the Demand that intend to use. Obviously, 50 percent of the minimum threshold is creating many problems for accurate planning, sourcing and scheduling. The Commission also finds this threshold limit as much lower compared to other States which have stipulated it to be 85% to 95% of Contract Demand as a threshold/minimum limit. The Commission notes that having higher Contract Demand and not utilising it would cause underutilisation of distribution asset. Thus, consumers maintaining their Demand as close as possible to its Contract Demand would facilitate DISCOMs power planning to that extent, particularly while drawing up their long/medium term power procurement plans.

8.8.16 In view of above, the time has come for revising the existing billing demand definition at the same time, the Commission is aware that any such revision should be undertaken in gradual manner and should not result in tariff shock for consumers. Thus, the Commission has proposed revision in definition of Billing Demand in case of HT category in gradual manner and at present no revision in definition of Billing Demand has been proposed for LT category. In case of HT category, the Commission has gradually increased lower limit by 5% in each year of the 4th Control Period so as to reach a threshold limit of 75% level in FY 2024-25. While estimating the revenue for the 4th Control period, the Commission has taken into consideration above aspect of revision in definition of Billing Demand for HT category. The concessions given to some industrial categories in the MTR order shall continue in this control period also.

8.8.17 Further, the Commission at present has also not accepted MSEDCL's proposal to extend the kVA based Fixed Charges for 3 phase consumers having loads less than 20 kVA, to avoid tariff shock for the consumers in these categories. In case of these categories (< 20 kW), existing fixed charge linked to per connection shall continue as per prevalent tariff design structure at applicable rates approved through this Order.

8.9 Penalty on Contract Demand Violation

MSEDCL's Submission

8.9.1 MSEDCL submitted that, the Commission had given directives for levying penalties for violations of maintaining Contract Demand in the last MTR Order dated 12th September 2018 stating that:

> *"Under these circumstances, the consumer shall not be liable for any other action under Section 126 of the EA, 2003, since the penal additional charge provides for the penalty that the consumer is liable to pay for exceeding his Contract Demand. In case a consumer exceeds his Contract Demand on more than three occasions in a calendar year, the action to be taken would be governed by the provisions of the Supply Code Regulations."*

8.9.2 It is also stated that, further to the issuance of the MTR Order, the Commission also issued Order No. 60 of 2018 dated 1st January 2019 invoking the inherent Power to Remove Difficulty under the Supply Code Regulations 2005 in which the Commission had noted the difficulty of Petitioner to give effect to the specific provision of the MTR Order when read

with Supply Code Regulations and therefore, could not take appropriate action against the consumers who regularly and intentionally breach their Contract Demand. In the said Order, the Commission ruled that

> *"Distribution Licensee can enhance the Contract Demand of the consumer when the consumers exceed the contract demand on more than three occasions during a calendar year, irrespective whether the Consumer submits an application for the same or otherwise. However, before such revision of Contract Demand, Distribution Licensee must give 15 days' notice to such consumer."*

8.9.3 MSEDCL further submitted that, it had issued Commercial Circular No. 312 for implementing the provisions of the said Order, where the consumer should be charged with the tariff applicable to the slab to which its recorded demand falls and not to the slab that the consumer has opted for. There is lack of clarity on this issue and due to which some of the LT consumers are raising disputes and approaching various Forums such as CGRF, Ombudsman etc. against charging such tariffs. In Order to bring explicit clarity, MSEDCL submitted that, the said stipulation regarding penalty for exceeding contract demand may be revised as proposed below:

> *"In case a consumer exceeds his Contract Demand, he will be billed at the tariff applicable for the respective load slab approved by the Commission, in which recorded demand falls for that billing cycle only and also be charged an additional amount at the rate of 150% of the applicable charge for the Demand in excess of the Contract Demand.*
>
> *Further Distribution licensee can enhance the Contract Demand of the consumer when the consumers exceeds the Contract Demand on more than three occasions during a calendar year, irrespective whether the Consumer submits an application for the same or otherwise. However, before such revision of Contact Demand, Distribution Licensee must give 15 days' notice to such consumer. Also, the Consumer is liable to pay necessary charges as may be stipulated in the approved Schedule of Charges for the revised Contract Demand."*

Commission's Analysis and Rulings

8.9.4 The Commission notes the submissions made by MSEDCL that the consumers with sanction load/contract demand around 20 kW tend to avail supply at below 20 kW since the fixed charges for this sub-category are on Per connection basis instead of Per kVA basis as

applicable for sanction load above 20 kW. In such cases recorded demand in excess of category limit of (upto 20 kW) on multiple occasions is clear violation or misuse of the facility of lower fixed charges.

8.9.5 The Commission has already dealt with this matter as referred in its Order in Case No. 60 of 2018, dated 1 January, 2019. However, to further remove anomalies in interpretation (if any) and to avoid potential litigations around this issue regarding applicability of tariff and necessary corrective actions to be initiated by Licensee, the Commission in exercise of its inherent powers to remove difficulties (if any) and powers to accord just treatment hereby approves the conditions as proposed by MSEDCL and reproduced hereunder –

> *"In case a consumer exceeds his Contract Demand, he will be billed at the tariff applicable for the respective load slab approved by the Commission, in which recorded demand falls for that billing cycle only and also be charged an additional amount at the rate of 150% of the applicable charge for the Demand in excess of the Contract Demand.*
>
> *Further Distribution licensee can enhance the Contract Demand of the consumer when the consumers exceeds the Contract Demand on more than three occasions during a calendar year, irrespective whether the Consumer submits an application for the same or otherwise. However, before such revision of Contact Demand, Distribution Licensee must give 15 days' notice to such consumer. Also, the Consumer is liable to pay necessary charges as may be stipulated in the approved Schedule of Charges for the revised Contract Demand."*

8.9.6 The Commission further clarifies that above condition of penalty for violation of contract demand shall be applicable only for consumers with contract demand upto 20 kW whereas penal conditions for violation of contract demand in all other cases shall continue to be same as at present.

8.10 kVAh Based Billing

MSEDCL's Submission

8.10.1 There are two components of electric power, active and reactive. The active or real power is actually consumed and converted into useful work for creating heat, light and motion and is measured in kilo Watt (kW) and is totalised by the energy meter in kilo Watt hour (kWh). The reactive power is used to provide the electromagnetic field in inductive and capacitive

equipment and is measured in kilo Volt Ampere Reactive (kVAR) and is totalised by the energy meter in kilo Volt Ampere Reactive hour (kVARh).

8.10.2 The reactive power occupies the capacity of electricity network and reduces the useful capacity of the system for generation and distribution. The source of the most reactive currents is the poor power factor loads (equipment) connected at the consumer premises. As these loads are not compensated by appropriate capacitor installations by consumers, utilities are burdened for installation of capacitors.

8.10.3 Reactive power is a local phenomenon and the extra reactive compensation by industrial consumers in MIDC/industrial area cannot be used/compensated against extra reactive energy drawl by agricultural section. As a result, in both situations, system stability of Distribution Company is hampered. It is thus imperative that every section of consumers has to shoulder their responsibility to maintain the system PF within permissible limits only.

8.10.4 Petitioner submitted that the most effective remedy to remove such anomaly is to introduce kVAh billing. Introduction of kVAh metering and kVAh tariffs is therefore seen as a commercial inducement to consumers to ensure a smaller electricity bill by ensuring that they do not draw reactive power. It is considered that these consumers will in turn use efficient devices with power factor correctors or install capacitors at their premises.

8.10.5 MSEDCL submitted that the Forum of Regulators (FoR) in its report on "Metering Issues" August,2009, has stated that kVAh billing is the new trend in electricity billing, which is adopted worldwide. In the report they have strongly advocated to adopt kVAh billing in India on account of the following reasons:

- kVAh Metering is a check on power factor
- It will encourage consumers to use reactive energy compensators to control the voltage at their intake point and maintain unity power factor.
- The accepted threshold limit of power factor is unity. There need not be any penalty exemption for power factor neither lagging nor leading. Thus, kVAh billing merits consideration over power factor penalty.

8.10.6 Further, the Commission in MYT Regulations, 2019 has provisioned for kVAh billing under Regulations 73.2 which states that

"Wheeling charges of the Distribution Licensee shall be determined….

Provided that the Wheeling Charges may be denominated in terms of Rupees/kVAh or Rupees/kVA/month, for the purpose of recovery from the Distribution System User,….”

8.10.7 Petitioner mentioned that kVAh billing has already been adopted in some of the states in India as per orders of respective SERCs details of while are as below:

- HP: HPERC Order dated 18.09.2001
- Delhi: DERC in 2001
- Jammu & Kashmir: Order dated 28.03.2007
- AP: APERC Order dated 30.03.2011
- Haryana: HERC Order dated 25.07.2012
- UP: UPERC Tariff Order dated 31.05.2013
- Punjab: PERC order dated 22.08.2014
- Chhattisgarh: Chhattisgarh ERC Order dated 23.05.2015
- Bihar: BERC Order dated 21.03.2016

8.10.8 Category wise status of applicability of kVAh billing for various states is tabulated as below:

Category	AP	CG	Delhi	Haryana	J & K	UP	Bihar
HT							
Industrial	✓	✓	✓	✓	✓	✓	✓
Commercial	✓	✓	✓	✓	✓	✓	✓
Railways	✓	✓	✓	✓	✓	✓	✓
Agriculture	✓	✓	✗	✗	✓	✗	✓
PWW/LIS	✓	✓	✓	✗	✓	✓	✓
Temporary	✓	✓	✓	✗	✓		✓
Bulk Supply	✓	✓	✗	✓	✓	✓	✓
Start Up	✗	✓	✗	✗	✗	✗	✓
LT							

Category	AP	CG	Delhi	Haryana	J & K	UP	Bihar
Domestic	✗	✗	✗	✗	✗	✗	✗
Non-domestic/ Commercial	✓*	✗	✓*	✓$	✗	✗	✗
PWW	✓	✗	✓*	✗	✗	✗	✓
Agriculture	✗	✗	✗	✗	✗	✗	✗
Industrial	✓#	✗	✓*	✓	✗	✗	✓
Street-Light	✗	✗	✗	✗	✗	✗	✗

$ - >20 kW/20 kVA
* - > 10 kW
# - > 15 kW
✓ - kVAh Tariff Applicable

8.10.9 The prime objective of the kVAh billing is to encourage the consumers to maintain near unity Power factor to achieve loss reduction, improve system stability, power quality and improve voltage profile. At the national level, emphasis is being given on energy conservation, energy efficiency and Demand Side Management (DSM) and green energy solutions to optimize the energy usage. By kVAh billing, the consumers will be encouraged to adopt energy efficiency programs and will be benefited by reduced electricity bills.

8.10.10 Petitioner further submitted that consumer's demand may get reduced due to improvement of Power Factor and kVAh billing will be correspondingly reduced in turn improving system voltage. The improvement in Power Factor will reduce the licensee's expenditure on Power Purchase and thereby the consumers will be benefited with lower tariff. If in case, the Power Factor is less than unity, the consumption recorded in respect of kVAh would be high compared to kWh consumption. Thus, the kVAh based billing will drive the consumers to reach unity power factor. Ultimately, kVAh billing will provide inbuilt incentive which will automatically take care of power factor incentive and disincentive.

Legal & Regulatory provisions:

A) Relevant APTEL judgements in the subject matter:

8.10.11 The Appellate Tribunal for Electricity, New Delhi in the matter of Prime Ispat Ltd., Mahamaya Steel Industries Limited and Chhattisgarh State Electricity Regulatory

Commission, in its judgement dated 10th April 2015 in appeal No.263/2014 had observed advantages of high power factor and kVAh billing.

8.10.12The relevant extracts of the same are reproduced below:

"…..

- Higher the power factor, lower is the load current and thereby technical losses of the transmission lines i.e. I^2R losses will be reduced considerably.
- Due to increase of power factor (nearer to one), the consumer's demand charges will be reduced and also the kVAh billing will also be correspondingly reduced.
- The higher power factor will reduce the demand on the system and improve the system voltage.
- Increases the available transmission and distribution system capacity
- The improvement in power factor will reduce the licensee's expenditure on power purchase and thereby the consumers will be benefited with lower tariff
- In view of the above, most of the States are changing their billing system from kWh to kVAh billing, bill amount has been increased and thereby the Appellant burdened with higher power bill. We do not find any merit in the contention for the following reasons:

"Because Power Factor = kWh/kVAh

If Power Factor is unity, then kWh=kVAh

In the instant case, the power factor is less than unity and hence consumption recorded in respect to kVAh is high compared to kWh consumption. Further, the power factor surcharge/rebate will not be there in kVAh billing. Thus, the kVAh based billing will drive the consumers to reach unity power factor and thereby the system performance will be improved and also reactive power drawl from the system will be minimised and thereby better system voltages for the tail end consumers also…."

8.10.13Hon'ble APTEL, in Appeal No.130 of 2005 of South East Central Railways, Chhattisgarh Vs Chhattisgarh State Electricity Board has upheld the decision of the State Commission in introducing kVAh billing, relevant extract of the same is reiterated below:

"kVAh billing which provides inbuilt incentive for the Appellant's category, which will automatically take care of power factor incentive and disincentive for the high and low power factor respectively."

8.10.14 Petitioner had requested in its MTR petition, the implementation of kVAh billing and the Commission in the MTR Order in Case No.195 of 2017 dated 12th September 2018 ruled as follows:

> *"…. 9.23.11. The Commission has taken a note of Petitioner's proposal for adoption of kVAh based billing for HT consumer categories. The Commission is of the view that the kVAh billing may not be appropriate at thus time of juncture as it has to be done in a gradual manner to avoid any tariff shock due to such change. MSEDCL may submit its proposal for kVAh billing in next control period. The Commission intends to implement kVAh billing to all HT consumers and LT consumers having load above 20 kW from 1 April 2020. All Distribution Licensees in State are required to take necessary steps such as meter replacement, if required, preparedness of billing software, etc. Also wherever possible, Distribution Licensee shall start collecting category-wise energy consumption details in kVAh terms and submit it during the next tariff determination process. Though the Commission agrees that the benefits and its technical superiority for measuring energy, it is felt that sufficient time needs to be given to MSEDCL and also the consumers to change over the billing kVAh method. The Commission directs MSEDCL to educate the consumers and take all necessary steps to ensure that all the consumers are billed by kVAh method from the next MYT i.e. from 1st April 2020."*

8.10.15 Petitioner submitted that, in line with the above directive of the Commission, it has taken the following steps to ensure effective implementation of kVAh billing from 1st April 2020.

8.10.16 Consumer Awareness: Petitioner has conducted around 100 awareness programs across the state to explain the concept of kVAh billing and its implications to various Industrial category consumers from sub-division officer level to the director level i.e. management level. During this program, various aspects of the proposed kVAh billing were discussed and deliberated upon using a PowerPoint Presentation (PPT), which is attached as Annexure 7 to the MYT petition. The FAQs on kVAh billing were uploaded on the MSEDCL website and the Petitioner sent letter through E-Mail, on 2nd February 2019, informing proposed implementation of kVAh billing from 1st April 2020 to all HT consumers having email IDs registered with MSEDCL.

8.10.17 MSEDCL submitted that, it has already initiated meter replacement drive which will be completed by January 2020 for HT consumers and by March 2020 for net meter and Open Access consumers. Meters for all LT consumers will be replaced in a phased manner by

March 2021 so as to enable kVAh billing for LT consumers during the MTR process in accordance with readiness of such implementation.

8.10.18The progress for kVAh billing meter replacement status for HT consumers is as follows:

TARGET	Meter Replaced	Balance to be replaced	MONTHLY PLAN	
			Dec-19	Jan-20
19043	18690	353	100	253

8.10.1924000 HT meters are procured, programming of Open Access (ABT Meters) & Solar consumers will be done before March 2020 to have kVAh reading with actual PF, TD Consumer meters will be replaced while reconnection, 359 meters under Bhiwandi franchisee area kVAh compatible

8.10.20The progress for kVAh billing meter reprograming of LT (>20 kW) consumers as follows:

Category	LIVE above 20 kW in billing system	CT operated meter consumers in billing system	Embedded meters in billing system	Embedded meters to be reprogrammed	Embedded meter replaced till date
Industrial	63072	25863	37209	18317	18892
Commercial	29013	16393	12620	7093	5527
Other	29936	24116	5820	5026	794
Total LT meters	**122021**	**66372**	**55649**	**30436**	**25213**

8.10.21The reprogramming target and plan is as below:

Reprogramming	Ind	Comm	Other	TARGET	Reprogrammed	Meters to be reprogrammed
	18317	7093	5026	**30436**	5312	25124

MONTHLY PLAN			
Dec-19	**Jan-20**	**Feb-20**	**Mar-20**
3000	7376	7374	7374

The progress for kVAh billing meter replacement status of LT (>20 kW) consumers as follows:

Category	Target (Non-kVAh meters)	MONTHLY PLAN									
		Dec -19	Jan -20	Feb -20	Mar -20	Apr -20	May -20	Jun -20	Jul -20	Aug -20	Sept -20
Indus-Trial	25863	2000	7955	7955	7953						
Commercial	16393	866	5176	5175	5176						
Other	24116	0	0	0	0	4020	4020	4020	4020	4020	4016
TOTAL	**66372**	**2866**	**13131**	**13131**	**13129**	**4020**	**4020**	**4020**	**4020**	**4020**	**4016**

8.10.22Petitioner submitted that it has not done any change in the billing software at present, but it shall be done, along with software updating of Open Access consumer meters, within a month as per the Commission's order. Metering specifications are changed to measure kVAh or kVA MD considering rkVAh (Lag & Lead).

8.10.23Petitioner further submitted that it shall strive to complete metering/programming of all HT consumers by March 2020. However, in case the replacement/programming is not done for any consumer, then the existing methodology to derive the kVAh shall be used for kVAh billing of those consumers. Petitioner stated that it is committed to provide the kVAh meters to all consumers for whom kVAh billing shall be applicable.

8.10.24Energy Consumption details: Petitioner has collected category-wise consumption details in kVAh and kWh for HT category consumers. Details of the same are as provided below:

Table 8-15: Category wise energy consumption details in kVAh and kWh

Category	Apr-19 to Oct-19		
	MkWh consumption	MkVAh consumption	PF %
HT – Industry	19161	19482	98%
HT – Commercial	1280	1318	97%
HT – Railways/Metro/ Monorail traction	47	48	97%
HT – Public Water Works (PWW)	1110	1152	96%

HT – Agriculture	733	801	91%
HT – Group Housing Societies (Residential)	124	128	97%
HT – Public Services	643	658	98%
HT – Electric Vehicle Charging Station	3	3	99%

8.10.25 Petitioner requested the Commission to allow gradual implementation of kVAh billing consisting of the first stage of rollout to HT consumers. Petitioner stated that it proposed the kVAh billing, like other states, initially for HT consumers considering higher awareness about advantages of maintaining PF among HT consumer groups and that the kVAh billing will be proposed subsequently for LT consumers in the next MTR petition.

8.10.26 Implementation of kVAh billing is a move to encourage consumers to adopt energy efficient programs and for the overall benefit of the sector. Petitioner stated that it feels that other Licensees in the state may take the decision depending upon their readiness as the implementation may not be linked to the readiness of all Licensees in the state and that if any Licensee requests the Commission for implementation of kVAh billing, it should be considered irrespective of the stand taken by other Licensees.

8.10.27 Regarding abolition of PF incentive, Petitioner submitted that the Hon'ble APTEL has already ruled that "kVAh billing which provides inbuilt incentive for the Appellant's category, which will automatically take care of power factor incentive and disincentive for the high and low power factor respectively". Petitioner further submitted that the principle of revenue neutrality is being followed in implementing the kVAh tariff so that both the licensee as well as consumers are not burdened unnecessarily and that kVAh billing system is a more accurate and cost effective system to extend uniform incentives/ penalties on account of low or good power factor. Tariff determined in kVAh shall be less than kWh tariff by the average power factor.

8.10.28 Petitioner further submitted that the consumers who have already spent money to maintain power factor will have an added advantage as they already have the resources to maintain higher power factor which will benefit them in terms of reduced consumption.

8.10.29 Petitioner submitted that even though the MYT Regulations specify unit of generation or sale as kWh, the same MYT Regulations provide for Rs./kVAh as one of the unit for Wheeling Charges

8.10.30 Petitioner submitted that even though the power purchase is done in terms of kWh, as per the CERC Grid Code Regulations 2010 as amended from time to time, reactive charges (present rate 14.05 paise/kVArh) are payable depending on the system conditions. The relevant Regulation is reproduced below:

> *"6.6 (2) The charge for VArh shall be at the rate of 10 paise/kVArh w.e.f. 1.4.2010, and this will be applicable between the Regional Entity, except Generating Stations, and the regional pool account for Var interchanges. This rate shall be escalated at 0.5 paise/kVArh per year thereafter, unless otherwise revised by the Commission."*

8.10.31 Petitioner submitted that for Open Access Consumers, Special Energy Meters (SEMs) are installed at all consumers sourcing power through Open Access. SEM records kVAh in 15 minutes time block. At unity power factor MW=MVA, thus, the settlement of scheduled power in kVAh with consumer's consumption in kVAh in the corresponding 15 minutes slot can be done.

8.10.32 Petitioner has proposed to adopt kVAh billing presently for HT category consumers. Simultaneously the PF incentive for these categories shall be withdrawn from FY 2020-21 onwards. In view of the submissions in the foregoing paras, the steps taken by the Petitioner and various advantages are listed below:

- The kVAh based billing has an inbuilt incentive/penalty mechanism and therefore separate mechanism for the same is no more required. It will encourage the consumers to improve the power factor by way of reactive power compensation at the load point itself.
- With better power factor, the line loading shall be lower for the same kW requirement leading to lower transmission as well as distribution losses.
- Benefit of kVAh billing is passed on to the consumers by way of reduction in energy charges or lower increase which would have been more in case of kWh billing.
- Power supply quality will be improved
- It is win-win proposal for both - the consumers and MSEDCL

8.10.33 Petitioner requested the Commission to approve kVAh based billing for the HT consumers.

8.10.34 In view of the proposed kVAh billing, the Power Factor incentive and penalty shall not be applicable for HT consumers. However, the existing provisions for Power Factor incentive

and penalty shall continue to be applicable for LT category consumers as per the relevant Orders of the Commission.

Commission's Analysis and Rulings

8.10.35 The Commission has taken a note of the MSEDCL's submissions and acknowledges the detailed rationale provided by MSEDCL for implementing the kVAh based billing as well as its preparedness status for rolling out kVAh billing in case of HT consumers. The Commission in the previous MTR Order had ruled that, the implementation of kVAh based billing would be based on the MSEDCL's proposal for kVAh billing for the next control period, where the Commission intends to implement kVAh billing to all HT consumers and LT consumers having load above 20 kW from 1 April, 2020.

8.10.36 Thus, in view of above, the Commission has sought the detailed proposal of kVAh based billing from MSEDCL as part of Data Gaps, which intended to understand the preparedness of MSEDCL for implementing the same by April, 2020. MSEDCL had submitted its detailed proposal alongwith metering status of HT and LT consumer categories. As regards, the kVAh metering infrastructure, MSEDCL has covered most of the HT consumers, the statistics of the same is covered in the above submission. Further, for LT consumer category, MSEDCL has proposed to complete the meter conversion for > 20 kW consumers by MTR process of the 4th Control Period.

8.10.37 Thus, after understanding the proposal and preparedness of MSEDCL, the Commission allows MSEDCL to implement kVAh based billing for HT Consumers at present. The same shall be effective from 1 April, 2020. As regards, the LT consumers above 20 kW load, the Commission directs MSEDCL to complete its meter conversion process alongwith other system modifications for such consumer categories and shall target to implement the same at the time of MTR i.e. by 1 April, 2023. For implementation of kVAh based billing for the remaining LT consumer categories below 20 kW, a comprehensive study will have to be undertaken based on experience gained through introduction of kVAh billing for more than 20 kW category, to assess pros/cons of introduction for below 20 kW alongwith implementation aspects etc. MSEDCL should evaluate the same and process for introduction of kVAh billing for such below 20 kW consumers can be undertaken in the 5th Control Period in a phased manner, if found feasible.

8.10.38 Several stakeholders have also raised concerns in term of kVAh based billing per se, if the same get implemented. The Commission has also taken a note of the concerns raised and is of the view that, in the present billing system, Consumer, based on the incentive/penalty

levied in the monthly bill was kept informed of Power Factor (PF) maintained by it during the month. The Consumer was therefore in the position to take corrective action in case penalty was levied due to poor PF based on the information from the monthly Bill. However, with implementation of kVAh billing, any adverse impact due to poor PF will be recorded in increased consumption in kVAh and Consumer will not be aware of actual PF for the month unless it is being recorded and monitored separately. For smooth transition to new billing system and to keep Consumer aware at all times, the Commission directs MSEDCL to display PF (computed by considering leading and lagging RkVAh) recorded during the month in the bill of all the Consumer categories till further directions. Further, such PF can be used for converting kVAh into kWh for arriving at payment to be made towards taxes / duties imposed by the GoM, if applicable.

8.10.39 In addition, the following Charges for the HT Consumer category will now have been determined in term of Rs./kVAh in case of HT consumer category where kVAh billing has been introduced:

- Energy Charges
- Wheeling Charges
- Transmission Charges
- ToD Charges
- Cross-Subsidy Surcharge
- Additional Surcharge

8.10.40 While determining per unit charges in kVAh, the Commission has used category wise PF which could be lower than unity. This makes per unit tariff lower than the tariff which would have been determined in kWh term. Further, in case of Energy Balance, the utility shall always maintain sale in kWh only. Tax on Sale of Electricity and Electricity duty shall be converted from kVAh to kWh. All the OA transactions will be maintained in kWh sale only, kVAh based sales shall be converted in kWh based on the Power Factor for the month provided in the Energy Bills.

8.10.41 The Commission has taken a note of Petitioner's proposal for adoption of kVAh-based billing for HT consumer categories and initiatives taken by MSEDCL towards it. The same matter was discussed in MTR Order. Accordingly, Commission has decided to approve the proposal of MSEDCL for adoption of kVAh billing for HT consumers from 1 April, 2020.

8.10.42 Further, Commission is of the opinion that, for LT consumers having load more than 20 kW, kVAh billing shall be adopted from 1 April, 2023 and MSEDCL shall propose the same during MTR order of the 4th Control Period.

8.10.43 For LT consumers having load less than 20 kW, Commission has decided to conduct a feasibility study for adoption of kVAh billing for LT consumers with load < 20kW and based on the results from the study, kVAh billing can be adopted in 5th Control Period for these consumers in a phased manner.

8.10.44 Several objectors have taken objection on how billing will be done if power purchase unit is kW then how MSEDCL can raise bills to consumers in terms of kVAh. Commission has taken the note of objectors and MSEDCL is directed to maintain kWh sale for Energy Balance. Further, in electricity bills of consumers, MSEDCL shall display Power Factor on bills which will be beneficial for consumers to measure electricity consumption in kWh. This will be helpful for consumers.

8.11 Tariff Categorisation

8.11.1 Several Stakeholders have expressed their concerns and made suggestions in respect of Tariff Categorisation or re-classification of class of consumers or creation of new consumer category or clarification regarding applicability of the tariff to specific consumer class. The suggestions of various stakeholder have been captured under Para. 2.26 of this MYT Order. The Commission's views on the same are further elaborated hereunder:

8.11.2 **Demand for creation of New Category**: Stakeholders from Steel & Alloy Industries have requested Commission to create a new consumer category in view of present economic condition of the industry and in view of similar categorisation prevalent in other states. Few stakeholders have requested to create separate category for Cotton mills, Agriculture produce factories, etc.

8.11.3 As elaborated in earlier paragraphs creation of new categories/sub-categories is against the principles of rationalisation of tariff and simplification of tariff slabs/sub-categories. Hence, the Commission is not creating any further new categories/sub-categories, which is also aligned with the recommendation in the draft Tariff Policy. Further, while redesigning the tariff rates for these categories, the Commission has ensured that Energy Charges are significantly lower than existing Energy Charges incl. FAC applicable for these industrial

consumer category. In addition, the Commission has introduced Rebate on incremental consumption and Bulk Supply Rebate linked to consumption (with a reverse telescopic slabs), and as against MSEDCL proposal and has continued with the incentive mechanism of Load factor incentive and concessional billing demand which would further benefit these industries allying their concerns regarding revision in Tariff as proposed by MSEDCL.

8.11.4 **Independent R&D Units**: These are presently categorised under Commercial Category. In order to promote Research and Development, the Commission has categorised it under Industrial Category.

8.11.5 **IT and ITeS Units**: Under existing tariff structure, IT and ITeS units having registration certificate under GoM's IT and ITeS Policy are categorised under Industrial Category. The APTEL in its Judgment dated 12 February, 2020 in Appeal No. 337 of 2016 & Others has ruled that tariff categorisation cannot be based on any certification under Policy and it should be based on criteria specified under Section 62 (3) of the Act. Accordingly, the Commission has removed the requirement of having certification under GoM Policy for claiming Industrial Tariff for IT and ITeS Units

8.11.6 **Hostels**: Presently all Student Hostels are covered under Residential Category. All Education Institutes are covered under Public Service category. Hence, it would be appropriate to categories Hostels into Public Service Category. This will avoid subjecting these Hostels at high tariff rate on account of telescopic tariff structure in Residential Category.

8.11.7 **Tabela**: The Commission has noted the submissions of stakeholders, where dairy or cattle farming is dependent and related to agricultural sector. Thus, the Commission has decided to classify Tabela under Consumer Category under LT IV (C) Agriculture (Others) so long as no associated industrial or commercial activity of milk processing or Dairy/Chilling plant are undertaken, which are separately covered under LT-Industrial (General) or activities of milk collection centres, which are covered under LT-Commercial.

8.11.8 **Temporary Supply (Religious) and Temporary Supply (Others)**: In an effort to rationalise the tariff categories, the Commission has done away with Temporary tariff category and merged Temporary Supply (Religious) with domestic category with benefit of telescopic slab and Temporary Supply (others) have been merged with Commercial category.

8.11.9 **Public Sanitary Convenience**: Public sanitation and public convenience facilities is crucial in maintaining public health, hygiene and would aid in Swaccha Bharat initiatives undertaken by Municipalities and Urban local bodies. Therefore, the Commission has decided to classify these activities for purpose of tariff applicability under LT - Public Service (Govt), category and expand the scope of applicability of tariff under this category to cover such public sanitation and public convenience facilities, which would benefit consumers/consumption for these categories.

8.12 Revised Tariff with effect from 1 April, 2020

Table 8-16: Summary of LT Tariff for FY 2020-21, effective from 1 April, 2020

Category	Units	FY 2020-21		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
LT Residential				
LT I(A): LT - Residential-BPL	Rs/conn/mth	26.00	1.12	-
LT I(B): LT - Residential				
1-100 units	Rs/conn/mth	100.00	3.46	1.45
101-300 units	Rs/conn/mth	100.00	7.43	1.45
301-500 units	Rs/conn/mth	100.00	10.32	1.45
Above 500 units	Rs/conn/mth	100.00	11.71	1.45
Three Phase Charges	Rs/conn/mth	340.00	-	-
LT II: LT - Non-Residential				
(A) 0 – 20 kW	Rs/conn/mth	403.00	7.36	1.45
(B): >20 kW and ≤ 50 kW	Rs/kW/mth	403.00	10.72	1.45
(C): >50 kW	Rs/kW/mth	403.00	12.83	1.45
LT III: LT - Public Water Works (PWW)				
(A): 0-20 kW	Rs/kW/mth	100.00	2.40	1.45
(B): >20 kW and ≤ 40 kW	Rs/kW/mth	121.00	3.78	1.45
(C): >40 kW	Rs/kW/mth	150.00	5.11	1.45
LT IV: LT - Agriculture				
LT IV(A): LT - AG Un-metered - Pumpsets				
Category 1 Zones				
(a) 0-5 HP	Rs/HP/mth	334.00	-	145
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	360.00	-	145
(c) Above 7.5 HP	Rs/HP/mth	405.00	-	145
Category 2 Zones				
(a) 0-5 HP	Rs/HP/mth	258.00	-	145
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	282.00	-	145
(c) Above 7.5 HP	Rs/HP/mth	327.00	-	145
LT IV(B): LT - Agriculture Metered Tariff - Pumpsets	Rs/HP/mth	41.00	1.85	1.45
LT IV(C): LT - Agriculture Metered – Others	Rs/HP/mth	111.00	3.34	1.45
LT V: LT – Industry*				
(i): 0-20 kW	Rs/conn/mth	454.00	5.21	1.45
(ii): Above 20 kW	Rs/kW/mth	303.00	6.11	1.45

Category	Units	FY 2020-21		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
LT VI: LT - Street Light				
(A): Grampanchayat; A B & C Class Municipal Council	Rs/kW/mth	111.00	4.90	1.45
(B): Municipal corporation Area	Rs/kW/mth	111.00	5.97	1.45
LT VII (A) - Public Services – Govt.				
(i): ≤ 20 kW	Rs/conn/mth	333.00	3.31	1.45
(ii): >20 - ≤ 50 kW	Rs/kW/mth	333.00	4.89	1.45
iii): >50 kW	Rs/kW/mth	333.00	6.01	1.45
LT VII (B) - Public Services - Others				
(i): ≤ 20 kW	Rs/conn/mth	362.00	4.86	1.45
(ii): >20 - ≤ 50 kW	Rs/kW/mth	362.00	7.44	1.45
iii): >50 kW	Rs/kW/mth	362.00	7.84	1.45
LT VIII – Electric Vehicle Charging Station	Rs/kW/mth	70.00	4.05	1.45

***Note**: Lower tariff (discount/rebate) of (2.5_%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

Table 8-17: Summary of LT Tariff for FY 2021-22, effective from 1 April, 2021

Category	Units	FY 2021-22		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
LT Residential				
LT I(A): LT - Residential-BPL	Rs/conn/mth	27.00	1.14	-
LT I(B): LT - Residential				
1-100 units	Rs/conn/mth	102.00	3.44	1.38
101-300 units	Rs/conn/mth	102.00	7.34	1.38
301-500 units	Rs/conn/mth	102.00	10.36	1.38
Above 500 units	Rs/conn/mth	102.00	11.82	1.38
Three Phase Charges	Rs/conn/mth	340.00	-	-
LT II: LT - Non-Residential				
(A) 0 – 20 kW	Rs/conn/mth	415.00	7.18	1.38
(B): >20 kW and ≤ 50 kW	Rs/kW/mth	415.00	10.79	1.38
(C): >50 kW	Rs/kW/mth	415.00	12.95	1.38
LT III: LT - Public Water Works (PWW)				
(A): 0-20 kW	Rs/kW/mth	103.00	2.46	1.38
(B): >20 kW and ≤ 40 kW	Rs/kW/mth	125.00	3.82	1.38
(C): >40 kW	Rs/kW/mth	155.00	5.12	1.38
LT IV: LT - Agriculture				
LT IV(A): LT - AG Un-metered - Pumpsets				

Category	Units	FY 2021-22		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
Category 1 Zones				
(a) 0-5 HP	Rs/HP/mth	349.00	-	138
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	376.00	-	138
(c) Above 7.5 HP	Rs/HP/mth	422.00	-	138
Category 2 Zones				
(a) 0-5 HP	Rs/HP/mth	269.00	-	138
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	295.00	-	138
(c) Above 7.5 HP	Rs/HP/mth	342.00	-	138
LT IV(B): LT - Agriculture Metered Tariff - Pumpsets	Rs/HP/mth	42.00	1.91	1.38
LT IV(C): LT - Agriculture Metered – Others	Rs/HP/mth	114.00	3.23	1.38
LT V: LT - Industry *				
(i): 0-20 kW	Rs/conn/mth	468.00	5.01	1.38
(ii): Above 20 kW	Rs/kW/mth	312.00	5.93	1.38
LT VI: LT - Street Light				
(A): Grampanchayat; A B & C Class Municipal Council	Rs/kW/mth	114.00	5.00	1.38
(B): Municipal corporation Area	Rs/kW/mth	114.00	6.09	1.38
LT VII (A) - Public Services – Govt.				
(i): ≤ 20 kW	Rs/conn/mth	343.00	3.12	1.38
(ii): >20 - ≤ 50 kW	Rs/kW/mth	343.00	4.48	1.38
iii): >50 kW	Rs/kW/mth	343.00	5.62	1.38
LT VII (B) - Public Services - Others				
(i): ≤ 20 kW	Rs/conn/mth	373.00	4.68	1.38
(ii): >20 - ≤ 50 kW	Rs/kW/mth	373.00	7.28	1.38
iii): >50 kW	Rs/kW/mth	373.00	7.49	1.38
LT VIII – Electric Vehicle Charging Station	Rs/kW/mth	70.00	4.12	1.38

***Note**: Lower tariff (discount/rebate) of (2.5_%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

Table 8-18: Summary of LT Tariff for FY 2022-23, effective from 1 April, 2022

Category	Units	FY 2022-23		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
LT Residential				
LT I(A): LT - Residential-BPL	Rs/conn/mth	28.00	1.16	-
LT I(B): LT - Residential				

Category	Units	FY 2022-23		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
1-100 units	Rs/conn/mth	105.00	3.36	1.35
101-300 units	Rs/conn/mth	105.00	7.34	1.35
301-500 units	Rs/conn/mth	105.00	10.37	1.35
Above 500 units	Rs/conn/mth	105.00	11.86	1.35
Three Phase Charges	Rs/conn/mth	350.00	-	-
LT II: LT - Non-Residential				
(A) 0 – 20 kW	Rs/conn/mth	427.00	7.07	1.35
(B): >20 kW and ≤ 50 kW	Rs/kW/mth	427.00	10.79	1.35
(C): >50 kW	Rs/kW/mth	427.00	12.76	1.35
LT III: LT - Public Water Works (PWW)				
(A): 0-20 kW	Rs/kW/mth	106.00	2.48	1.35
(B): >20 kW and ≤ 40 kW	Rs/kW/mth	129.00	3.84	1.35
(C): >40 kW	Rs/kW/mth	160.00	5.09	1.35
LT IV: LT - Agriculture				
LT IV(A): LT - AG Un-metered - Pumpsets				
Category 1 Zones				
(a) 0-5 HP	Rs/HP/mth	359.00	-	135
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	387.00	-	135
(c) Above 7.5 HP	Rs/HP/mth	435.00	-	135
Category 2 Zones				
(a) 0-5 HP	Rs/HP/mth	277.00	-	135
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	304.00	-	135
(c) Above 7.5 HP	Rs/HP/mth	352.00	-	135
LT IV(B): LT - Agriculture Metered Tariff - Pumpsets	Rs/HP/mth	43.00	1.95	1.35
LT IV(C): LT - Agriculture Metered – Others	Rs/HP/mth	117.00	3.29	1.35
LT V: LT - Industry *				
(i): 0-20 kW	Rs/conn/mth	482.00	5.11	1.35
(ii): Above 20 kW	Rs/kW/mth	321.00	6.05	1.35
LT VI: LT - Street Light				
(A): Grampanchayat; A B & C Class Municipal Council	Rs/kW/mth	117.00	5.10	1.35
(B): Municipal corporation Area	Rs/kW/mth	117.00	6.21	1.35
LT VII (A) - Public Services – Govt.				

Category	Units	FY 2022-23		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
(i): ≤ 20 kW	Rs/conn/mth	353.00	3.18	1.35
(ii): >20 - ≤ 50 kW	Rs/kW/mth	353.00	4.57	1.35
iii): >50 kW	Rs/kW/mth	353.00	5.73	1.35
LT VII (B) - Public Services - Others				
(i): ≤ 20 kW	Rs/conn/mth	384.00	4.57	1.35
(ii): >20 - ≤ 50 kW	Rs/kW/mth	384.00	7.23	1.35
iii): >50 kW	Rs/kW/mth	384.00	7.49	1.35
LT VIII – Electric Vehicle Charging Station	Rs/kW/mth	70.00	4.15	1.35

***Note**: Lower tariff (discount/rebate) of (2.5_%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

Table 8-19: Summary of LT Tariff for FY 2023-24, effective from 1 April, 2023

Category	Units	FY 2023-24		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
LT Residential				
LT I(A): LT - Residential-BPL	Rs/conn/mth	29.00	1.18	-
LT I(B): LT - Residential				
1-100 units	Rs/conn/mth	107.00	3.28	1.30
101-300 units	Rs/conn/mth	107.00	7.34	1.30
301-500 units	Rs/conn/mth	107.00	10.38	1.30
Above 500 units	Rs/conn/mth	107.00	11.90	1.30
Three Phase Charges	Rs/conn/mth	357.00	-	-
LT II: LT - Non-Residential				
(A) 0 – 20 kW	Rs/conn/mth	436.00	7.01	1.30
(B): >20 kW and ≤ 50 kW	Rs/kW/mth	436.00	10.84	1.30
(C): >50 kW	Rs/kW/mth	436.00	12.62	1.30
LT III: LT - Public Water Works (PWW)				
(A): 0-20 kW	Rs/kW/mth	108.00	2.52	1.30
(B): >20 kW and ≤ 40 kW	Rs/kW/mth	132.00	3.86	1.30
(C): >40 kW	Rs/kW/mth	163.00	5.19	1.30
LT IV: LT - Agriculture				
LT IV(A): LT - AG Un-metered - Pumpsets				
Category 1 Zones				

Category	Units	FY 2023-24		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
(a) 0-5 HP	Rs/HP/mth	366.00	-	130
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	395.00	-	130
(c) Above 7.5 HP	Rs/HP/mth	444.00	-	130
Category 2 Zones				
(a) 0-5 HP	Rs/HP/mth	283.00	-	130
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	310.00	-	130
(c) Above 7.5 HP	Rs/HP/mth	359.00	-	130
LT IV(B): LT - Agriculture Metered Tariff - Pumpsets	Rs/HP/mth	44.00	1.99	1.30
LT IV(C): LT - Agriculture Metered – Others	Rs/HP/mth	119.00	3.36	1.30
LT V: LT - Industry *				
(i): 0-20 kW	Rs/conn/mth	492.00	5.21	1.30
(ii): Above 20 kW	Rs/kW/mth	327.00	6.17	1.30
LT VI: LT - Street Light				
(A): Grampanchayat; A B & C Class Municipal Council	Rs/kW/mth	119.00	5.20	1.30
(B): Municipal corporation Area	Rs/kW/mth	119.00	6.33	1.30
LT VII (A) - Public Services – Govt.				
(i): ≤ 20 kW	Rs/conn/mth	360.00	3.24	1.30
(ii): >20 - ≤ 50 kW	Rs/kW/mth	360.00	4.66	1.30
iii): >50 kW	Rs/kW/mth	360.00	5.84	1.30
LT VII (B) - Public Services - Others				
(i): ≤ 20 kW	Rs/conn/mth	392.00	4.56	1.30
(ii): >20 - ≤ 50 kW	Rs/kW/mth	392.00	7.27	1.30
iii): >50 kW	Rs/kW/mth	392.00	7.54	1.30
LT VIII – Electric Vehicle Charging Station	Rs/kW/mth	70.00	4.20	1.30

***Note**: Lower tariff (discount/rebate) of (2.5_%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

Table 8-20: Summary of LT Tariff for FY 2024-25, effective from 1 April, 2024

Category	Units	FY 2024-25		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
LT Residential				
LT I(A): LT - Residential-BPL	Rs/conn/mth	30.00	1.18	-
LT I(B): LT - Residential				
1-100 units	Rs/conn/mth	109.00	3.28	1.26
101-300 units	Rs/conn/mth	109.00	7.34	1.26

Category	Units	FY 2024-25		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
301-500 units	Rs/conn/mth	109.00	10.38	1.26
Above 500 units	Rs/conn/mth	109.00	11.90	1.26
Three Phase Charges	Rs/conn/mth	364.00	-	-
LT II: LT - Non-Residential				
(A) 0 – 20 kW	Rs/conn/mth	445.00	7.01	1.26
(B): >20 kW and ≤ 50 kW	Rs/kW/mth	445.00	10.84	1.26
(C): >50 kW	Rs/kW/mth	445.00	12.62	1.26
LT III: LT - Public Water Works (PWW)				
(A): 0-20 kW	Rs/kW/mth	110.00	2.52	1.26
(B): >20 kW and ≤ 40 kW	Rs/kW/mth	135.00	3.86	1.26
(C): >40 kW	Rs/kW/mth	166.00	5.19	1.26
LT IV: LT - Agriculture				
LT IV(A): LT - AG Un-metered - Pumpsets				
Category 1 Zones				
(a) 0-5 HP	Rs/HP/mth	373.00	-	126
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	403.00	-	126
(c) Above 7.5 HP	Rs/HP/mth	453.00	-	126
Category 2 Zones				
(a) 0-5 HP	Rs/HP/mth	289.00	-	126
(b) Above 5 HP - 7.5 HP	Rs/HP/mth	316.00	-	126
(c) Above 7.5 HP	Rs/HP/mth	366.00	-	126
LT IV(B): LT - Agriculture Metered Tariff - Pumpsets	Rs/HP/mth	45.00	1.99	1.26
LT IV(C): LT - Agriculture Metered – Others	Rs/HP/mth	121.00	3.36	1.26
LT V: LT - Industry *				
(i): 0-20 kW	Rs/conn/mth	502.00	5.21	1.26
(ii): Above 20 kW	Rs/kW/mth	334.00	6.17	1.26
LT VI: LT - Street Light				
(A): Grampanchayat; A B & C Class Municipal Council	Rs/kW/mth	121.00	5.20	1.26
(B): Municipal corporation Area	Rs/kW/mth	121.00	6.33	1.26
LT VII (A) - Public Services – Govt.				
(i): ≤ 20 kW	Rs/conn/mth	367.00	3.24	1.26
(ii): >20 - ≤ 50 kW	Rs/kW/mth	367.00	4.66	1.26
iii): >50 kW	Rs/kW/mth	367.00	5.84	1.26
LT VII (B) - Public Services - Others				
(i): ≤ 20 kW	Rs/conn/mth	400.00	4.56	1.26
(ii): >20 - ≤ 50 kW	Rs/kW/mth	400.00	7.27	1.26
iii): >50 kW	Rs/kW/mth	400.00	7.54	1.26
LT VIII – Electric Vehicle Charging Station	Rs/kW/mth	70.00	4.24	1.26

***Note**: Lower tariff (discount/rebate) of (2.5_%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

Table 8-21: Summary of HT Tariff for FY 2020-21, effective from 1 April, 2020

Category	Units	FY 2020-21		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
EHV				
HT I (A) HT - Industry	Rs/kVA/mth	411.00	7.02	-
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	411.00	7.28	-
HT II: HT – Commercial	Rs/kVA/mth	411.00	11.47	-
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	411.00	6.76	-
HT IV: HT - Public Water Works	Rs/kVA/mth	411.00	6.07	-
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	72.00	3.79	-
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	72.00	5.20	-
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	329.00	5.70	-
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	411.00	7.74	-
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	411.00	9.48	-
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.93	-
HT				
HT I (A) HT - Industry Sub-total	Rs/kVA/mth	411.00	7.02	0.57
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	411.00	7.28	0.57
HT II: HT – Commercial	Rs/kVA/mth	411.00	11.47	0.57
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	411.00	6.76	0.57
HT IV: HT - Public Water Works	Rs/kVA/mth	411.00	6.07	0.57
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	72.00	3.79	0.57
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	72.00	5.20	0.57
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	329.00	5.70	0.57
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	411.00	7.74	0.57
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	411.00	9.48	0.57
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.93	0.57

Table 8-22: Summary of HT Tariff for FY 2021-22, effective from 1 April, 2021

Category	Units	FY 2021-22		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
EHV				
HT I (A) HT - Industry	Rs/kVA/mth	432.00	6.96	-
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	432.00	7.22	-
HT II: HT – Commercial	Rs/kVA/mth	432.00	11.20	-

Category	Units	FY 2021-22		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	432.00	6.86	-
HT IV: HT - Public Water Works	Rs/kVA/mth	432.00	6.17	-
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	76.00	3.69	-
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	76.00	5.10	-
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	345.00	5.70	-
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	432.00	7.74	-
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	432.00	9.21	-
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.94	-
HT				
HT I (A) HT - Industry Sub-total	Rs/kVA/mth	432.00	6.96	0.56
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	432.00	7.22	0.56
HT II: HT – Commercial	Rs/kVA/mth	432.00	11.20	0.56
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	432.00	6.86	0.56
HT IV: HT - Public Water Works	Rs/kVA/mth	432.00	6.17	0.56
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	76.00	3.69	0.56
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	76.00	5.10	0.56
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	345.00	5.70	0.56
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	432.00	7.74	0.56
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	432.00	9.21	0.56
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.94	0.56

Table 8-23: Summary of HT Tariff for FY 2022-23, effective from 1 April, 2022

Category	Units	FY 2022-23		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
EHV				
HT I (A) HT - Industry	Rs/kVA/mth	454.00	6.89	-
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	454.00	7.15	-
HT II: HT – Commercial	Rs/kVA/mth	454.00	10.95	-
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	454.00	6.86	-
HT IV: HT - Public Water Works	Rs/kVA/mth	454.00	6.17	-
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	80.00	3.69	-
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	80.00	5.10	-
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	362.00	5.70	-
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	454.00	7.74	-
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	454.00	8.96	-
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.95	-
HT				
HT I (A) HT - Industry Sub-total	Rs/kVA/mth	454.00	6.89	0.55
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	454.00	7.15	0.55

Category	Units	FY 2022-23		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
HT II: HT – Commercial	Rs/kVA/mth	454.00	10.95	0.55
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	454.00	6.86	0.55
HT IV: HT - Public Water Works	Rs/kVA/mth	454.00	6.17	0.55
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	80.00	3.69	0.55
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	80.00	5.10	0.55
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	362.00	5.70	0.55
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	454.00	7.74	0.55
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	454.00	8.96	0.55
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.95	0.55

Table 8-24: Summary of HT Tariff for FY 2023-24, effective from 1 April, 2023

Category	Units	FY 2023-24		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
EHV				
HT I (A) HT - Industry	Rs/kVA/mth	463.00	6.85	-
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	463.00	7.11	-
HT II: HT – Commercial	Rs/kVA/mth	463.00	9.75	-
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	463.00	5.56	-
HT IV: HT - Public Water Works	Rs/kVA/mth	463.00	6.17	-
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	82.00	3.69	-
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	82.00	5.10	-
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	369.00	5.20	-
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	463.00	7.24	-
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	463.00	7.76	-
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.96	-
HT				
HT I (A) HT - Industry Sub-total	Rs/kVA/mth	463.00	6.85	0.54
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	463.00	7.11	0.54
HT II: HT – Commercial	Rs/kVA/mth	463.00	9.75	0.54
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	463.00	5.56	0.54
HT IV: HT - Public Water Works	Rs/kVA/mth	463.00	6.17	0.54
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	82.00	3.69	0.54
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	82.00	5.10	0.54
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	369.00	5.20	0.54
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	463.00	7.24	0.54
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	463.00	7.76	0.54

Category	Units	FY 2023-24		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.96	0.54

Table 8-25: Summary of HT Tariff for FY 2024-25, effective from 1 April, 2024

Category	Units	FY 2024-25		
		Fixed/Demand Charge	Energy Charge	Wheeling Charge
EHV				
HT I (A) HT - Industry	Rs/kVA/mth	472.00	6.73	-
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	472.00	6.99	-
HT II: HT – Commercial	Rs/kVA/mth	472.00	9.30	-
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	472.00	5.31	-
HT IV: HT - Public Water Works	Rs/kVA/mth	472.00	6.17	-
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	84.00	3.69	-
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	84.00	5.10	-
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	376.00	5.20	-
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	472.00	7.24	-
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	472.00	7.31	-
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.97	-
HT				
HT I (A) HT - Industry Sub-total	Rs/kVA/mth	472.00	6.73	0.53
HT I (B): HT - Industry (Seasonal)	Rs/kVA/mth	472.00	6.99	0.53
HT II: HT – Commercial	Rs/kVA/mth	472.00	9.30	0.53
HT III : HT - Railways/Metro/Monorail Traction	Rs/kVA/mth	472.00	5.31	0.53
HT IV: HT - Public Water Works	Rs/kVA/mth	472.00	6.17	0.53
HT V(A): HT - Agriculture Pumpsets	Rs/kVA/mth	84.00	3.69	0.53
HT V(B): HT - Agriculture - Others	Rs/kVA/mth	84.00	5.10	0.53
HT VI: HT - Group Housing Societies (Residential)	Rs/kVA/mth	376.00	5.20	0.53
HT VIII(A): HT - Public Services-Gov.	Rs/kVA/mth	472.00	7.24	0.53
HT VIII(B): HT - Public Services-Others	Rs/kVA/mth	472.00	7.31	0.53
HT IX: HT – Electric Vehicle Charging Station	Rs/kVA/mth	70.00	4.97	0.53

8.13 Recording of Maximum Demand

MSEDCL's Submission

8.13.1 It has been observed that certain consumers are taking the benefit of lacunae in system of bloc window method of Maximum Demand recording and thereby getting the benefit of lower MD recording.

8.13.2 Petitioner submitted that, as per the Regulation 2.1 (p) of the MERC (Electricity Supply Code and Other Conditions of Supply) Regulations 2005, the Maximum Demand (MD) is defined as twice the largest number of kWh or kVAh supplied and taken during any consecutive thirty minute blocks in that period, which is the same definition as provided by the Commission in MTR Order dated 12th September 2018 (case No.195 of 2017).

8.13.3 Petitioner submitted that "IS 14697" is INDIAN STANDARD for AC static CT/PT operated Energy meters and specifies about the demand integration period i.e. 15 or 30 minutes.

8.13.4 Petitioner submitted that CBIP's "guide on Static energy meters-Specification and testing" has mentioned two methods i.e. block and sliding window method for determination of the MD. In sliding window method determination of the MD is based on 30 min DIP (Demand Integration Period). In block window method, the MD is determined over a fixed time slot of 30 min i.e. from 10:00 to 10:30 hrs. 10:30 to 11:00 hrs…. so on. The new Demand Integration Period (DIP) starts only after the end of previous DIP.

8.13.5 In block window method, the MD is integrated over a fixed block of time as per the meter clock i.e. from 10:00 to 10:30 hrs or 10:30 to 11:00 hrs. In this method, there is one disadvantage i.e. consumer with higher demand can split his load in two consecutive time slots such that the demand is split in two blocks and MD recorded is less than the actual load on the system. This split high load than sanctioned contract demand is harmful to the grid and pose difficulties to Distribution Company for meeting demand. Hence, sliding window method is incorporated in new meters to determine demand more accurately, which complies with MERC Regulations, Tariff Order, IS and CBIP standards.

8.13.6 In the revised methodology determination of Maximum Demand, the Demand Integration Period (DIP) of consecutive 30 min as specified in the MERC (Electricity Supply Code and other Conditions of Supply) Regulation 2005 is maintained and considered for measuring, recording & billing the maximum demand of consumer and is in line the IS and CBIP Guide.

8.13.7 Petitioner stated that FAQs regarding kVA Maximum Demand calculation are available on MSEDCL's websites.

8.13.8 Petitioner submitted that it has installed new technology meters with a sliding window for recording maximum demand in consecutive 30 minutes block. The 30 min DIP is sliding consecutively with 10 min sub-interval has been used.

Commission's Analysis and Rulings

8.13.9 The Commission observes that per provisions under State Grid Code and IEGC, measurement period for the purpose of energy accounting, recording of the demand, scheduling and despatch of power is "time block" which is defined as "*time-block'means a time block of 15 minutes, for which specified electrical parameters and quantities are recorded by special energy meter, with first time block starting at 00.00 hrs*". There are 96 time-blocks in a day, starting from 00:00 hours with each time-block of consecutive 15-minute duration. Thus, 30 minute measurement for the purpose of energy accounting, scheduling and despatch comprise fixed duration from start of hour boundary to next half hourly boundary and does not envisage any sliding scale for measurement of any 30-minute duration, as proposed by MSEDCL for energy accounting/ deviation accounting/determination of Under-drawal/over-drawal or under-injection/under-injection by participants.

8.13.10 Further, DSM Regulations notified by MERC and Central Commission as well as recent notification of the Regulations for Real time market operations has further emphasised this aspect by recognising odd numbered time blocks and even numbered time blocks for the purpose of market operations, and trading on power exchange, alongwith introduction of concept of gate closure. Thus, entire timeframe for the purpose of energy accounting, scheduling and despatch, deviation accounting, congestion management etc. is aligned with the concept of "Time-Blocks" which are fixed duration time-block rather than sliding duration of the time-block. Generating Companies, Distribution Licensees and even Open Access consumers would be responsible for their energy accounting, deviation accounting on "time-block" concept of fixed duration as elaborated above. Under the circumstances, the Commission opines that recording of demand of Direct Consumers of Licensee on sliding scale of 30-minute duration would not be proper and would in fact tantamount to discrimination as against open access consumer.

8.13.11 Thus, the Commission rejects the MSEDCL proposal for introduction of sliding scale based measurement of Billing Demand and MSEDCL should continue with existing practice of recording of Billing Demand on fixed duration of 30-minutes around boundaries of hourly start and half-hourly start period (viz. 00:00 to 00:30 and 00:30 to 01:00 hrs and so on). As per General Conditions under Tariff schedule, the Distribution licensee may measure the Maximum Demand for any period shorter than 30 minute of maximum use, subject to conformity with the Commission's Supply Code Regulations, where it considers that there

are considerable load fluctuations in operations. Accordingly, in such cases of repeated instances, MSEDCL may opt to install SEM at their own cost for such cases and record their Demand on 15-minute Time-block basis and bill accordingly; instead of changing method of measurement to sliding scale.

8.14 Revision in Load Factor Formula

MSEDCL's Submission

8.14.1 Petitioner submitted that the Commission in the last MTR Order dated 12th September 2018, had acknowledged the issue of wilful violation of Contract Demand during 22:00 to 06:00 hours to avail ToD benefits & Load Factor Incentive and observed that

> *"In order to ensure operation of electricity grid, it is critical that every constituent of the system acts within its assigned boundaries. Intentional violation of contract demand limit by individual consumer for its own financial gain may lead to a system failure, which may affect other consumers."*

8.14.2 Accordingly, the Commission revised the provision and ruled that LF incentives shall not be available in case of exceeding Contract Demand during night also.

8.14.3 Petitioner further submitted that, as per the Order dated 24th December 2018 in Case No.321 of 2018, the Commission revised the LF incentive formula for PF and unity PF is considered instead of actual PF.

8.14.4 The concept of LFI was introduced by Hon'ble Commission in Case No. 2 of 2003 i.e. nearly 16 years ago. Since then till date, there have been numerous disputes with regard to the interpretation of the LF formula. Consumers are approaching MSEDCL with the demand of consideration of interruption/non-supply hours and shut down more than 60 Hours because of unforeseen incidents like water logging in EHV Substation, Flood situation etc. However, as per Formula only planned outage (since 60 hours in a 30 day month is already in built in the Formula) is considered for reduction in hours for calculation of Load Factor. This ultimately results into disputes before CGRF or Hon'ble Commission.

8.14.5 Change in LFI computation is sought with the intention of bringing clarity and simplification in the LFI formula and that any shutdown (planned outage), breakdown or any interruption of supply to the extent of 60 hours in a month has to be considered while framing the calculation of Load Factor Incentive which means, in the 60 hours, the effect of non-supply to the extent of 60 hours is built in and will not have additional effect while calculating LF whereas any non-supply beyond 60 hours will be considered.

8.14.6 Since the introduction of LF incentive, in the calculation of Load Factor as per the methodology adopted by the Commission, 60 hours have been deducted towards interruption/non-supply in a 30-day month. As per the formula of LFI, maximum incentive of 15% becomes available at 92.5% which means non-supply including interruption up to 60 hours are inbuilt in the formula.

8.14.7 Petitioner submitted that the 60 hours of non-supply should include any type of breakdown, interruptions, maintenance, planned shutdowns, etc.

8.14.8 Petitioner further submitted that there is non-supply for more than 60 hours or sometimes more than a few days due to natural calamities like floods or cyclones. Since lack of clarity on how to treat planned outages resulted in various disputes, there is a need to bring in more clarity in the formula for treatment of shutdown or planned outages. Petitioner, thus, proposed not to deduct any non-supply upto 60 hours including planned shutdown for calculating the load factor, whereas, any non-supply of more than 60 hours will be deducted while calculating the load factor as per the following formula proposed by the Petitioner:

$$\text{Load Factor} = \frac{\text{Consumption during the month, in MU}}{\text{Maximum Consumption possible during the month, in MU}}$$

Maximum consumption possible = Contract Demand (kVA) x Unity Power Factor x Total no. of hours during the month less non-supply hours beyond 60 hours. (irrespective of planned or un-planned load shedding)

In case the consumer exceeds its contract demand in any particular month, the Load Factor Incentive will not be payable to the consumer in that month

8.14.9 Petitioner also submitted that the 60 hours may be reduced to Zero hours by reducing the incentive and actual non-supply hours shall be excluded from computation of Load Factor, if the Commission deems fit. This will protect the consumer interest as he will not lose the incentive due to non-supply from MSEDCL/MSETCL since Load Factor incentive will be based on performance of consumer, thus reducing litigations.

8.14.10 Petitioner asserts that the Load Factor of the consumers will improve due to such revision and many consumers presently not getting the load factor incentive may get the incentives for load factor achievement.

8.14.11Petitioner also submitted that in both the proposed cases as above, the maximum incentives shall be limited to 7.5% and the proposed applicability of Load Factor incentive is as follows :

- Load Factor above 75% and up to 85% - incentive of 0.25% on the energy charge for every 1% rise in load factor from 75% to 85%.
- Consumers having load factor above 85% - incentive of 0.50% on the energy charge for 1% rise in load factor from 85%.
- The total incentive will be subject to a ceiling of 7.5% of energy charges applicable to the consumer.

8.14.12Load Factor Calculation with proposed changes:

Base data assumed for case studies			
Consumption during month (Units)	CD (kVA)	Total number of hours during month	PF
500000	1000	720	1

						Existing method		Proposed method	
Scenario	MSEDCL		MSETCL		Total interruptions during the month in hours	Hours considered for deduction	Load factor	Hours considered for deduction	Load factor
	Breakdown in hours	Planned outage in hours	Breakdown in hours	Planned outage in hours					
	1	2	3	4	5=1+2+3+4	6	7	8	9
CASE 1	30	0	0	25	55	0	69%	55	75%
CASE 2	30	10	10	20	70	10	70%	70	77%
CASE 3	40	50	20	0	110	50	75%	110	82%
CASE 4	10	90	0	0	100	90	79%	100	81%

Commission's Analysis and Rulings

8.14.13As per the existing tariff of MSEDCL, Load factor incentive is available for incentivising the bulk consumers in the State availing higher loading as compared to the Contract Demand thereby maintaining a steady demand on the system. Maximum incentive payable is 15%

of energy charge. The Commission proposes to continue with same rebate.

8.14.14However, computation of the load factor considered an interruption/non-supply to the extent of 60 hours in a 30-day month even if there is no or lower than 60 hours of interruption during the month. With AMR/MRI enabled meters being installed to all HT consumers, actual hours of interruptions are recorded in meter and are readily available at the time of processing of monthly bill.

8.14.15Thus, in order to understand the impact of non-consideration of 60 hrs of interruption during a month, the Commission had sought the illustration from MSEDCL to show net impact on charges to consumers in its Petition with respect to Existing Load Factor Incentive Formula v/s Proposed Load Factor Incentive Formula. The same was submitted by MSEDCL, which can be referred in the above submissions of MSEDCL. The Commission after understanding the above illustration finds it evident that, the removal of '60 Hours' from LF formula and using actual hours of interruptions will provide the correct estimation of LF and the proposal of correcting LF formula has been accepted by the Commission.

8.14.16In addition, with AMR/MRI enabled meters being installed to all HT consumers, actual hours of interruptions are recorded in meter and are readily available at the time of processing of monthly bill. Hence, in order to compute correct Load Factor, the Commission has modified the formula and has included the actual interruptions hours recorded in the meter instead of provision for 60 hours. In case of faulty meter where interruptions hours are not recorded in the meter, the interruptions hours recorded on feeder meter shall be considered for calculation of Load Factor Incentive for the individual consumer

8.15 Rebate for Incremental Consumption

MSEDCL's Submission

8.15.1 Petitioner in its MTR petition proposed to provide incentive to the existing HT consumers for incremental consumption, with a rebate of Rs.1/kVAh in energy charges for additional consumption over a threshold limit, provided the effective variable charge of such consumer should not be less than Rs.4/kVAh after considering all charges, rebates, incentives, etc.

8.15.2 Petitioner submitted that the Commission in its MTR Order dated 12th September 2018 has observed that encouraging incremental consumption by way of discount would be good in surplus power scenario and contracted capacity is available in excess which otherwise would be subjected to backing down. However, the Commission further states that

providing such rebate during MTR review process would not be proper and hence the same can be considered along with next filing for new Control Period with detailed scheme and cost/benefit analysis of such scheme.

8.15.3 Petitioner further submitted that, the Commission in Regulation 81.4 of MYT Regulations 2019 provides for such rebates, "The Distribution Licensee may propose other rebates for inter-alia, taking supply at higher voltage, bulk consumption, power factor, etc. as apart of their petition and the revenue impact of the rebates shall be passed on through the Aggregate Revenue Requirement and tariffs, subject to the Commission's approval." However, this rebate should not be considered under the Regulation 81.5 of the MYT Regulations 2019. Petitioner requested the Commission to allow this rebate as a part of the ARR. The impact assessment of incremental consumption, estimate of eligible consumer/consumption base etc. have been illustrated below:

Cost benefit analysis	**UoM**	**FY 2020-21**	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**
Sales due to incremental consumption	MU	2424	1318	1392	1472	1561
Average billing rate of HT consumers	Rs./unit	9.12	9.31	9.49	9.66	9.81
Rebate given for incremental consumption	Rs./Unit	1.00	1.00	1.00	1.00	1.00
Net ABR for HT consumers	**Rs./Unit**	**8.12**	**8.31**	**8.49**	**8.66**	**8.81**
Total revenue from incremental sales	**Rs. Cr**	**1969**	**1094**	**1181**	**1275**	**1376**
Purchase quantum for incremental sales	**MU**	**2621**	**1425**	**1505**	**1592**	**1687**
Marginal variable cost of power purchase	Rs./Unit	3.00	3.00	3.00	3.00	3.00
Total cost for incremental sales	**Rs. Cr**	**786**	**427**	**451**	**478**	**506**
Total benefit	**Rs. Cr**	**1183**	**667**	**730**	**798**	**869**

8.15.4 Petitioner submitted that, it would get additional revenue for incremental sales due to such subsidising consumers.

8.15.5 Petitioner proposed to provide incentive to HT consumers for incremental consumption with a rebate of Re.1/kVAh in energy charges for additional consumption over a fixed threshold but the consumers have to pay the fixed and wheeling charges as may be applicable to that category. The criterion for allowing the rebate shall be as under:

- The rebate shall be applicable for HT industries, HT commercial, HT public services and HT Railways/Metro/Mono.
- The rebate shall be given only to those consumers who source their entire power from MSEDCL.
- The rebate shall be for a period of 5 years subject to reconsideration during the MTR.
- The rebate shall be allowed to consumers who consume power above threshold limit. The total consumption in financial year FY 2018-19 by the consumer shall be considered as baseline consumption.
- In case, period is less than one year, baseline consumption shall be worked out on prorate basis.
- The billing at the reduced rates after allowing the rebate shall be done once the consumer crosses the baseline consumption. E.g. If a consumer's total annual consumption in FY 2018-19 was 10,000 units, the consumer shall be entitled for the rebate of Rs.1/kVAh for consumption exceeding consumption of previous year (not below the baseline consumption of 10,000 units) in FY 2020-21 onwards.
- The amount of rebate shall be adjusted in the consumer's bill after completion of the financial year
- The rebate shall be over and above the existing rebates subject to the fact that the consumer's total variable charges should not be less than Rs.4/ kVAh after accounting all applicable rebates.
- The rebates would also be applicable to Open Access consumers who shift their entire demand to MSEDCL

8.15.6 Petitioner submitted that such incentives on incremental consumption is prevalent for

industrial, non-industrial and shopping mall categories in Madhya Pradesh and the relevant clause (3.12 – xii of MPERC Tariff Order FY 19-20) for the same is reproduced as "A rebate of Re.1 per unit energy charges is applicable for incremental monthly consumption w.r.t corresponding month of FY 2015-16."

8.15.7 Petitioner submitted that in order to reduce the burden of fixed charges on its consumers, there is a need to promote consumption from MSEDCL. Petitioner will also get additional revenue from the subsidising HT categories apart from optimum utilisation of all sources of power. Petitioner further submitted that benefit of increased revenue as a result of increased consumption will get passed on through tariffs during future truing up which will be a win-win situation for all stakeholders including consumers. Petitioner, thus, requested the Commission to approve the above proposal and consider the said rebate as a part of ARR.

Commission's Analysis and Rulings

8.15.8 The Commission notes the submission and rationale provided by MSEDCL for offering rebate for incremental consumption. With surplus contracted energy available at its disposal, the Commission agrees with MSEDCL about exploring avenues for increasing sales within its distribution area as well as opportunities of surplus trading of power through power exchanges and inter-utility exchange within state. In addition any incremental consumption by existing or future consumers would help MSEDCL gainfully utilise surplus /stranded power generation/contracted capacity available with it instead of backing down. So long as the opportunity for revenue recovery from such sources exceed the variable/incremental cost of sourcing of such power, it would only benefit MSEDCL to reduce burden of surplus/stranded power capacity. In that sense, offering such rebate for incremental consumption to direct consumers as well as open access consumers would be in order, since aim for offering such rebate is to increase incremental consumption/sale by Licensee. Hence, the Commission opines that offering such rebate for incremental consumption to all consumers including partial open access consumers, subject to clearly laid out conditions would be appropriate.

8.15.9 In this context, the Commission observes that Regulation 81.4 of MYT Regulations 2019 allows for provisioning of such rebates,

> *"The Distribution Licensee may propose other rebates for inter-alia, taking supply at higher voltage, bulk consumption, power factor, etc. as a part of their petition and the revenue impact of the rebates shall be passed on through the Aggregate Revenue Requirement and tariffs, subject to the Commission's approval."*

8.15.10Thus, as covered under earlier sections, impact of such rebate has been estimated based on sales projections with some assumptions to be recovered as part of ARR component in line with regulatory accounting treatment given in case of discounts/prompt payment rebate etc.

*8.15.11*Thus, in line with the MSEDCL's Proposal and Commission's view on allowing rebate for incremental consumption with certain modifications to MSEDCL's proposal, the Commission in principle accepts the proposal of MSEDCL. The rebate for incremental consumption is allowed @ Rs 0.75/KVAh and further, it needs to be ensured that conditions and operational modalities are laid out clearly to avoid any discrimination and potential litigations are minimal.

*8.15.12*Detailed modalities for operationalization of rebate for incremental consumption alongwith relevant conditions for applicable consumer categories and eligible consumers shall be governed as per following conditions:

- The rebate for incremental consumption shall be applicable for HT industries, HT commercial, HT public services, HT-PWW, HT Railways/Metro/Mono and HT-Group Housing Society (Residential).
- The rebate shall be given to eligible consumers including partial open access consumers falling under above consumer categories to the extent of procurement from MSEDCL.
- The rebate shall be for a period of 3 years subject to reconsideration during the MTR.
- The rebate shall be allowed to eligible consumers who consume power above threshold limit.
- The 3-year average monthly consumption by consumer from FY 2017-18 to FY 2019-20 shall be considered as baseline consumption (or monthly threshold consumption) for determination of incremental consumption by such eligible consumers.
- In case of a consumer registered into system for duration lower than 3 years, such consumer shall be eligible for availing incremental rebate from the next billing cycle upon completion of 3-year period and average monthly consumption for past three years shall be considered as its baseline consumption (or monthly threshold

consumption) in such cases for determination of their incremental consumption for the purpose of rebate.

- For the purpose of determination of Incremental consumption post MTR period of 4th Control Period, (i.e. for FY 2023-24 and FY 2024-25), baseline consumption (or monthly threshold consumption) shall be reset based on 3-year average from FY 2020-21 to FY 2022-23.

- The billing at the reduced rates after allowing the rebate shall be done on monthly basis subject to condition that net entitlement for the rebate under this head of incremental consumption shall be determined on annual basis (April to March) equal to energy units consumption in excess of baseline consumption (i.e. annual threshold consumption). The adjustment for shortfall/excess in case cumulative monthly consumption for the yearly consumption vis-à-vis its baseline consumption (i.e. annual threshold consumption) shall be effected in the last monthly (for March) billing period. No carry-forward of shortfall/excess shall be allowed from one year to next year.

  Provided that such adjustment of rebate for yearly incremental consumption vis-à-vis baseline consumption (i.e. annual threshold consumption) shall be undertaken from FY 2021-22 onwards and no such adjustment shall be undertaken for FY 2020-21 wherein monthly rebate shall continue considering emergent situation arising in FY 2020-21 due to global pendemic of COVID-19 and its possible fall out on annual electricity consumption by industry and society at large.

- For example, If a consumer's 3-year average annual consumption in was 12,000 units, the consumer shall be entitled for the rebate of Rs.0.75/kVAh for consumption exceeding its monthly threshold consumption (not below the baseline consumption of 1,000 units per month) in FY 2021-22 onwards. However, in case its cumulative monthly consumption for the yearly period falls short of annual threshold consumption of 12,000 units then, consumer shall not be entitled for incremental consumption rebate for that financial year and shortfall (or rebate already availed by consumer in earlier months, if any) shall be adjusted for recovery in monthly billing period for March.

- The Commission has not considered isolated cases which may become Permanently Disconnected during the year in which a rebate has been availed for some months. The details of such cases, if any will be dealt based on the data as may be submitted by MSEDCL during MTR.

- The rebate shall be over and above the existing rebates subject to the fact that the consumer's total variable charges should not be less than Rs.4/ kVAh after accounting for all applicable rebates.
- The rebates would also be applicable to Open Access consumers, subject to conditions outlined above.

8.16 Rebate for Bulk Consumption

Commission's Analysis and Rulings

8.16.1 During public hearing, many industrial consumers have voiced concerns regarding high tariff regime prevalent in the state in comparison to other states for similarly placed industries. They have also highlighted their bulk consumption offers significant revenue stability to Utility as also other benefits in terms of power procurement planning and load generation balancing by Utility. With expected increase in demand charges and likely revision in billing demand their cost of operations where electricity is major raw material source affects the economics of their operations significantly. Hence, such industries/stakeholders have vehemently argued their case for bulk consumption discount or rebate.

8.16.2 The Commission observes that out of around 14000 number of HT-Industrial consumers, around 0.4% no. of consumers consume > 5 MU/month and contribute around 25% of total consumption of HT-Industrial category. Further, around 3% no. of consumers consume between 1 to 5 MU/month and contribute around 29% of total consumption of HT-Industrial category and around 22% no. of consumers consume between 0.1 to 1 MU/month and contribute around 39% of total consumption of HT-Industrial category. The Commission opines that bulk consumption rebate with a reverse telescopic slab would benefit all such consumers under HT-Industrial consumers with consumption in excess of 1 lakh units per month (0.1 MU per month). Thus, the Commission has decided to introduce "Bulk Consumption" rebate in a reverse telescopic manner for HT-Industrial consumers in following manner:

- a) For monthly consumption (> 1 Lakh units to 1 MU) per month: 2%
- b) For monthly consumption (> 1 MU to 5 MU) per month: 1.5%
- c) For monthly consumption (> 5 MU) per month: 1%

8.16.3 Bulk Consumption Rebate shall be applicable on the Energy Charge component including

FAC of the Bill excluding taxes and duty.

8.16.4 In this context, the Commission observes that Regulation 81.4 of MYT Regulations 2019 allows for provisioning of such Bulk Consumption rebates,

> *"The Distribution Licensee may propose other rebates for inter-alia, taking supply at higher voltage, bulk consumption, power factor, etc. as a part of their petition and the revenue impact of the rebates shall be passed on through the Aggregate Revenue Requirement and tariffs, subject to the Commission's approval."*

8.16.5 Thus, as covered under earlier sections, impact of such rebate has been estimated based on sales projections with some assumptions to be recovered as part of ARR component in line with regulatory accounting treatment given in case of discounts/prompt payment rebate etc.

8.16.6 Illustration:

8.16.7 Say a consumer consumes 15 MU during month then, its consumption more than 1 Lakh units upto 1 MU units rebate will be 2%/unit, for next 4 MU (i.e. upto consumption of 5 MU) rebate will be 1.5%/unit and for consumption in excess of 5 MU upto 15 MU, rebate will be 1%/unit.

8.17 Prepaid Meter Rebate

MSEDCL's Submission

8.17.1 MSEDCL submitted that it was difficult to persuade consumers to shift to prepaid metering in the absence of any discount. Further, activities like meter reading, preparation and distribution of bills and payment collection takes considerable time and the costs associated with such processes is a significant amount that is being charged to the consumers which will decrease if consumers opt for prepaid meters. In view of this, the Commission in its Tariff Order as dated on 12th September 2010 (in Case No.111 of 2009) has approved prepaid meter rebate of 5%.

8.17.2 Petitioner submitted that the consumers paying regular bills within the stipulated timelines get Prompt Payment Discount of 1%. Petitioner further submitted that the Commission provides interest for normative working capital at a rate of about 8-10% p.a. which is less than 1% per month. The Commission provides interest for security deposit at bank rate which is about 6-6.5% p.a. The interest rates provided for bank deposits are also in the range of 6-8% p.a. Petitioner also submitted that in view of the same, existing discount of 5% is

much higher which comes to 60% p.a. which was initially given as promotional activity and there is a need to correct the same.

8.17.3 Petitioner proposed to reduce the prepaid meter rebate to 2% of the consumer's total monthly bill as the existing rebate appears quite high considering the saving in cost from implementation of prepaid meters. Petitioner also submitted that even after reduction of 2%, it is still attractive and higher than prompt payment discount.

8.17.4 Petitioner, thus, requested the Commission to allow the Prepaid Meter Rebate as proposed above.

Commission's Analysis and Rulings

8.17.5 The Commission has sought the detailed rationale of MSEDCL's proposal of reducing the existing prepaid meter rebate as part of data gaps, to which the response of MSEDCL was not found sufficient enough to justify its claim of reducing the rebate for prepaid meters from 5% to 2%.

8.17.6 In addition, the Commission has also sought the details of category wise prepaid sales as part of data Gaps, the details of the same is provided in the following table:

Table 8-26: Category wise prepaid sales

Category	FY 2016-17		FY 2017-18		FY 2018-19	
	Live_Cons	Sale	Live_Cons	Sale	Live_Cons	Sale
	Nos.	MUs	Nos.	MUs	Nos.	MUs
LT Prepaid Res,	11372	10.77	10,528	9.59	9,438	7.75
LT- Prepaid Comm.	1693	1.14	1557	0.97	1358	0.70
LT- Prepaid Temp.	6	0.00	12	0.00	13	0.00
Total	**13,071**	**11.91**	**12,097**	**10.57**	**10,809**	**8.45**

8.17.7 From above table, it is clear that, the overall sales of LT prepaid meter sales is very miniscule to have any significant impact on overall ARR which necessitates review of rebate for prepaid from current level of 5% to 2%. In addition, there is a y-o-y reduction in the Prepaid meter sales, reducing the existing rebate from 5% to 2%, will further de-motivate the consumer who wish to opt for prepaid connections. Thus, the Commission has

not accepted the present proposal of MSEDCL in this Order.

8.17.8 The Commission has already approved the capital cost for release of Ag connection on HVDS. The Capital cost involved in releasing Ag connection under HVDS is relatively costly compared to realigning the same on LT level. The Commission also agrees with the advantages of the HVDS system in terms of reliability and quality of supply to the Ag consumers. The Commission also agrees with MSEDCL that with all associated advantage and higher investments, there is a clear expectation of MSEDCL to received timely payments. The higher capital cost is socialized on all the consumers. The Commission directs MSEDCL that all the HVDS connections shall be released through prepaid meters only. Also, HVDS Ag connections released earlier should also be converted into prepaid meters within 6 months. Also, in case of non-availability of prepaid meters, the released connections should be converted to prepaid meters within 6/12 months.

8.18 InSTS Charges for Open Access Consumers

MSEDCL's Submission

8.18.1 MSEDCL submitted that the Commission in its Order dated 14th June 2019 had directed the Petitioner to submit details of revenue collected on account of transmission charges from partial OA consumers for the period of FY 2016-17 to FY 2019-20 in its next tariff petition. Accordingly, the Petitioner submitted the details of transmission charges collected from partial OA consumers in the following table:

Table 8-27: Transmission charges collected from partial OA

Particulars	Amount in Rs. Crores
FY 2016-17	284.82
FY 2017-18	220.17

8.18.2 Petitioner submitted that the Distribution Licensees may be allowed to retain the transmission charges collected from partial OA consumers as the demand from partial OA consumers is embedded within the demand of the Licensee. Hence, the transmission charges payable by the Distribution Licensee also includes the share of transmission charges attributable to partial Open Access consumers which the Distribution Licensee must recover from partial OA consumers to avoid any burden on regular consumers.

8.18.3 Petitioner further submitted that the CPD/NCPD of Distribution Licensee should be

exclusive of the open access capacity of partial OA consumers while calculating the Base TCR of the Distribution Licensee for determination of InSTS charges. This will ensure correct transmission charge liability of the Distribution Licensees corresponding to their own consumers since, by including open access capacity for partial OA consumers, STU is getting paid double for the same demand. Following table provides details of partial open access consumers and its impact on the Petitioner:

Table 8-28: Transmission charges- details of partial OA

Particulars	Unit	FY 16-17	FY 17-18	FY 18-19
Base TCR approved for MSEDCL	MW	15657	16663	17891
MSEDCL share in TTSC	Rs. Crs	3837	4797	4288
Transmission charges	Rs.Crs/MW	0.25	0.29	0.24
Partial OA capacity	MW	1838	1274	1224
Amount paid by MSEDCL from partial OA consumers	Rs. Crs	450	367	293
Amount collected by MSEDCL from partial OA consumers	Rs. Crs	285	220	182
Loss to MSEDCL	**Rs. Crs**	**166**	**147**	**111**

8.18.4 Petitioner requested the Commission to allow it to retain the transmission charges collected from partial OA consumers. Petitioner further requested the Commission to devise a mechanism to recover the complete amount of transmission charges due to OA consumers. Petitioner submitted that it has raised this issue several times before the Commission through submissions in petition and comments on Draft Open Access Regulations.

Commission's Analysis and Rulings

8.18.5 The Commission has already discussed its detailed dispensation of not allowing MSEDCL's claim of retaining Transmission Charges collected on behalf of STU in the ARR sections above and accordingly the impact of the same have also been disallowed in the respective year's ARR.

8.18.6 Besides, the Commission has also issued directions for passing on the earlier retained revenue from transmission charges collected from partial open access consumers during FY 2017-18 to FY 2019-20 to be passed onto STU in a time-bound manner. The reduction in

Non-tariff income and increase in ARR to that effect has already been given effect to through this Order. Further, benefit of such passing on of transmission charge revenue would also be available to MSEDCL, (being TSU), as part of sharing of Intra-state transmission system cost (TTSC) in proportion to its share in TTSC.

8.19 kVA based Fixed Charges for loads < 20 kW & load in kVA instead of kW

MSEDCL's Submission

8.19.1 Petitioner submitted that at present tariff is categorised as per the Sanctioned load in kW, for categories such as LT commercial, LT Public services and LT industrial, the fixed charges for 0-20 kW are based on Rs./Connection/Month while the consumers above 20 kW in these categories are billed on the contract demand basis (kVA) of the consumer i.e. Rs./kVA/month. Hence, it is necessary to divide categories as per Contract Demand of the consumer. Following cases highlight the necessity for contract demand as a basis for categorisation.

- Case 1: - If consumer having 20 kW sanctioned load uses the same load at 0.7 PF, then the demand of the consumer will be = 20/0.7 = 28.57 kVA
- Case 2: - If consumer having 25 kW sanctioned load uses the same load at unity PF, then the demand of the consumer will be = 25/1 = 25 kVA

8.19.2 Petitioner submitted that, in Case 1, the consumer uses more Contract Demand than Case 2 but still gets billed at only Fixed Charge of Rs. /connection/month because sanctioned load is below 20 kW. Hence it is necessary to correlate slabs of tariff in kVA also.

8.19.3 Petitioner suggested that the sub slabs in the 3 phase LT categories need to be on the basis of kVA only and based on the recorded demand, the consumer shall be billed on Rs./kVA/month for that month and if the consumer crossed the 20 kVA limit on three instances in a year, he shall be categorised in higher slab permanently. Petitioner submitted that; the Commission has given similar ruling in the Order dated 1st January 2019 in Case No.60 of 2018.

8.19.4 Petitioner further submitted that if the consumer is willing to reduce the demand back to its previously allocated demand, then it would monitor the load of the consumer for 3 consecutive months before switching it back to the previously allocated lower tariff category. Further, all consumers shall be charged for minimum demand of 1 kVA even if the consumer's demand is below 1 kVA.

8.19.5 Petitioner submitted that it shall continue to levy fixed charges on Rs./connection/month as per the proposed tariff for consumers having single phase connections (upto 40 Amp/7.5 kW) in 0-20 kVA industries, commercial, public services in LT category. Petitioner thus, requested the Commission to allow the kVA-based demand charges for LT category as proposed above.

Commission's Analysis and Rulings

8.19.6 The Commission has noted the submissions of MSEDCL, and is of the view that, the proposed billing based on the Contract Demand for 3-Phase LT consumers between 0-20 kW cannot be implemented at this stage, since, the Commission is not yet sure of the readiness of MSEDCL and also MSEDCL needs to carry out a detailed study about the likely impact of implementation of this proposal. The Commission would not like to take any hasty step that may result in the tariff shock for such consumer categories at the same time, it is also important to assess the potential impact on number of consumers alongwith their connected load. In earlier sections, the Commission has already dealt with issue of Tariff design for consumers < 20 kW including feasibility of extending kVAh billing in phases, likely impact of revision in Fixed/Demand Charges for such low end consumption basket but affecting vast number of consumers. A comprehensive study on these aspects would be necessary before redesigning tariff aspects for such consumer categories.

8.19.7 Thus, the Commission has not allowed proposed claim of MSEDCL in this Order.

8.20 Grid Support Charges for Rooftop Net Metering Arrangements

MSEDCL's Submission

8.20.1 Petitioner submitted that it has always supported renewable energy and its current RE contracted capacity is 10795 MW and installed capacity is 7654 MW which is one of the highest in the country.

8.20.2 Petitioner submitted that it encounters challenges due to continuous addition of rooftop RE systems as installation of such facility not only reduces the utilisation of its distribution network but also disturbs the power planning and results into stranded tied-up capacity of generation. Net metering consumers end up paying much lower charges for keeping ready the network and generation capacity which was earlier setup/ tied up for all consumers including these (rooftop) consumers while the burden of unrecovered expenses falls on other consumers of MSEDCL.

8.20.3 The solar energy is generated during daytime and after self-consumption by the consumer, the balance energy is fed into the grid. Due to its combined impact, the utility has to back down thermal generation but is obligated to pay same fixed cost to generators. When there is no solar power generation (evening, seasonal change, technical problem in the system, etc.), the rooftop consumer draws full power as per the requirement from the grid and utility has to keep network and generators on bar ready to feed this demand. The rooftop consumer is using the grid as a storage system for his solar rooftop arrangement under the net metering and at the same time, loading the balance costs on other consumers of the distribution utility such as generators fixed cost, infrastructure cost recovery, CSS etc. Thus the burden of such unrecovered expenses from net metering systems falls on other consumers of MSEDCL.

8.20.4 Petitioner further submitted that the net metering facility is being utilised by the high end HT/LT consumers which are subsidising consumers and the event of any decrease in consumption by these consumers from Distribution Licensee will have a direct impact by way of increase in tariff for all consumers due to under recovery. Thus, Cross subsidy balance inbuilt in the tariff structure will get disturbed.

8.20.5 Petitioner submitted that the Commission has provided for levy of Grid Support Charges on the generated energy under the net metering systems in the MERC Grid Interactive Rooftop Renewable Energy Generating systems Regulations 2019.

8.20.6 Petitioner submitted that as per the Net Metering Regulations 2019, the Grid Support Charges cover balancing, banking and wheeling cost after adjusting RPO benefits avoided distribution losses and any other benefits accruing to the Distribution Licensee.

8.20.7 Petitioner submitted that the fixed cost component of its cost gets recovered partially through demand/fixed charges. However, the variable charges along with the fixed cost component built into it remains unrecovered. Petitioner further submitted that it shall save only variable component of power purchase cost and T&D losses due to consumer opting for net metering arrangement. Petitioner proposed Grid Support Charges for rooftop net metering arrangements considering the category-wise variable charges, marginal variable cost of power purchase, applicable wheeling and intra state transmission losses. Petitioner has shown the computation for FY 2020-21 in the following table:

Table 8-29: Proposed Grid Support Charges for Rooftop Net Metering Arrangements (FY 2020-21)

Category	Variable charge	Marginal cost of power purchase	Intra state transmission loss	Wheeling loss	Grid Support Charge
	Rs./kVAh	Rs./kWh	%	%	Rs./kVAh
HT I: HT – Industry					
HT	7.88	3.38	3.74%	7.50%	4.08
EHV	7.11	3.38	3.74%		3.60
HT I(B): HT – Industry (Seasonal)					
HT	8.17	3.38	3.74%	7.50%	4.37
EHV	7.40	3.38	3.74%		3.89
HT II: HT – Commercial					
HT	12.47	3.38	3.74%	7.50%	8.67
EHV	11.70	3.38	3.74%		8.19
HT III: HT – Railways/Metro/Monorail traction					
HT	7.97	3.38	3.74%	7.50%	4.17
EHV	7.20	3.38	3.74%		3.69
HT IV: HT – Public Water Works					
HT	7.27	3.38	3.74%	7.50%	3.47
EHV	6.50	3.38	3.74%		2.99
HT V(A): HT – Agricultural Pumpsets					
HT	4.67	3.38	3.74%	7.50%	0.87
EHV	3.90	3.38	3.74%		0.39
HT V(B): HT – Agriculture (Others)					
HT	6.17	3.38	3.74%	7.50%	2.37
EHV	5.40	3.38	3.74%		1.89
HT VI: HT – Group Housing Societies (Residential)					

Category	Variable charge	Marginal cost of power purchase	Intra state transmission loss	Wheeling loss	Grid Support Charge
HT	6.77	3.38	3.74%	7.50%	2.97
EHV	6.00	3.38	3.74%		2.49
HT VIII(A): HT – Temporary Supply Religious (TSR)					
HT	4.67	3.38	3.74%	7.50%	0.87
EHV	3.90	3.38	3.74%		0.39
HT VIII(B): HT – Temporary Supply Others (TSO)					
HT	13.17	3.38	3.74%	7.50%	9.37
EHV	12.40	3.38			9.02
HT VIII(B): HT – Temporary Supply Others (TSO) Total	17.38		3.74%		
HT IX: HT – Public Services					
HT IX(A): HT – Public Services – Govt. Edu. Institutions and Hospitals					
HT	8.77	3.38	3.74%	7.50%	4.97
EHV	8.00	3.38	3.74%		4.49
HT IX(B): HT – Public Services – Others					
HT	10.67	3.38	3.74%	7.50%	6.87
EHV	9.90	3.38	3.74%		6.39
HT X: HT – Electric Vehicle Charging Station					
HT	6.17	3.38	3.74%	7.50%	2.37
EHV	6.17	3.38	3.74%		2.65

Category	Variable charge	Marginal cost of power purchase	Intra state transmission loss	Wheeling loss	Grid Support Charge
	Rs./kWh	**Rs./kWh**	**%**	**%**	**Rs./kWh**

LT Residential					
LT I(A): LT – Residential – BPL	1.36	3.38	3.74%	12.00%	-
LT I(B): LT – Residential					
1 – 100 units	4.45	3.38	3.74%	12.00%	0.46
101 – 300 units	8.45	3.38	3.74%	12.00%	4.46
301 – 500 units	11.05	3.38	3.74%	12.00%	7.06
Above 500 units	12.65	3.38	3.74%	12.00%	8.66
LT II: LT – Non Residential					
(A) 0 – 20 kVA	9.05	3.38	3.74%	12.00%	5.06
(B) > 20 kVA and ≤ 50 kVA	10.65	3.38	3.74%	12.00%	6.66
(C) > 50 kVA	12.75	3.38	3.74%	12.00%	8.76
LT III: LT – Public Water Works					
(A) 0 – 20 kVA	3.45	3.38	3.74%	12.00%	-
(B) > 20 kVA and ≤ 50 kVA	4.75	3.38	3.74%	12.00%	0.76
(C) > 50 kVA	6.05	3.38	3.74%	12.00%	2.06
LT IV(C): LT – Agriculture Metered – Others	4.85	3.38	3.74%	12.00%	0.86
LT V(A): LT – Industry – Powerlooms					
(i) 0 – 20 kVA	6.05	3.38	3.74%	12.00%	2.06
(ii) Above 20 kVA	7.45	3.38	3.74%	12.00%	3.46
LT V(B): LT – Industry – General					
(i) 0 – 20 kVA	6.15	3.38	3.74%	12.00%	2.16
(ii) Above 20 kVA	7.05	3.38	3.74%	12.00%	3.06
LT VI: LT – Street Light					
(A): Grampanchayat; A, B and C class Municipal Councils	6.05	3.38	3.74%	12.00%	2.06
(B): Municipal Corporation area	7.15	3.38	3.74%	12.00%	3.16
LT VII: LT – Temporary Connection					

(A): LT – Temporary Supply Religious (TSR)	4.55	3.38	3.74%	12.00%	0.56
(B): LT – Temporary Supply Others (TSO)	14.35	3.38	3.74%	12.00%	10.36
LT VIII: LT – Advertisements and Hoardings	13.55	3.38	3.74%	12.00%	9.56
LT IX: LT – Crematorium and Burial Grounds	4.55	3.38	3.74%	12.00%	0.56
LT X(A) – Public Services – Govt.					
(i) 0 – 20 kVA	4.85	3.38	3.74%	12.00%	0.86
(ii) > 20 kVA and ≤ 50 kVA	5.65	3.38	3.74%	12.00%	1.66
(iii) > 50 kVA	6.85	3.38	3.74%	12.00%	2.86
LT X(B) – Public Services - Others					
(i) 0 – 20 kVA	6.95	3.38	3.74%	12.00%	2.96
(ii) > 20 kVA and ≤ 50 kVA	8.25	3.38	3.74%	12.00%	4.26
(iii) > 50 kVA	8.75	3.38	3.74%	12.00%	4.76
LT XI: LT – Electric Vehicle Charging Station	6.15	3.38	3.74%	12.00%	2.16

8.20.8 Following table provides the category wise and year wise proposed Grid Support Charges for Rooftop Net Metering Arrangements

Table 8-30: Grid Support Charges for Rooftop Net Metering Arrangements (H T Category)

Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./kVAh	Rs./kVAh	Rs./kVAh	Rs./kVAh	Rs./kVAh
HT I: HT – Industry					
HT	4.08	4.07	4.05	4.03	3.96
EHV	3.60	3.59	3.57	3.57	3.52
HT I(B): HT – Industry (Seasonal)					
HT	4.37	4.37	4.35	4.33	4.29
EHV	3.89	3.89	3.87	3.87	3.85

Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT II: HT – Commercial					
HT	8.67	8.57	8.45	8.33	8.19
EHV	8.19	8.09	7.97	7.87	7.75
HT III: HT – Railways/Metro/Monorail traction					
HT	4.17	4.27	4.35	4.43	4.49
EHV	3.69	3.79	3.87	3.97	4.05
HT IV: HT – Public Water Works					
HT	3.47	3.57	3.65	3.73	3.79
EHV	2.99	3.09	3.17	3.27	3.35
HT V(A): HT – Agricultural Pumpsets					
HT					
EHV					
HT V(B): HT – Agriculture (Others)					
HT	2.37	2.47	2.55	2.63	2.69
EHV	1.89	1.99	2.07	2.17	2.25
HT VI: HT – Group Housing Societies (Residential)					
HT	2.97	3.07	3.15	3.23	3.29
EHV	2.49	2.59	2.67	2.77	2.85
HT VIII(A): HT – Temporary Supply Religious (TSR)					
HT					
EHV					
HT VIII(B): HT – Temporary Supply Others (TSO)					
HT	9.37	9.67	9.95	10.23	10.49
EHV	9.02	9.19	9.47	9.77	10.05

Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT IX: HT – Public Services					
HT IX(A): HT – Public Services – Govt. Edu. Institutions and Hospitals					
HT	4.97	4.97	4.95	4.93	4.89
EHV	4.49	4.72	4.61	4.92	5.02
HT IX(B): HT – Public Services – Others					
HT	6.87	6.87	6.85	6.83	6.79
EHV	6.39	6.39	6.37	6.37	6.35
HT IX: HT – Public Services Total					
HT X: HT – Electric Vehicle Charging Station					
HT	2.37	2.59	2.55	2.63	2.69
EHV	2.65	2.09	2.07	2.17	2.25

Table 8-31: Grid Charges for Rooftop Net Metering Arrangements (LT category)

Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./kWh	**Rs./kWh**	**Rs./kWh**	**Rs./kWh**	**Rs./kWh**
LT Residential					
LT I(B): LT – Residential					
1 – 100 units					
101 – 300 units	4.46	4.56	4.63	4.69	4.73
301 – 500 units	7.06	6.96	8.63	6.69	6.53
Above 500 units	8.66	8.56	8.43	8.39	8.33
LT II: LT – Non Residential					
(A) 0 – 20 kVA	5.06	5.16	5.23	5.29	5.33
(B) > 20 kVA and ≤ 50 kVA	6.66	6.86	7.03	7.19	7.33
(C) > 50 kVA	8.76	8.86	8.93	8.89	8.83

Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
LT III: LT – Public Water Works					
(A) 0 – 20 kVA					
(B) > 20 kVA and ≤ 50 kVA					
(C) > 50 kVA	2.06	2.06	2.13	2.19	2.23
LT IV(C): LT – Agriculture Metered – Others					
LT V(A): LT – Industry – Powerlooms					
(i) 0 – 20 kVA	2.06	2.16	2.33	2.49	2.63
(ii) Above 20 kVA	3.46	3.46	3.53	3.59	3.63
LT V(B): LT – Industry – General					
(i) 0 – 20 kVA	2.16	2.36	2.53	2.69	2.83
(ii) Above 20 kVA	3.06	3.26	3.43	3.59	3.73
LT VI: LT – Street Light					
(A): Grampanchayat; A, B and C class Municipal Councils	2.06	2.06	2.13	2.19	2.23
(B): Municipal Corporation area	3.16	3.26	3.33	3.39	3.43
LT VII: LT – Temporary Connection					
(A): LT – Temporary Supply Religious (TSR)					
(B): LT – Temporary Supply Others (TSO)	10.36	10.66	10.93	11.19	11.43
LT VIII: LT – Advertisements and Hoardings	9.56	9.86	10.13	10.39	10.63
LT IX: LT – Crematorium and Burial Grounds					
LT X(A) – Public Services – Govt.					
(i) 0 – 20 kVA					
(ii) > 20 kVA and ≤ 50 kVA	1.66	1.76	1.83	1.89	2.03
(iii) > 50 kVA	2.86	3.06	3.23	3.39	3.53

Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
LT X(B) – Public Services - Others					
(i) 0 – 20 kVA	2.96	3.16	3.33	3.49	3.63
(ii) > 20 kVA and ≤ 50 kVA	4.26	4.56	4.83	5.09	5.33
(iii) > 50 kVA	4.76	5.06	5.33	5.59	5.83
LT XI: LT – Electric Vehicle Charging Station	2.16	2.36	2.53	2.69	2.83

8.20.9 Petitioner requested the Commission to approve the levy of Grid Support Charges on generated energy for Net Metering systems as proposed above.

8.20.10 Petitioner submitted that the Grid Support Charges for rooftop Net Metering arrangements shall vary depending on:

- Any cost approved by the Commission for Genco/Transco in their respective Tariff orders or by way of a separate order
- Variation in any cost approved by the Commission affecting MSEDCL tariff
- Petitioner's REC requirement to fulfil the shortfall in meeting the RPO targets
- The prevailing monthly market rate for RECs

8.20.11 Petitioner submitted that, the RPO benefits, being a variable element, shall be adjusted at the year-end i.e. at the time of settlement of banked units and after assessment of REC requirement, as per the actual monthly REC rates and consumption during the respective month and financial impact of net metering of below 10 kW consumers.

8.20.12 Petitioner submitted that the benefit of RPO (REC rate) shall be as per the prevailing market rates. Petitioner further submitted that in case it does not require the energy for RPO fulfilment, the benefit of RPO to net metering consumers shall be treated as Zero and the benefit shall be adjusted only till the time the Petitioner has RPO shortfall. Further, if the consumer is an obligated entity (above 1 MW), then also RPO benefit for that consumer shall be treated as Zero.

8.20.13 Petitioner further submitted that the Net metering Regulations 2019 provides that the consumers having sanctioned load up to 10 kW shall be exempted from the payment of Grid

Support charges for net metering systems. Petitioner also submitted that the loss for exemption from paying the Grid Support charges needs to be recovered from consumers having sanctioned load above 10 kW so as to avoid burden on consumers not opting for net metering. This impact shall be computed by considering the same category wise GSC as proposed above and shall be passed on to >10 kW net metering consumers during the year-end settlement as proposed in the above paragraph.

8.20.14 Petitioner submitted that it has computed Grid Support charges for all categories as per the above table and assumptions. However, certain categories such as LT Residential (0 – 100 units), LT PWW (>20 kVA upto 50 kVA), LT AG Metered Others, LT Temporary Supply Religious, LT Crematoriums and Burial Grounds, LT Public Services – Govt. (0 – 20 kVA) and HT AG Pumpsets & HT Temporary supply Religious, considering the adjustment of RPO benefits and floor price of Re.1.00/unit of REC, such charges may be Nil. Petitioner, hence, has not proposed Grid Support Charges for these categories in the petition, however, the same shall be reviewed in the MTR process.

8.20.15 Petitioner further submitted the applicability of Grid Support Charges for rooftop net metering arrangements as follows:

RE generated units	**Applicable charges**
All generated units	Grid Support Charges
Banked units	Wheeling losses

8.20.16 Petitioner submitted that, in case of HT consumers having rooftop net metering arrangements, the kVAh consumption recorded in the net meter shall be used for commercial settlement for banked energy after consideration of wheeling losses and the generated units shall be converted to kVAh by considering unity PF.

8.20.17 Petitioner proposed that no Grid Support Charges will be levied for rooftop RE systems with Net Billing arrangement.

8.20.18 Petitioner submitted that the financial impact of the Grid Support Charges is not considered at present due to uncertainty of usage by consumers but the impact on revenue for such charges will be considered at the time of final true up.

Commission's Analysis & Rulings

8.20.19 The Commission notes the submission made by MSEDCL. However, the Commission also notes that this proposal of introduction of Grid Support Charges was the most prominent issue highlighted to the Commission during the public consultation process of this Petition. It had received several written and oral objections on the issue which are captured in brief in chapter 2 of this Order. As a general principle the Commission wants to promote solar generation to the extent possible and has acted upon by way of notifying the RPO Regulations where the solar targets have been increased and further an incentive is available for exceeding the solar target. Having said this, and considering the complexity of the issue of Grid Support Charges, the Commission highlighted following issues for analysis covering the following aspects:

- Effect of Net-metering on Utilities and on consumers
- Assessing technicality of introduction of Grid Support Charges
- Assessing legal tenability of Grid Support Charges
- Formulation of GSC & defining parameters for its determination
- Determination of Grid Support Charges for 4th Control Period
- Applicability of Grid Support Charges
- Review of Grid Support Charges

Effect of Net-Metering & assessing technicality of the proposal

8.20.20 The first two aspects viz. Effect of Net-metering on Utilities and on consumers and assessing technicality of introduction of Grid Support Charges have been well elaborated in its Statement of Reasons of the Net metering Regulations, 2019 along with detailed rationale. While, the Commission in the said Regulations has provided various benefits for facilitation of net metering based solar roof-top systems, the difficulties on the side of Utility due to net-metering due to increased proliferation of such systems in the distribution grid was also highlighted. The relevant extract of the statement of reasons is reproduced as under:

> *"Further, the existing structure of Retail Supply tariff has an in-built cross-subsidy component. The Tariff for cross-subsidizing categories, such as Commercial, Industrial, etc., is higher than the Average Cost of Supply (ACoS) and the Tariff of cross-subsidised categories such as Residential and Agriculture, is lower than ACoS. In short, the higher Tariff for Commercial and Industrial categories cross-subsidises the lower Tariff for Residential and Agriculture category.* ***Any revenue***

loss due to lower sales billed to Commercial and Industrial consumers setting up Rooftop RE Plants would have to be met through tariff increase to subsidised consumer categories and other subsidising consumers, who do not have the space or capital to invest in Rooftop RE plants.

Further, the generation from distributed RE sources such as wind and solar is non-firm. Because of uncertainty of generation from these sources, the power procurement plan of the Distribution Licensee is required to be dynamic and is likely to be adversely affected. Also, Rooftop RE sources are grid connected and operating in integration with the distribution grid. ***The balancing of the grid is required to be done at distribution system level, considering non-firm RE generation. The responsibility of grid management and the Deviation Settlement Mechanism lies with the Distribution Licensees, and the rooftop RE systems do not have such responsibility.***

Also, the supply of Distribution Licensee works as standby arrangement for such grid-connected systems, which will always be available in case of failure of generation from these sources.

Further, generation from RE sources is exported to the distribution grid during periods of lower self-consumption and could be taken back from distribution grid during peak period/higher consumption period. ***Thus, the distribution grid is being used for free as a bank/battery to store the energy generated, which is taken back for consumption. The consumer also saves on the requirement and capital cost of battery systems and their related inefficiency, which would have to be installed, in case the banking facility was not provided by the Distribution Licensee.*** *The consumer does not have to match his generation capacity to his consumption pattern and has the luxury of generating and injecting into the grid, with the facility to utilise such energy at no cost at any time during the financial year.*

Also, export of generation into distribution grid during light loaded conditions would lead to increase in voltage of distribution system at local level. The voltage levels are required to be maintained by the Distribution Licensee at specified level as per applicable Regulations. ***Thus, higher penetration of Net Metering installations affects the technical operations of the distribution grid.***

Under the Net Metering Arrangement, there is saving to consumer equal to applicable energy charges for every unit generated from the rooftop RE System. The saving increases with the increase in applicable tariff, i.e., the level of cross-subsidy. In other words, the Return on Investment in rooftop RE systems is artificially higher because of the cross-subsidy element present in the tariff for the respective category. The Commission has been reducing the cross-subsidy over the years, and will be continuing in its efforts to do so over the future tariff determination exercises. Therefore, the Return on Investment will reduce as the tariff reduces.

On the other side, there is revenue loss equal to applicable tariff for every unit generated from the rooftop RE System. *Further, the Aggregate Revenue Requirement (ARR) of the Wires Business of the Distribution Licensee is entirely fixed cost in nature. However, the recovery of Wheeling Charges in the State of Maharashtra is entirely variable in nature, as the Wheeling Charges are recovered in Rs/kWh terms. As the quantum of energy billed to the consumers is reduced under the Net Metering Arrangement, the Wheeling Charges will also be under-recovered to that extent.* ***Similarly, a major part of the fixed cost of the Distribution Licensee is recovered through energy charges levied by the Distribution Licensee.*** *In case of MSEDCL, the Fixed Charges are designed to recover only one-third of the Fixed Costs of MSEDCL. Hence,* ***any reduction in units billed due to Net Metering, would lead to lower revenue from energy charges, further leading to increased under-recovery of fixed costs of the Distribution Licensee.***

At the same time, ***Net Metering is not entirely disadvantageous to the Distribution Licensee.*** *The Distribution Licensee is able to meet its RPO targets on account of the units deemed to have been purchased from RE sources, for all units adjusted against the consumers' bills due to Net Metering. Further, reduction of every unit of sale leads to lower power purchase requirement to that extent, which will result in corresponding savings in variable cost of power purchase. It has to also be noted that this saving in power purchase quantum is at consumption end, thereby leading to increased saving in power purchase quantum at the Generator busbar, after factoring in the Transmission Losses and Distribution Losses. Further, due to the very nature of distributed generation located at consumption end, the Distribution Losses would also reduce, though it could be difficult to quantify the exact benefits in this regard.*

From the above, it can be seen that the role of the Distribution Licensee is crucial in facilitating the operation of the Net Metering Arrangement. Hence, it is required to balance the interest of both consumers as well as the Distribution Licensee. (Emphasis Added)"

8.20.21 Considering the pros and cons as highlighted above, the intent of the Commission was clear as stated in the later part of the aforementioned paragraph i.e., to strike a balance of the interest of both consumers as well as Distribution Licensee. Hence the need for introduction of such charges is established. Moreover, during the public hearing, various entities, and consumer groups including the Prayas Energy Group, Vidarbha Industries association had supported the concept of Grid support charges. However, what is demanded by various stakeholders is the reasoned, rationale principles for determination of such Grid Support Charges and thereby ensuring regulatory certainty regarding the same. This is a very fair expectation.

Legal Tenability

8.20.22In this context, the Commission would like to highlight that determination of Grid Support Charges is in pursuance of the provisions for such determination as specified under its Net metering Regulations, which is statutory in nature. Thus, the levy of such charges is legally tenable in accordance with the provisions of the said Regulations formulated and in exercise of the powers conferred to Commission under Sections 86(1) (e) and 181 of the Electricity Act, 2003 upon following due regulatory process for notification of the same.

Formulation of Grid support Charges

8.20.23Net metering Regulations, 2019 define the principle based on which Grid Support charges have to be determined. It specifies parameters to be considered while determination of such charges such as balancing cost, banking and wheeling cost giving due adjustment for parameters such as RPO benefits, avoided distribution losses and any other benefits accruing to the distribution licensee. The relevant extract of the Regulations is reproduced as under.

> *11.5 The Commission may determine in the retail Tariff Order such Grid Support Charges to be levied on the generated energy under Net Metering systems which* ***shall cover balancing, banking and wheeling cost after adjusting RPO benefits, avoided distribution losses and any other benefits accruing to the Distribution Licensee.*** *These Grid Support Charges would be determined consumer tariff category wise, based on the proposal of the Distribution Licensee in its retail supply Tariff Petition, supported by adequate justification:*
> *Provided that the consumers of all Categories having Sanctioned Load up to 10 kW shall be exempted from payment of Grid Support Charges for Net Metering systems:*

8.20.24Based on the above specified principle, the Commission hereby stipulates the following formulation for determination of Grid Support Charges separately for HT category of consumers and LT category of consumers for the gross generation of solar energy:

Grid Support Charges (HT)	GSC (HT) = BC+CB+WC(HT)-(RREB+ADL(HT))
Grid Support Charges (LT)	GSC (LT) = BC+CB+WC(LT)-(RREB+ADL(LT))

Where,
'BC' shall mean the Balancing Cost,
'CB' shall mean the Cost of availing Banking facility,
'WC (HT) & WC (LT)' shall mean the Wheeling Charges for HT & LT categories respectively,
'RREB' shall mean the Rooftop RE benefit accrued to the Distribution Licensee
'ADL (HT) & ADL (LT)' shall mean the Avoided Distribution Loss for HT & LT categories respectively,

8.20.25The premise for determination of values against each of the above identified parameters are as listed below:

Parameters	Premise
Balancing Cost (BC)	Fixed Cost of Thermal Generating Stations which will act as standby or balancing support
Cost of Banking (CB)	Difference in ToD Charges during day peak when generation from Solar occurs and banking takes place and ToD charges of the evening peak when utilization of banked energy takes place.
Wheeling Charges	
Wheeling Charges (HT)	As determined in this Order
Wheeling Charges (LT)	As determined in this Order
Rooftop RE Benefit	Equivalent to RPO Non-compliance Charge as specified in Regulation 12.3 of the RPO Regulations, 2019
Avoided Distribution Loss	Avoided Distribution loss on Marginal Variable Cost over the 4th control period
Avoided Dist. Loss (HT)	ADL(HT) = [MVC/(1-HT Loss%)] - MVC Where, HT Loss% = Tx. Loss + WC (HT) Tx. Loss as approved for the 4th Control Period in this Order
Avoided Dist. Loss (LT)	ADL(HT) = [MVC/(1-LT Loss%)] - MVC Where, LT Loss% = Tx. Loss + WC (LT) Tx. Loss as approved for the 4th Control Period in this Order

Determination of Grid Support Charges

8.20.26The following table shows the working of GSC based on the above parameters.

Nomenclature	Premise	Workings FY 21
BC	Fixed Cost of Thermal Generating Stations which will act as Standby or balancing support	1.31
CB	a. 2% of banking cost (earlier policy initiative) ~ 0.08 Rs/u b. Diff. in ToD Charges: (1.10 - 0.80) Rs/kWh ~ 0.30 Rs/u whichever is lower	0.08
WC		
WC(HT)	As determined in this order	0.57

Nomenclature	Premise	Workings FY 21
WC(LT)	As determined in this order	1.45
RREB	Equiv. RPO Non-compliance Charge (Rs/Unit)	0.10
ADL	On Marginal Variable Cost (MVC) = 3.44 Rs./kWh Range from 3.22 to3.61 per unit over Control Period	
ADL(HT)	ADL(HT) = [MVC/(1-HT Loss%)] - MVC Where, HT Loss% = Tx. Loss + WC (HT) = 3.18% + 7.5% = **10.68%**	0.41
ADL(LT)	ADL(HT) = [MVC/(1-LT Loss%)] - MVC Where, LT Loss% = Tx. Loss + WC (LT) = 3.18% + 12% = **15.18%**	0.62
GSC		
GSC(HT)	GSC (HT) = BC+CB+WC(HT)-(RREB+ADL(HT))	1.45
GSC(LT)	GSC (LT) = BC+CB+WC(LT)-(RREB+ADL(LT))	2.33
Approved GSC	**Concessional GSC Charges**	
Approved GSC(HT)	AGSC (HT) 50% of the GSC (HT)	0.72
Approved GSC(LT)	AGSC (LT) 50% of the GSC (LT)	1.16

8.20.27 Grid support charges at HT level are lower than that at LT level as cost to serve principle for allocation of distribution network cost suggests that network related capital costs and associated support costs of its operation should be allocated amongst HT:LT network considering the fact that network at HT is used to cater to requirements of HT as well as LT. Thus, wire cost and wheeling cost at HT are further allocated to LT and thus per unit cost of wheeling at HT is lower than per unit cost of wheeling at LT. Accordingly, Grid Support Charges at HT are lower than that at LT voltage level.

8.20.28 As per statistics presented by MSEDCL more than 460 MW of RTPV systems (245 MW at HT level and 215 MW at LT level) have been deployed within MSEDCL area as on January 2020. The Commission notes that said installation is way behind the policy target set by the Government of Maharashtra. The commercial impact on MSEDCL is commensurately not significant. Thus, to incentivize installation of RTPV, the Commission has decided not to impose any Grid Support Charge on RTPV under net-metering arrangement till cumulative

installed capacity of RTPV in the State reaches 2000 MW. Subsequent to that Commission will reconsider option of imposing Grid Support Charge as provided under the Regulations.

8.20.29 Having, exempted levy of Grid Support Charge, the Commission cannot be ignorant of the fact that Distribution Licensee incurrs certain costs in order to provide services to RTPV under net-metering arrangement. One of such service is energy banking facility under which RTPV owner banks excess generated energy with MSEDCL and uses it subsequently. During public consultation process, some of the stakeholders have suggested that the Commission may impose banking charges in kind i.e. deduct 15 to 20% of banked energy as a banking charge. The Commission notes that such units made available by way of adjustment in kind, can be used for offsetting some of the Wheeling Loss which the licensee incurrs in supplying back the banked units to consumers. Hence, till the Grid Support Charges as envisaged in the Regulations stay exempted, in order to enable MSEDCL to at least recover cost of banking service, the Commission has decided to levy banking charge. For this purpose, the Commission has linked such Banking Charge to Wheeling Loss allowed in this Order i.e. 7.5% for HT and 12% to LT. Accordingly, for RTPV connected on HT network, from the energy injected into the grid, 7.5% energy will be deducted by MSEDCL as a Banking Charge. Similarly, for RTPV connected on LT side such deduction of energy would be 12%.

Applicability of Banking Charges

8.20.30 In pursuance of the principles specified under Net Metering Regulations, 2019 and in view of the foregoing, the Banking Charges shall be applicable to all categories of consumers for future installations of rooftop systems under net metering arrangement to be commissioned from the date of issuance of this Order in MSEDCL area, except for the following:

- All Categories having Sanctioned Load up to 10 kW shall be exempted from payment of Grid Support Charges or Banking Charges for Net Metering systems
- Roof top PV systems under Net Billing arrangement and
- Rooftop PV systems installations Behind the Consumer’s meter not availing Net Metering or Net Billing arrangement

8.21 Additional Demand Charges for systems not opting for Net Metering/ Billing

MSEDCL's Submission

8.21.1 Petitioner submitted that the Commission has provided for the Additional Fixed Charges or Demand Charges and any other charges for consumers of Rooftop Grid Connected RE Systems not opting for Net Metering or Net Billing Arrangement in the MERC Grid Interactive Rooftop Renewable Energy Generating Systems Regulations 2019. The relevant excerpts are given below:

> *"7.9 Grid Connected Renewable Energy Generating Systems connected behind the consumer's meter, and not opting for either Net Metering arrangement or Net Billing arrangement, shall be allowed only after prior intimation to the respective Distribution Licensee:*
>
> *.....Provided further that the Commission may determine additional Fixed Charges or Demand Charges and any other charges for such Grid Connected systems excluding non-fossil fuel based co-generation plants, in the retail Tariff Order, if Distribution Licensee proposes such additional Fixed Charges or Demand Charges and any other charges for such systems….*
>
> *Provided also in the case the consumer installs Renewable Energy Generating Systems behind the consumer's meter without prior intimation to the respective Distribution Licensee, then the total additional liabilities in terms of additional Fixed Charges or Demand Charges ant any other charges for such systems, shall be levied at twice at the determined rate for such period of default."*

8.21.2 Petitioner submitted that certain consumers connected at EHV/HT level are installing rooftop RE projects without informing the Distribution Licensee. Such systems take support of the Grid and the network of the Distribution Licensee and reduces the utilisation of Transmission/Distribution network and thereby such consumer pay lower charges for such network setup earlier for it. The unrecovered part of the expenses is then loaded on other consumers of the Distribution Licensee.

8.21.3 Petitioner proposed Additional Fixed/Demand Charges for Grid connected Renewable Energy Generating systems connected behind consumer's meter and not opting for either Net Metering arrangement or Net Billing arrangement along with the procedure for

intimating the Petitioner as stipulated below:

- Consumer willing to install such Rooftop RE systems shall intimate the Petitioner with the type and capacity of such system
- Additional Fixed/Demand Charges as given below shall be applicable on installed capacity per kWp per month over and above the applicable charges for the respective consumer category.

8.21.4 Petitioner submitted that it has considered the projected ARR for respective year of the Control Period and bifurcated it into fixed and variable costs. The per unit fixed cost recovery required is computed using expected average monthly generation. The units generated in 1 kW rooftop solar plant are computed assuming annual CUF of 19%. Further, nominal 10% demand/ fixed charges are added to the computed demand/fixed charges so as to encourage Net Metering or Net Billing arrangement.

8.21.5 The Additional Fixed/ Demand charges computed in Rs./kW/month basis are as under:

Table 8-32: Additional Fixed/Demand Charges for Grid Connected RE Generating Systems connected behind consumer's meter

Particulars	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Actual FC Recovery Required (Rs./unit)	4.23	3.86	3.83	3.81	3.73
Monthly units generated by 1 kW rooftop SPV (CUF=19%)	138.7	138.7	138.7	138.7	138.7
Fixed charges to be recovered (Rs./kW/month)	645	589	584	581	568

8.21.6 Petitioner submitted that for compensating its common consumers for current level of cross subsidy, the subsidising consumers shall pay Cross Subsidy Surcharge as proposed for the respective year of control period.

8.21.7 Petitioner requested the Commission to approve the proposed Additional Fixed/ Demand Charges along with CSS for Grid Connected Renewable Energy Systems connected behind

the consumer's meter and not opting for either Net Metering arrangement or Net Billing arrangement.

8.21.8 Petitioner submitted that the financial impact of the Additional Fixed/ Demand charges is not considered at present due to uncertainty of usage by consumers but the impact on revenue of such charges will be considered at the time of final true up.

Commission's Analysis and Rulings

8.21.9 The Commission opines that registering the grid connected rooftop solar system installations behind the consumer's meter not availing net metering or net billing arrangement and levy of Additional Demand/Fixed Charges for such installations are two distinct aspects from regulatory governance perspective.

8.21.10 Registration of such grid connected rooftop solar system installations behind consumer's meter whether or not availing net metering or net billing arrangement is important solely from the point of view of keeping track of their operational status since such systems are synchronised with grid distribution system whether or not they export power to the grid. It is important to ensure operational safety, deployment of adequate protection systems/islanded mode of operation or anti-islanding features etc. as well as keeping record of such generation for RPO compliance purpose whether for credit to Utility or credit to be availed by such consumer if it is an obligated entity. In future, many such systems are expected to proliferate considering conducive policy/regulatory framework and prosumer friendly approach adopted by distribution utilities as per prevalent regulatory regime. It is important to create a registry of such installations for orderly development of the sector.

8.21.11 Many objectors/stakeholders have pointed out during public hearing that there are many such captive installations (conventional generation/co-generation) facilities operating behind the consumer's meter, for which no such charges have been proposed. The Commission would like to highlight that at present, consumers having captive generation facility synchronised with the grid are required to pay standby demand charges subject to stipulated conditions. The Commission has already considered the revision in Standby/Additional Demand Charges for such installations as dealt with under separate section. Even in such cases, revised Standby/Additional Demand charges are linked to a percentage of Demand Charges and not linked to shortfall in recovery of Fixed Cost as proposed by MSEDCL in this case.

8.21.12 The Commission observes that Regulations for Grid interactive RTPV systems and the Statement of Reasons thereof have clearly specified the rationale for levy of such Additional Demand/Fixed Charges. However, without considering the preparedness, registry and modalities for implementation, the Commission is deferring the levy of such charges at this stage for rooftop PV systems behind the consumer's meter and not availing net metering or net billing arrangement. f

8.22 Change in slabs for Commercial and Public services

MSEDCL's Submission

8.22.1 Petitioner submitted that Ministry of Power has appointed a committee for Tariff Simplification and another committee for Tariff Rationalisation to suggest measures for simplification of tariff structure and improve transparency to enhance operational performance of the distribution utilities. The committees have strongly advocated for merging of categories and simplify tariff structure. Petitioner further submitted that simplification of tariff structure is one of the major reasons for the proposal as there have been addition of slabs and sub-slabs in the tariff categories over the years. Hence, there is a need to simplify and rationalise the tariff structure.

8.22.2 Petitioner proposed that the consumption based sub-slabs in 0 – 20 kVA for LT Commercial and LT Public Services may be replaced by a single tariff category of 0-20 kVA. Since, large number of consumers are shifting to rooftop RE, the high consumption consumers will automatically shift to lower tariff slabs as a result of merger of these tariff slabs which will enable simplification of tariff structure.

8.22.3 Thus, Petitioner proposed not to increase substantially, the energy charges for 3 phase consumers with load less than 20 kW considering the proposed change in kVA based fixed charges and thus, this will not have impact on small consumer.

Commission's Analysis and Rulings

8.22.4 As covered under earlier sections, the Commission has extensively dealt with the issue of tariff category rationalisation and rationalisation of consumption slabs. Further, as ruled under earlier sections, the tariff redesigning (fixed charge as well as applicability of kVAh billing) for consumer category below 20 kW would require comprehensive study and impact analysis on large number of consumers. However, while other aspects of tariff rationalization can be undertaken over the period, merging of sub-slabs within the sub-

category would be appropriate in the overall interest of tariff category rationalization and simplification of the slabs. However, it needs to be ensured that while merging such consumption slabs, consumers in the lower end consumption slabs do not suffer tariff shock. The Commission has considered this aspect while merging consumption slab for LT-Commercial and LT-Public Service.

8.22.5 Thus, the Commission has not accepted MSEDCL's proposal for revision in consumption slabs for below 20 kW in respect of LT-Commercial and LT-Public Service.

8.23 Stand-by Charges from Captive Power Producers (CPP) and SEZs

MSEDCL's Submission

Standby Charges for CPPs

8.23.1 Petitioner submitted that the Commission introduced the additional standby demand charges in its Order dated 8th September 2004 in Case no.55 and 56 of 2003 (hereby referred to as "the CPP Order") wherein, it provided power purchase and other dispensation for fossil fuel based Captive Power Plants (CPPs). Further, the Commission allowed recovery of additional demand charges from embedded CPPs through its respective Tariff Orders. The additional standby demand charges of Rs.20 per kVA is being levied to embedded CPP holders which were introduced long back and not revised till date.

8.23.2 Petitioner submitted that the CPP Order determining the standby charges for CPP was issued more than 13 years back considering the then prevailing power supply situation wherein the circumstances have emerged to be precisely different at present. These charges are still continued and are on much lower side in comparison to capacity charges payment made by the Petitioner for serving standby contracted capacity. Petitioner also submitted that such charges should be revised to fit the present power scenario where the Petitioner gets affected by over drawl from these CPP holders in present DSM Regulations 2019.

8.23.3 Petitioner submitted that CPP consumers having captive generation facilities who are synchronised with the Grid require standby facility throughout the year. The standby arrangement is for the benefit of the consumers so that they receive uninterrupted electricity supply and the standby charges are the premium (as fixed charges) on such guaranteed supply which is irrespective of whether any supply is actually drawn under the standby arrangement or not. Petitioner further submitted that as per the existing dispensation, it can charge additional demand charges on embedded CPP consumers, only when it is being

utilised and only up to the extent of use.

8.23.4 Petitioner submitted that a CPP unit trips due to faults resulting in drawl of power from MSEDCL which may result in over drawl of power from the Grid by MSEDCL, thus, affecting the state grid as well as impacting the Petitioner financially in terms of deviation charges. Moreover, such over drawl may lead to power deficit situation for the existing consumers of MSEDCL and may result in grid instability. Petitioner further submitted that it has to plan its power purchase to cater such additional demands and that if penal charges for exceeding the demand on account of unplanned shutdown of CPP are computed based on existing provisions then it works out to be minuscule and does not provide adequate compensation.

8.23.5 Petitioner submitted that the Commission in the last MTR Order already observed that:

"9.35.10 …… the Commission has already determined the standby charges of Rs.20/kVA for the embedded CPPs. The Commission notes that the same said charges, which has been worked in the past might require some revision. The same shall be taken up during next MYT Order for the new Control Period."

8.23.6 Petitioner further submitted that, additional standby charges for CPPs may be revised in the following manner considering the present power scenario

Demand Charges on Standby Contracted Capacity

By its very nature, the standby demand has two scenarios as follows:

- Scenario 1: Standby demand is not utilised
- Scenario 2: Standby demand is utilised in planned/unplanned shutdown

8.23.7 Following dispensation is prayed before the Commission:

`	**Energy charges**	**Demand Charges on standby contracted capacity**	**Penal Addition Demand Charges**
When standby demand is not utilised			
Except planned shutdown	-	25% of applicable demand charges on standby contracted capacity	-
When standby demand is utilised			
Planned shutdown	Energy charge as approved in tariff order for relevant category	As approved in tariff order for relevant category on total	2 times demand charges (on

		contracted standby capacity (on monthly basis).	monthly basis) in force
Unplanned shutdown / breakdown	Applicable energy charge for temporary category; energy consumption due to unplanned shut down will be calculated on prorate basis of demand utilised	25% of applicable demand charges on standby contracted capacity	

8.23.8 Petitioner submitted that the method stipulated above would reduce the risk borne by CPP consumers, protect the Petitioner's consumers from load shedding, compensate the Petitioner for standby services and is easy to implement and levy.

Standby Charges for SEZs and Demand Licensees

8.23.9 MSEDCL requested the Commission to make it compulsory for making standby arrangement for supply of power in case of failure of source generator, as many SEZs and deemed licensees do not have standby arrangements. In order to ensure 24x7 reliable and uninterrupted supply to its consumers, Licensees may draw more power from the Grid. Hence, in order to maintain Grid discipline and to avoid financial impact of penalty of over-drawl on the Petitioner, it has requested the Commission that SEZ/ Deemed licensees must have a standby arrangement.

8.23.10 The Commission ruled that many of the deemed licensees have their own standby arrangements where the demand is fulfilled by DG sets installed in different premises within their licensee area. The Commission further stated that these deemed licensees have not shown their concerns or requirement for the standby arrangement. The Commission also ruled that there is no legal mandate on SEZs for standby arrangement.

8.23.11 Petitioner submitted that currently there is no mechanism in place to ensure whether there exists standby arrangement in the form of DG sets within the SEZs/Deemed licensee area as ruled by the Commission in MTR Order and even if such arrangement exists, whether it is being used at the time of failure of source generator is not monitored. Petitioner further submitted that any drawl can be seen only at the time of FBSM as there is no real time monitoring system with SLDC to ensure that such standby arrangement is being put to use at the time of unavailability of source generator.

8.23.12 Petitioner submitted that it had already submitted the number of instances during which certain SEZs/ Indian Railways resorted to overdrawl from the Grid, in its review petition on

the MTR Order.

8.23.13Petitioner further submitted the exact details of the time blocks during which schedule of the source generated of M/S Gigaplex (SEZ) was Zero and still there was drawl from the Grid.

8.23.14Generator schedule and drawl details of M/s Gigaplex is summarised in the following table

Time Slot No.	Generator Schedule	Actual Drawl from Grid (kWh)	Pool imbalance (kWh)
10th Oct 2016 Slot 75 to 96 (18.30 to 24.00)	0	9611	(9611)
10th Oct 2016 Slot 1 to 28 (00.00 to 07.00)	0	8537	(8537)

8.23.15Petitioner submitted that Indian Railways has also resorted to over drawl from Grid when the schedule of the source generator of Indian Railways was curtailed as shown in the table below for FY 2017-18 (upto 25.30.2018)

Month	Total No. of time blocks for which bills prepared (time block)	Net OD energy (MUs)	No. of instance having OD more than 12% demand		No. of instance having OD more than 100% demand (Time block)
			No. of time blocks	%	
August	2976	8.1	1364	46%	123
September	2880	6.1	1263	44%	22
October	2976	10.5	2087	70%	33
November	2496	12.9	1664	67%	347
December	2688	8.3	1528	57%	60

January	2976	13.8	2069	70%	44
February	2688	8.0	1678	62%	57
March	2400	6.4	1511	63%	0
TOTAL	**22080**	**74.1**	**13164**	**60%**	**686**

8.23.16 Petitioner submitted that if M/s Gigaplex and M/s Indian Railways have their own standby arrangement, there is no necessity to draw power from the Grid during the unavailability/curtailed availability of source generator. Petitioner further submitted that factual situation is contrary to the ruling of the Commission that the SEZs/Deemed Licensees have their own standby arrangement.

8.23.17 Petitioner reiterated that such situations are not only detrimental to the stability of the Grid but the undue financial burden of such instances is also getting passed onto its consumers for no fault on their part and therefore, SEZs /Deemed Licensee and Indian Railways must have standby arrangement

8.23.18 Petitioner further submitted that it has submitted a letter on 8th February 2019 highlighting the issues pertaining to SEZ. The said letter is attached as Annexure 9 to the petition

8.23.19 Petitioner requested the Commission to make standby arrangement compulsory and if standby arrangement is opted from the Petitioner, recovery of standby charges to be allowed from SEZs or Deemed Licensees at the rate of applicable demand charges for HT Industrial category.

Commission's Analysis & Rulings

Sharing of Standby charged for Mumbai Distribution Area

8.23.20 In the MYT Orders for the three Mumbai Distribution Licensees, viz. Tata Power Co. Ltd. (Case No.326 of 2019), Adani Electricity Mumbai Ltd. (Case No.325 of 2019) and BEST (Case No.324 of 2018), the Commission has decided their Stand-by Demand contribution based on average Coincident Peak Demand (CPD) and Non-coincident Peak Demand (NCPD) used for sharing the Total Transmission System Charges.

8.23.21 Further, as elaborated in the previous MTR Order in Case No. 195 of 2017, with reference to the Commission rulings in Case No. 53 of 2017 in the matter of review of the Stand-by Arrangement with MSEDCL, for the Mumbai Distribution area, and related issues, the

Commission had decided the share of Stand-by charges would now be shared amongst the Indian Railways (Mumbai Area) and rest other three Mumbai Distribution Licensees.

8.23.22 In view of above and based on the revised average CPD and NCPD (Base TCR) as approved in the latest InSTS Tariff Order dated 12 September, 2018 in Case No. 265 of 2018, the Commission has determined the share of these three Licensees and Indian Railways (Mumbai Area) in the Stand-by charges for FY 2020-21 to FY 2024-25.

Table 8-33: Standby Charges for FY 2020-21 to FY 2024-25, as approved by the Commission

Distribution Licensee	Base TCR	% of Share of Mumbai Utilities & IR	Annual Share of Standby Charges (Rs. Crores)	Per month share of Standby Charges (Rs. Crores)
FY 2020-21				
TPCL-D	808.72	25.25%	99.98	8.33
AEML-D	1482.30	46.28%	183.25	15.27
BEST	811.13	25.32%	100.28	8.36
IR(Mumbai)	101.08	3.16%	12.50	1.04
Total	**3203.23**	**100.00%**	**396.00**	**33.00**
FY 2021-22				
TPCL-D	819.42	25.18%	99.72	8.31
AEML-D	1513.18	46.50%	184.15	15.35
BEST	816.80	25.10%	99.40	8.28
IR(Mumbai)	104.64	3.22%	12.73	1.06
Total	**3254.05**	**100.00%**	**396.00**	**33.00**
FY 2022-23				
TPCL-D	830.26	25.12%	99.46	8.29
AEML-D	1544.70	46.73%	185.04	15.42
BEST	822.52	24.88%	98.53	8.21
IR(Mumbai)	108.34	3.28%	12.98	1.08
Total	**3305.82**	**100.00%**	**396.00**	**33.00**
FY 2023-24				
TPCL-D	841.24	25.05%	99.19	8.27
AEML-D	1576.88	46.95%	185.93	15.49
BEST	828.27	24.66%	97.66	8.14
IR(Mumbai)	112.17	3.34%	13.23	1.10
Total	**3358.56**	**100.00%**	**396.00**	**33.00**
FY 2024-25				
TPCL-D	852.38	24.98%	98.92	8.24
AEML-D	1609.73	47.17%	186.81	15.57
BEST	834.06	24.44%	96.79	8.07
IR(Mumbai)	116.13	3.40%	13.48	1.12
Total	**3412.29**	**100.00%**	**396.00**	**33.00**

Standby Charges for CPP

8.23.23 The Commission observes that the present dispensation for Standby charges for CPP was first introduced under its CPP Order dated 8th September 2004 in Case no.55 and 56 of 2003.The power scenario and energy planning by both, Utility and consumer has undergone significant change since then. In the last MTR Order, the Commission has observed that standby charges for CPP as determined may need revision and can be considered at the time of next MYT filing. Relevant extract of the MTR Order is as under:

> *"9.35.10 …… the Commission has already determined the standby charges of Rs.20/kVA for the embedded CPPs. The Commission notes that the same said charges, which has been worked in the past might require some revision. The same shall be taken up during next MYT Order for the new Control Period."*

8.23.24 In this context, as part of data gaps, the Commission sought the instances of over drawls by CPP in the State, which has affected the State Grid's and MSEDCL's consequent financial implications due to Deviation Charges along with the instance of tripping in a year by CPPs, to which MSEDCL submitted that, there are 35 nos. of Embedded CPP's (Thermal). During FY 2017-18 there are 63 instances & during FY 2018-19 there are 41 instances of over drawls by embedded CPP's. MSEDCL further submitted that due to metering arrangements (ABT and ToD Meters), it would be difficult to provide financial implications for such over drawls. MSEDCL also provided the list of consumers overdrawing the beyond their allotted Contract Demand, the details of the same is provided in the Table below:

Particulars	FY 2017-18	FY 2018-19
Total No. of Consumers	63	41
Total Contract Demand (kVA)	188,786	109,931
Total Max. Demand Recorded (kVA)	305,966	254,628

8.23.25 Further, the Commission also sought MSEDCL's proposal of penal charges as proposed to be applied on CPP when it exceeds its demand during unplanned shutdowns, where MSEDCL submitted that, the same is covered in its submission above. However, while analysing the details of instances the Commission is of the view that, the details submitted by MSEDCL is not evident enough to point that, the such Overdrawal instances are due to embedded CPPs, since only the consumers numbers for respective instances were provided. In addition, MSEDCL has itself submitted that, due to lack of metering infrastructure, the financial implications due to such Overdrawal would be difficult to estimate at this stage.

8.23.26 Nonetheless, the Commission also acknowledges that with introduction of DSM regime as per MERC DSM Regulations, 2019, the licensees/ generators/ TSUs would be subject to

stringent scheduling and despatch regime with consequent implications of the Deviation charges/Additional Deviation charges for deviation from the schedule, if any. The standby support availed by such CPPs (in planned or un-planned manner) has direct bearing on the scheduling regime, power purchase planning and management of imbalances/deviations by the Utility. The Commission observes that the arrangement for Standby power capacity is optional at the choice of CPP. However, the pricing for usage of standby capacity during planned and un-planned shutdown should not be so low as to cause undue burden on the Utility for its management/arrangement of capacity to cater to standby requirement and at the same time it should not be priced so high so that CPP users hesitate to opt for such standby facility from Utility.

8.23.27 Under the circumstances, upon careful consideration of all facts, the Commission opines that the framework for levy of Standby charges as proposed by MSEDCL is fair and Commission has decided to adopted it with following modifications, as it caters to all cases of supply availed by CPP under Standby arrangement and encourages discipline as regards power planning, load generation balancing and availing standby support while ensuring minimal cost burden for Utility and CPP as well.

8.23.28 Accordingly, the Commission approves the following arrangement for levy of Standby Charges and other conditions/charges to be applicable for availing power supply under standby arrangement by CPP Users. Demand Charges on standby contracted capacity by CPP consumer shall apply in following manner:

- 25% of the Applicable Demand Charges for months when standby capacity is not utilized
- Demand Charges at the rate of 100% of Applicable Demand Charges for months when standby capacity is not used under planned or un-planned shutdown of CPP
- During planned or un-planned shutdown, Additional Demand Charges at the rate of 150% of Applicable Demand Charges (on monthly basis) shall be applicable on such excess demand only if recorded demand exceeds contract demand plus standby contracted capacity.
- In case of CPP Users, who do not opt for Standby power arrangement, in such cases of CPP users for their planned or un-planned outage, Additional Demand Charges at the rate of 200% of Applicable Demand Charges (on monthly basis) shall be

levied on the quantum exceeding their contract demand only if recorded demand exceeds contract demand.

8.24 Standby Charges for SEZs or Deemed Distribution Licensees

8.24.1 In case of SEZs, the Commission is of the view that, as highlighted by MSEDCL many of the Deemed Distribution Licensees have their own Stand-by arrangements, where the demand is fulfilled by DG Sets installed in different premises of their Licensee area. Thus, as such these Deemed Licensees have not shown their concerns or requirement for the Stand-by arrangement.

8.24.2 Further, some of the Deemed Licensee have acknowledged the drawl from the grid, when generators have failed to supply, in such cases SLDC should have directed the Deemed Licensee to curtail its Load. Such exceptional circumstances cannot be the ground for mandating SEZs to pay Stand-by Charges to MSEDCL, when it already has 100% standby DG Set as mandated under the SEZ Act.

8.24.3 Further, the Commission observes that SEZs/Deemed Distribution Licensees, being TSUs are also participants in the Deviation Pool account and be subjected to scheduling/despatch regime and rules for Deviation settlement mechanisms and would attract deviation charges/additional deviation charges as per MERC DSM Regulations, 2019 and procedures formulated therein. Further, Additional Deviation charges for exceeding their volume limits would also be applicable under DSM regime.

8.24.4 Further, in such scenario the requirement of additional supply may be raised before MSEDCL, since, the Licensee can sell the power as per the Short-Term Rates inclusive of other applicable charges to the Licensee. In addition, SEZ being a pool participant, the over drawl instance will be subjected to DSM charges for deviations.

8.24.5 Thus, in view of above facts, the Commission rules that levy of Stand-by Charges will not be applicable to the SEZ and Deemed Licensee.

8.25 Revision in ToD rates

MSEDCL's Submissions

8.25.1 Petitioner submitted that the Commission in its MTR Order dated 12th September 2018 has observed that the revision in ToD slabs and rates thereof would depend upon factors such

as load curve, demand side measures, overall system demand management measures in vogue, etc. The Commission further ruled that as this issue must be seen in totality across all Licensees, it would take a view on proposals to modify the ToD time slots and /or ToD slot wise tariffs in the next control period

8.25.2 In existing TOD tariff concept, rebate or penalty is same in all month irrespective of load pattern, surplus & shortfall in availability. There is no consideration of impact of RE generation which will be one of important change in generation mix. Moreover, due to various Govt. of India policies to promote RE generation and as per the RPO Targets set for Utilities by the Commission, tremendous rise in RE generation is expected. The major rise is in solar generation which has typical shape of inverted hyperbola. There is no or very less generation during specific time period of a day; particularly during 06:00 to 09:00 and during 15:00 to 19:00 Hrs. Considering the demand pattern and expected Solar Generation, Petitioner has proposed revision in ToD tariff /rates

8.25.3 Petitioner submitted that the existing ToD slabs and Tariffs may be followed with the revision in ToD tariffs as shown in the table below. However, with the increasing share of renewable generations over the last few years, it is necessary to revise ToD slabs so as to change the demand pattern of consumers to enable the utilities to meet their peak demand effectively. Petitioner further submitted that it shall propose revision in ToD slabs and tariffs based on the existing and upcoming renewable capacity additions and the demand-supply scenario at the time of filing of the next MTR petition.

Consumption Slab (kWh)	**Existing ToD charge (Rs./kWh)**	**Proposed ToD charge (Rs./kWh)**
2200 Hrs – 0600 Hrs	-1.50	-1.50
0600 Hrs – 0900 Hrs & 1200 Hrs – 1800 Hrs	0.00	0.00
0900 Hrs – 1200 Hrs	0.80	0.60
1800 Hrs – 2200 Hrs	1.10	1.50

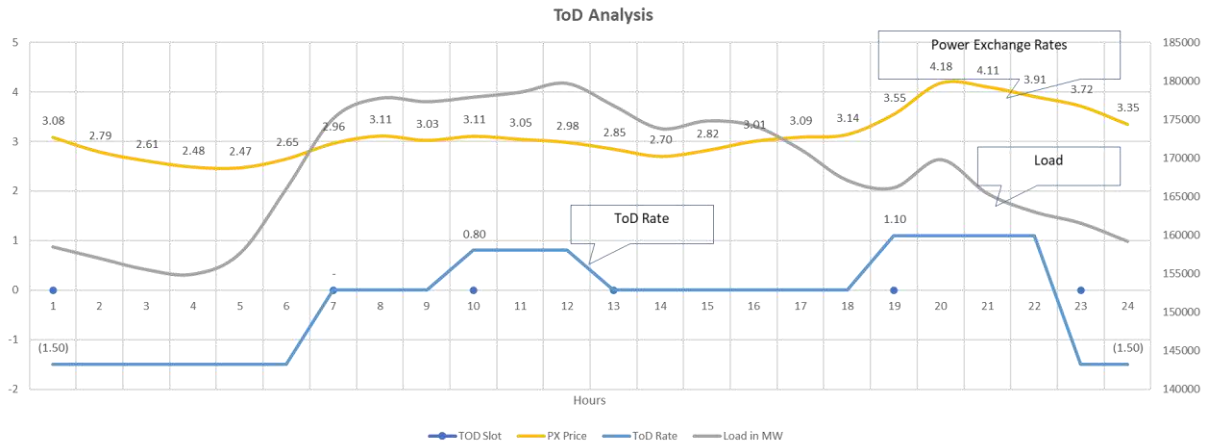
8.25.4 Petitioner requested the Commission to approve the revision in ToD charges as proposed

Commission's Analysis and Rulings

8.25.5 MSEDCL has requested the Commission to revise ToD slots and charges with the claim of

upcoming increase in RE installed capacity and hence, higher amount of penetration in grid from RE plants.

8.25.6 The Commission had sought Hourly, Seasonal & Average Load Curve for the past three years, for establishing the basis of proposed changes in the ToD Rates along with the revenue impact of such proposed revision in the ToD Charges on MSEDCL as part of Data gaps, to which MSEDCL has submitted the required data, while the revenue impact estimated for the ensuing years is ~896 Crore, but no detailed rationale or analysis for revision is provided by MSEDCL. While analysing the data sought from MSEDCL, the Commission has also analysed the hourly trend of Load along with the existing ToD Rates as well as the Short Term Prices discovered at Power Exchange..



8.25.7 In the past the Commission has followed centralized MoD approach and standardised ToD timeslots and rates. The Commission upon analysing the same observed that, the existing ToD structure matches with the rates prevalent in the Power Exchange, i.e., ToD rate is high when Power Exchange power is costly and ToD rate is low when Power Exchange power is cheaper. From 1 April 2020, the State is shifting to decentralized MoD under the DSM framework, and each DISCOM must plan its power procurement as per its load curve. Hence, the ToD structure can be different for each DISCOM. If proposed changes in ToD rates are accepted, it will result into consumer shift from DISCOM to RE plants. Penalising consumers in such a manner will result into loss of consumers for DISCOMs.

8.25.8 In addition, RPO Regulations for the next Control Period envisages substantial increase in Solar power, which will be helping the load curve as it shall be contributing to meet the daytime peak load requirement. Such RE projects would be commissioned in the next couple of years. Hence, at the time of MTR, it would be appropriate to revisit and revise, if

necessary, the ToD timeslots and rates as per DISCOM's power procurement planning. The Commission may also consider having seasonal ToD rate in order to assist the DISCOMs to absorb seasonal variation in RE generation which as per RPO Regulations, 2019 would be 25% in FY 2024-25

8.25.9 Thus, in view of above, the Commission has decided to continue with the existing structure of ToD slots and applicable charges and directs MSEDCL to submit a detailed proposal at the time of MTR.

8.26 Harmonics Penalty

MSEDCL's Submission

8.26.1 MSEDCL submitted that the Central Electricity Authority on 6th February 2019 had notified amendment to the CEA (Technical Standards for Connectivity to the Grid) Regulations 2007. The amendment states that the Distribution Licensee and Bulk consumers are required to provide adequate reactive compensation to compensate reactive power requirement in the system and mandates for installation of power quality meter and sharing the recorded data thereof. The relevant extracts of the Regulations are reproduced below:

"(2) (i) The Distribution Licensee and bulk consumer shall provide adequate reactive compensation to compensate reactive power requirement in their system so that they do not depend upon the grid for reactive power support.
(ii) The power factor for distribution system and bulk consumer shall be within ± 0.95;
(3) Voltage and Current Harmonics –
(i) The limits of voltage harmonics by the distribution licensee in its electricity system, the limits of injection of current harmonics by bulk consumers, point of harmonics measurement i.e. point of common coupling , method of harmonic measurement and other related matters, shall be in accordance with the IEEE 519-2014 standards, as amended from time to time;

.....

(iv) The bulk consumer shall install power quality meter and share the recorded data thereof with the Distribution Licensee with such periodicity as may be specified by the appropriate Electricity Regulatory Commission."

8.26.2 MSEDCL submitted that the Regulation 2.1 (i) of the MERC (Electricity Supply code and other Conditions of Supply) Regulations, 2005 defines "Harmonics" as under:

"Regulation 2.1 (l) "Harmonics" means a component of a periodic wave having frequency that is an integral multiple of the fundamental power line frequency of 50 Hz causing distortion to pure sinusoidal waveform of voltage or current, and as governed by IEEE STD 519-1992, namely "IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems" and corresponding

standard as may be specified in accordance with clause (c) of subsection (2) of section 185 of the Act."

8.26.3 MSEDCL states that from the definition, it is understood that the presence of harmonics in electrical systems means that the current and/or voltage are distorted and deviated from the sinusoidal waveform.

8.26.4 MSEDCL further submitted that the Regulation 12.1 of MERC Supply Code provides that the certain categories of HT consumers and LT consumers (Industrial and Commercial) are required to control the harmonics generated in their system on account of their load. The Regulation is reproduced below:

"12.1 It shall be obligatory for the consumer……..
Provided that it shall be obligatory for the HT consumer and the LT consumer (Industrial and Commercial only) to control harmonics of his load at levels prescribed by the IEE STD 519-1992 and in accordance with the relevant Orders of the Commission."

8.26.5 MSEDCL further submitted that Regulation 12.2 MERC Supply Code Regulations 2005 provides for the minimum time period given to the consumer to make necessary changes in their system so as to control harmonics (or) improve the system's power factor. Further, the said Regulations also set provisions for penalizing the neglecter for failing to do so. This may attract penalty for not controlling harmonics within the prescribed limit. The Regulation is reproduced below:

"12.2 The Distribution Licensee may require the consumer within a reasonable time period which shall not be less than three months, to take such effective measures so as to raise the average power factor or control harmonics of his installation to a value not less than such norm, in accordance with Regulation 12.1 above
Provided that the Distribution Licensee may charge penalty or provide incentives for low/high power factor and for harmonics, in accordance with relevant orders of the Commission."

8.26.6 MSEDCL submitted that its consumers use various non-linear loads in industrial and commercial establishments which demand non-sinusoidal currents which are reach in harmonics with higher frequencies of 150 Hz, 250 Hz, etc. Such currents cause overheating of transformers, cables, switchgears, thus causing insulation deterioration and nuisance tripping in control circuits. Thus, harmonics are necessary to control as excessive current harmonics result in voltage harmonics and hence, poor power quality.

8.26.7 MSEDCL mentioned the fact that industrial systems have been moving towards non-linear load equipment which result in higher harmonics in the system leading to increased iron

and copper losses in upstream electrical equipment in distribution systems which do not get metered to the consumer. MSEDCL also mentioned that the increase THD levels (Total Harmonic Distortion) will have adverse effects on the equipment of the utility which affects the operational efficiency of the utility as well as consumers.

8.26.8 MSEDCL submitted some of the effects of harmonics on various components as mentioned below:

- **Generators & Transformers:** Increased heating on account of high iron and copper losses affects the machine efficiency and insulation life. Harmonics lead to asymmetrical unbalanced currents which in turn cause stress on insulation provided t neutral conductors in star connected systems and give rise to failure
- **Power Cables and Capacitor:** Voltage stress induces higher corona losses resulting in dielectric failure
- **Meters:** Non-linear voltages and current induce errors into the measurement circuit resulting in false readings
- **Switch gear and relay:** The out-of-balance current causes spurious/false operations and might operate false alarms and trips.
- **Conductors:** Increase to losses and heating leads to reduced life of conductors

Petitions by MSEDCL in past regarding Harmonics

8.26.9 MSEDCL had filed a Petition before the Commission for amendment in SOP Regulations related to Harmonics limits and prayed for effective implementation of Regulation 12.2 of the Supply Code Regulations 2005 (Case No. 34 of 2011).

8.26.10 The Commission vide its Order dated 24.12.2012 opined that introduction of penalty for injection of the Harmonics at this stage will be premature. Instead of introduction of penalty, Petitioner needs to analyse existing level of Harmonics in the system and determine causes and remedial measures for limiting the same. The Commission further observed that Petitioner needs to arrange a program for creating awareness amongst the consumers about effects of Harmonics on the power equipment.

8.26.11 MSEDCL filed a petition for removal of difficulties and amendment of Standards of Performance Regulations 2014 and prayed that the onus of control of harmonics should be placed on the consumer in addition to the Distribution Licensee

8.26.12The Commission vide its Order dated 17th August 2015 rejected the claim of Petitioner citing pendency of response to directives in Case No.34 of 2011

Compliance of Directives in Case No.34 of 2011

8.26.13MSEDCL, as per the directives of the Commission, carried out a study of harmonics measurement at the substation end in Load ON and OFF conditions as well as at various HT consumers.

8.26.14MSEDCL submitted that the measurement of Harmonics was carried out by its field engineers using Electronic Reference Standard Meter (Make: Zera, Class: 0.2S) available with MSEDCL and the THD is measured at consumer premises as well as at substation end.

8.26.15MSEDCL mentioned that, out of 21810 HT consumers for whom harmonics were measured, 9905 consumers have shown abnormalities of about 45% which is very high.

8.26.16MSEDCL submitted that, in order to further confirm the abnormalities, it decided to appoint an expert third party agency (M/s. SAS PowerTech P. Ltd., Pune) to undertake measurement of harmonics and analyse the issues involved in respect of sample 100 HT consumers spread all over the state including 25 consumers from each region strictly as per the requirements of IEEE 519 : 1992. This exercise was carried out with the assistance of the third-party expert agency in the field of harmonics measurement and analysis in order to cross verify and validate the observations made by the Petitioner's field engineers.

8.26.17MSEDCL further mentioned that M/s. SAS PowerTech P. Ltd., Pune completed the work of measurement of harmonics at selected 100 HT consumers premises in May 2018 and submitted the report of detailed analysis in June 2018. These measurements and recordings were carried out for 24 hours at each consumer premises at HT PCC between the MSEDCL and consumer electrical system.

8.26.18MSEDCL mentioned that, out of 100 HT consumers, 31 consumers were exceeding the permissible limits of TDD compliance, 10 consumers had their TDD at border level while 4 consumers were found exceeding voltage harmonic compliance.

Regulatory Provisions for Harmonics

8.26.19MSEDCL submitted that IEEE Standard namely "IEEE 519-1992 – IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems" provides for the requirement for harmonics control.

8.26.20MSEDCL submitted that the CEA on 6th February 2019 has notified amendment to CEA (Technical Standards for Connectivity to the Grid) Regulations 2007 as per which, the Distribution Licensees and the Bulk consumers are required to provide adequate reactive compensation to compensate reactive power requirement in their system. The amendment mandates the installation of power quality meter and sharing the recorded data thereof.

8.26.21MSEDCL further submitted that Regulation 12.1 of MERC (Electricity Supply Code & Other conditions of (Supply) Regulation 2005 provides that it shall be obligatory for HT consumers to control harmonics of his loads at level prescribed by IEEE Standard 519-1992

8.26.22MSEDCL mentioned the current distortion limits as per the IEEE 519-2014 for general distribution system (120V to 69000V) as below:

Maximum Harmonic Current Distortion in % of I_L						
Individual Harmonic Order (Odd Harmonics)						
I_{SC}/I_L	**3≤h<11**	**11≤h<17**	**17≤h<23**	**23≤h<35**	**35≤h<50**	**TDD**
< 20*	4.0	2.0	1.5	0.6	0.3	**5.0**
20 < 50	7.0	3.5	2.5	1.0	0.5	**8.0**
50 < 100	10.0	4.5	4.0	1.5	0.7	**12.0**
100 < 1000	12.0	5.5	5.0	2.0	1.0	**15.0**
> 1000	15.0	7.0	6.0	2.5	1.4	**20.0**

8.26.23MSEDCL mentioned the current distortion limits as per the IEEE 519-2014 for general distribution system (69 kV to 161 kV) as below:

Maximum Harmonic Current Distortion in % of I_L						
Individual Harmonic Order (Odd Harmonics)						
I_{SC}/I_L	**3≤h<11**	**11≤h<17**	**17≤h<23**	**23≤h<35**	**35≤h<50**	**TDD**
< 20*	2.0	1.0	0.75	0.3	0.15	**2.5**
20 < 50	3.5	1.75	1.25	0.5	0.25	**4.0**
50 < 100	5.0	2.25	2.0	0.75	0.35	**6.0**
100 < 1000	6.0	2.75	2.5	1.0	0.5	**7.5**

> 1000	7.5	3.5	3.0	1.25	0.7	**10.0**

8.26.24MSEDCL mentioned the current distortion limits as per the IEEE 519-2014 for general distribution system (above 161 kV) as below:

Maximum Harmonic Current Distortion in % of I_L						
Individual Harmonic Order (Odd Harmonics)						
I_{SC}/I_L	**3≤h<11**	**11≤h<17**	**17≤h<23**	**23≤h<35**	**35≤h<50**	**TDD**
< 25	1.0	0.5	0.38	0.15	0.1	**1.5**
25 < 50	2.0	1.0	0.75	0.3	0.15	**2.5**
≥50	3.0	1.5	1.15	0.45	0.22	**3.75**

Even harmonics are limited to 25% of the odd harmonic limits. TDD refers to the Total Demand Distortion and is based on the average maximum demand current at the fundamental frequency taken at the PCC
*All power generation equipment is limited to these values of current distortion regardless of Isc/I_L
Isc = Maximum short circuit current at the PCC
I_L = Maximum demand load current (fundamental) at the PCC
h = Harmonic Number

8.26.25MSEDCL submitted that IEEE 519-2014 has introduced statistical evaluation (very short and short time harmonic measurements), having same limits as mentioned in IEEE 519-1992.

*8.26.26*MSEDCL further submitted that Tamil Nadu Electricity Regulatory Commission (TNERC) through its order dated 30th Match 2012 has permitted the utility to levy harmonic compensation of 15% of respective tariff for High tension consumers for non-compliance of Harmonics limit.

Proposal for Harmonics Penalty

8.26.27In view of the above, MSEDCL has requested the Commission to propose the following:

8.26.28Introduce a harmonics penalty of 5% additional energy charges (Wheeling charges plus Energy charges) for HT Industrial and Commercial consumers who do not maintain the harmonics levels specified in IEEE STD 519-2014.

8.26.29 Carry out harmonic survey along with quarterly/annual testing. If any consumer is found with harmonics level beyond limits specified in IEEE STD 519-2014, then the Petitioner will serve a notice indicating test results an intimation to take corrective action for harmonics suppression within 3 months from the date of service of the notice.

8.26.30 Petitioner stated that consumers are required to file report of compliance accompanied with test certificates of harmonic filters, invoices and commissioning report. For such consumers who provide compliance to the notice, no penalty shall be levied, but it is expected that they will maintain harmonic filters in working condition

8.26.31 Consumers who do not adhere to notice stipulations will be charged additional energy charges for consumption beyond 6 months till rectification of defect.

8.26.32 If the consumer has not complied with the stipulations of the notice or has maintained harmonic filters in working conditions, then MSEDCL will apply harmonics penalty for past consumption i.e. from date of serving of notice and for future consumption till rectification of defect.

8.26.33 MSEDCL requested the Commission to approve levy of harmonics penalty through additional charge equivalent to 5% of variable charges (Wheeling charges plus energy charges) for HT Industrial and Commercial consumers who do not maintain the harmonics level specified in IEEE STD 519-2014

8.26.34 MSEDCL further submitted that the HT Industrial and Commercial consumers shall install power quality meters within six months period and share the recorded data with the Petitioner on quarterly basis.

Commission's Analysis and Rulings

8.26.35 The Commission notes that harmonics in Industries is largely generated from the use of Variable Frequency Drives (VFDs) for large motors with fluctuating load conditions. This being one of the largest sources may not be present in all plants. Further, the Commission opines that the generalization of the fact that all HT and LT-commercial consumers inject Harmonics into the utility's network denies the benefit of investments made by some plants in installing filters to control the harmonic level.

8.26.36 The Commission noted the suggestions and objections from various stakeholders on the issue of Harmonic Penalty. Although most of the stakeholders have opposed imposing

penalty, all desired to get quality power supply from MSEDCL. The Commission notes that Consumers and Distribution Licensee are jointly responsible for Harmonics. Distribution Licensees are responsible for Voltage Harmonics whereas Consumers are responsible for Current Harmonics. However, to fix accountability of Harmonics, it is important to have power quality meter which can measure and record continuous data of power harmonics. Such meter should also be capable of differentiating and recording harmonics being injected from both direction i.e. for consumer, injection from Distribution System and injection into Distribution System. Without having such data based on continuous monitoring and its analysis, the Commission would not be able to impose any incentive or penalty for Harmonics.

8.26.37 In this context, the Commission would like to highlight the provisions of Regulation 5 (3) of CEA (Technical Standards for connectivity to Grid) (Amendment) Regulations, 2019 notified on 6th February 2019 which clearly specifies the conditions for Voltage/Current Harnonics, role and responsibility of entities and timelines for corrective actions in case of shortfall in performance on harmonics than that stipulated as per standards. Relevant extract of the said CEA Regulations is as under:

> *"(3) **Voltage and Current Harmonics.** - (i) The limits of voltage harmonics by the distribution licensee in its electricity system, the limits of injection of current harmonics by bulk consumers, point of harmonic measurement, i.e., point of common coupling, method of harmonic measurement and other related matters, shall be in accordance with the IEEE 519-2014 standards, as amended from time to time;*
>
> *(ii) Measuring and metering of harmonics shall be a continuous process with meters complying with provisions of IEC 61000-4-30 Class A.*
>
> *(iii) The data measured and metered as mentioned in sub-paragraph (ii) with regard to the harmonics, shall be available with distribution licensee and it shall also be shared with the consumer periodically.*
>
> *(iv) The bulk consumer shall install power quality meter and share the recorded data thereof with the distribution licensee with such periodicity as may be specified by the appropriate Electricity Regulatory Commission:*
>
> *Provided that the existing bulk consumer shall comply with this provision within twelve months from the date of commencement of the Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2018."*

8.26.38 Having said that the Commission is cognizant of issue of power quality. Hence, in order to ensure that requisite data is available before next tariff determination process, the

Commission has laid down time frame for installation of power quality meter as per mandates of CEA Regulations. Accordingly, all Bulk Consumers with Contract Demand above 20 MVA shall install power quality meter by March 2021 (and above 10 MVA by March 2022) and share monthly data with Distribution Licensee. Also, Distribution Licensee needs to install power quality meter at their selected substations and share the data from these meter on its website.

8.26.39 The Commission opines that introduction of penalty for HT consumers for injection of the Harmonics can be undertaken upon analysis of data to be made available through power quality meters. Hence, the Commission has not introduced any Harmonics penalty at this stage. The Commission further observes that MSEDCL needs to arrange a program for creating awareness amongst the consumers about effects of Harmonics on the power equipment.

8.27 Expenses for Go Green Initiative (E-Copy of the Bill) and SMS Service

MSEDCL's Submission

Expenses for Go Green Initiative

8.27.1 MSEDCL submitted that it may decide and continue with SMS services and may increase rebate to Rs. 10/- per bill under Go-Green initiative which could be linked to a percentage of bill amount or Rs 10/- per bill whichever is higher, as opined by the Commission in its Order dated 19th March 2019 in Case No.1 of 2019. This expenditure pass through would either be treated as an expenditure under O&M and more specifically under A&G or would be considered as a pass through subject to submission of cost benefit analysis justifying the expense incurred, during its upcoming tariff Petition.

8.27.2 Petitioner proposed to provide a rebate of Rs.10 on every electricity bill to the consumers who opt for an electronic copy of the bill instead of the hard copy under its "Go Green" initiative, in order to encourage consumers to participate in Digital Program. Go Green initiative is a voluntary initiative wherein consumers are free to opt for an electronic copy of the bill instead of the hard copy as per their willingness

8.27.3 Petitioner submitted that earlier it was giving a discount of Rs.3 on every electricity bill since 2016, but has not decided to offer a discount of Rs.10 per electricity bill to consumers opting for electronic bill in order to encourage more participation in Go Green initiative which was implemented w.e.f. 1st December 2018 for LT consumers.

8.27.4 Petitioner mentioned that, currently, 59,040 consumers have opted for Go Green initiative and it has registered email addresses of 14 lakh consumers while more than 50 lakh consumers are paying online. Petitioner further submitted that it expects more and more consumers to opt for electronic copy of the bill. Petitioner, thus, requested the Commission to allow expenditure for Go Green Initiative as revenue expenditure over and above the normative O&M expenses.

Expenses for SMS Service

8.27.5 Petitioner submitted that the Commission in its MTR Order in Case No.195 of 2017 noted that serving of notices to the consumers through digital medium such as WhatsApp message, email, SMS etc. will not only be environment friendly and save administrative cost but also would free the human resources for other consumer service related works. Hence, the Commission allowed the Petitioner to issue notices under Section 56 of the Electricity Act, 2003 through digital mode such as WhatsApp message, email, SMS etc.

8.27.6 Petitioner submitted that new SMS services are introduced for employees through Employee portal, vendors through vendor payment system and for Solar AG Consumers. Various SMS campaigns are also executed for informing consumers about MSEDCL schemes and major breakdowns during emergencies and natural calamities etc. Recently added Meter Reading Intimation SMS makes consumer aware that meter reader is going to visit his/her premises for capturing reading Meter Reading in particular slots.

8.27.7 Petitioner submitted that the SMS service will help not only consumer but MSEDCL also in information disseminating in a matter of seconds to large section of consumers at one go. Petitioner further submitted that, the Delhi Electricity Regulatory Commission (DERC) in its Order in the matter of Petition for approval of Annual Revenue Requirement (ARR) of Tata Power Delhi Distribution Ltd. for the FY 2018-19, Revised ARR for FY 2017-18, True up for FY 2016-17 has approved expenses of SMS services separately in ARR under other expenses. Petitioner requested the Commission to allow the expenditure for SMS Services as revenue expenditure over and above the normative O&M Expenses.

Commission's Analysis & Rulings

8.27.8 Commission has noted the submissions made by MSEDCL for Go Green Initiatives with E-Billing and SMS service taken by DISCOM and its benefits. Commission appreciates the steps taken by MSEDCL towards Go Green Initiatives with the way of saving paper used for electricity bills and other stationary materials. However, the detailed rationale for the same and way of funding such schemes is already discussed under Opex Scheme by the

Commission in this MYT Order.As far as proposal for rebate to consumers for opting for Go Green initiative is concerned, the same is allowed and costs pertaining to such rebate shall be allowed as pass through in ARR in line with Regulation 84.1 of MYT Regulations 2019. However, MSEDCL should maintain separate account of such rebates and details of consumers opting for such Go-Green initiative. Further, MSEDCL should also arrange awareness campaigns through mailers/bills, engage in outreach activities to promote this initiative and also through its customer care centres.

8.28 Sharing of Cross Subsidy Impact due to AG consumers in Maharashtra

MSEDCL's Submission

8.28.1 Petitioner submitted share of the electricity consumption by the agricultural category consumers is ~30 % of the total electricity consumption. The electricity tariff of the agriculture category consumers is being determined to be much less than the Average Cost of Supply effectively increasing the tariff of other category consumers by way of cross subsidy. At the same time, revenue realised from the agriculture consumers is also less owing to various reasons such as poor capacity to pay, uncertain agricultural produce due to unpredictable rainfall etc. This AG cross subsidy is getting passed on to other subsidizing consumers of the Petitioner and increasing their tariff further.

8.28.2 Petitioner submitted that, the higher tariffs of the cross-subsidising consumers (Industrial, Commercial, high end residential etc.) is impacting its sales and revenue thereby requiring tariff hike and thus entering into a vicious circle. Hence there is a necessity to maintain a balance in tariff of the subsidised AG consumers and the high-end subsidising consumers.

8.28.3 Petitioner submitted that the consumer base of Mumbai licensees (Tata, Adani, BEST) as well as other SEZs comprises mostly of high-end consumers (Industrial, Commercial, high end Residential etc.) that have higher capacity to pay in comparison to the Agricultural category consumers. For Mumbai Licensees and SEZs, as there are no AG consumers, there is no impact on the tariff of these consumers because of cross subsidy for agricultural consumers. Thus, the consumers of Mumbai Licensees and SEZs are protected from payment of the cross subsidy for AG consumers. Petitioner also submitted that since all AG consumers are in its License Area, it has created imbalance in revenue recovery.

8.28.4 Stating a fact that the benefits of the agricultural produce from the agricultural consumers of the Petitioner are being enjoyed by all the consumers of Maharashtra including Mumbai

Licensees and SEZs, Petitioner proposed to share equally, the impact of such cross subsidy, by all the consumers of the state of Maharashtra including those in the area of Mumbai Licensees and SEZs as it will reduce differentiation among similar category consumers. Petitioner, thus, requested the Commission to take note of the same and address the issue in larger benefit of similarly placed electricity consumers in the state.

8.28.5 Petitioner further submitted that proposed amendment in the EA 2003 provides for separation of carriage and contents. As a result, multiple supply Licensees will be introduced in State. Petitioner also submitted that, being a Supply Licensee, the impact of cross subsidy of all the AG consumers in its area will be on the Petitioner itself. Hence, the cross-subsidy impact needs to be distributed amongst all the Supply Licensees in Maharashtra which is in line with the proposed amendment.

8.28.6 Petitioner has estimated the overall cross subsidy impact on Mumbai Utilities is around Rs. 1,896 Crore and requested the Commission to use its inherent powers to decide the matters in the interest of consumers as well as utilities.

Commission Analysis and Rulings

8.28.7 The Commission has noted the submissions and is of the view that, the same is not legally tenable as per the Electricity Act, 2003, as cross-subsidising inter-se amongst licensees is not envisaged under the Act as each Utilities ARR and Tariff determination is to be undertaken based on its consumer mix/sales mix/power purchase mix, network topography in accordance with the principles specified under MYT Regulations.

8.28.8 The Act empowers the Appropriate Government to extend subsidy to Licensee in case any consumer category /class of consumers needs to be provided subsidy against the tariff determined by the Commission and State Government can extend the same in pursuance of Section 65 of the Electricity Act 2003. Further the Government is empowered to determine the Electricity Duty and Tax on Sale of Electricity as per the relevant Acts. Thus, the Commission has not accepted the claim of MSEDCL of sharing the Cross-subsidy impact with Mumbai Utilities.

8.29 Wheeling Charges

MSEDCL's Submission

Network Cost of MSEDCL

8.29.1 Petitioner submitted that the Commission has provided the ratio of network and supply cost segregation in MYT Regulations 2019 and the Petitioner has considered the same for segregation of average revenue requirement for the control period and arrived at the wires business and retail supply business cost. Following table provides the summary of network cost of the Petitioner for the control period

Table 8-34: Network cost of MSEDCL for FY 2020-21 to FY 2024-25

Sr. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
1	Operation & Maintenance expenses	4536	4710	4891	5078	5273
2	Depreciation	2481	2670	2840	2899	2953
3	Interest on Loan Capital	1266	1317	1222	1001	771
4	Interest on Working Capital	130	140	145	145	145
5	Interest on deposit from consumers and distribution system users	54	57	60	63	66
6	Other finance charges	-	-	-	-	-
7	Provision for bad and doubtful debts	89	94	99	105	111
8	Opex schemes	87	87	87	87	87
9	Contribution to contingency reserves	143	159	171	175	180
10	Income Tax	-	-	-	-	-
11	Return on Equity Capital	1550	1613	1668	1711	1752
	Total Revenue Expenditure	10338	10847	11182	11266	11338

8.29.2 Petitioner submitted that the Regulation 73.2 of MERC (Multi Year Tariff) Regulations 2019 provides for computation of wheeling charges separately for LT voltage, HT voltage and EHT voltage levels. The relevant extract of such regulations are given below:

"73.2 The Wheeling Charges of the Distribution Licensee shall be determined by the Commission on the basis of a Petition for determination of Tariff filed by the Distribution Licensee in accordance with Part B of these Regulations:

Provided that the Wheeling Charges may be denominated in terms of Rupees/kWh or Rupees/kVAh or Rupees/kW/month or Rupees/kVA/month, for the purpose of recovery from the Distribution System User, or any such denomination, as may be stipulated by the Commission:
Provided further that the Wheeling Charges shall be determined separately for LT voltage, HT voltage, and EHT voltage, as applicable:"

8.29.3 Petitioner submitted that for the control period from FY 2020-21 to FY 2024-25, it has proposed Wheeling Charges for three levels only, EHV (66kV and above), HT (combined wheeling charges for 33, 22 & 11 kV) and LT level.

8.29.4 Petitioner submitted that it does not maintain audited accounts for voltage wise assets and thus it does not have segregation between GFA for HT and LT Levels. Hence, Petitioner, for the purpose of projection, has considered GFA segregated into HT and LT as considered by the Commission in the Mid Term Review Order dated 12th September 2018. Petitioner further submitted that in order to arrive at the proportion of GFA for HT Level, it has added the GFA proportion for 33 kV, 22 kV and 11 kV voltage levels and the same is shown in the table below.

Table 8-35: Segregation of GFA for the control period

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT (Excel EHV)	70%	70%	70%	70%	70%
LT level	30%	30%	30%	30%	30%

8.29.5 Petitioner has applied ratio of voltage-wise GFA shown in the above table to arrive at GFA of HT (excluding EHV level) and LT levels asset which has been approved by the Commission in its Order dated 12th September 2018

8.29.6 The network cost is apportioned among voltage level in the ratio of GFA as computed above:

Table 8-36: Network cost apportioned for the control period (Rs. Crore)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT (Excel EHV)	7237	7593	7827	7886	7936
LT level	3101	3254	3354	3380	3401

8.29.7 Petitioner submitted that it has considered the voltage wise consumption (in kVAh also) as projected in Form 1.2 for the respective years of the control period for determining the wheeling charges. The projected consumption at different voltage levels is shown below:

Table 8-37: Voltage wise consumption for the control period, in MUs

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT (Excel EHV)	30,895	32,100	33,356	34,666	36,034
LT level	73,257	75,874	78,641	81,569	84,671

8.29.8 Petitioner submitted that, to arrive at the cost of wheeling at various voltage levels, the total wire network cost (as computed above) has been apportioned to the various levels (i.e. HT (excluding EHV) and LT) in the ratio of sales at respective voltage levels. The wire costs at higher voltage levels have been further apportioned to lower voltage levels, since the HT system is also being used for supply to the LT consumers

Table 8-38: Calculation of wheeling cost for FY 2020-21

Particulars	Network cost (Rs.Crs.)	Sales (MUs)	% of Sales	Wheeling cost (Rs. Crs)
HT (Excel EHV)	7237	30,895	30%	2147
LT level	3101	73,257	70%	8191
Total	**10,338**	**1,04,152**	**100%**	**10,338**

8.29.9 Using the same methodology, the Petitioner has computed the wheeling cost for the entire control period

8.29.10 Petitioner has submitted that it has calculated the share of each voltage category in the non-incident peak demand using % sales for each category. The wheeling charges have been derived by dividing the wheeling cost of each voltage category (as computed above) by the non-coincidental peak demand for that category and dividing it by 12 months

8.29.11 Petitioner submitted that the wheeling charges have been calculated by dividing the wheeling charges for each category by the load factor (assumed to be 66%) and 720 hours (24x30)

Table 8-39: Proposed wheeling charges for FY 2020-21

Particulars	Wheeling cost (Rs. Crs.)	Share in Non coincident demand (MW)	Wheeling charge (Rs./kW/month)	Wheeling charges
HT (Excel EHV)	2147	4913	364	0.77
LT level	8191	12,540	544	1.15
Total	**10,338**	**17,453**	**494**	**1.04**

8.29.12Petitioner submitted that using the same methodology, the Petitioner has computed the wheeling cost for the entire control period. The proposed wheeling charges for the control period are given below:

Table 8-40: Proposed Wheeling Charges for the control period, in Rs./unit

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT (Excel EHV)	Rs./kVAh	0.77	0.78	0.78	0.77	0.75
LT level	Rs./kVAh	1.15	1.17	1.17	1.14	1.11

8.29.13Petitioner proposed to continue the following wheeling losses which are already approved in previous Tariff Orders for the purpose of commercial settlement

Table 8-41:Proposed Wheeling Losses for control period

Particulars	Wheeling Losses
33 kV	6.00%
22 kV	7.50%
11 kV	9.00%
LT	12.00%

8.29.14Petitioner requested the Commission to approve the Wheeling Charges as proposed.

Commission Analysis and Rulings

8.29.15The Commission in the previous MTR Order estimated the voltage wise Wheeling Charges for 33 kV, 22 kV, 11 kV and LT level consumers. Whereas in the present MYT Petition, in

line with the Regulation 73.2 of the MYT Regulations, 2019, the Wheeling Charges shall now be determined for LT, HT and EHV voltage levels only.

8.29.16 The Commission in its every Tariff Order has directed MSEDCL to provide the Voltage wise GFA details, but the same have not been complied till date. Thus, in absence of Voltage-wise Network Cost, the Commission has considered estimate of the voltage wise GFA ratio considering assumptions on various parameters that influences the determination of GFA ratio such as HT/LT circuit km, Substation Capacity (HT/LT), Number of DTCs/DT capacity, Voltage-wise sales at HT/LT, Energy Units handled at HT/LT etc. and accordingly derived the ratio for allocation of wheeling cost between HT and LT, which is summarised as under:

Table 8-42: Allocation of Wheeling Cost for FY 2020-21 to FY 2024-25, considered by Commission

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT (Excl EHV)	26%	27%	27%	27%	28%
LT Level	74%	73%	73%	73%	72%

8.29.17 Based on the GFA Ratio, the Commission has worked out the Voltage-wise energy sales, excluding EHV Sales, of HT and LT Levels for FY 2020-21 to FY 2024-25.

Table 8-43: Voltage-wise Wheeling Cost Allocation for computation of Wheeling Charges for FY 2020-21 to FY 2024-25

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT (Excl EHV)	1,714	1,737	1,796	1,822	1,848
LT Level	9,089	9,047	9,196	9,275	9,351
Total	**10,804**	**10,784**	**10,992**	**11,097**	**11,199**

8.29.18 In addition to the allocation of yearly wheeling cost to recover projected ARR of wire business through wheeling charge, the Commission in this present MYT Order has also considered to recover the past period gaps (from FY 2017-18 to FY 2019-20) in recovery of Wire ARR through Wheeling Charges to an extent of Rs 3528 Crore over the ensuing years. Thus, proposed recovery of Wires cost (incl. deferred recovery of past period gaps for wire business) for the ensuing years is provided in the following table:

Table 8-44: Total Wire Recovery including past period gaps for FY 2020-21 to FY 2024-25, as approved by the Commission

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Wheeling ARR	Rs Cr	10,804	10,784	10,992	11,097	11,199

Past Period Wheeling Gap (Incl. Carrying Cost)	Rs Cr	657	657	657	657	657
Total Recovery (Incl. Past Gap)	**Rs Cr**	**11,461**	**11,441**	**11,650**	**11,754**	**11,856**

8.29.19 Thus, the voltage wise wheeled cost, wheeled units and approved Wheeling Charges so determined for the 4th Control Period is summarised in the table below:

Table 8-45: Voltage-wise Share of Network Cost for FY 2020-21 to FY 2024-25, as considered by Commission (Rs. Crore)

Particulars	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Wheeled Cost – HT	Rs Cr	1,819	1,843	1,903	1,930	1,956
Wheeled Cost – LT	Rs Cr	9,642	9,598	9,746	9,824	9,900
Total Wheeled Cost (incl. past period gaps)	**Rs Cr**	**11,461**	**11,441**	**11,650**	**11,754**	**11,856**
Wheeled Units – HT	MU	30,112	31,246	32,425	33,649	34,921
Wheeled Units – LT	MU	65,615	68,344	71,219	74,250	77,446
Wheeling Charge - HT	Rs/kWh	0.58	0.57	0.57	0.55	0.54
Wheeling Charge - LT	Rs/kWh	1.45	1.38	1.35	1.30	1.26
Wheeling Charge - HT	Rs/kVAh	0.57	0.56	0.55	0.54	0.53

8.29.20 In case of HT category where kVAh billing is introduced, Wheeling charges in Rs/kVAh shall be applicable considering categorywise power factor (0.98 pf), as approved in the above table. Further, the Commission approves Wheeling Loss of 7.5% at HT and 12% at LT as proposed by MSEDCL.

8.29.21 Further, In this Order, the Commission has also determined the Wires and Supply components of the tariff separately for each consumer category. Accordingly, the Wheeling Charge component and Energy Charge component have been shown separately while computing the category-wise tariffs, except for the Residential BPL category. In case of the BPL category, no Wheeling Charges are apportioned considering the consumer profile of this category.

8.30 Cross Subsidy Surcharge

MSEDCL's Submission

8.30.1 MSEDCL submitted that Section 2(47) of the said Electricity Act, 2003 defines "Open

Access", while the Section 42 of the said Act inter-alia mandates the Distribution Licensee to provide Open Access to eligible consumers, subject to payment of "Cross Subsidy Surcharge", "Additional Surcharge" and other applicable charges.

8.30.2 Petitioner further submitted that the Section 42(2) of the Act provides for the levy of Cross Subsidy Surcharge (CSS). The relevant provision of the Act is reproduced below:

> *" ……. in determining the charges of wheeling, it shall have due regard to all relevant factors including such cross-subsidies and other operational constraints;*
>
> *Provided that open access shall be allowed on payment of surcharge in addition to the charges for wheeling as may be determined by the state Commission;*
>
> *Provided further that such surcharge shall be utilised to meet the requirements of the current level of cross-subsidy within the area of distribution licensee"*
> *Emphasis added*

8.30.3 The Section 86(1)(a) of the said Act inter-alia mandates the Commission to determine "Cross Subsidy Surcharge", "Additional Surcharge" and other applicable charges payable by the consumers opting for Open Access

8.30.4 Petitioner submitted that the National Electricity Policy as stipulated by the Central Government provides that-

> *"Under the sub-section (2) of Section 42 of the Act, a surcharge is to be levied by the respective State Commissions on consumers switching to alternate supplies under Open Access. This is to compensate the host distribution licensee serving such consumers who are permitted Open Access under Section 42(2), for the loss of Cross Subsidy element built into the tariff of such consumers……"*

8.30.5 Petitioner submitted that the Central Government notified the revised National Tariff Policy on 28th January 2016 and has revised the "Surcharge Formula" as follows:

$$S = T - [C/ (1 - L/ 100) + D + R]$$

Where,

S is the Surcharge

T is the Tariff Payable by the relevant category of consumers including reflection the Renewable Purchase Obligation

C is the per unit weighted average cost of power purchase by the Licensee, including meeting the Renewable Purchase Obligation

D is the aggregate of transmission, distribution and wheeling charge applicable to the relevant voltage level.

L is the aggregate of transmission, distribution and commercial losses, expressed as a percentage applicable to the relevant voltage level

R is the per unit cost of carrying regulatory assets

8.30.6 As per the provisions of Section 42(2) of the Electricity Act 2003, the cross-subsidy surcharge needs to be based on the current level of cross subsidy. Accordingly, the consumers who opted for open access needs to be charged for the compensation of current level of cross subsidy which prevailed during the period and in order to avoid the burden of the same getting passed on other consumers who are with the Distribution Licensee

8.30.7 Petitioner submitted that, to examine the issues related to Open Access along with issues relating to amendments in provisions relating to captive Generating plants in the Electricity Rules, 2005, a committee was constituted by CEA on the advice of Ministry of Power. In the Consultation paper by MoP issued on 24th August 2017, which is based on the report of the said Committee, it has been proposed that the SERCs should determine the CSS based on real cross subsidy. The said Paper also advocated for implementation of Tariff Policy 2016 in true spirit. The relevant extract of the said Consultation Paper is reproduced below:

> *"The Tariff Policy 2016 mandates SERCs to determine roadmap for reduction of cross subsidy and bring tariff at +/- 20% Average Cost of Supply, however it restricts Cross Subsidy Surcharge at 20% of the consumer tariff. In case the consumer tariff is more than 120% of Average Cost of Supply, DISCOM will not be able to recover losses through cross subsidy surcharge in case consumer opts for open access. It is essential for SERCs to implement both Para 8.3-2 and First proviso to para 8.5.1 of the Tariff Policy 2016 simultaneously. If one of the provisions could not be implemented due to some reason, the second provision should also not be implanted to that extent."*

8.30.8 Petitioner further stated that while approving the CSS in Case No.195 of 2017, the Commission worked out the various components of CSS formulae based on the approved values for FY18-19 and FY19-20 and computed the consumer category-wise CSS in accordance with the Tariff Policy 2016. The CSS computed in accordance with NTP formulae represents the current level of cross subsidy. The Petitioner further stated that, however, the Commission approved the CSS equal to minimum of the two values: Computed CSS and 20% of tariff. This has resulted in lower CSS applicable than current level of cross subsidy leading to incomplete recovery of cross subsidy from open access consumers.

8.30.9 For example, the CSS calculated by the Commission as per the NTP formula for HT industrial (general) at EHV level for FY 18-19 was Rs. 3.21 per unit whereas the CSS approved for that category was Rs.1.58 per unit only. Considering the EHV Open Access quantum for FY 18-19, the Petitioner lost about Rs.670 crores of legitimate revenue from HT category open access consumers due to lower level of approved CSS.

8.30.10 Petitioner thus submitted that such revenue deficit due to lower approved CSS is being passed on to its consumers during truing-up exercise which results in:

- Substantial delay in revenue realisation which comes only after true up exercise
- Further tariff increases of MSEDCL consumers at large, despite not being at any fault.

8.30.11 OA consumers unduly get benefited due to less cross subsidy surcharge. As industrial consumers are the subsidising consumers the impact gets loaded onto the industrial category, raising its tariff. This increased industrial tariff will lead more consumers to opt for open access which will further add to revenue deficit leading to requirement of further tariff hike, thus entering a vicious cycle. Petitioner further states, therefore, as a principle, only those consumers who opt for open access during a particular period should pay the CSS for such period to maintain the prevailing level of cross subsidy and should not be loaded onto the Petitioner's consumers at large.

8.30.12 Petitioner, thus, submitted that one of the reasons for tariff hike is incomplete recovery of CSS. There can be no ambiguity with the preposition that CSS is a compensatory charge to the Discom. This principle had been accepted even by the Appellate Tribunal in several judgments earlier. Petitioner further submitted that, as held by the Tribunal, CSS is not only to compensate the Discom for the loss of cross subsidy, it is also to compensate the

remaining consumers of the Discom who have not taken open access. The same has been held up in the APTEL in its judgement dated 2nd December 2013 in Appeal No.178 of 2011 (supra) which is reproduced below:

> *"…II The contention of the State Commission that Tariff Policy provide that the CSS should not be enormous to suffocate the Competition is misplaced.* ***The Act mandated the State Commission to determine the CSS to meet the requirement of current level of cross subsidy.*** *We have to keep in mind that the CSS is paid by subsidizing consumers only. This Tribunal in catena of cases has held that CSS is compensatory in nature. It is meant for to compensate the loss suffered by the remaining subsidised low-end consumers. Thus, in the scenario of mass changeover of consumers, the CSS has also to be such that exodus of subsidizing consumers does not load the remaining low-end consumers heavily. The State Commission has to balance the interest of all the consumers, the plea taken by the State Commission in Appeal No.132/2011 and accepted by this Tribunal in its judgement. The above submission of the State Commission also suggests that it has attempted to suppress the CSS artificially…"* ***Emphasis Added***

8.30.13 Petitioner submitted that it has determined the cross-subsidy surcharge based on the Tariff Policy formula without putting any ceiling.

8.30.14 Petitioner requested the Commission to determine the cross-subsidy surcharge considering the formula prescribed by the NTP 2016 without putting any ceiling.

Computation of Cross Subsidy Surcharge for the Control Period.

8.30.15 Computation of 'C' is based on the projected power purchase quantum and price for the control period as submitted in the Form 2 of the Regulatory Formats for the respective year. The definition/explanation for 'C' has been revised in the Tariff Policy dated 28th January 2016 with the inclusion of renewable power purchase in the computation of 'C'. The comparison of old and new Tariff Policy is given below:

Old Tariff Policy	New Tariff Policy
Weighted average cost of power purchase of top 5% at the margin excluding liquid fuel-based generation and renewable power.	Per unit weighted average cost of power purchase by the licensee, including meeting the renewable purchase obligation.

8.30.16 Petitioner submitted that the computation of 'C' can be taken as the total power purchase cost based on MOD principle to the total power scheduled to be purchased as per the MOD

principle. Therefore, the 'C' computed for MSEDCL for control period are shown in the following table:

Table 8-46: Computation of C for Control Period

Financial Year	Details of Power Purchase		
	MUs	Rs. Crores*	Rs./kWh
2020-21	1,36,888	57,558	4.20
2021-22	1,41,651	60,035	4.24
2022-23	1,46,645	63,403	4.32
2023-24	1,51,950	66,662	4.39
2024-25	1,57,573	69,350	4.40

***** - *Power Purchase Cost is excluding the PGCIL transmission charges*

8.30.17Computation of System Loss 'L': Petitioner submitted that the projected wheeling losses at the respective voltage level and the transmission losses are used to arrive at the grossed up total system losses for the Petitioner which is shown in the following table:

Table 8-47: Computation of System Loss for the Control Period

Particulars	EHV	HT	LT level
Transmission Losses (%)	3.30%	3.30%	3.30%
Wheeling Losses (%)	0.00%	7.50%	12.00%
Total System Losses (%)	**3.30%**	**10.55%**	**14.90%**

8.30.18Computation of Wheeling charge 'D': Petitioner submitted that the projected wheeling charges as shown in the Chapter 11 at the respective voltage levels for the Petitioner along with per unit transmission charges (including PGCIL charges and intra-state) are used for the parameter 'D' in the computation of cross subsidy surcharge for the control period. The same wheeling charges at respective voltage levels are shown in the following table along with system losses:

Table 8-48: Computation of Wheeling Charge 'D' for the Control Period

Wheeling Charges and Transmission Charges
Wheeling Charges (Rs./unit)

Particulars	EHV	HT	LT level
2020-21		0.77	1.15
2021-22	-	0.78	1.17
2022-23	-	0.78	1.17
2023-24	-	0.77	1.14
2024-25	-	0.75	1.11
Transmission Charges (Rs./unit)			
Particulars	**EHV**	**HT**	**LT level**
2020-21	1.22	1.22	1.22
2021-22	0.86	0.86	0.86
2022-23	0.87	0.87	0.87
2023-24	0.90	0.90	0.90
2024-25	0.93	0.93	0.93
Wheeling and Transmission charges (Rs./unit)			
Particulars	**EHV**	**HT**	**LT level**
2020-21	1.22	1.99	2.37
2021-22	0.86	1.64	2.03
2022-23	0.87	1.66	2.04
2023-24	0.90	1.67	2.04
2024-25	0.93	1.68	2.05

8.30.19Computation of Average Billing Rate ‘T’: Petitioner stated that its ABR has been taken as the effective average billing rate as per the proposed tariff for control period

8.30.20Determination of Cross Subsidy Surcharge ‘S’: Petitioner submitted that the category wise CSS applicable to open access consumers arrived on consideration of the components ABR, C, L & D from the above referred respective sections is provided in the tables below:

Table 8-49: Detailed Computation of CSS for FY 2020-21 for HT Consumers

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS computed
	Rs./unit*		%	%	%	Rs./unit*	
HT I: HT – Industry							
HT	9.25	4.20	7.50%	3.30%	10.55%	1.99	2.57
EHV	8.40	4.20	0.00%	3.30%	3.30%	1.22	2.83
HT I(B): HT – Industry (Seasonal)							
HT	12.18	4.20	7.50%	3.30%	10.55%	1.99	5.49
EHV	13.93	4.20	0.00%	3.30%	3.30%	1.22	8.36
HT II: HT – Commercial							
HT	15.26	4.20	7.50%	3.30%	10.55%	1.99	8.57
EHV	16.47	4.20	0.00%	3.30%	3.30%	1.22	10.90
HT III: HT – Railways/Metro/Monorail traction							
HT	10.71	4.20	7.50%	3.30%	10.55%	1.99	4.03
EHV	9.55	4.20	0.00%	3.30%	3.30%	1.22	3.98
HT IV: HT – Public Water Works							
HT	8.29	4.20	7.50%	3.30%	10.55%	1.99	1.61
EHV	6.95	4.20	0.00%	3.30%	3.30%	1.22	1.38
HT V(B): HT – Agriculture (Others)							
HT	6.57	4.20	7.50%	3.30%	10.55%	1.99	-
EHV	-	4.20	0.00%	3.30%	3.30%	1.22	-
HT VI: HT – Group Housing Societies (Residential)							
HT	8.77	4.20	7.50%	3.30%	10.55%	1.99	2.09
EHV	6.00	4.20	0.00%	3.30%	3.30%	1.22	0.43

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS computed
	Rs./unit*		%	%	%	Rs./unit*	
HT VIII(B): HT – Temporary Supply Others (TSO)							
HT	17.38	4.20	7.50%	3.30%	10.55%	1.99	10.69
EHV	-	4.20	0.00%	3.30%	3.30%	1.22	-
HT IX: HT – Public Services							
HT IX(A): HT – Public Services – Govt. Edu. Institutions and Hospitals							
HT	10.73	4.20	7.50%	3.30%	10.55%	1.99	4.04
EHV	-	4.20	0.00%	3.30%	3.30%	1.22	-
HT IX(B): HT – Public Services – Others							
HT	12.96	4.20	7.50%	3.30%	10.55%	1.99	6.27
EHV	10.81	4.20	0.00%	3.30%	3.30%	1.22	5.24

Table 8-50: Detailed computation of CSS for FY 2020-21 for LT Consumers

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS computed
	Rs./unit*		%	%	%	Rs./unit*	
LT Residential							
LT I(A): LT – Residential – BPL	2.18	4.20	12.00%	3.30%	14.90%	2.37	-
LT I(B): LT – Residential							
1 – 100 units	5.61	4.20	12.00%	3.30%	14.90%	2.37	-
101 – 300 units	9.68	4.20	12.00%	3.30%	14.90%	2.37	2.37
301 – 500 units	12.32	4.20	12.00%	3.30%	14.90%	2.37	5.01
Above 500 units	13.15	4.20	12.00%	3.30%	14.90%	2.37	5.85
LT II: LT – Non-Residential							
(A) 0 – 20 kVA	10.55	4.20	12.00%	3.30%	14.90%	2.37	3.24
(B) > 20 kVA and ≤ 50 kVA	13.39	4.20	12.00%	3.30%	14.90%	2.37	6.08

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS computed
	Rs./unit*		%	%	%	Rs./unit*	
(C) > 50 kVA	15.35	4.20	12.00%	3.30%	14.90%	2.37	8.04
LT IV(C): LT – Agriculture Metered – Others	7.95	4.20	12.00%	3.30%	14.90%	2.37	0.65
LT V(A): LT – Industry – Powerlooms							
(i) 0 – 20 kVA	6.50	4.20	12.00%	3.30%	14.90%	2.37	-
(ii) Above 20 kVA	7.87	4.20	12.00%	3.30%	14.90%	2.37	0.56
LT V(B): LT – Industry – General							
(i) 0 – 20 kVA	7.92	4.20	12.00%	3.30%	14.90%	2.37	0.61
(ii) Above 20 kVA	9.22	4.20	12.00%	3.30%	14.90%	2.37	1.92
LT VI: LT – Street Light							
(B): Municipal Corporation area	7.76	4.20	12.00%	3.30%	14.90%	2.37	0.45
LT VII: LT – Temporary Connection							
(A): LT – Temporary Supply Religious (TSR)	8.06	4.20	12.00%	3.30%	14.90%	2.37	0.75
(B): LT – Temporary Supply Others (TSO)	16.32	4.20	12.00%	3.30%	14.90%	2.37	9.01
LT VIII: LT – Advertisements and Hoardings	20.39	4.20	12.00%	3.30%	14.90%	2.37	13.08
LT X(A) – Public Services – Govt.							
(i) 0 – 20 kVA	6.09	4.20	12.00%	3.30%	14.90%	2.37	-
(ii) > 20 kVA and ≤ 50 kVA	8.72	4.20	12.00%	3.30%	14.90%	2.37	1.41
(iii) > 50 kVA	9.80	4.20	12.00%	3.30%	14.90%	2.37	2.50
LT X(B) – Public Services - Others							
(i) 0 – 20 kVA	8.33	4.20	12.00%	3.30%	14.90%	2.37	1.02
(ii) > 20 kVA and ≤ 50 kVA	10.65	4.20	12.00%	3.30%	14.90%	2.37	3.34

Consumer Category	T (ABR)	C	WL	TL	L	D=WL + Tx	CSS computed
	Rs./unit*		%	%	%	Rs./unit*	
(iii) > 50 kVA	10.85	4.20	12.00%	3.30%	14.90%	2.37	3.54
LT XI: LT – Electric Vehicle Charging Station	6.35	4.20	12.00%	3.30%	14.90%	2.37	-

Table 8-51: Summary of CSS for the Control Period of HT Consumers

Consumer Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./unit	Rs./unit	Rs./unit	Rs./unit	Rs./unit
HT I: HT – Industry					
HT	2.57	3.09	3.19	3.31	3.46
EHV	2.83	3.35	3.45	3.57	3.71
HT I(B): HT – Industry (Seasonal)					
HT	5.49	6.06	6.20	6.35	6.57
EHV	8.36	9.02	9.25	9.50	9.81
HT II: HT – Commercial					
HT	8.57	9.05	9.10	9.17	9.30
EHV	10.90	11.49	11.66	11.85	12.11
HT III: HT – Railways/Metro/Monorail traction					
HT	4.03	4.77	5.09	5.44	5.87
EHV	3.98	4.64	4.87	5.12	5.42
HT IV: HT – Public Water Works					
HT	1.61	2.21	2.38	2.56	2.81
EHV	1.38	1.92	2.03	2.15	2.32
HT V(B): HT – Agriculture (Others)					
HT	-	0.41	0.52	0.62	0.78
EHV	-	-	-	-	-

Consumer Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./unit	Rs./unit	Rs./unit	Rs./unit	Rs./unit
HT VI: HT – Group Housing Societies (Residential)					
HT	2.09	2.84	3.19	3.57	4.03
EHV	0.43	0.96	1.06	1.16	1.32
HT VIII(B): HT – Temporary Supply Others (TSO)					
HT	10.69	11.95	12.83	13.80	14.92
EHV	-	-	-	-	-
HT IX: HT – Public Services					
HT IX(A): HT – Public Services – Govt. Edu. Institutions and Hospitals					
HT	4.04	4.69	4.92	5.18	5.54
EHV	-	-	-	-	-
HT IX(B): HT – Public Services – Others					
HT	6.27	6.86	7.04	7.23	7.49
EHV	5.24	5.75	5.84	5.93	6.09
HT X: HT – Electric Vehicle Charging Station					
HT	1.99	2.71	3.03	3.36	3.78
EHV	-	-	-	-	-

Table 8-52: Summary of CSS for the Control Period for LT Consumers

Consumer Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./unit	Rs./unit	Rs./unit	Rs./unit	Rs./unit
LT Residential					
LT I(A): LT – Residential – BPL	-	-	-	-	-
LT I(B): LT – Residential					
1 – 100 units	-	-	-	-	-

Consumer Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./unit	Rs./unit	Rs./unit	Rs./unit	Rs./unit
101 – 300 units	2.37	2.99	3.18	3.39	3.66
301 – 500 units	5.01	5.45	5.45	5.49	5.58
Above 500 units	5.85	6.25	6.23	6.33	6.51
LT II: LT – Non Residential					
(A) 0 – 20 kVA	3.24	3.78	3.88	3.98	4.14
(B) > 20 kVA and ≤ 50 kVA	6.08	6.76	7.00	7.24	7.55
(C) > 50 kVA	8.04	8.54	8.61	8.58	8.61
LT III: LT – Public Water Works					
(A) 0 – 20 kVA	-	-	-	-	-
(B) > 20 kVA and ≤ 40 kVA	-	-	-	-	-
(C) > 40 kVA	-	-	-	-	0.14
LT IV(C): LT – Agriculture Metered – Others	0.65	1.23	1.48	1.77	2.11
LT V(A): LT – Industry – Powerlooms					
(i) 0 – 20 kVA	-	-	-	0.12	0.39
(ii) Above 20 kVA	0.56	1.02	1.14	1.28	1.48
LT V(B): LT – Industry – General					
(i) 0 – 20 kVA	0.61	1.27	1.50	1.72	2.02
(ii) Above 20 kVA	1.92	2.66	2.97	3.30	3.69
LT VI: LT – Street Light					
(A): Grampanchayat; A, B and C class Municipal Councils	-	-	-	-	-
(B): Municipal Corporation area	0.45	1.01	1.14	1.29	1.49
LT VII: LT – Temporary Connection					
(A): LT – Temporary Supply Religious (TSR)	0.75	1.73	2.35	3.08	3.98
(B): LT – Temporary Supply Others (TSO)	9.01	10.04	10.68	11.39	12.22
LT VIII: LT – Advertisements and Hoardings	13.08	14.31	15.13	16.00	16.96

Consumer Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Rs./unit	Rs./unit	Rs./unit	Rs./unit	Rs./unit
LT IX: LT – Crematorium and Burial Grounds	-	-	-	-	-
LT X(A) – Public Services – Govt.					
(i) 0 – 20 kVA	-	-	-	-	-
(ii) > 20 kVA and ≤ 50 kVA	1.41	2.00	2.15	2.31	2.63
(iii) > 50 kVA	2.50	3.06	3.20	3.34	3.54
LT X(B) – Public Services - Others					
(i) 0 – 20 kVA	1.02	1.66	1.88	2.10	2.39
(ii) > 20 kVA and ≤ 50 kVA	3.34	4.11	4.46	4.81	5.22
(iii) > 50 kVA	3.54	4.23	4.48	4.74	5.06
LT XI: LT – Electric Vehicle Charging Station	-	-	-	-	-

8.30.21 Petitioner submitted that as stipulated in the Open Access Regulations, the cross-subsidy surcharge shall be based on the current level of cross subsidy of the tariff category/ tariff slab and/or voltage level to which such consumer or person belong or are connected to. Accordingly, the consumers who opt for Open Access during the control period need to be charged to compensate the level of cross subsidy which will prevail during the control period and to avoid the burden of the same on other consumers. Petitioner, therefore, requested the Commission to approve the CSS for the control period as computed above.

Commission's Analysis & Rulings

8.30.22 The Commission has taken a note of the concern raised by MSEDCL regarding the application of ceiling cap of +/- 20% across consumer categories as per the Para. 8.3 (2) of the Tariff Policy, 2016. Further, the Commission also notes the reference to the Consultation Paper issued by MoP in August, 2017 as regards implementation of both Para. 8.3 (2) and first proviso to para 8.5.1. of the Tariff Policy, 2016 simultaneously.

8.30.23 The Commission here would like to highlight that, while working out the CSS, in the previous MTR order in Case No. 195 of 2017, basic intent of keeping the cap of +/- 20% was to keep the gradual reduction trend of the cross-subsidy over the ensuing years and

determine the tariff as close as is possible to the ACoS as well as keeping the cognizance of avoiding tariff shock all across the consumer categories. Further, the Commission notes that in case of most prominent consumer category that is eligible for Open Access and avails open access i.e. HT-Industry, the ratio of ABR/ACoS is lower than 120%.

8.30.24Thus, Commission has worked out the CSS by keeping the ceiling of +/- 20% for most of the consumer categories in order to maintain the consistency with the principle adopted in the previous MTR Order.

8.30.25Further, the Commission has worked out the various components of CSS formulae based on the approved values for 4th Control Period and worked out the category-wise CSS for 4th Control Period i.e. from FY 2020-21 to FY 2024-25 for HT Consumers only, since the eligible consumers for OA lies within the HT consumers category only.

8.30.26The category-wise CSS computed from FY 2020-21 to FY 2024-25 is as shown under:

Table 8-53: Cross Subsidy Surcharge approved by Commission for FY 2020-21 as per revised Tariff Policy, 2016

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT Category - EHV (66kV and Above)									
HT I (A) (i): HT - Industry	8.36	4.00	3.18%	0.00%	3.18%	0.83	3.39	1.67	1.67
HT I (B): HT - Industry (Seasonal)	11.01	4.00	3.18%	0.00%	3.18%	0.83	6.04	2.20	2.20
HT II (A): HT - Commercial	14.58	4.00	3.18%	0.00%	3.18%	0.83	9.62	2.92	2.92
HT III (A): HT - Railways/Metro/Monorail Traction	7.08	4.00	3.18%	0.00%	3.18%	0.83	2.12	1.42	1.42
HT IV: HT - Public Water Works (PWW)	6.67	4.00	3.18%	0.00%	3.18%	0.83	1.71	1.33	1.33
HT V(A): HT - Agriculture Pumpsets	3.95	4.00	3.18%	0.00%	3.18%	0.83	-	0.79	-
HT VI: HT - Group Housing Societies (Residential)	5.70	4.00	3.18%	0.00%	3.18%	0.83	0.73	1.14	0.73
HT IX(B): HT - Public Services-Others	10.13	4.00	3.18%	0.00%	3.18%	0.83	5.17	2.03	2.03
HT Category - HT (33kV, 22kV and 11 kV)									
HT I (A) (i): HT - Industry	8.55	4.00	3.18%	7.50%	10.44%	1.40	2.68	1.71	1.71
HT I (B): HT - Industry (Seasonal)	10.22	4.00	3.18%	7.50%	10.44%	1.40	4.35	2.04	2.04
HT II (A): HT - Commercial	13.46	4.00	3.18%	7.50%	10.44%	1.40	7.59	2.69	2.69
HT III (A): HT - Railways/Metro/Monorail Traction	8.40	4.00	3.18%	7.50%	10.44%	1.40	2.53	1.68	1.68

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT IV: HT - Public Water Works (PWW)	7.39	4.00	3.18%	7.50%	10.44%	1.40	1.52	1.48	1.48
HT V(A): HT - Agriculture Pumpsets	4.74	4.00	3.18%	7.50%	10.44%	1.40	-	0.95	-
HT V(B): HT - Agriculture Others	6.01	4.00	3.18%	7.50%	10.44%	1.40	0.14	1.20	0.14
HT VI: HT - Group Housing Societies (Residential)	7.27	4.00	3.18%	7.50%	10.44%	1.40	1.40	1.45	1.40
HT VIII(B): HT - Temporary Supply Others (TSO)	14.30	4.00	3.18%	7.50%	10.44%	1.40	8.43	2.86	2.86
HT IX(A): HT - Public Services-Govt. Edu. Institutions and Hospitals	9.28	4.00	3.18%	7.50%	10.44%	1.40	3.41	1.86	1.86
HT IX(B): HT - Public Services-Others	9.28	4.00	3.18%	7.50%	10.44%	1.40	3.41	1.86	1.86
HT X: HT – Electric Vehicle Charging Station	8.29	4.00	3.18%	7.50%	10.44%	1.40	2.42	1.66	1.66

Table 8-54: Cross Subsidy Surcharge approved by Commission for FY 2021-22 as per revised Tariff Policy, 2016

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT Category - EHV (66kV and Above)									
HT I (A) (i): HT - Industry	8.37	4.00	3.18%	0.00%	3.18%	0.82	3.41	1.67	1.67
HT I (B): HT - Industry (Seasonal)	11.14	4.00	3.18%	0.00%	3.18%	0.82	6.19	2.23	2.23
HT II (A): HT - Commercial	14.47	4.00	3.18%	0.00%	3.18%	0.82	9.51	2.89	2.89
HT III (A): HT - Railways/Metro/Monorail Traction	7.19	4.00	3.18%	0.00%	3.18%	0.82	2.23	1.44	1.44
HT IV: HT - Public Water Works (PWW)	6.84	4.00	3.18%	0.00%	3.18%	0.82	1.88	1.37	1.37
HT V(A): HT - Agriculture Pumpsets	3.87	4.00	3.18%	0.00%	3.18%	0.82	-	0.77	-
HT VI: HT - Group Housing Societies (Residential)	5.70	4.00	3.18%	0.00%	3.18%	0.82	0.74	1.14	0.74
HT IX(B): HT - Public Services-Others	9.90	4.00	3.18%	0.00%	3.18%	0.82	4.95	1.98	1.98
HT Category - HT (33kV, 22kV and 11 kV)									
HT I (A) (i): HT - Industry	8.53	4.00	3.18%	7.50%	10.44%	1.38	2.68	1.71	1.71
HT I (B): HT - Industry (Seasonal)	10.28	4.00	3.18%	7.50%	10.44%	1.38	4.43	2.06	2.06
HT II (A): HT - Commercial	13.26	4.00	3.18%	7.50%	10.44%	1.38	7.40	2.65	2.65
HT III (A): HT - Railways/Metro/Monorail Traction	8.55	4.00	3.18%	7.50%	10.44%	1.38	2.69	1.71	1.71

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT IV: HT - Public Water Works (PWW)	7.57	4.00	3.18%	7.50%	10.44%	1.38	1.71	1.51	1.51
HT V(A): HT - Agriculture Pumpsets	4.65	4.00	3.18%	7.50%	10.44%	1.38	-	0.93	-
HT V(B): HT - Agriculture Others	5.91	4.00	3.18%	7.50%	10.44%	1.38	0.05	1.18	0.05
HT VI: HT - Group Housing Societies (Residential)	7.31	4.00	3.18%	7.50%	10.44%	1.38	1.46	1.46	1.46
HT VIII(B): HT - Temporary Supply Others (TSO)	14.16	4.00	3.18%	7.50%	10.44%	1.38	8.31	2.83	2.83
HT IX(A): HT - Public Services-Govt. Edu. Institutions and Hospitals	9.33	4.00	3.18%	7.50%	10.44%	1.38	3.47	1.87	1.87
HT IX(B): HT - Public Services-Others	9.33	4.00	3.18%	7.50%	10.44%	1.38	3.47	1.87	1.87
HT X: HT – Electric Vehicle Charging Station	8.35	4.00	3.18%	7.50%	10.44%	1.38	2.50	1.67	1.67

Table 8-55: Cross Subsidy Surcharge approved by Commission for FY 2022-23 as per revised Tariff Policy, 2016

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT Category - EHV (66kV and Above)									
HT I (A) (i): HT - Industry	8.38	4.00	3.18%	0.00%	3.18%	0.82	3.43	1.68	1.68
HT I (B): HT - Industry (Seasonal)	11.28	4.00	3.18%	0.00%	3.18%	0.82	6.33	2.26	2.26
HT II (A): HT - Commercial	14.39	4.00	3.18%	0.00%	3.18%	0.82	9.44	2.88	2.88
HT III (A): HT - Railways/Metro/Monorail Traction	7.20	4.00	3.18%	0.00%	3.18%	0.82	2.25	1.44	1.44
HT IV: HT - Public Water Works (PWW)	6.92	4.00	3.18%	0.00%	3.18%	0.82	1.97	1.38	1.38
HT V(A): HT - Agriculture Pumpsets	3.89	4.00	3.18%	0.00%	3.18%	0.82	-	0.78	-
HT VI: HT - Group Housing Societies (Residential)	5.70	4.00	3.18%	0.00%	3.18%	0.82	0.75	1.14	0.75
HT IX(B): HT - Public Services-Others	9.70	4.00	3.18%	0.00%	3.18%	0.82	4.75	1.94	1.94
HT Category - HT (33kV, 22kV and 11 kV)									
HT I (A) (i): HT - Industry	8.51	4.00	3.18%	7.50%	10.44%	1.37	2.67	1.70	1.70
HT I (B): HT - Industry (Seasonal)	10.34	4.00	3.18%	7.50%	10.44%	1.37	4.50	2.07	2.07
HT II (A): HT - Commercial	13.07	4.00	3.18%	7.50%	10.44%	1.37	7.24	2.61	2.61

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT III (A): HT - Railways/Metro/Monorail Traction	8.60	4.00	3.18%	7.50%	10.44%	1.37	2.76	1.72	1.72
HT IV: HT - Public Water Works (PWW)	7.65	4.00	3.18%	7.50%	10.44%	1.37	1.81	1.53	1.53
HT V(A): HT - Agriculture Pumpsets	4.66	4.00	3.18%	7.50%	10.44%	1.37	-	0.93	-
HT V(B): HT - Agriculture Others	5.90	4.00	3.18%	7.50%	10.44%	1.37	0.07	1.18	0.07
HT VI: HT - Group Housing Societies (Residential)	7.35	4.00	3.18%	7.50%	10.44%	1.37	1.52	1.47	1.47
HT VIII(B): HT - Temporary Supply Others (TSO)	14.05	4.00	3.18%	7.50%	10.44%	1.37	8.22	2.81	2.81
HT IX(A): HT - Public Services-Govt. Edu. Institutions and Hospitals	9.37	4.00	3.18%	7.50%	10.44%	1.37	3.53	1.87	1.87
HT IX(B): HT - Public Services-Others	9.37	4.00	3.18%	7.50%	10.44%	1.37	3.53	1.87	1.87
HT X: HT – Electric Vehicle Charging Station	8.41	4.00	3.18%	7.50%	10.44%	1.37	2.58	1.68	1.68

Table 8-56: Cross Subsidy Surcharge approved by Commission for FY 2023-24 as per revised Tariff Policy, 2016

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT Category - EHV (66kV and Above)									
HT I (A) (i): HT - Industry	7.98	4.00	3.18%	0.00%	3.18%	0.81	3.04	1.60	1.60
HT I (B): HT - Industry (Seasonal)	13.31	4.00	3.18%	0.00%	3.18%	0.81	8.37	2.66	2.66
HT II (A): HT - Commercial	14.16	4.00	3.18%	0.00%	3.18%	0.81	9.22	2.83	2.83
HT III (A): HT - Railways/Metro/Monorail Traction	7.52	4.00	3.18%	0.00%	3.18%	0.81	2.58	1.50	1.50
HT IV: HT - Public Water Works (PWW)	6.69	4.00	3.18%	0.00%	3.18%	0.81	1.75	1.34	1.34
HT V(A): HT - Agriculture Pumpsets	3.96	4.00	3.18%	0.00%	3.18%	0.81	-	0.79	-
HT VI: HT - Group Housing Societies (Residential)	5.20	4.00	3.18%	0.00%	3.18%	0.81	0.26	1.04	0.26
HT IX(B): HT - Public Services-Others	8.49	4.00	3.18%	0.00%	3.18%	0.81	3.55	1.70	1.70
HT Category - HT (33kV, 22kV and 11 kV)									
HT I (A) (i): HT - Industry	8.61	4.00	3.18%	7.50%	10.44%	1.35	2.79	1.72	1.72

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT I (B): HT - Industry (Seasonal)	11.45	4.00	3.18%	7.50%	10.44%	1.35	5.63	2.29	2.29
HT II (A): HT - Commercial	12.84	4.00	3.18%	7.50%	10.44%	1.35	7.02	2.57	2.57
HT III (A): HT - Railways/Metro/Monorail Traction	8.58	4.00	3.18%	7.50%	10.44%	1.35	2.77	1.72	1.72
HT IV: HT - Public Water Works (PWW)	7.82	4.00	3.18%	7.50%	10.44%	1.35	2.00	1.56	1.56
HT V(A): HT - Agriculture Pumpsets	4.84	4.00	3.18%	7.50%	10.44%	1.35	-	0.97	-
HT V(B): HT - Agriculture Others	5.95	4.00	3.18%	7.50%	10.44%	1.35	0.13	1.19	0.13
HT VI: HT - Group Housing Societies (Residential)	7.46	4.00	3.18%	7.50%	10.44%	1.35	1.64	1.49	1.49
HT VIII(B): HT - Temporary Supply Others (TSO)	13.24	4.00	3.18%	7.50%	10.44%	1.35	7.43	2.65	2.65
HT IX(A): HT - Public Services-Govt. Edu. Institutions and Hospitals	9.38	4.00	3.18%	7.50%	10.44%	1.35	3.57	1.88	1.88
HT IX(B): HT - Public Services-Others	9.38	4.00	3.18%	7.50%	10.44%	1.35	3.57	1.88	1.88
HT X: HT – Electric Vehicle Charging Station	7.59	4.00	3.18%	7.50%	10.44%	1.35	1.78	1.52	1.52

Table 8-57: Cross Subsidy Surcharge approved by Commission for FY 2024-25 as per revised Tariff Policy, 2016

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT Category - EHV (66kV and Above)									
HT I (A) (i): HT - Industry	7.98	4.00	3.18%	0.00%	3.18%	0.79	3.05	1.60	1.60
HT I (B): HT - Industry (Seasonal)	13.77	4.00	3.18%	0.00%	3.18%	0.79	8.85	2.75	2.75
HT II (A): HT - Commercial	14.12	4.00	3.18%	0.00%	3.18%	0.79	9.20	2.82	2.82
HT III (A): HT - Railways/Metro/Monorail Traction	7.41	4.00	3.18%	0.00%	3.18%	0.79	2.48	1.48	1.48
HT IV: HT - Public Water Works (PWW)	6.78	4.00	3.18%	0.00%	3.18%	0.79	1.85	1.36	1.36
HT V(A): HT - Agriculture Pumpsets	4.00	4.00	3.18%	0.00%	3.18%	0.79	-	0.80	-
HT VI: HT - Group Housing Societies (Residential)	5.20	4.00	3.18%	0.00%	3.18%	0.79	0.27	1.04	0.27
HT IX(B): HT - Public Services-Others	8.12	4.00	3.18%	0.00%	3.18%	0.79	3.19	1.62	1.62
HT Category - HT (33kV, 22kV and 11 kV)									
HT I (A) (i): HT - Industry	8.60	4.00	3.18%	7.50%	10.44%	1.32	2.81	1.72	1.72

Consumer Category	T (ABR)	C	TL	WL	L	D = WL + Tx	CSS Computed - a	20% of Tariff - (b)	CSS - Min (a,b)
	Rs./Unit*		%	%	%	Rs./Unit*		Rs./Unit*	
HT I (B): HT - Industry (Seasonal)	11.68	4.00	3.18%	7.50%	10.44%	1.32	5.89	2.34	2.34
HT II (A): HT - Commercial	12.61	4.00	3.18%	7.50%	10.44%	1.32	6.82	2.52	2.52
HT III (A): HT - Railways/Metro/Monorail Traction	8.57	4.00	3.18%	7.50%	10.44%	1.32	2.78	1.71	1.71
HT IV: HT - Public Water Works (PWW)	7.98	4.00	3.18%	7.50%	10.44%	1.32	2.19	1.60	1.60
HT V(A): HT - Agriculture Pumpsets	4.88	4.00	3.18%	7.50%	10.44%	1.32	-	0.98	-
HT V(B): HT - Agriculture Others	5.96	4.00	3.18%	7.50%	10.44%	1.32	0.16	1.19	0.16
HT VI: HT - Group Housing Societies (Residential)	7.60	4.00	3.18%	7.50%	10.44%	1.32	1.81	1.52	1.52
HT VIII(B): HT - Temporary Supply Others (TSO)	12.95	4.00	3.18%	7.50%	10.44%	1.32	7.16	2.59	2.59
HT IX(A): HT - Public Services-Govt. Edu. Institutions and Hospitals	9.52	4.00	3.18%	7.50%	10.44%	1.32	3.73	1.90	1.90
HT IX(B): HT - Public Services-Others	9.52	4.00	3.18%	7.50%	10.44%	1.32	3.73	1.90	1.90
HT X: HT – Electric Vehicle Charging Station	7.79	4.00	3.18%	7.50%	10.44%	1.32	2.00	1.56	1.56

8.30.27 With the rationalisation effected by the Distribution Open Access Regulations, 2016 and its First amendment thereof, adoption of the CSS formulae in accordance with the Tariff Policy and the preferential tariff approved for purchase from RE sources, no concession would be provided to the RE sector in terms of discounted CSS levy. Thus, from the date of applicability of this Order, in case of an OA consumer purchases power from a RE source, the full CSS as determined above shall be payable. The CSS so approved as above shall be applicable on the energy actually consumed by the OA consumer, i.e., on the metered consumption.

8.31 Additional Surcharge

MSEDCL's Submission

8.31.1 MSEDCL submitted that Section 42(4) provides the levy of Additional Surcharge to a consumer who receives supply of electricity from a person other than the distribution licensee of his area of supply. Regulation 14.8 of the Commission's Distribution OA Regulations, 2016 outlines the principles for determination and levy of Additional Surcharge as below:

8.31.2 MSEDCL submitted that it has been casted by Universal Service Obligation (USO) under the Section 43 of the Electricity Act 2003. Hence, in order to cater to the consumer demand, it has to purchase power on long term basis from Mahagenco, NTPC under the MoU route and from IPPs through competitive bidding process. Petitioner further submitted that the tariff for generation as per PPA/MoU comprises of two parts viz. Fixed Charge which is dependent on declared availability of generator and variable charge which is dependent on declared availability of generator and variable charge which is dependent on actual energy supplied.

8.31.3 MSEDCL submitted that capacity addition was done by signing the PPAs with generating companies after due approval of the Commission and based on estimated demand as per the projections published in 16th Electric Power Survey (EPS) published by CEA. However, there is a variation in projected and actual demand due to various reasons such as increase in Open Access, RE capacity addition to fulfil RPO Target, RE capacity addition by CPP because of low tariff and Net Metering etc., resulting into surplus power availability.

8.31.4 MSEDCL further submitted that to fulfil the RPO targets set by the Commission, it has to plan prospective power purchase from RE sources. MSEDCL submitted that it has to procure at least 25% of the power from Renewable sources by FY2024-25 which include 13.5% of solar and 11.5% of non-solar power, as per RPO Regulations 2019 notified on 27th December 2019. Hence, MSEDCL has tied up a total of 10,785 MW capacity of Renewable Energy as on 31st October 2019 of which 7654 MW capacity is commissioned, which include wind generation of 3999 MW, solar of 4017 MW, bagasse based cogeneration of 2406 MW, biomass capacity of 236 MW, small hydro of 121 MW and Municipal Solid Waste of 16 MW capacity. Further, by the end of FY 2024-25 to meet RPO target, MSEDCL has planned to increase the solar capacity to 12,500 MW. Due to such addition of renewable power, the surplus power is expected to be continued further since the renewable energy is treated as “Must Run”.

8.31.5 MSEDCL also submitted that due to recent trends in the prices of solar energy and MERC Net Metering Regulations 2019, various consumers are now converting to captive power plants (CPPs) by installing solar projects through developers, hence, surplus power is also expected to increase further.

8.31.6 MSEDCL also submitted that to manage surplus power, MSEDCL gives zero schedule/backdown to the high variable cost thermal generation as per Merit Order Despatch or sell in energy market depending upon market rates thereby reducing the burden

of energy charges. MSEDCL further submitted that it has to pay fixed/capacity charges irrespective of the scheduling or non-scheduling of power from the units which declare its availability whenever surplus capacity remains available.

8.31.7 MSEDCL further submitted that whenever there is unavailability of generation due to the forced outage/coal shortage, there is requirement of additional power during certain blocks of the day, sometimes the duration of shortfall during the day is so small that to cater the demand for such small period, it is unviable to take a generation unit on bar to cater the demand for small period. In such cases, the Petitioner forecasts the demand, availability and shortfall on day-ahead basis and procures power from Short Tern Markets such as Energy Exchanges.

8.31.8 MSEDCL also submitted that it has to plan in advance and procure the power on short term through bilateral transactions on DEEP Portal considering the historical trend of demand, coal shortage scenario, trend of rates in exchanges, etc.

8.31.9 MSEDCL submitted that it also explores the option of optimisation of power purchase cost by backing down of costly generation unit as per MOD and procuring the cheaper power available in Short Term Market/Exchange.

8.31.10 MSEDCL further submitted that it has to pay fixed charges to the generators as per the terms and conditions of the PPAs irrespective of utilisation of generation capacity and thus it gets burdened by fixed cost of surplus capacity.

8.31.11 MSEDCL submitted the year wise details of net surplus capacity, backdown quantum capacity under outages due to coal shortage and power purchase through short term tender and IEX is as given in the following tables:

FY 17-18	**Units under RSD, ESD & BD (MUs)**	**Capacity under coal shortage (MUs)**	**Total surplus (MUs)**	**Total Short Term Purchase (MUs)**
	A	**B**	**C=A+B**	**D**
Total MUs	18349	11443	29792	4029
Average MW on RTC basis	2095	1306	3401	460

FY 18-19	Units under RSD, ESD & BD (MUs)	Capacity under coal shortage (MUs)	Total surplus (MUs)	Total Short Term Purchase (MUs)
	A	B	C=A+B	D
Total MUs	20883	15599	36482	5821
Average MW on RTC basis	2384	1781	4165	665

FY 19-20 (Nov-19)	Units under RSD, ESD & BD (MUs)	Capacity under coal shortage (MUs)	Total surplus (MUs)	Total Short Term Purchase (MUs)
	A	B	C=A+B	D
Total MUs	22796	932	23727	763
Average MW on RTC basis	3893	159	4052	130

8.31.12 MSEDCL submitted that MSEDCL is in power surplus as reflected from above tables and will continue to be in surplus for the 4th control period. However, short term power is purchased for cost optimization or to meet demand during coal shortage scenario and hence, additional surcharge is justifiable & needs to be made applicable to all OA consumers.

Surcharge Computation as submitted by MSEDCL

8.31.13MSEDCL submitted that it has implemented Intra State ABT in Maharashtra since 1st August 2011 and SLDC/ Discom are granting approvals/ consent to open access consumers for purchase and sale of power through open access as per Open Access Regulations. MSEDCL further submitted that open access consumers are buying considerable quantum of power under open access and on the other hand, it has tied up sufficient quantum of power after approval of the Commission to meet the expected demand by considering the overall growth in the state.

8.31.14MSEDCL also submitted that it needs to back down the generation and also has to pay Fixed Charges (or Capacity Charges) to the Generators as per the terms and conditions of the PPAs irrespective of utilization of generation capacity, when the tied up generation capacity becomes excess and that the burden of fixed cost is affecting the viability and sustainability of its operations, which ultimately adversely affects the tariff of its common consumers.

MSEDCL submitted that, hence, to mitigate this, it is appropriate to determine the Additional Surcharge for OA consumers, as per Section 42 (4) of the EA, 2003. MSEDCL also submitted that the Commission in its Order dated 3rd November 2016 (Case No. 48/2016) had observed that there was a case for recovery of the part of fixed cost towards the stranded capacity arising from the power purchase obligation through levy of Additional Surcharge from OA consumers. Accordingly, the Commission has determined the additional surcharge in the said MYT Order dated 3rd November 2016 and subsequently in MTR Order dated 12th September 2018.

8.31.15 MSEDCL submitted that it has calculated the Additional Surcharge for the 4th control period i.e. FY2020-21 to FY2024-25 as per DOA Regulations 2016 based on the data for the FY2018-19 as per the methodology adopted by the Commission in the MYT Order dated 3rd November 2016 and MTR Order dated 12th September 2018.

Table 8-58: Additional Surcharge for FY 2020-21 as submitted by MSEDCL

Particulars	Reference	Unit	Value
Step 1: Establishing contribution of OA to backing-down/stranded capacity			
OA volume for FY2019-20 (Upto Sept-19)	(a)	MU	2178
Backing down quantum for FY2019-20 (Upto Sept-19)	(b)	MU	14,704
Ratio of OA to Backed down for FY2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	15%
Step 2: Ascertaining Cost of Stranded Capacity			
Fixed cost of thermal generating sources for FY2020-21	(d)	Rs. Crs	19,207
Total Available MU from thermal generating stations for FY2020-21	(e)	MUs	1,43,926
Wt. Avg. per Unit FC of thermal generating stations for FY2020-21	(f)=(d)/(e)x10	Rs./kWh	1.33
Total projected backdown/RSD volume for FY2020-21	(g)	MUs	32,653
Projected Open Access volume for year for FY2020-21	(h)	MUs	4843
Fixed Cost pertaining to backdown/RSD capacity for FY2020-21	(i)=(f)*(h)/10	Rs. Crs	646
Step 3: Determination of Additional Surcharge			

Per unit Additional Surcharge (to be applicable to OA consumers)	**(j)=(i)/(h)*10**	**Rs./unit**	**1.33**

Table 8-59: Additional Surcharge for FY 2021-22 as submitted by MSEDCL

Particulars	Reference	Unit	Value
Step 1: Establishing contribution of OA to backing-down/stranded capacity			
OA volume for FY2019-20 (Upto Sept-19)	(a)	MU	2178
Backing down quantum for FY2019-20 (Upto Sept-19)	(b)	MU	14,704
Ratio of OA to Backed down for FY2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	15%
Step 2: Ascertaining Cost of Stranded Capacity			
Fixed cost of thermal generating sources for FY2021-22	(d)	Rs. Crs	19,698
Total Available MU from thermal generating stations for FY2021-22	(e)	MUs	1,44,100
Wt. Avg. per Unit FC of thermal generating stations for FY2021-22	(f)=(d)/(e)x10	Rs./kWh	1.37
Total projected backdown/RSD volume for FY2021-22	(g)	MUs	31,957
Projected Open Access volume for year for FY2021-22	(h)	MUs	4843
Fixed Cost pertaining to backdown/RSD capacity for FY2021-22	(i)=(f)*(h)/10	Rs. Crs	662
Step 3: Determination of Additional Surcharge			
Per unit Additional Surcharge (to be applicable to OA consumers)	**(j)=(i)/(h)*10**	**Rs./unit**	**1.37**

Table 8-60: Additional Surcharge for FY 2022-23 as submitted by MSEDCL

Particulars	Reference	Unit	Value
Step 1: Establishing contribution of OA to backing-down/stranded capacity			
OA volume for FY2019-20 (Upto Sept-19)	(a)	MU	2178
Backing down quantum for FY2019-20 (Upto Sept-19)	(b)	MU	14,704

Ratio of OA to Backed down for FY2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	15%
Step 2: Ascertaining Cost of Stranded Capacity			
Fixed cost of thermal generating sources for FY2022-23	(d)	Rs. Crs	20,038
Total Available MU from thermal generating stations for FY2022-23	(e)	MUs	1,42,875
Wt. Avg. per Unit FC of thermal generating stations for FY2022-23	(f)=(d)/(e)x10	Rs./kWh	1.40
Total projected backdown/RSD volume for FY2022-23	(g)	MUs	31,725
Projected Open Access volume for year for FY2022-23	(h)	MUs	4843
Fixed Cost pertaining to backdown/RSD capacity for FY2022-23	(i)=(f)*(h)/10	Rs. Crs	679
Step 3: Determination of Additional Surcharge			
Per unit Additional Surcharge (to be applicable to OA consumers)	**(j)=(i)/(h)*10**	**Rs./unit**	**1.40**

Table 8-61: Additional Surcharge for FY 2023-24 as submitted by MSEDCL

Particulars	Reference	Unit	Value
Step 1: Establishing contribution of OA to backing-down/stranded capacity			
OA volume for FY2019-20 (Upto Sept-19)	(a)	MU	2178
Backing down quantum for FY2019-20 (Upto Sept-19)	(b)	MU	14,704
Ratio of OA to Backed down for FY2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	15%
Step 2: Ascertaining Cost of Stranded Capacity			
Fixed cost of thermal generating sources for FY2023-24	(d)	Rs. Crs	20,487
Total Available MU from thermal generating stations for FY2023-24	(e)	MUs	1,43,181
Wt. Avg. per Unit FC of thermal generating stations for FY2023-24	(f)=(d)/(e)x10	Rs./kWh	1.43

Total projected backdown/RSD volume for FY2023-24	(g)	MUs	30,469
Projected Open Access volume for year for FY2023-24	(h)	MUs	4843
Fixed Cost pertaining to backdown/RSD capacity for FY2023-24	(i)=(f)*(h)/10	Rs. Crs	693
Step 3: Determination of Additional Surcharge			
Per unit Additional Surcharge (to be applicable to OA consumers)	**(j)=(i)/(h)*10**	**Rs./unit**	**1.43**

Table 8-62: Additional Surcharge for FY 2024-25 as submitted by MSEDCL

Particulars	Reference	Unit	Value
Step 1: Establishing contribution of OA to backing-down/stranded capacity			
OA volume for FY2019-20 (Upto Sept-19)	(a)	MU	2178
Backing down quantum for FY2019-20 (Upto Sept-19)	(b)	MU	14,704
Ratio of OA to Backed down for FY2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	15%
Step 2: Ascertaining Cost of Stranded Capacity			
Fixed cost of thermal generating sources for FY2024-25	(d)	Rs. Crs	20,276
Total Available MU from thermal generating stations for FY2024-25	(e)	MUs	1,42,854
Wt. Avg. per Unit FC of thermal generating stations for FY2024-25	(f)=(d)/(e)x10	Rs./kWh	1.42
Total projected backdown/RSD volume for FY2024-25	(g)	MUs	27,218
Projected Open Access volume for year for FY2024-25	(h)	MUs	4843
Fixed Cost pertaining to backdown/RSD capacity for FY2024-25	(i)=(f)*(h)/10	Rs. Crs	687
Step 3: Determination of Additional Surcharge			
Per unit Additional Surcharge (to be applicable to OA consumers)	**(j)=(i)/(h)*10**	**Rs./unit**	**1.42**

Table 8-63: Summary of Additional Surcharge for 4th Control Period as proposed by MSEDCL

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Proposed Additional Surcharge (Rs/kVAh)	1.33	1.37	1.40	1.43	1.42

8.31.16 MSEDCL has requested the Commission to approve the Additional Surcharge for Open Access consumers irrespective of source i.e. Captive Power Plants (CPPs), IPP, RE based power plants etc. in addition to the conventional open access consumers as computed in the above tables.

8.31.17 MSEDCL further submitted that the CPPs existing prior to FY2015-16 originally set up the plant for self-consumption and continuing the same arrangement of captive use shall be exempted from applicability of Additional Surcharge. This is since these were set up during the power shortage situation and were captive in real sense as per the spirit of the Act.

Commission's Analysis and Ruling

8.31.18 The Commission has carefully examined the submissions of MSEDCL, as well as the objections filed by stakeholders with regard to the determination of Additional Surcharge and MSEDCL's replies. The Commission has examined the Section 42(4) of the EA, 2003, Clause 8.5.4 of the Tariff Policy, 2016 and Regulation 14.8 of the Distribution Open Access Regulations, 2016 ('DOA Regulations, 2016'). In light of said provisions of the respective Regulations and Tariff Policy, the Commission in its MYT Order and MTR had already recognised that there is a case for recovery of the part of fixed cost towards the stranded capacity arising from the power purchase obligation through levy of Additional Surcharge from OA consumers.

8.31.19 As the Commission has envisaged a power surplus scenario for 4th Control Period, the levy of Additional Surcharge from OA consumers is found to be applicable for FY 2020-21 to FY 2024-25.

8.31.20 Regarding the applicability of the Additional Surcharge, MSEDCL stated that the Additional Surcharge, being a compensatory amount payable towards the fixed cost of stranded power resulting from approved power purchase contracts, has to be determined commonly for all the OA Users.

8.31.21 The Commission has examined the relevant provisions of EA, 2003, and Regulation 14.8 of the DOA Regulations, 2016 on which MSEDCL has relied. The relevant extracts read as follows:

> *"(a) Section 42 (4) of EA, 2003, stipulates that:*
> *"Where the State Commission permits a consumer or class of consumers to receive supply of electricity from a person other than the distribution licensee of his area of supply, such consumer shall be liable to pay an additional surcharge on the charges of wheeling, as may be specified by the State Commission, to meet the fixed cost of such distribution licensee arising out of his obligation to supply."*

8.31.22 The Second proviso of Section 9 (1) of the EA 2003 only states that the electricity generated from Captive Generating Plants (CGP) may be supplied to any consumers subject to Regulations made under Section 42 (2) of the EA 2003. The Relevant para. is reproduced as below:

> *"9.*
> *(1) Notwithstanding anything contained in this Act, a person may construct, maintain or operate a captive generating plant and dedicated transmission lines:*
> *Provided that the supply of electricity from the captive generating plant through the grid shall be regulated in the same manner as the generating station of a generating company.*
> *[Provided further that no licence shall be required under this Act for supply of electricity generated from a captive generating plant to any licencee in accordance with the provisions of this Act and the rules and regulations made thereunder and to any consumer subject to the regulations made under subsection (2) of section 42.*
> *(2) Every person, who has constructed a captive generating plant and maintains and operates such plant, shall have the right to open access for the purposes of carrying electricity from his captive generating plant to the destination of his use:"*

8.31.23 1st proviso to Regulation 14.8 (d) of DOA Regulations, 2016 reads as follows:

> "*14.8 (d)… (ii) The cost has not been or cannot be recovered from the consumer, or from other consumers who have been given supply from the same assets or facilities, or from other Consumers, either through wheeling charges, standby charges or such other charges as may be approved by the Commission:*
> *Provided that such Additional Surcharge shall be applicable to all the consumers who have availed Open Access to receive supply from a source other than the Distribution Licensee to which they are connected."*

8.31.24 Proviso of Section 42 (2) of the Electricity Act, 2003 reads as under:

> *"42(2) The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for*

wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints:

.....

Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use:"

8.31.25 Moreover, CSS and Additional Surcharge are levied on account of completely different underlying principles. CSS is used/ utilized/ levied to meet the requirement of current level of cross subsidy of Distribution Licensee, while Additional Surcharge is to be levied to meet the fixed cost of such Distribution Licensee arising out of his obligation to supply and its planned power supply has been stranded due to shifting/switching over of Consumers from Distribution Licensee to Open Access mode.

8.31.26 The Commission is of the considered view that, unless fixed costs due to stranded capacity are recovered from OA Consumers, this burden would be unjustly loaded onto other Consumers of Distribution Licensee. The Commission believes it would be unfair and unwarranted to pass such burden of fixed cost recovery of such stranded cost to other Consumers through consequent tariff hike.

8.31.27 The Commission is of the view that, under the circumstances and in pursuance of Regulation 14.8 of the DOA Regulations, 2016, there is a case for recovery of the part of fixed cost towards the stranded capacity arising from the power purchase obligation through levy of Additional Surcharge from OA Consumers including the Group Captive Consumers who have availed such arrangement.

8.31.28 Accordingly, the Commission in its MTR Order in Case No.- 195 of 2017 dated 12 September 2018 had determined the two categories of captive users who procure power from CGP's viz., (a) Original Captive Users (who were never consumers of Distribution Licensee) and (b) Converted Captive Users (who subsequently switchover to GCPP mode) . The Original Captive Users were the Users who have been procuring power originally under the captive mode and whose demand has not been included in the power procurement plan of Distribution Licensee whereas Converted Captive Users are the Users who prior to issue of MTR Order dated 12 September 2018 were Consumers of Distribution Licensee and who have opted to procure power under Group Captive arrangement, creating stranded capacity for Distribution Licensee. In view of the above the Commission held that Additional Surcharge shall be applicable to Captive Users of Group Captive Power Plants; in addition to Open Access consumers in Case No. - 195 of 2017 dated 12 September 2018.

8.31.29However, APTEL in Appeal No. 311 of 2018 & IA Nos. 1531, 1468 & 1467 of 2018 dated 27th March 2019 filed by JSW Steel Limited and others had set aside the Commission's Order in Case No. - 195 of 2017 dated 12 September 2018 against the levy of additional surcharge on Captive Users of Group Captive Power Plants. The relevant extracts of the Judgement is reproduced below for reference:

"83. The scope of Mid Term Review proceedings is understood from the above regulations. As seen from the above Regulations, the Commission cannot deviate from the principles adopted in the Multi Year Tariff order. Fundamental principles adopted in the MYT proceedings cannot be reopened and challenged at the stage of MTR proceeding, the scope of which is very limited.

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85. There is one more flaw in the manner in which the Respondent Commission proceeded with Mid-Term-Performance Review. Having come to conclusion that captive consumers are not liable to pay additional surcharge in MYT proceedings, which was implemented by MSEDCL, MERC opines in Review Proceedings that additional surcharge is payable by captive consumers of captive power plant. But this is without giving an opportunity of being heard to the Appellants. This is nothing but violation of principles of natural justice. Firstly, Mid-Term Review is nothing but a comparison between the actual operational performances (factual) vis-a-vis the approved forecast in terms of MERC regulations of 2015. This is nothing but ignoring its own regulations.

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88. In the light of the above discussion and reasoning, we are of the opinion that there cannot be any distinction between an individual captive consumer and group captive consumers or original captive consumers and converted captive consumers. For the above mentioned reasons, the above appeals deserve to be allowed and accordingly allowed. The impugned order dated 12.09.2018 passed by Maharashtra Electricity Regulatory Commission is hereby set aside. All the pending IAs shall stand disposed of. No order as to costs."

8.31.30However, the Supreme Court in its Record of Proceedings dated 01.07.2019 in Civil Appeal No(s). 5074-5075/2019 has put stay on operation and implementation of APTEL's Judgement in Appeal No. 311 of 2018 & IA Nos. 1531, 1468 & 1467 of 2018 dated 27th March 2019.

8.31.31Accordingly, in view of the Supreme Court's Stay Order on APTEL's Judgement as mentioned above paras, the Commission in this Order would continue to determine the two categories of captive users who procure power from CGP's viz., (a) Original Captive Users (who were never consumers of Distribution Licensee) and (b) Converted Captive Users (who subsequently switchover to GCPP mode) . The Original Captive Users are the Users who have been procuring power originally under the captive mode and whose demand has

not been included in the power procurement plan of Distribution Licensee whereas Converted Captive Users are the Users who prior to issue of MTR Order Case No. - 195 of 2017 dated 12 September 2018 were Consumers of Distribution Licensee and who have opted to procure power under Group Captive arrangement, creating stranded capacity for Distribution Licensee.

8.31.32 However, as quantum of consumption by such GCPP users is not known and matter being sub-judice, the Commission has not considered revenue projections from such Additional Surcharge in case of GCPP users. The same would be subject to scrutiny and prudence check at the time of MTR.

8.31.33 In view of the above the Commission holds that for 4th Control Period, Additional Surcharge shall be applicable to Captive Users of Group Captive Power Plants, in addition to Open Access consumers.

8.31.34 The Commission has employed the same methodology as suggested by the MSEDCL for determination of the Additional Surcharge for 4th Control Period, the computation of which is provided below.

Table 8-64: Additional Surcharge for FY 2020-21 approved by the Commission (Rs/kWh)

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-1: Establishing contribution of OA to backing-down/stranded capacity				
OA volume for FY 2019-20 (Upto Sept-19)	(a)	MU	2,178	2,159
Backing Down quantum for FY 2019-20 (Upto Sept-19)	(b)	MU	14,704	14,704
Ratio to OA to Backed down for FY 2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	14.81%	14.68%
Step-2: Ascertaining Cost of Stranded Capacity				
Fixed Cost of Thermal Generating Sources for FY 2020-21	(d)	Rs. Crs	20,424	21,087
Total Available MU from Thermal Generating Stations for FY 2020-21	(e)	MUs	129,814	160,753
Wt. Avg. Per Unit FC of Thermal Generating Stations for FY 2020-21	(f)=(d)/(e) x10	Rs/kWh	1.57	1.31
Total Projected Backdown/RSD Volume for FY 2020-21	(g)	MUs	18,609	18,609
Projected Open Access Volume for year for FY 2020-21	(h)	MUs	4,843	4,843
Fixed Cost pertaining to Backdown/RSD capacity for FY 2020-21	(i)=(f)*(h)/10	Rs. Crs	762	635

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-3: Determination of Additional Surcharge				
Per Unit Additional Surcharge (to be applicable on OA Consumers)	**j=(i)/(h)*10**	**Rs/kWh**	**1.57**	**1.31**
Per Unit Additional Surcharge (to be applicable on OA Consumers)		**Rs/kVAh**		**1.28**

Table 8-65: Additional Surcharge for FY 2021-22 approved by the Commission (Rs/kWh)

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-1: Establishing contribution of OA to backing-down/stranded capacity				
OA volume for FY 2019-20 (Upto Sept-19)	(a)	MU	2,178	2,159
Backing Down quantum for FY 2019-20 (Upto Sept-19)	(b)	MU	14,704	14,704
Ratio to OA to Backed down for FY 2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	14.81%	14.68%
Step-2: Ascertaining Cost of Stranded Capacity				
Fixed Cost of Thermal Generating Sources for FY 2021-22	(d)	Rs. Crs	20,898	21,171
Total Available MU from Thermal Generating Stations for FY 2021-22	(e)	MUs	129,639	164,645
Wt. Avg. Per Unit FC of Thermal Generating Stations for FY 2021-22	(f)=(d)/(e) x10	Rs/kWh	1.61	1.29
Total Projected Backdown/RSD Volume for FY 2021-22	(g)	MUs	17,502	17,502
Projected Open Access Volume for year for FY 2021-22	(h)	MUs	4,843	4,843
Fixed Cost pertaining to Backdown/RSD capacity for FY 2021-22	(i)=(f)*(h)/10	Rs. Crs	781	623
Step-3: Determination of Additional Surcharge				
Per Unit Additional Surcharge (to be applicable on OA Consumers)	**j=(i)/(h)*10**	**Rs/kWh**	**1.61**	**1.29**
Per Unit Additional Surcharge (to be applicable on OA Consumers)		**Rs/kVAh**		**1.26**

Table 8-66: Additional Surcharge for FY 2022-23 approved by the Commission (Rs/kWh)

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-1: Establishing contribution of OA to backing-down/stranded capacity				
OA volume for FY 2019-20 (Upto Sept-19)	(a)	MU	2,178	2,159
Backing Down quantum for FY 2019-20 (Upto Sept-19)	(b)	MU	14,704	14,704
Ratio to OA to Backed down for FY 2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	14.81%	14.68%
Step-2: Ascertaining Cost of Stranded Capacity				
Fixed Cost of Thermal Generating Sources for FY 2022-23	(d)	Rs. Crs	21,220	21,243
Total Available MU from Thermal Generating Stations for FY 2022-23	(e)	MUs	128,739	167,728
Wt. Avg. Per Unit FC of Thermal Generating Stations for FY 2022-23	(f)=(d)/(e) x10	Rs/kWh	1.65	1.27
Total Projected Backdown/RSD Volume for FY 2022-23	(g)	MUs	17,567	17,567
Projected Open Access Volume for year for FY 2022-23	(h)	MUs	4,843	4,843
Fixed Cost pertaining to Backdown/RSD capacity for FY 2022-23	(i)=(f)*(h)/10	Rs. Crs	798	613
Step-3: Determination of Additional Surcharge				
Per Unit Additional Surcharge (to be applicable on OA Consumers)	**j=(i)/(h)*10**	**Rs/kWh**	**1.65**	**1.27**
Per Unit Additional Surcharge (to be applicable on OA Consumers)		**Rs/kVAh**		**1.24**

Table 8-67: Additional Surcharge for FY 2023-24 approved by the Commission (Rs/kWh)

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-1: Establishing contribution of OA to backing-down/stranded capacity				
OA volume for FY 2019-20 (Upto Sept-19)	(a)	MU	2,178	2,159
Backing Down quantum for FY 2019-20 (Upto Sept-19)	(b)	MU	14,704	14,704
Ratio to OA to Backed down for FY 2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	14.81%	14.68%
Step-2: Ascertaining Cost of Stranded Capacity				

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Fixed Cost of Thermal Generating Sources for FY 2023-24	(d)	Rs. Crs	21,670	21,307
Total Available MU from Thermal Generating Stations for FY 2023-24	(e)	MUs	129,091	172,536
Wt. Avg. Per Unit FC of Thermal Generating Stations for FY 2023-24	(f)=(d)/(e) x10	Rs/kWh	1.68	1.23
Total Projected Backdown/RSD Volume for FY 2023-24	(g)	MUs	16,364	16,364
Projected Open Access Volume for year for FY 2023-24	(h)	MUs	4,843	4,843
Fixed Cost pertaining to Backdown/RSD capacity for FY 2023-24	(i)=(f)*(h)/10	Rs. Crs	813	598
Step-3: Determination of Additional Surcharge				
Per Unit Additional Surcharge (to be applicable on OA Consumers)	**j=(i)/(h)*10**	**Rs/kWh**	**1.68**	**1.23**
Per Unit Additional Surcharge (to be applicable on OA Consumers)		**Rs/kVAh**		**1.20**

Table 8-68: Additional Surcharge for FY 2024-25 approved by the Commission (Rs/kWh)

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-1: Establishing contribution of OA to backing-down/stranded capacity				
OA volume for FY 2019-20 (Upto Sept-19)	(a)	MU	2,178	2,159
Backing Down quantum for FY 2019-20 (Upto Sept-19)	(b)	MU	14,704	14,704
Ratio to OA to Backed down for FY 2019-20 (Upto Sept-19)	(c)=(b)/(a)	%	14.81%	14.68%
Step-2: Ascertaining Cost of Stranded Capacity				
Fixed Cost of Thermal Generating Sources for FY 2024-25	(d)	Rs. Crs	21,460	21,313
Total Available MU from Thermal Generating Stations for FY 2024-25	(e)	MUs	129,095	177,592
Wt. Avg. Per Unit FC of Thermal Generating Stations for FY 2024-25	(f)=(d)/(e) x10	Rs/kWh	1.66	1.20
Total Projected Backdown/RSD Volume for FY 2024-25	(g)	MUs	13,364	13,364
Projected Open Access Volume for year for FY 2024-25	(h)	MUs	4,843	4,843
Fixed Cost pertaining to Backdown/RSD capacity for FY 2024-25	(i)=(f)*(h)/10	Rs. Crs	805	581

Particulars	Reference	Unit	MYT Petition	Approved in this Order
Step-3: Determination of Additional Surcharge				
Per Unit Additional Surcharge (to be applicable on OA Consumers)	**j=(i)/(h)*10**	**Rs/kWh**	**1.66**	**1.20**
Per Unit Additional Surcharge (to be applicable on OA Consumers)		**Rs/kVAh**		**1.18**

Table 8-69: Summary of Additional Surcharge for 4th Control Period as approved by the Commission (Rs/kWh)

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Additional Surcharge (MYT Petition)	1.57	1.61	1.65	1.68	1.66
Additional Surcharge (Approved in this Order)	1.31	1.29	1.27	1.23	1.20

8.31.35 The Commission observes that for application of the Additional Surcharge, it has to be conclusively demonstrated that the contracted capacity has been stranded and that open access has partly resulted in causing such stranded capacity. Based on actual data for FY 2019-20 (Upto September 2019) and the workings provided in the above table, the case of stranded capacity on account of open access and hence the levy of Additional Surcharge is established. Besides, based on the approved power purchase projections and projection of available generation capacity as outlined under Chapter-6, the same is expected to continue for 4th Control Period. Hence, for the purpose of specifying the additional surcharge for the future years of 4th Control period, the Commission approves the Additional Surcharge as per the above mentioned table.

8.31.36 However, for the purpose of billing, as kVAh based billing has been introduced for HT category consumers, Additional Surcharge (in kVAh terms) shall be applicable by multiplying category-wise power factor (0.98 pf) to be applied on Additional Surcharge (in per Rs/ kWh) so determined in above tables for respective years of the 4th Control Period.

9 COMPLIANCE OF EARLIER DIRECTIVES

The status of compliance by MSEDCL of the directives given in the previous MTR Order is set out below.

9.1 Feeder-based Metering with AMR facilities

Directive

9.1.1 MSEDCL at the time of last MTR process submitted that out of 4901 Agricultural feeders with AMR, only 1021 feeders are active and the rest are having communication linkage problem. MSEDCL was directed to keep all the feeder AMR active and start uploading data on its website.

MSEDCL's Response

9.1.2 MSEDCL submitted that as on 25th November 2019, out of the total 5405 Ag feeders, 5228 nos. have been upgraded with AMR facilities. MSEDCL submitted that it is rigorously taking up the process to install AMR for the balance 177 nos. MSEDCL also submitted that the feeder input data for all the feeders (including Ag feeders) is made available at MSEDCL website on following path:

Consumer Portal > Operational data > Feeder Input Data
(https://consumerinfo.mahadiscom.in/feederdata/index.php)

Commission's Ruling

9.1.3 The Commission has noted MSEDCL's submission and progress on compliance of the directive. MSEDCL shall ensure that various actions points including metering of AG feeders as listed under para 4.2.25 shall be carried out.

9.2 kVAh Metering

Directive

9.2.1 MSEDCL to educate the consumers and take all necessary steps to ensure that all the consumers are billed by kVAh method from the next MYT i.e. from 1st April 2020.

MSEDCL's Response

9.2.2 MSEDCL submitted that it has taken up necessary steps to ensure smooth rollout of kVAh billing. Consumer awareness programs were conducted. FAQs on kVAh billing were uploaded on the website and many interactive sessions on the same were conducted. The consumer awareness programs received many interest from the consumers and were successfully coordinated.

9.2.3 The next step towards kVAh metering was meter replacement. MSEDCL submitted that it has already initiated meter replacement and the same for HT consumers is planned to be completed by January 2020. After completing HT meter replacement, MSEDCL will rigorously take up LT meter replacement too. MSEDCL further submitted that the status of the same would be communicated to the Commission during the next MTR process.

Commission's Ruling

9.2.4 The Commission has noted compliance of the MSEDCL in the matter and the progress for adoption of kVAh-based billing for HT consumer categories. The Commission also observes that MSEDCL has chalked out clear plans to shift LT consumes also to kVAH regime. The Commission intends to implement kVAh billing to all LT consumers having load above 20 kW from 1 April, 2023 upon review of implementation of kVAH based billing for HT consumers effective from 1st April, 2020. MSEDCL is required to take necessary steps such as meter replacement, if required, preparedness of billing software etc. for smooth implementation of kVAh billing.

10 SCHEDULE OF CHARGES

10.1 Background

10.1.1 MSEDCL has submitted that it recovers various miscellaneous and general charges from its consumers for various services provided as per the Schedule of charges approved by the Commission vide its Order dated 12 September, 2018 (Case No. 195 of 2017). Basically, these charges are for recovery of cost incurred for availing supply of electricity and various other services provided to the consumers. In order to shield regular consumers from consumer service specific costs, provision for schedule of charges has been made. Income from these charges form a part of the non-tariff income of MSEDCL.

10.1.2 MSEDCL stated that the provisions of Section 46 of the Act provides that the Commission may authorize a Distribution License to charge a person requiring a supply of electricity any expenses reasonably incurred in providing any electric line or electrical plant used for the purpose of giving that supply. Otherwise these costs will get passed on to regular consumers of MSEDCL.

10.1.3 MSEDCL also quoted provisions of Supply Code Regulations where various charges are permitted to be recovered from consumers subject to approval from the Commission. Various services for which charges can be recovered from the consumer as per provisions in MERC (Electricity Supply Code) Regulations, 2005.

10.1.4 In its Petition, MSEDCL has prayed to revise the schedule of charges and proposed revised charges. In the following paragraphs, the Commission has analysed the proposal and determined the Schedule of Charges for MSEDCL.

10.2 Service connection charges proposed by MSEDCL

10.2.1 MSEDCL submitted that it has proposed Service Connection Charges (SCC) based on maximum of estimated or actual expenditure incurred for providing supply to the consumer.

10.2.2 The Commission in its Order in Case No. 197 of 2017 dated 12 September, 2018 has estimated the service connection charges on the basis of 20 meters as the average length. MSEDCL in present proposal has followed the same basis for estimation.

10.2.3 MSEDCL submitted that it has used the material schedule rates of its Central Purchase

Agency (CPA). As per revised Cost data of FY 2019-20 and centages, the estimates are prepared to derive the Service Connection charges. The loading - unloading and handling charges for meter, Contingencies, Insurance of material & price variation/ escalation were taken in consideration. The centages in total over the total estimated cost of materials is 25.50%. All other things are kept as it is such as supervision charges, variable charges etc.

10.2.4 While estimating charges for new HT Overhead connection, MSEDCL has considered all the legitimate expenditure for works of Gantry, Earthing, protection and Metering etc. Similar works have been considered in case of HT underground new service connection. Accordingly, MSEDCL proposes the new service connection charges based on all legitimate costs.

Service connection charges for new overhead connections:

10.2.5 The computation of service connection charges for new overhead connections as submitted by MSEDCL is detailed below:

LT supply

Single phase:

Table 10-1: Computation of C for Control Period

Material	Unit	Quantity	Rate in Rs	Cost in Rs.
5-30A LTAC Single Phase 6loWPAN RF Meter with enclosure	No.	1	966.10	966.10
W.P. Wire 2.5 mm2 T/C 1100 V Grade	Mtr	20	6.36	127.20
Meter Board	No	1	80.00	80.00
Kit Kat/ MCCB 20A with Enclosure	No	1	133.00	133.00
Reel Insulator 20mm	No	20	2.00	40.00
G.I. Wire 10SWG	Kg	2	57.40	114.80
G.I. Pipe 20mm	Mtr	3	88.44	265.32
G.I. Bend 20mm	No	3	16.77	50.31
G.I. Flexible pipe 20mm	Mtr	3	11.00	33.00
G.I. coupling 20mm	No	2	7.00	14.00
Sundries (Nut Bolts for Earthing Point and fitting, screws, Washers, drilling bit,	No	1	170.00	170.00

Material	Unit	Quantity	Rate in Rs	Cost in Rs.
Nails, Saddle clamps, lugs, PVC RAWAL Plugs etc.)				
Total				**1,993.73**
Approx. Labour Charges			15.00%	299.06
Transportation Charges			5.00%	99.69
Tools & Plants			1.50%	29.91
Contingencies			2.50%	49.84
Insurance & Finance Cost			1.50%	29.91
Grand Total				**2502.13**
Less Meter Cost				966.10
	Proposed charges			**1530.00**

Table 10-2: Service connection charges for Overhead connection (LT 1 Ph)

Material	Unit	Quantity	Rate in Rs.	Cost in Rs.
5-30A LTAC Single Phase 6loWPAN RF Meter with enclosure	No.	1	966.10	966.10
W.P.Wire 10 mm2 T/C 1100 V Grade	Mtr	20	21.00	420.00
Meter Board	No	1	80.00	80.00
Kit kat / MCCB 32 A with Enclosure	No	1	130.00	130.00
Reel Insulator 30mm	No	20	2.00	40.00
G.I.Wire 10SWG	Kg	2	57.40	114.80
GI Pipe 30mm	Mtr	3	110.00	330.00
GI Bend 30mm	No	3	48.00	144.00
PVC Flexible pipe 30mm	No	2	27.00	54.00
GI coupling 30mm	No	2	32.00	64.00
Sundries (Nut Bolts for Earthing Point and fitting, screws, Washers, drilling bit, Nails, Saddle clamps, lugs, PVC RAWAL Plugs etc.)	No	1	210.00	210.00
Total				**2552.90**
Approx. Labour Charges			15.00%	382.94
Transportation Charges			5.00%	127.65
Tools & Plants			1.50%	38.29
Contingencies			2.50%	63.82
Insurance & Finance Cost			1.50%	38.29

Material	Unit	Quantity	Rate in Rs.	Cost in Rs.
Grand Total				**3203.89**
Less Meter Cost				966.10
	Proposed Charges			**2230.00**

Three phase:

Table 10-3: Service connection charges for Overhead connection (LT 3 Ph) for motive power (< 27 HP) or other (< 20 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs	Cost in Rs
10-40A LTAC Three Phase 6loWPAN RF Meter with enclosure	No.	1	1456.78	1456.78
L.T. XLPE Amourred 2 Core 16 Sqmm cable	Mtr	40	52.00	2080.00
Meter Board	No	1	74.20	74.20
Three Phase Four Pole MCB 32A with enclosure	No	1	2096.00	2096.00
Reel Insulator 25mm	No	30	2.12	63.60
G.I. Wire 8SWG	Kg	5	57.40	287.00
G.I. Pipe 110 mm	Mtr	3	238.00	714.00
G.I. Bend 110mm	No	3	60.00	180.00
G.I. Flexible pipe 110mm	Mtr.	2	106.00	212.00
G.I. coupling 110mm	No	2	40.00	80.00
Sundries (Nut Bolts for Earthing Point and fitting, screws, Washers, drilling bit, Nails, Saddle clamps, lugs, PVC RAWAL Plugs etc.)	No	1	400.00	400.00
Total				**7,643.58**
Approx. Labour Charges			15.00%	1,146.54
Transportation Charges			5.00%	382.18
Tools & Plants			1.50%	114.65
Contingencies			2.50%	191.09
Insurance & Finance Cost			1.50%	114.65
Grand Total				**9592.69**
Less Meter Cost				1456.78
	Proposed Charges			**8130.00**

Table 10-4: Service connection charges for overhead connection (LT 3 Ph) for motive power (>27 HP but <107 HP) or other (>20 kW but <80 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs	Cost in Rs.
40-200A LTAC CT Embeded Meter	No.	1	13305.08	13305.08
Single Core armoured XLPE Cable 70 sq.mm	Mtr.	80	56.20	4496.00
Meter Board	No	1	230.00	230.00
Kit Kat fuses 415 V 200 A / MCCB 200 A	No	3	730.00	2190.00
G.I.Wire 8SWG	Kg	6	57.40	344.40
G.I. Pipe 110 mm	Mtr	3	238.00	714.00
G.I. Bend 110mm	No	3	60.00	180.00
G.I. Flexible pipe 110mm	Mtr.	2	106.00	212.00
G.I. coupling 110mm	No	3	40.00	120.00
Sundries (Nut Bolts for Earthing Point and fitting, screws, Washers, drilling bit, Nails, Saddle clamps, lugs, PVC RAWAL Plugs etc.)	No	1	700.00	700.00
Total				**22491.48**
Approx. Labour Charges			15.00%	3,373.72
Transportation Charges			5.00%	1,124.57
Tools & Plants			1.50%	337.37
Contingencies			2.50%	562.29
Insurance & Finance Cost			1.50%	337.37
Grand Total				**28226.81**
Less Meter Cost				13305.08
	Proposed charges			**14920.00**

Table 10-5: Service connection charges for overhead (LT 3 Ph) for motive power (> 107 HP but < 201 HP) or other (> 80 kW but <150 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs	Cost in Rs
40-200A LTAC CT Embeded Meter	No.	1	13305.08	13305.08
Single Core armoured XLPE Cable 185 sq.mm	Mtr	80	140.00	11200.00
Meter Board	No	1	230.00	230.00
Kit Kat fuses 415 V 200 A/ MCCB 200 A	No	3	730.00	2190.00
G.I.Wire 8SWG	Kg	6	57.40	344.40
G.I. Pipe 200 mm	Mtr	3	276.00	828.00

Material	Unit	Quantity	Rate in Rs	Cost in Rs
G.I. Bend 200mm	No	3	66.00	198.00
G.I. Flexible pipe 200mm	Mtr.	2	110.00	220.00
G.I. coupling 200mm	No	2	42.00	84.00
Sundries (Nut Bolts for Earthing Point and fitting, screws, Washers, drilling bit, Nails, Saddle clamps, lugs, PVC RAWAL Plugs etc.)	No	1	1,000.00	1,000.00
Total				**29599.48**
Approx. Labour Charges			15.00%	4,439.92
Transportation Charges			5.00%	1,479.97
Tools & Plants			1.50%	443.99
Contingencies			2.50%	739.99
Insurance & Finance Cost			1.50%	443.99
Grand Total				**37147.35**
Less Meter Cost				13305.08
	Proposed Charges			**23840.00**

HT supply

10.2.6 The Commission notes that MSEDCL has re-classified the connections in terms of load limits and voltage level. It has provided the item-wise cost break up for its proposed service connection charges for new overhead HT connections. MSEDCL submitted details as below.

Table 10-6: Service connection charges for overhead connection (HT) 11 kV supply up to 1000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
XLPE Cable 11 kV 3C 95 sq.mm.	No.	1	85000.00	85000.00
HT TOD Meter 5A rating of 0.5s accuracy class	No	1	2316.95	2316.95
HT Earthing set (For cubical)	Set	9	547.00	4923.00
RSJ 152x152, 13 m long	No	2	21562.00	43124.00
11 kV Pin Insulators with G.I. Pins	No	3	135.00	405.00
Disc Insulator 11 KV 70 KN	No	3	344.00	1032.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
11 kV Lightning Arrestor (Gapless type) with disconnector	Set	1	1268.00	1268.00
11KV A.B. Switch, 400 A	Set	1	9240.00	9240.00

M.S. Flats (50 X 10mm)	Kg	20	48.50	970.00
M.S. Channel 100x50x6 mm	Kg	160	51.80	8288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3367.00
H.T. Stay Set	No	2	598.00	1196.00
Stay Wire 7/8	Kg	25	57.45	1436.25
Earthing Sets H.T.	No	4	342.00	1368.00
1" PVC pipe for LA earthing separation	Mtr.	16	73.00	1168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.40	1148.00
G.I. Barbed Wire 'A' type.	Kg	3	64.27	192.81
Danger Board in yard.	No	2	50.00	100.00
Red Oxide Paint for 2 coats	Ltr	6	85.00	510.00
Aluminium Paint for 1 coat	Ltr	4	113.00	452.00
Black Bituminus Paint	Ltr	2	85.00	170.00
Concreting ratio 1:3:6	Cmt	10	3027.00	30270.00
XLPE Cable 11 kV 3C 95 sq.mm.	Rmt	20	592.00	11840.00
Heat shrinkable kit Outdoor	No	1	1459.00	1459.00
Heat shrinkable kit Indoor	No	1	1169.00	1169.00
Cable Trays 2.5* 6"	No	12	212.00	2544.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14310.00
Bentonite clay	Kg	500	13.00	6500.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, Minor Civil Work & misc. items)	L.S.	1	12680.00	12680.00
Total				**2,56,754.01**
Approx. Labour Charges			15.00%	38,513.10
Transportation Charges			5.00%	12,837.70
Tools & Plants			1.50%	3,851.31
Contingencies			2.50%	6,418.85
Insurance, Labour & Finance Cost			1.50%	3,851.31
Grand Total				**3,22,226.28**
Less Metering Cost				87,316.95
	Proposed Charges			**2,34,900.00**

Table 10-7: Service connection charges for Overhead 11kV HT supply above 1000 kVA up to 5000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (11 kV) Metering Cubicle including CT & PT	No.	1	85,000.00	85,000.00
HT TOD Meter 5A rating of 0.2s accuracy class	No	1	5,709.00	5,709.00
HT Earthing set (For cubical)	Set	9	546.81	4921.30
RSJ 152x152, 13 m long	No	2	21562.00	43124.00
11 kV Pin Insulators with G.I. Pins	No	3	135.00	405.00
Disc Insulator 11 KV 70 KN	No	3	344.00	1032.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
11 kV Lightning Arrestor (Gapless type) with disconnector	Set	1	1268.00	1268.00
11 KV Isolators with EB (800 A)	Set	1	30025.00	30025.00
M.S. Flats (50 X 10mm)	Kg	20	48.50	970.00
M.S. Channel 100x50x6 mm	Kg	160	51.80	8288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3367.00
H.T. Stay Set	No	2	546.81	1093.62
Stay Wire 7/8	Kg	25	57.45	1436.25
Earthing Sets H.T.	No	4	302.32	1209.29
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.07	1141.41
G.I. Barbed Wire 'A' type.	Kg	3	57.88	173.63
Danger Board in yard.	No	2	46.64	93.28
Red Oxide Paint for 2 coats	Ltr	6	54.06	324.36
Aluminum Paint for 1 coat	Ltr	4	93.28	373.12
Black Bituminous Paint	Ltr	2	43.46	86.92
Concreting ratio 1:4:8	Cmt	10	3323.10	33231.00
XLPE Cable 11 KV, 3 C / 300 mm sq.	Rmt	20	1,194.00	23,880.00
Heat shrinkable kit Outdoor	No	1	2,230.00	2,230.00
Heat shrinkable kit Indoor	No	1	1,662.00	1,662.00
Cable Trays 2.5* 6"	No	12	212.00	2,544.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14310.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Bentonite clay	Kg	500	4.24	2120.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, Minor Civil Work & misc. items)	L.S.	1	12680.00	12680.00
Total				2,92,173.18
Approx. Labour Charges			15.00%	43,825.98
Transportation Charges			5.00%	14,608.66
Tools & Plants			1.50%	4,382.60
Contingencies			2.50%	7,304.33
Insurance, Labour & Finance Cost			1.50%	4,382.60
Grand Total				3,66,677.35
Less Meter Cost				90,709.00
		Proposed Charges		**2,75,900.00**

Table 10-8 : Service connection charges for Overhead 22kV HT supply up to 1000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (22 kV) Metering Cubicle including CT 25/ 5 A& PT	No.	1	1,30,000.00	1,30,000.00
HT TOD Meter 5A rating of 0.5s accuracy class	No	1	2,316.95	2,316.95
HT Earthing set (For cubical)	Set	9	546.81	4921.30
RSJ 152x152, 13 m long	No	2	21562.00	43124.00
22 kV Pin Insulators with G.I. Pins	No	3	336.00	1008.00
Disc Insulator 11 KV 70 KN	No	6	344.00	2064.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
22 KV Lightning Arrestors (Gapless type) with disconnector	Set	1	2280.00	2280.00
22KV A.B. Switch, 400 A	Set	1	14447.00	14447.00
M.S. Flats (50 X 10mm)	Kg	20	36.18	723.56
M.S. Channel 100x50x6 mm	Kg	160	51.80	8288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3367.00
H.T. Stay Set	No	2	546.81	1093.62

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Stay Wire 7/8	Kg	25	52.16	1304.07
Earthing Sets H.T.	No	4	302.32	1209.29
1" PVC pipe for LA earthing separation	Mtr.	16	73.00	1168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.07	1141.41
G.I. Barbed Wire 'A' type.	Kg	3	57.88	173.63
Danger Board in yard.	No	2	46.64	93.28
Red Oxide Paint for 2 coats	Ltr	6	54.06	324.36
Aluminium Paint for 1 coat	Ltr	4	93.28	373.12
Black Bituminus Paint	Ltr	2	43.46	86.92
Concreting ratio 1:4:8	Cmt	10	3323.10	33231.00
XLPE Cable 22 kV 3C 95 sq.mm.	Rmt	20	846.00	16,920.00
Heat shrinkable kit Outdoor	No	1	9,023.00	9,023.00
Heat shrinkable kit Indoor	No	1	7,381.00	7,381.00
Cable Trays 2.5* 6"	No	12	212.00	2,544.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14310.00
Bentonite clay	Kg	500	4.24	2120.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, Minor Civil Work & misc. items)	L.S.	1	12680.00	12680.00
Total				**3,26,023.51**
Approx. Labour Charges			15.00%	48,903.53
Transportation Charges			5.00%	16,301.18
Tools & Plants			1.50%	4,890.35
Contingencies			2.50%	8,150.59
Insurance, Labour & Finance Cost			1.50%	4,890.35
Grand Total				**4,09,159.50**
Less Meter Cost				1,30,000.00
		Proposed Charges		**2,79,100.00**

Table 10-9: Service connection charges for Overhead 22kV HT above 1000 kVA up to 10000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (22 kV) Metering Cubicle including CT & PT	No.	1	1,30,000.00	1,30,000.00
HT TOD Meter 1A & 5A rating of 0.2s accuracy class	No	1	5,709.00	5,709.00
HT Earthing set (For cubical)	Set	9	546.81	4921.30
RSJ 152x152, 13 m long	No	2	21562.00	43124.00
22 kV Pin Insulators with G.I. Pins	No	3	336.00	1008.00
Disc Insulator 11 KV 70 KN	No	6	344.00	2064.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
22 KV Lightning Arrestors (Gapless type) with disconnector	Set	1	2280.00	2280.00
22 KV Isolators with EB (800 A)	Set	1	41547.00	41547.00
M.S. Flats (50 X 10mm)	Kg	20	36.18	723.56
M.S. Channel 100x50x6 mm	Kg	160	51.80	8288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3367.00
H.T. Stay Set	No	2	546.81	1093.62
Stay Wire 7/8	Kg	25	52.16	1304.07
Earthing Sets H.T.	No	4	302.32	1209.29
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.07	1141.41
G.I. Barbed Wire 'A' type.	Kg	3	57.88	173.63
Danger Board in yard.	No	2	46.64	93.28
Red Oxide Paint for 2 coats	Ltr	6	54.06	324.36
Aluminium Paint for 1 coat	Ltr	4	93.28	373.12
Black Bituminus Paint	Ltr	2	43.46	86.92
Concreting ratio 1:4:8	Cmt	10	3323.10	33231.00
XLPE Cable 22 KV, 3 C / 300 mm sq.	Rmt	20	1,464.00	29,280.00
Heat shrinkable kit Outdoor	No	1	13,715.00	13,715.00
Heat shrinkable kit Indoor	No	1	12,874.00	12,874.00
Cable Trays 2.5* 6"	No	12	212.00	2,544.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14310.00
Bentonite clay	Kg	500	4.24	2120.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts,	L.S.	1	12680.00	12680.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Clamps, Minor Civil Work & misc. items)				
Total				**3,79,060.56**
Approx. Labour Charges			15.00%	56,859.08
Transportation Charges			5.00%	18,953.03
Tools & Plants			1.50%	5,685.91
Contingencies			2.50%	9,476.51
Insurance, Labour & Finance Cost			1.50%	5,685.91
Grand Total				**4,75,721.00**
Less Meter Cost				1,35,709.00
		Proposed Charges		**3,40,000.00**

Table 10-10 : Service connection charges for Overhead 33kV HT up to 20000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (33 kV) Metering Cubicle including CT & PT	No.	1	1,90,000.00	1,90,000.00
HT TOD Meter 1A rating of 0.2s accuracy class	No	1	5,709.00	5,709.00
HT Earthing set (For cubical)	Set	9	547.00	4,923.00
RSJ 152x152, 13 m long	No.	2	21,562.00	43,124.00
33 kV Pin Insulators with G.I. Pins	No.	3	541.00	1,623.00
Disc Insulator 11 KV 70 KN	No.	9	344.00	3,096.00
Strain Hardware for Dog 0.1 or Equ.AAAC.	No.	3	322.00	966.00
33 KV LA 9 KA	Set	1	10,248.00	10,248.00
33 KV Isolators without EB (800 Amp.)	Set	1	50,510.00	50,510.00
M.S. Flats (50 X 10mm)	Kg	20	48.50	970.00
M.S. Channel 100x50x6 mm	Kg	160	51.80	8,288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7,770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3,367.00
H.T. Stay Set	No	2	598.00	1,196.00
G.I.Stay Wire 7/4mm(8 SWG)	Kg	25	57.45	1,436.25
Earthing Sets H.T.	No	4	342.00	1,368.00
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1,168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.40	1,148.00
G.I. Barbed Wire 'A' type.	Kg	3	64.27	192.81

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Danger Board in yard.	No	2	50.00	100.00
Red Oxide Paint for 2 coats	Ltr	3	85.00	255.00
Aluminium Paint for 1 coat	Ltr	2	113.00	226.00
Black Bituminus Paint	Ltr	1	85.00	85.00
Concreting ratio 1:3:6	Cmt	10	3,027.00	30,270.00
XLPE Cable 33 KV, 3 C / 300 mm sq.	Rmt	20	1,737.00	34,740.00
33 kV Heat shrik Outdoor termination joint (Al) kit for XLPE 3 C X 300 sqmm	No	1	19,028.00	19,028.00
33 kV Heat shrik Indoor termination joint (Al) kit for XLPE 3 C X 300 sqmm	No	1	14,145.00	14,145.00
Cable Trays 2.5* 6"	No	12	212.00	2,544.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14,310.00
Bentonite clay	Kg	500	13.00	6,500.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, minor civil work & misc. items)	L.S.	1	12,680.00	12,680.00
Total				**4,71,986.06**
Approx. Labour Charges			15.00%	70,797.91
Transportation Charges			5.00%	23,599.30
Tools & Plants			1.50%	7,079.79
Contingencies			2.50%	11,799.65
Insurance, Labour & Finance Cost			1.50%	7,079.79
Grand Total			**25.50%**	**5,92,342.51**
Less Metering Cost				1,95,709.00
Proposed Charges				**3,96,600.00**

EHV Supply

10.2.7 MSEDCL has proposed charges for EHV supply and beyond SOP cases at actual.

Service connection charges for new underground connections

10.2.8 The service connection charges for new underground connections as proposed by MSEDCL are reproduced below.

LT supply

Single phase:

Table 10-11 : Service connection charges for underground connection (LT 1 Ph) for load up to 5 kW as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
5-30A LTAC Single Phase 6loWPAN RF Meter with enclosure	No.	1	966.10	966.10
L.T. 2 Core Cable 2.5 sqmm Armoured	Rmt	20	73.41	1468.10
Meter Board	No	1	42.40	42.40
Kit Kat / MCCB 32A with enclosure	No	1	130.72	130.72
Misc. for U/G Cable	LS	1	1060.00	1060.00
Total				**3,667.32**
Approx. Labour Charges			15.00%	550.10
Transportation Charges			5.00%	183.37
Tools & Plants			1.50%	55.01
Contingencies			2.50%	91.68
Insurance, Labour & Finance Cost			1.50%	55.01
Grand Total				**4,602.49**
Less Meter Cost				966.10
			Proposed Charges	**3630.00**

Table 10-12: Service Connection Charges for Underground Connection (LT 1Ph) for loads above 5 kW up to 7 kW as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
5-30A LTAC Single Phase 6loWPAN RF Meter with enclosure	No.	1	966.10	966.10
L.T. 2 Core Cable 10sqmm Armoured	Rmt	20	45.42	908.42
Meter Board	No	1	74.20	74.20
Kitkat / MCCB 63A, 650V	No	3	328.32	984.97
Misc. for U/G Cable	LS	1	4240.00	4240.00
Total				**7,173.69**
Approx. Labour Charges			15.00%	1,076.05
Transportation Charges			5.00%	358.68
Tools & Plants			1.50%	107.61

Contingencies			2.50%	179.34
Insurance, Labour & Finance Cost			1.50%	107.61
Grand Total				**9,002.98**
Less Meter Cost				**966.10**
	Proposed Charges			**8030.00**

Three phase:

Table 10-13: Service connection charges for underground connection (LT 3 Ph) motive power (< 27 HP) or other (<20 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
10-40A LTAC Single Phase 6loWPAN RF Meter with enclosure	No.	1	1456.78	1456.78
L.T. XLPE Armoured cable 4core 16sq.mm.	Rmt	20	67.48	1349.59
Meter Board	No	1	74.20	74.20
Kitkat / MCCB 63A, 650V	No	3	328.32	984.97
R.C.C. Pipe 150 mm 2 M	No	10	507.74	5077.40
Misc. for U/G Cable	LS	1	4240.00	4240.00
Total				**13,182.95**
Approx. Labour Charges			15.00%	1,977.44
Transportation Charges			5.00%	659.15
Tools & Plants			1.50%	197.74
Contingencies			2.50%	329.57
Insurance, Labour & Finance Cost			1.50%	197.74
Grand Total				**16,544.60**
Less Meter Cost				1456.78
	Proposed Charges			**15,080.00**

Table 10-14: Service connection charges for underground (LT 3 Ph) motive power (>27 HP but <67 HP) or other (>20 kW but <50 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
40-200A LTAC CT Embeded Meter	No.	1	13,305.08	13,305.08
L.T. XLPE Armoured cable 4core 70 sq.mm.	Rmt	20	383.59	7671.86
Meter Board	No	1	74.20	74.20

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Kitkat / MCCB 200A, 650V	No	3	328.32	984.97
R.C.C. Pipe 150 mm 2 M	No	10	507.74	5077.40
Misc. for U/G Cable	LS	1	4240.00	4240.00
Total				**31,353.51**
Approx. Labour Charges			15.00%	4,703.03
Transportation Charges			5.00%	1,567.68
Tools & Plants			1.50%	470.30
Contingencies			2.50%	783.84
Insurance, Labour & Finance Cost			1.50%	470.30
Grand Total				**39,348.65**
Less Meter Cost				13,305.08
			Proposed Charges	**26,040.00**

Table 10-15: Service connection charges for underground (LT 3 Ph) motive power (> 67 HP but <134 HP) or other (> 50 kW but <100 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
40-200A LTAC CT Embeded Meter	No.	1	13,305.08	13,305.08
L.T. XLPE Armoured cable 4core 185 sq.mm.	Rmt	20	835.71	16714.29
Meter Board	No	1	74.20	74.20
MCCB	No	1	5830.00	5830.00
R.C.C. Pipe 150 mm 2 M	No	10	667.80	6678.00
Misc. for U/G Cable	LS	1	8480.00	8480.00
Total				**51,081.57**
Approx. Labour Charges			15.00%	7,662.24
Transportation Charges			5.00%	2,554.08
Tools & Plants			1.50%	766.22
Contingencies			2.50%	1,277.04
Insurance, Labour & Finance Cost			1.50%	766.22
Grand Total				**64,107.37**
Less Meter Cost				13,305.08
			Proposed Charges	**50,800.00**

Table 10-16: Service connection charges for underground (LT 3 Ph) motive power (> 134 HP but <201 HP) or other (> 100 kW but < 150 kW) as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs	Cost in Rs

40-200A LTAC CT Embeded Meter	No.	1	13,305.08	13,305.08
L.T. XLPE Armoured cable 4core 300 sq.mm.	Rmt	20	1308.80	26175.97
Meter Board	No	1	72.80	72.80
MCCB	No	1	16463.20	16463.20
R.C.C. Pipe 150 mm 2 M	No	10	655.20	6552.00
Misc. for U/G Cable	LS	1	8320.00	8320.00
Total				**70,889.05**
Approx. Labour Charges			15.00%	10,633.36
Transportation Charges			5.00%	3,544.45
Tools & Plants			1.50%	1,063.34
Contingencies			2.50%	1,772.23
Insurance, Labour & Finance Cost			1.50%	1,063.34
Grand Total				**88,965.76**
Less Meter Cost				13,305.08
	Proposed Charges			**75,660.00**

HT supply

10.2.9 The Commission observes that MSEDCL has re-classified the connections in terms of load limits and voltage level. It has provided the item-wise cost break up for its proposed service connection charges for new underground HT connections. MSEDCL submitted details as below.

Table 10-17: Service connection charges for underground 11 kV HT supply up to 1000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (11 kV) Metering Cubicle including CT & PT	No.	1	85,000.00	85,000.00
HT TOD Meter 5A rating of 0.5s accuracy class	No	1	2,316.95	2,316.95
HT Earthing set (For cubical)	Set	9	547.00	4,923.00
RSJ 152x152, 13 m long	No	2	21,562.00	43,124.00
11 kV Pin Insulators with G.I. Pins	No	3	135.00	405.00
Disc Insulator 11 KV 70 KN	No	3	344.00	1,032.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
11 kV Lightning Arrestor (Gapless type) with disconnector	Set	1	1,268.00	1,268.00
11KV A.B. Switch, 400 A	Set	1	9,240.00	9,240.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
M.S. Flats (50 X 10mm)	Kg	20	48.50	970.00
M.S. Channel 100x50x6 mm	Kg	160	51.80	8,288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7,770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3,367.00
H.T. Stay Set	No	2	598.00	1,196.00
Stay Wire 7/8	Kg	25	57.45	1,436.25
Earthing Sets H.T.	No	4	342.00	1,368.00
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1,168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.40	1,148.00
G.I. Barbed Wire 'A' type.	Kg	3	64.27	192.81
Danger Board in yard.	No	2	50.00	100.00
Red Oxide Paint for 2 coats	Ltr	6	85.00	510.00
Aluminium Paint for 1 coat	Ltr	4	113.00	452.00
Black Bituminus Paint	Ltr	2	85.00	170.00
Concreting ratio 1:3:6	Cmt	10	3,027.00	30,270.00
XLPE Cable 11 kV, 3 C / 95 mm sq.	Rmt	60	592.00	35,520.00
11 kV Outdoor termination joint kit for 3 C X 95 mm^2	No	1	1,459.00	1,459.00
11 kV Indoor termination joint kit for 3 C X 95 mm^2	No	1	1,169.00	1,169.00
R.C.C. Pipe 150 mm^2	No	5	572.00	2,860.00
Half round cement pipe (150mm X 1mtr)	No	5	110.00	550.00
Sand	Cmt	15	222.00	3,330.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14,310.00
Bentonite clay	Kg	500	13.00	6,500.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, minor Civil work & misc. items)	L.S.	1	12,680.00	12,680.00
Total				**2,84,630.01**
Approx. Labour Charges			15%	42,694.50
Transportation Charges			5%	14,231.50
Tools & Plants			2%	4,269.45
Contingencies			3%	7,115.75
Insurance, Labour &			2%	4,269.45

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Finance Cost				
Grand Total				**3,57,210.66**
Less Metering Cost				87,316.95
	Proposed Charges			**2,69,800.00**

Table 10-18: Service connection charges for underground 11 kV HT above 1000 kVA up to 5000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (11 kV) Metering Cubicle including CT & PT	No.	1	85,000.00	85,000.00
HT TOD Meter 1A & 5A rating of 0.2s accurancy class	No	1	5,709.00	5,709.00
HT Earthing set (For cubical)	Set	9	546.81	4,921.30
RSJ 152x152, 13 m long	No	2	21562.00	43,124.00
11 kV Pin Insulators with G.I. Pins	No	3	135.00	405.00
Disc Insulator 11 KV 70 KN	No	3	344.00	1,032.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
11 kV Lightning Arrestor (Gapless type) with disconnector	Set	1	1,268.00	1,268.00
11 KV Isolators with EB (800 A)	Set	1	30,025.00	30,025.00
M.S. Flats (50 X 10mm)	Kg	20	48.50	970.00
M.S. Channel 100x50x6 mm	Kg	160	51.80	8,288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7,770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3,367.00
H.T. Stay Set	No	2	546.81	1,093.62
Stay Wire 7/8	Kg	25	57.45	1,436.25
Earthing Sets H.T.	No	5	302.32	1,511.61
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1,168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	25	57.07	1,426.76
G.I. Barbed Wire 'A' type.	Kg	3	57.88	173.63
Danger Board in yard.	No	2	46.64	93.28
Red Oxide Paint for 2 coats	Ltr	6	54.06	324.36
Aluminium Paint for 1 coat	Ltr	4	93.28	373.12
Black Bituminus Paint	Ltr	2	43.46	86.92

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Concreting ratio 1:4:8	Cmt	10	3,323.10	33,231.00
XLPE Cable 11 KV, 3 C / 300 mm sq.	Rmt	20	1,194.00	23,880.00
Heat shrinkable kit Outdoor	No	1	2,230.00	2,230.00
Heat shrinkable kit Indoor	No	1	1,662.00	1,662.00
R.C.C. Pipe 150 mm^2	No	5	572.00	2,860.00
Half round cement pipe (150mm X 1mtr)	No	5	110.00	550.00
Sand	Cmt	15	222.00	3,330.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14,310.00
Bentonite clay	Kg	500	4.24	2,120.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, minor Civil work & misc. items)	L.S.	1	12,680.00	12,680.00
Total				**2,96,956.86**
Approx. Labour Charges			15.0%	44,543.53
Transportation Charges			5.0%	14,847.84
Tools & Plants			1.5%	4,454.35
Contingencies			2.5%	7,423.92
Insurance, Labour & Finance Cost			1.5%	4,454.35
Grand Total				**3,72,680.86**
Less Meter Cost				90,709.00
		Proposed Charges		**2,81,900.00**

Table 10-19: Service connection charges for underground 22 kV HT up to 1000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (22 kV) Metering Cubicle including CT & PT	No.	1	1,30,000.00	1,30,000.00
HT TOD Meter 5A rating of 0.5s accuracy class	No	1	2,316.95	2,316.95
HT Earthing set (For cubical)	Set	9	546.81	4,921.30
RSJ 152x152, 13 m long	No	2	21562.00	43,124.00
22 kV Pin Insulators with G.I. Pins	No	3	336.00	1,008.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Disc Insulator 11 KV 70 KN	No	6	344.00	2,064.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
22 KV Lightning Arrestors (Gapless type) with disconnector	Set	1	2,280.00	2,280.00
22KV A.B.Switch, 400 A	Set	1	14,447.00	14,447.00
M.S. Flats (50 X 10mm)	Kg	20	36.18	723.56
M.S. Channel 100x50x6 mm	Kg	160	51.80	8,288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7,770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3,367.00
H.T. Stay Set	No	2	546.81	1,093.62
Stay Wire 7/8	Kg	25	52.16	1,304.07
Earthing Sets H.T.	No	4	302.32	1,209.29
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1,168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.07	1,141.41
G.I. Barbed Wire 'A' type.	Kg	3	57.88	173.63
Danger Board in yard.	No	2	46.64	93.28
Red Oxide Paint for 2 coats	Ltr	6	54.06	324.36
Aluminium Paint for 1 coat	Ltr	4	93.28	373.12
Black Bituminus Paint	Ltr	2	43.46	86.92
Concreting ratio 1:4:8	Cmt	10	3,323.10	33,231.00
XLPE Cable 22 KV, 3 C / 95 mm sq.	Rmt	60	846.00	50,760.00
22 kV Outdoor Cable termination joint kit for 3 C X 95 mm^2	kit	1	7,381.00	7,381.00
22 kV Indoor Cable termination joint kit for 3 C X 95 mm2	kit	1	9,023.00	9,023.00
R.C.C. Pipe 150 mm^2	No	5	572.00	2,860.00
Half round cement pipe (150mm X 1mtr)	No	5	110.00	550.00
Sand	Cmt	15	222.00	3,330.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14,310.00
Bentonite clay	Kg	500	4.24	2,120.00
Sundries (Crimping of cable jumpers, minor matching	L.S.	1	12,680.00	12,680.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
washers, Glands, Nut Bolts, Clamps, minor Civil work & misc. items)				
Total				**3,64,059.51**
Approx. Labour Charges			15.0%	42,694.50
Transportation Charges			5.0%	14,231.50
Tools & Plants			1.5%	4,269.45
Contingencies			2.5%	7,115.75
Insurance, Labour & Finance Cost			1.5%	4,269.45
Grand Total				**4,36,640.16**
Less Meter Cost				1,30,000.00
		Proposed Charges		**3,06,600.00**

Table 10-20: Service connection charges for underground 22 kV HT above 1000 kVA up to 10000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (22 kV) Metering Cubicle including CT & PT	No.	1	1,30,000.00	1,30,000.00
HT TOD Meter 1A & 5A rating of 0.2s accuracy class	No	1	5,709.00	5,709.00
HT Earthing set (For cubical)	Set	9	546.81	4,921.30
RSJ 152x152, 13 m long	No	2	21562.00	43,124.00
22 kV Pin Insulators with G.I. Pins	No	3	336.00	1,008.00
Disc Insulator 11 KV 70 KN	No	6	344.00	2,064.00
Strain Hardware for Weasel/Squirrel	Set	3	179.00	537.00
22 KV Lightning Arrestors (Gapless type) with disconnector	Set	1	2,280.00	2,280.00
22 KV Isolators with EB (800 A)	Set	1	41,547.00	41,547.00
M.S. Flats (50 X 10mm)	Kg	20	36.18	723.56
M.S. Channel 100x50x6 mm	Kg	160	51.80	8,288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7,770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3,367.00
H.T. Stay Set	No	2	546.81	1,093.62
Stay Wire 7/8	Kg	25	52.16	1,304.07
Earthing Sets H.T.	No	5	302.32	1,511.61

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1,168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	25	57.07	1,426.76
G.I. Barbed Wire 'A' type.	Kg	3	57.88	173.63
Danger Board in yard.	No	2	46.64	93.28
Red Oxide Paint for 2 coats	Ltr	6	54.06	324.36
Aluminium Paint for 1 coat	Ltr	4	93.28	373.12
Black Bituminus Paint	Ltr	2	43.46	86.92
Concreting ratio 1:4:8	Cmt	10	3,323.10	33,231.00
XLPE Cable 22 KV, 3 C / 300 mm sq.	Rmt	20	1,464.00	29,280.00
Heat shrinkable kit Outdoor	No	1	13,715.00	13,715.00
Heat shrinkable kit Indoor	No	1	12,874.00	12,874.00
R.C.C. Pipe 150 mm^2	No	5	572.00	2,860.00
Half round cement pipe (150mm X 1mtr)	No	5	110.00	550.00
Sand	Cmt	15	222.00	3,330.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14,310.00
Bentonite clay	Kg	500	4.24	2,120.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, minor Civil work & misc. items)	L.S.	1	12,680.00	12,680.00
Total				**3,83,844.23**
Approx. Labour Charges			15.0%	57,576.63
Transportation Charges			5.0%	19,192.21
Tools & Plants			1.5%	5,757.66
Contingencies			2.5%	9,596.11
Insurance, Labour & Finance Cost			1.5%	5,757.66
Grand Total			**25.50%**	**4,81,724.51**
Less Meter Cost				1,35,709.00
		Proposed Charges		**3,46,000.00**

Table 10-21: Service connection charges for underground 33 kV HT up to 20000 kVA as proposed by MSEDCL

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT (33 kV) Metering Cubicle including CT & PT	No.	1	1,90,000.00	1,90,000.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
HT TOD Meter 1A & 5A rating of 0.2s accuracy class	No	1	5,709.00	5,709.00
HT Earthing set (For cubical)	Set	9	547.00	4,923.00
RSJ 152x152, 13 m long	No.	2	21,562.00	43,124.00
33 kV Pin Insulators with G.I. Pins	No.	3	541.00	1,623.00
Disc Insulator 11 KV 70 KN	No.	18	344.00	6,192.00
Strain Hardware for Dog 0.1 or Equ.AAAC.	No.	6	322.00	1,932.00
33 KV LA 9 KA	Set	1	10,248.00	10,248.00
33 KV Isolators without EB (800 Amp.)	Set	1	50,510.00	50,510.00
M.S. Flats (50 X 10mm)	Kg	20	48.50	970.00
M.S. Channel 100x50x6 mm	Kg	160	51.80	8,288.00
M.S. Channel 75x40x6 mm	Kg	150	51.80	7,770.00
M.S. angle 50x50x6 mm	Kg	65	51.80	3,367.00
H.T. Stay Set	No	2	598.00	1,196.00
G.I.Stay Wire 7/4mm(8 SWG)	Kg	25	57.45	1,436.25
Earthing Sets H.T.	No	4	342.00	1,368.00
1” PVC pipe for LA earthing separation	Mtr.	16	73.00	1,168.00
G.I. Wire 8 SWG/ 6 SWG	Kg	20	57.40	1,148.00
G.I. Barbed Wire 'A' type.	Kg	3	64.27	192.81
Danger Board in yard.	No	2	50.00	100.00
Red Oxide Paint for 2 coats	Ltr	3	85.00	255.00
Aluminium Paint for 1 coat	Ltr	2	113.00	226.00
Black Bituminus Paint	Ltr	1	85.00	85.00
Concreting ratio 1:3:6	Cmt	10	3,027.00	30,270.00
XLPE Cable 33 KV, 3 C / 300 mm sq.	Rmt	20	1,737.00	34740.00
33 kV Heat shrik Outdoor termination joint (Al) kit for XLPE 3 C X 300 sqmm	No	1	19,028.00	19028.00
33 kV Heat shrik Indoor termination joint (Al) kit for XLPE 3 C X 300 sqmm	No	1	14,145.00	14145.00
R.C.C. Pipe 150 mm^2	No	5	572.00	2860.00
Half round cement pipe (150mm X 1mtr)	No	5	110.00	550.00

Material	Unit	Quantity	Rate in Rs.	Cost in Rs
Sand	Cmt	15	222.00	3330.00
Copper Strip (25 X 6 mm) for earthing of cubical, meter & cable	Kg	30	477.00	14,310.00
Bentonite clay	Kg	500	13.00	6,500.00
Sundries (Crimping of cable jumpers, minor matching washers, Glands, Nut Bolts, Clamps, minor civil work & misc. items)	L.S.	1	12,680.00	12,680.00
Total				**4,80,244.06**
Approx. Labour Charges			15.00%	72,036.61
Transportation Charges			5.00%	24,012.20
Tools & Plants			1.50%	7,203.66
Contingencies			2.50%	12,006.10
Insurance, Labour & Finance Cost			1.50%	7,203.66
Grand Total			**25.50%**	**6,02,706.30**
Less Metering Cost				1,95,709.00
		Proposed Charges		**4,06,900.00**

EHV Supply:

10.2.10 The Commission observes that MSEDCL has proposed charges for EHV supply and beyond SOP cases at actual.

10.2.11 Based on above computation, MSEDCL has proposed revision in service connection charges which is summarised below:

Table 10-22: Summary of Approved Vs Proposed Service connection charges (Rs.)

Sr. No.	Particulars		As per MTR Order (Case 195 of 2017) Existing Charges (Rs.)	Proposed Charges (Rs.)
I) SERVICE CONNECTION CHARGES FOR NEW OVERHEAD CONNECTION				
1	**Low Tension (LT) Supply.**			
	a. Single Phase			
	i.	For load up to 0.5kW	1,000	1,530

Sr. No.		Particulars	As per MTR Order (Case 195 of 2017) Existing Charges (Rs.)	Proposed Charges (Rs.)
	ii.	For load above 0.5kW and up to 7.5kW	1,500	2,230
	b. Three Phase			
	i.	Motive power up to 27 HP or other loads up to 20 kW.	3,500	8,130
	ii.	Motive power above 27 HP but up to 107 HP or other loads above 20 kW but up to 80 kW.	8,500	14,920
	iii.	Motive power above 107 HP but up to 201 HP or other loads above 80 kW but up to 150 kW.	13,000	23,840
2	**High Tension (HT) Supply& Extra High Voltage (EHV) Supply**			
	i.	11kV Supply up to 1,000 kVA.	21,500 + 30/-Per kVA for excess load above 500 kVA.	2,34,900
	ii.	11kV Supply above 1,000 kVA up to 5,000 kVA		2,75,900
	iii.	22kV Supply up to 1,000 kVA.		2,79,100
	iv.	22kV Supply above 1,000 kVA up to 10,000 kVA		3,40,000
	v.	33kV Supply up to 20,000 kVA.		3,96,600
	vi.	EHV Supply and beyond SOP Cases		At Actual
II) SERVICE CONNECTION CHARGES FOR NEW UNDERGROUND CONNECTION				
	Low Tension (LT) Supply.			
	a. Single Phase			
	i.	For load up to 0.5 kW	3,100	3,630
	ii.	For loads above 0.5 kW & up to 7.5kW	7,150	8,030
	b. Three Phase			
	i.	Motive power up to 27 HP or other loads up to 20 kW	13,500	15,080
	ii.	Motive power above 27 HP but up to 67 HP or for other loads above 20 kW but up to 50 kW	21,000	26,040

Sr. No.		Particulars	As per MTR Order (Case 195 of 2017) Existing Charges (Rs.)	Proposed Charges (Rs.)
	iii.	Motive power above 67HP but up to 134 (201)HP or for other loads above 50 kW but up to 100 kW(150)	43,000	50,800
	iv.	Motive power above 134HP but up to 201 HP or for other loads above 100 kW but up to 150 kW	66,500	75,660
	High Tension (HT) & Extra High Voltage (EHV) Supply			
	i.	11kV Supply up to 1,000 kVA.	2,21,000 (up to 500 kVA)	2,69,800
	ii.	11kV Supply above 1,000 kVA up to 5,000 kVA		2,81,900
	iii.	22kV Supply up to 1,000 kVA.		3,06,600
	iv.	22kV Supply above 1,000 kVA up to 10,000 kVA	2,30,000 (above 500 kVA)	3,46,000
	v.	33kV Supply up to 20,000 kVA.		4,06,900
	vi.	EHV Supply & beyond SOP Cases		At actual

Notes:

1. In case MSEDCL permits an applicant to carry out the works through a Licensed Electrical Contractor (LEC), a rate of 1.30 % of the normative charges will be applicable towards supervision charges.
2. In case of extension of load, the normative charges will be applicable on the total load (existing as well as additional load demanded) as per the load slabs indicated above.
3. In case of extension of Load where augmentation of infrastructure is required, the expenses will be recovered for such augmentation as actual in accordance with clause 3.3.4 of MERC Regulation, 2005.
4. The GST will be levied extra as per applicable rates.
5. The road opening charges vary from area to area hence will be levied on actual basis.

Commission's Analysis and Rulings

10.2.12The Commission notes that MSEDCL considered average length of service wires as 20 metres which is the same as considered by the Commission in its earlier Order on Schedule of Charges dated 12 September, 2018.

10.2.13 The Commission observes that proposed revision in LT-Service connection charges (SCC) (for overhead lines) amounts to increase of 49% (LT-single phase upto 7.5kW) to 132% (LT-3ph upto 20 kW) as against that existing SCC (as approved under MTR Order) whereas proposed revision in LT-Service connection charges (for underground) amounts to increase of 12% (LT-single phase upto 7.5kW) to 24% (LT-3ph upto 50 kW)as against existing SCC that approved under MTR Order.

10.2.14 As regards HT service connections (overhead and under-ground), the Commission observes that as against earlier classification of HT (upto 500 kVA and above 500 kVA), MSEDCL has re-classified the connections in terms of load limits/contract demand and voltage level. MSEDCL has proposed separate service connection charges at 11 kV (upto 1,000 kVA and 1,000 kVA to 5,000 MVA), 22 kV (upto 1,000 kVA and 1,000 kVA to 10,000 MVA), 33 kV (upto 20,000 kVA). It has provided the item-wise cost estimate break up for its proposed service connection charges for new overhead and underground HT connections.

10.2.15 The Commission observes that with proposed reclassification and revision in SCC rate for HT category (overhead line connections), there is significant increase (>200%), particularly, for connections upto 1000 kVA whereas the increase for > 5000 kVA connections is moderate. In case of HT-underground connections, the revision of (15% to 70%) is proposed depending on load requirement from 1000 kVA to upto 20,000 kVA.

10.2.16 The Commission sought MSEDCL to submit the Central Purchase Agency (CPA) data in support of the rates of materials as considered by MSEDCL for the purpose of cost estimation. The Commission verified the proposed rates with the rates submitted by MSEDCL. However, it is observed that MSEDCL has not submitted per unit rates for all the material items and also the rates are not matching with the proposed rates.

10.2.17 In the absence of comparable CPA cost data for each of item of Service Connection Charges computation, the Commission could not fully verify reasonability of cost of each of the item included in calculation of Service Connection Charges.

10.2.18 Regarding labour charges used in computation of Service Connection Charges, MSEDCL has proposed rate of 15% for the same. The centages for overheads/soft costs over the total estimated cost of material required in the proposed charges is 25.50% as compared to approved charges of 16.5% in Commissions earlier order.

10.2.19 The Commission notes that MSEDCL in its submission has stated that Service Connection Charges are proposed based on charges approved by the Commission in Order dated 12

September 2018 and revised Cost data of FY 2019-20 with revised centages, as proposed.

10.2.20 The Commission fully appreciates that the cost of individual services provided to the consumer needs to be fully recovered from the consumer. However in the absence of difficulty in ascertaining reasonability of material rates as rate data for all material is not available and also not matching with submissions made by MSEDCL for computation of Service Connection Charges, the Commission has relied on approximation after comparing the proposed revision in material rates vis-à-vis Wholesale Price Index (WPI) published by the Government of India. The Commission has considered 3-year average of WPI which works out to be 2.98% p.a. The escalation factor is further compounded for 3 years and applied on the material cost estimates approved as per MTR Order to arrive at material cost estimates for FY 2020-21. Further, the Commission opines that the centages of 25.50% considered by MSEDCL is much higher than that considered under MTR Order at 17%. Also, MSEDCL has considered labour component at 15% as against 10% considered under MTR Order. Further, as regards other components of transport, insurance, tools/tackles MSEDCL has considered higher rates at 10.5% (including contingency) as against 6.5% considered under MTR Order. The Commission has considered revised centages at 20% as against MSEDCL's claim of 26.5% after allowing for escalation in labour/transport/insurance on account of inflation.

10.2.21 The Commission has observed that in case of 3-phase low tension supply, the proposed charges are much higher than the approved charges. The Commission directed MSEDCL to submit the justifications for such increase. MSEDCL submitted that for supplying such load it is necessary to provide either 3.5 core or two runs of twin core cable. Ideally, two runs of twin core cable is more preferred in view of reliability of supply. Hence, while working out cost estimate two runs of twin core cable have been considered.

10.2.22 The Commission has observed in case of HT Supply the connections are re-classified in terms of load limits and voltage level. MSEDCL stated that it has brought more clarity in terms of service connection charges required at HT level. In earlier approved charges voltage levels and load limits were not defined for release of connection at HT level, it was based on only two categories of load (below 500 kVA and above 500 kVA). In present filing MSEDCL has demarcated costs based on load limits as specified in MERC (SoP) Regulations, 2014 and voltage levels.

10.2.23 With the above considerations, the Commission approves Service Connection Charges for new overhead and underground connections as summarised in the following table:

Table 10-23: Service connection charges for new overhead connections as approved by the Commission

Sr. No.	Category		As per case 195 of 2017 Existing Charges (Rs.)	Proposed by MSEDCL (Rs.)	Approved by the Commission
1	**Low Tension (LT) Supply.**				
	a. Single Phase				
	i.	For load up to 0.5kW	1,000	1,530	1,300
	ii.	For load above 0.5kW and up to 7.5kW	1,500	2,230	1,700
	b. Three Phase				
	i.	Motive power up to 27 HP or other loads up to 20 kW.	3,500	8,130	7,200
	ii.	Motive power above 27 HP but up to 107 HP or other loads above 20 kW but up to 80 kW.	8,500	14,920	12,600
	iii.	Motive power above 107 HP but up to 201 HP or other loads above 80 kW but up to 150 kW.	13,000	23,840	21,600
2	**High Tension (HT) Supply& Extra High Voltage (EHV) Supply**				
	i.	11kV Supply up to 1,000 kVA.	21,500 + 30/-Per kVA for excess load above 500 kVA.	2,34,900	2,20,000
	ii.	11kV Supply above 1,000 kVA up to 5,000 kVA		2,75,900	2,58,000
	iii.	22kV Supply up to 1,000 kVA.		2,79,100	2,60,000
	iv.	22kV Supply above 1,000 kVA up to 10,000 kVA		3,40,000	3,17,000
	v.	33kV Supply up to 20,000 kVA.		3,96,600	3,68,000
	vi.	EHV Supply and beyond SOP Cases		At Actual	At Actual on case to case basis subject to ceiling of Rs 5,00,000

1. *In case MSEDCL permits an applicant to carry out the works through a Licensed Electrical Contractor (LEC), a rate of 1.30 % of the normative charges will be applicable towards supervision charges.*

2. *In case of extension of load, the normative charges will be applicable on the total load (existing as well as additional load demanded) as per the load slabs indicated above.*
3. *In case of extension of Load where augmentation of infrastructure is required, the expenses will be recovered for such augmentation as actual in accordance with clause 3.3.4 of MERC Regulation, 2005.*
4. *The GST will be levied extra as per applicable rates.*
5. *The road opening charges vary from area to area hence will be levied on actual basis.*

Table 10-24: Service connection charges for new underground connections as approved by the Commission

Sr. No.		Category	As per case 195 of 2017 Existing Charges (Rs.)	Proposed by MSEDCL (Rs.)	Approved by the Commission
1	**Low Tension (LT) Supply.**				
	a. Single Phase				
	i.	For load up to 0.5 kW	3,100	3,630	3,400
	ii.	For loads above 0.5 kW & up to 7.5kW	7,150	8,030	7,600
	b. Three Phase				
	i.	Motive power up to 27 HP or other loads up to 20 kW	13,500	15080	13,800
	ii.	Motive power above 27 HP but up to 67 HP or for other loads above 20 kW but up to 50 kW	21,000	26,040	24,300
	iii.	Motive power above 67HP but up to 134 (201)HP or for other loads above 50 kW but up to 100 kW(150)	43,000	50,800	46,900
	iv.	Motive power above 134HP but up to 201 HP or for other loads above 100 kW but up to 150 kW	66,500	75,660	71,100
2	**High Tension (HT) & Extra High Voltage (EHV) Supply**				
	i.	11kV Supply up to 1,000 kVA.	2,21,000 (up to 500 kVA)	2,69,800	2,53,000
	ii.	11kV Supply above 1,000 kVA up to 5,000 kVA		2,81,900	2,64,000
	iii.	22kV Supply up to 1,000 kVA.		3,06,600	3,05,000
	iv.	22kV Supply above 1,000 kVA up to 10,000 kVA	2,30,000	3,46,000	3,23,000

Sr. No.		Category	As per case 195 of 2017 Existing Charges (Rs.)	Proposed by MSEDCL (Rs.)	Approved by the Commission
	v.	33kV Supply up to 20,000 kVA.	(above 500 kVA)	4,06,900	3,78,000
	vi.	EHV Supply & beyond SOP Cases		At actual	At actual on case to case basis subject to ceiling of Rs 5,00,000

Notes:

1. In case MSEDCL permits an applicant to carry out the works through a Licensed Electrical Contractor (LEC), a rate of 1.30 % of the normative charges will be applicable towards supervision charges.
2. In case of extension of load, the normative charges will be applicable on the total load (existing as well as additional load demanded) as per the load slabs indicated above.
3. In case of extension of Load where augmentation of infrastructure is required, the expenses will be recovered for such augmentation as actual in accordance with clause 3.3.4 of MERC Regulation, 2005.
4. The GST will be levied extra as per applicable rates.
5. The road opening charges vary from area to area hence will be levied on actual basis.

10.3 Charges for Premium Service:

MSEDCL Submissions

10.3.1 A distribution Licensee has a Universal Supply Obligation (USO) under Section 43 of the Electricity Act, 2003 to supply electricity to any consumer within its area of supply who makes a demand. MSEDCL being fully owned Government Company rely for funds on Government Grants and same is worked out and approved on year to year basis. There is limitation for availing loans by MSEDCL as well as the capacity to repay loans in time. The connections are released after following seniority list.

10.3.2 It is observed that many consumers are approaching field offices with requests to carry out work on priority and are ready to carry out works by paying cost of infrastructure and metering. MSEDCL submitted that there is no explicit Regulatory provision to act on such request applications. Hence, MSEDCL proposed Premium Service (excluding DDF) charges based on actual cost estimate (all items including Civil works, road reinstatement and metering). Such premium service will be applicable to all categories and it will be on non-refundable basis. Further, MSEDCL will maintain the assets created and will be utilized for catering future load growth.

10.3.3 The expenditure required is not uniform and vary case to case. However, the estimate required is prepared based on latest CPA data and Cost data (BOQ). Rates are derived through e-tendering, joint measurement after work completion and in consultation with contractors for market prices.

10.3.4 MSEDCL submitted that such premium charges will reduce the burden of infrastructure cost on common consumers.

Commission's Analysis and Rulings:

10.3.5 The Commission notes that MSEDCL's premium service proposal considers payment of all charges / creation of infrastructure by consumer and such infra then can be used by MSEDCL for providing service to others. Existing Supply Code Regulations provide incurring of expenses by consumer only in case of Dedicated Distribution Facilities (DDF) where in dedicated infrastructure created is for exclusive use of such consumer. Non-DDF consumer has to pay only normative charges. Hence, though the concept is appreciated, this proposal cannot be allowed in the present format since the same is beyond the framework of Supply Code. The Commission advises MSEDCL to take up this issue during the public consultation process of Supply Code.

10.4 Scheme for optimum utilization of existing distribution assets:

MSEDCL Submission

10.4.1 MSEDCL submitted that Section 42 (1) of the Electricity Act, 2003 casts duty on MSEDCL to develop and maintain an efficient coordinated and economical distribution system. The Electricity Act 2003 mandates that a distribution licensee is under obligation to supply electricity to every consumer within its licensed area of supply.

10.4.2 According to MERC Supply Code Regulations, 2005 the consumers have option to opt for dedicated distribution facility. All the assets created under DDF schemes are maintained by MSEDCL. Further, due to allocation of bays exclusively for DDF works, MSEDCL is not in position to release new connections due to Right of way issues and space constraints in sub-stations, network/capacity constraints. In such cases, only option available is mutually sharing of under-utilized capacity of infrastructure by existing consumer with prospective consumer. Voltage wise details of underutilized capacity (Feeders in Nos.) are depicted in table below:

Voltage Level	11 kV	22 kV	33 kV
No. of feeders	460	213	335

10.4.3 Accordingly, MSEDCL proposed following:

- Based on new service connection requests, MSEDCL at first stage will strive to release the connection through its own infrastructure.
- If there is space/capacity constraints in MSEDCL substation/lines and underutilized network created under DDF is readily available in the vicinity then MSEDCL will utilise underutilized DDF assets, if any available.

- In such cases in the interest of common consumers, MSEDCL will take over the assets created under DDF by granting depreciated cost of the sanctioned CAPEX to original developer.
- While implementing above proposal, MSEDCL will ensure technical feasibility by considering nature of load, process in consumer establishment and reliability of supply. Further, if any works related to augmentation, isolation of supply systems is required, then MSEDCL will carry out the works in accordance with Regulation 3.3.4 of MERC (Electricity Supply Code and Other Conditions of Supply) Regulations, 2005.
- In case MSEDCL permits an applicant to carry out the works through a Licensed Electrical Contractor, a rate of 1.30% of the cost estimate will be applicable towards supervision charges

Commission's Analysis and Rulings:

10.4.4 Voltage wise details of underutilized capacity (Feeders in Nos.) submitted by MSEDCL depicts that in many cases consumer assets created under DDF are not being optimally utilized**.** As per Section 43 of the Act if the owner or occupier of any premises situated in the license area of the distribution licensee demands supply then the licensee is statutorily compelled to give connection and release the supply to such an applicant within the stipulated time period. Also, the Commission cannot ignore the fact that at times the asset created under DDF is under-utilised and on the other hand MSEDCL is unable to meet the USO due to infrastructure contraints. Therefore, it is necessary to devise the scheme for optimum utilization of distribution assets.

10.4.5 However, proposal of MSEDCL to take over the DDF asset by providing depreciated cost refund needs to be scrutinized further for the fairness, equity and compliance of Supply Code/SOP Regulations. The issue in point is whether such acquisition of assets created through DDF facilities be allowed to be taken over by Distribution Utility on mandatory basis or on voluntary basis at choice of consumer for whom such DDF facilities were created in the first place. Besides, the Commission opines that in case such proposal of MSEDCL is to be allowed, necessary amendments to Supply Code/SOP Regulations will have to be undertaken upon due regulatory process. The consumers who have invested in DDF facilities as per prevalent Supply Code and SOP Regulations need to be provided opportunity to participate through due regulatory process for amendment of relevant clauses under Supply Code/SOP Regulations. In view of above, MSEDCL is advised to file a separate petition with all the details so that the Commission can take a further necessary action on the same.

10.5 Cost of meter and meter box

MSEDCL Submission

10.5.1 Section 45 (3) (b) of the Electricity Act, 2003 empowers Distribution Licensees to recover a rent or other charges in respect of any electric meter or electrical plant provided by it. Accordingly, MSEDCL is entitled to recover the following charges related to meters:

- Cost of the meter in case the meter is purchased from the Distribution Licensee
- Replacement in case of lost/burnt meter
- Hire charges for the meter

10.5.2 As per Section 14.1.3 of MERC (Electricity Supply Code and Other Conditions of Supply) Regulations, 2005, a consumer of a distribution licensee can purchase a meter from the distribution licensee or from any supplier of correct meter in accordance with the specifications laid down by CEA.

Commission's Analysis and Rulings:

10.5.3 The Commission observes that in recent years, metering technology has given new dimensions to billing practiced by Distribution Companies. Metering is no longer limited to the conventional application of billing alone. It also provides useful information for Analytics, Pricing mechanisms, revenue protection, Demand forecast, Energy management etc. Due to obsolescence in metering technology and for easy facilitation of billing data transfer MSEDCL has adopted new metering technologies

10.5.4 MSEDCL submitted benefits of the new metering technologies. The Commission is of view that new metering technology would certainly provide benefits in terms of improvement or cost savings. Accordingly, the Commission approves the rates proposed by MSEDCL as indicated in table below, which would be applicable only in case of a burnt or a lost meter or where a consumer opts to purchase the meter from MSEDCL.

Table 10-25: Cost of meter and meter box approved by the Commission

Sr. No.	Particulars	Existing Charges (Rs.)	Proposed Charges by MSEDCL(Rs.)	Approved by the Commission
Applicable in case consumer opts to purchase the meter, metering Cabinet/ cubicle from MSEDCL & in case of Lost & Burnt Meter & metering Cabinet/ cubicle.				
1	**LT Single Phase**			

Sr. No.	Particulars	Existing Charges (Rs.)	Proposed Charges by MSEDCL(Rs.)	Approved by the Commission
a.	Plain Meter	600	Obsolete	
b.	5-30A 6LoWPAN RF Meter without enclosure	1,500	820	820
c.	Pre-Paid Meter	2,700	Obsolete	
d.	Pre-Paid Meter Interface	900	Obsolete	
e.	10-60A Smart Meter (including GPRS communication Module) as per IS:16444 Part-I	-	2,610	2610
2	**LT Three Phase**			
a.	Three Phase Whole Current Meter	2,500	Obsolete	
b.	10-40A 6LoWPAN RF Meters without enclosure	-	1,520	1520
c.	10-60A Smart Meter (including GPRS communication Module) as per IS:16444 Part-I	-	3,790	3790
3	**LT-CT Operated Three Phase Metering Unit**			
a.	50/5 A Meter with CTs & MCCB	21,000	Obsolete	
b.	100/5 A Meter with CTs & MCCB	22,500	Obsolete	
c.	150/5 A Meter with CTs & MCCB			
d.	200/5 A Meter with CTs & MCCB			
e.	250/5 A Meter with CTs & MCCB	22,500	22,500	22,500
f.	40-200A CT embedded Meter	-	13,840	13,840
g. i.	LT-CT Operated Three Phase Smart Meter (including GPRS Communications Module) as per 15:16444 Part-2 with Accuracy Class 0.5S and current rating of -/5 A.	-	3,570	3,570
g. ii.	Supporting CTs and MCCB for LT-CT Operated Three Phase Smart Meters as above	-	18,720	18,720
4	**HT ToD Meter**			
a.	5A rating with 0.5s accuracy class	4,000	2,420	2,420
b.	1A rating with 0.5s accuracy class		2,650	2,650
c.	1A & 5A rating with 0.2s accuracy class		5,930	5,930
5	**HT Metering cubical including C.T. & P.T.**			
a.	For 11 kV Supply	85,000	85,000	85,000
b.	For 22 kV Supply	1,30,000	1,30,000	1,30,000
c.	For 33 kV Supply	1,90,000	1,90,000	1,90,000

1. *In case consumer opts to purchase the meter, metering Cabinet/ cubicle from MSEDCL, the security for the price of the meter, metering Cabinet/ cubicle in accordance with the provisions of clause 14.1.1 of MERC Regulation, 2005 will not be applicable.*

2. *In case of lost and burnt meter and metering cabinet/cubicle, the installation testing fees will be recovered from the consumer as per approved SoC*

3. *Meter box will be provided by MSEDCL at its own cost.*

10.5.5 The GST will be levied extra as per applicable rates

10.6 Hiring Charges

MSEDCL Submission

10.6.1 MSEDCL submitted that the Regulation 14.1.2 of MERC (Electricity Supply Code and Other Conditions of Supply) Regulations, 2005 specifies as under:

> *"14.1.2 The Charges for hiring of meters by a consumer shall be in accordance with the approved schedule of charges under Regulation 18."*

10.6.2 MSEDCL submitted that in case the consumer opts for hiring the meter as per Section 45 of the EA 2003 and Regulation 14.1.2 of MERC (Electricity Supply Code and Other Conditions of Supply) Regulations, 2005 then such facility needs to be granted.

Commission's Analysis and Ruling

10.6.3 The Commission notes that in case of new consumer connections meter for new connections is to be provided by licensee. Hence, meter cost is not included in calculation of schedule of charges for service connection. Distribution Licensee, upon capitalization of such meters, is allowed to recover its cost, as part of its Annual Revenue Requirement. Thus, meter will be required to be purchased by consumer only when meter gets damaged on account of its fault and not otherwise. In that case, it should pay upfront charge for meter. The cost of meter and meter box are separately approved as part of this Order in earlier paragraphs. Thus, Commission is not approving any hiring cost of meter as such.

10.7 Miscellaneous and general charges

MSEDCL Submission

Application Registration and processing Charges:

10.7.1 MSEDCL submitted that a consumer can submit application for provision of electricity supply, sanction of additional load, shifting of service, etc. MSEDCL added that as per Regulation 4.1 (ix) of MERC Supply Code Regulations 2005, a distribution licensee can recover fees for processing such applications.

10.7.2 MSEDCL reported that after receipt of application form, it is primarily required to conduct the following activities:

- Verification and scrutiny of existing location of applicant;
- Scrutiny of past dues, if any;
- Existing facility / infrastructure at consumer premises (service line, meter board, etc.);
- Provision of electrical network and equipment; and
- Verification of compliances from consumer (payment of charges and appropriate wiring / distribution).

10.7.3 For carrying out these activities MSEDCL require man power and associated facilities. Further, it is necessary to create minimum barrier to discourage frivolous or non-serious consumers

Commission's Analysis and Rulings

10.7.4 The Commission had expressed its views in context of the above mentioned activities vide the Order dated September 8, 2006 in Case No. 70 of 2005. The relevant portion of the said order is reproduced herein under:

> *However, all the above activities fall under normal activities of the Licensee's staff .As the expenditure on the staff is covered under ARR, the Processing fee should not include the expenditure towards the staff employed for processing the application to avoid double accounting. At the same time the Commission feels that there should be a minimum barrier to discourage frivolous or non-serious consumers."*

10.7.5 Accordingly, the Commission has considered the five year average of CPI and WPI with 50% weightage to each for escalate previously approved charges under MTR Order dated 12 September, 2018. Accordingly, approved charges for application registration and processing are mentioned in table below:

Table 10-26: Application registration and processing charges approved by the Commission

Category	Existing charges as per Order in MTR Order (Case No. 195 of 2017) (Rs.)	Proposed charges (Rs.)	Approved charges (Rs.)
New connection/ Change of name/Reduction or Enhancement of load/ Shifting of service/ Temporary connection			
a) Single phase	100	110	110
b) Three phase	150	160	160

Category	Existing charges as per Order in MTR Order (Case No. 195 of 2017) (Rs.)	Proposed charges (Rs.)	Approved charges (Rs.)
c) LT (Agricultural)	150	160	160
d) HT supply up to 33 kV	2,400	2500	2500
e) EHV Supply	4,800	5100	5100

Installation testing fees

10.7.6 Regulation 9 of MERC (Electricity Supply Code and Other Conditions of Supply) Regulations 2005 provides that the wiring of consumers premises shall conform to the standards specified in the Indian Electricity Rules, 1956. As per Rule 47, it is the duty of the supplier to inspect and test applicant's installation before connecting the supply . As per Rule 53(1), the cost of first inspection and testing of a consumer's installation carried out in pursuance of the provisions of Rule 47 shall be borne by the supplier and the cost of every subsequent inspection and test shall be borne by the consumer.

10.7.7 The first testing of a consumer's installation will be free of cost as done currently. For every subsequent inspection and test, it proposed higher rates of installation testing fees than existing rates, considering trend in inflation.

Reconnection charges

10.7.8 Considering the practice followed by MSEDCL in disconnection of supply pursuance to default of payment, MSEDCL has proposed to reframe reconnection charges based on nature of disconnection.

Changing Location of the Meter within the same premises (shifting of service is not required) at consumer's request

10.7.9 MSEDCL submitted different charges for shifting of meter in case of single phase supply and three phase supply. It stated that the said bifurcation is required as three phase meter shifting requires more labor and sundry items than single phase meter shifting.

Shifting of services/Poles/Lines (utility), if carried out only on consumer's request

10.7.10 MSEDCL submitted that the consumer's request may not be limited to shifting of single meter within the same meter cabin or another meter box, but may also require shifting of the entire meter box along with its service cable or shifting of poles. This may involve partial or complete removal of the existing service cable. It may also involve relocation of the meter along with the service cable, fuse unit and other safety

arrangements. In case of underground cable, if the cable is to be removed, it will require excavation which may be in private property or on public roads. Accordingly, reinstatement charges become applicable. Thus, additional manpower and resources are required which would vary from case to case considering consumer requirement and site conditions

10.7.11 Further, due to development work, many consumers approach the MSEDCL to shift the poles in his premises. In many cases consumers are approaching MSEDCL to shift Poles/Lines (Utility) to secure non-agricultural (NA) land status. Present schedule of charges do not address this scenario, hence following is proposed. It is submitted that for such cases charges will be recovered based on approved cost data of MSEDCL.

Testing of meters

10.7.12 MSEDCL submitted that it has proposed charges for testing of meters considering the increase in labour cost, testing equipment cost, maintenance cost, duration of testing, etc.

10.7.13 Further, MSEDCL stated that testing charges proposed for single phase (1Ph.), three phase (3Ph), LTCT Operated (3ph), HT TOD & ABT/Apex meter having different applicable IS. The testing charges have been proposed based on type of meter, duration for testing, and its accuracy class. Hence the rates for testing charges are varying accordingly. Also, considering the costly automatic equipment service maintenance, electricity cost and all other costs, the revised rates are proposed.

10.7.14 MSEDCL has not proposed any changes in testing of Meter at TQA Labs. Further, it is stated that MSEDCL carry out testing of Distribution Transformers of consumers. Hence, charges for testing of DTs are also proposed

Administrative charges for cheque bouncing

10.7.15 MSEDCL is not seeking any revision in administrative charges for Cheque bouncing.

Commission's Analysis and Rulings

10.7.16 The Commission notes that MSEDCL has provided detailed computation justifying its request for increasing various miscellaneous and general charges for providing various services to the consumers. MSEDCL has considered the five year average WPI to escalate the charges considering the trend of inflation.

10.7.17 In view of above, as most of the activities are labour incentive, the Commission has considered the five year average of Consumer Price Index published by the Labour Bureau, Government of India to escalate previously approved charges in Order dated 12 September, 2018 on compounded basis. Accordingly, approved charges for

Miscellaneous and General activities are mentioned in table below.

10.7.18 The Commission notes that MSEDCL has proposed increase in existing reconnection charges. The Commission is allowing such proposed increase so as to create deterrent to defaulting consumers. The Commission also allows proposed reconnection charges for HT consumers which are slightly higher than other consumers as amount of recovery involved in case of HT consumer is much more than LT consumers. Regarding, separate reconnection charges based on requirement of re-installation of cut-out, meter and service line is concerned, the Commission is of the opinion that such category may create confusion as in case of normal disconnections also, cut-out or meter is removed. As the Commission has already approved increase in reconnection charges, it is not inclined to create this category based on work to be undertaken for reconnection.

10.7.19 MSEDCL has proposed charges for shifting of services/poles/lines on request of consumer's request at actual cost. The Commission allows it to recover the cost at actual basis. Considering previous dispensations and considerations set out by MSEDCL in the present Petition, and the fact that the shifting may involve relocation of the meter along with service cable, it would also involve excavation at public and private property. This would require additional labour and cost may vary case to case. The Commission accepts MSEDCL's proposal in this regard. MSEDCL may levy the actual costs involved for shifting of Service at the request of the consumer

10.7.20 MSEDCL has not proposed any changes in Testing of equipment like CT/ PT and testing of Meter at TQA Labs. Hence, the Commission continues the charges for such activities as approved in MTR Order dated 12 September 2018.

10.7.21 MSEDCL has proposed new categories like Summator meter – module, Calibration of Testing Equipment of Other Utilities' request at TQA Laboratories, Cable Testing and fault Detection and Testing of Distribution Transformer. In this context, MSEDCL submitted that testing charges have been proposed based on type of meter, duration for testing, and its accuracy class. Hence, the rates for testing charges are varying accordingly. Further, considering the costly automatic equipment service maintenance, electricity cost and all other costs, the proposed rates are revised. The consumers do have option to test meters at TQA labs other than MSEDCL. In order to keep rates competitive, MSEDCL has not proposed any revision in testing charges at TQA labs. The Commission has noted the justification provided by MSEDCL and thus approves its proposal.

10.7.22 As regards charges for testing of Distribution transformers is concerned, the same shall

be levied only in such cases where such tests are carried out at the request of consumer and where DT is covered as part of DDF of consumer or located within consumer premises behind consumer meter.

10.7.23 Regarding, proposed cheque bouncing charges, MSEDCL is seeking no changes. Hence, the Commission continues the charges for such activities as approved in Order dated 12 September 2018.

Table 10-27: Miscellaneous and General Charges as approved by the Commission

Sr. No.	Category	Approved by the Commission- Case 195 of 2017	Proposed by MSEDCL in present petition	Approved Charges
1	**Installation Testing Fees**			
	Low Tension Service			
	a) Single phase	100	110	110
	b) Three phase	200	220	220
	High Tension Service			
	Agriculture	550	600	600
	All categories except Agricultural	-	750	750
	Renewable Energy Installations with Net Metering features	-		
	Single phase	-	500	500
	Three phase	-	1,000	1,000
2	**Reconnection Charges**			
	Low Tension Service at Meter incomer			
	a) Single phase	100	200	200
	b) Three phase	200	400	400
	At overhead mains:			
	a) Single phase	100	300	300
	b) Three phase	200	500	500
	Reconnection in underground cable works			
	a) Single phase	200	300	300
	b) Three phase	200	500	500
	High Tension Supply:	800	3,000	3000

Sr. No.	Category	Approved by the Commission- Case 195 of 2017	Proposed by MSEDCL in present petition	Approved Charges
3	**Changing location of meter within same premises at consumers request at consumer request (shifting of service is not required)**			
	Single phase	350	400	385
	Three phase	-	1,000	1,000
4	**Shifting of poles**	-		
	Single phase	-	Actuals	Actuals
	Three phase	-	Actuals	Actuals
5	**1. Testing of meters**			
	a) Single phase	200	250	220
	b) Polyphase meter/ RKVAH meter	800	1,000	880
	c) LTMD (with/without CTs)	1,000	1,200	1,100
	d) Tri vector meter	1,000	1,200	1,100
	e) Metering equipment like CT/PT per unit for LT	1,000	1,000	1,000
	f) Metering equipment like CT/PT per unit for HT up to and including 33kV	3,000	3,000	3,000
	g) Metering equipment like CT/PT per unit for EHT above 33 kV	5,000	5,000	5,000
	h) Net Meter			
	Single Phase	-	500	500
	Three phase LT CT Operated Bidirectional	-	2,200	1100
	Three phase HT ToD Bidirectional	-	2,400	1100
	B. Testing of Meters at TQA Laboratories			
	a) Single Phase	2,000	2,000	2,000
	b) Three Phase	9,500	9,500	9,500
	c) LT CT OP Meters	10,000	10,000	10,000

Sr. No.	Category	Approved by the Commission- Case 195 of 2017	Proposed by MSEDCL in present petition	Approved Charges
	d) HT ToD Meters	15,000	15,000	15,000
	e) ABT/Apex	20,000	20,000	20,000
6	**Summator meter – module**			
	a)Two module + Summator	-	46,500	46,500
	b)Three module + Summator	-	68,200	68,200
	c) Four module + Summator	-	89,990	89,990
7	**Calibration of Testing Equipment of Other Utilities' request at TQA Laboratories**			
	a) Active/ Reactive Energy	-	400 per load point	400 per load point
	b) Active/ Reactive/ Apparent Power	-		
	c) Voltage	-	500 per load point	500 per load point
	d) Current	-		
	e) Power Factor	-		
	f) Frequency	-		
8	**Cable Testing and fault Detection on request of other utilities**	-		
	33/11KV cable fault location	-	12,000	12,000
	33/11KV cable Hipot	-	4,500	4,500
	33/11KV Cable Identification	-	4,500	4,500
	33/11KV Cable fault Identification	-	4,500	4,500
	LT U.G. Cable Fault location and identification	-	4,500	4,500
9	**Testing of Distribution Transformer***		3,000	3,000
10	**Administrative charges for cheque bouncing**	Rs. 750/- or Bank charges whichever is higher	No Change	Rs. 750/- or Bank charges whichever is higher

(* note – subject to conditions as outlined at para 9.7.22)

10.8 Schedule of Charges for Open Access MSEDCL Submission

Processing and operating charges for Open Access

10.8.1 MSEDCL has stated various reasons for revising the processing fees and charges under SoC mentioned below:

a) Processing Fees:

10.8.2 As per MERC Distribution Open Access Regulation 2016 an open access consumer can avail open access from multiple generators and multiple sources. Due to this number of applications have increased.

10.8.3 MSEDCL has developed online system for submission of application for availing open access.

10.8.4 The number of consumers availing short term open access are more, the consumers apply every month for STOA and upload the required the documents in the online system having 50 to 100 MB Capacity. Thus, MSEDCL have to purchase additional storage space to save all the documents every month in the online system.

10.8.5 A separate IT system is developed for proper operation of the online system for submission arid processing of open access applications.

10.8.6 MSEDCL has developed online system for the paying the processing fees with the application. Thus, MSEDCL has to pay service charges to service provider of online payment system.

10.8.7 Issuance of periodical open access permissions: Maintaining OA Consumer Records and recording change of name/change of ownership, if any

b) Operating Charges:

10.8.8 A multiple monthly joint meter reading is taken for consumers availing open access from multiple generator and multiple sources

10.8.9 Forwarding the metering data to the consumer end through electronic media

10.8.10 Separate IT system and IT staff for processing of open access bills;

10.8.11Providing vehicle for monthly joint meter reading. The rate of diesel is almost doubled;

10.8.12Deputation / deployment of Engineers and staff;

10.8.13Testing of generation meter;

10.8.14Development in open billing software as per changes in Regulations and MERC various Orders;

10.8.15Monitoring of daily schedule of open access consumers

10.8.16Downloading and checking of schedules from WRLDC, MSLDC and Exchange website for billing

10.8.17Compilation of consumer wise, date wise monthly schedule

10.8.18Purchase of Meter Reading Instruments and Laptops for meter readings

10.8.19MSEDCL proposed a processing fee and operating charges of Open Access as shown in below table.

Table 10-28: Processing and operating charges proposed by MSEDCL

Load requisitioned	***MTR Order (Case 197 of 2017)***		***Proposed by MSEDCL***	
	One time processing fee per application (Rs.)	**Operating charges per transaction/Permissions (Rs.)**	***One time processing fee per application (Rs.)***	**Operating charges per transaction/Permissions (Rs.)**
Upto 1 MW	14,500	14,500	15,000	20,000
More than 1 MW and up to 5 MW	22,000		25,000	
More than 5 MW and up to 20 MW	44,000	28,000	45,000	40,000
More than 20 MW and up to 50 MW	75,000		60,000	
More than 50 MW			75,000	

Commission's Analysis and Rulings:

10.8.20The Commission noticed that MSEDCL did not submit the expense heads for processing fee and operating charges/fees and detailed justification thereof. MSEDCL has submitted common reasons and explanation for all proposed charges for Open

Access i.e. application processing charges and operating charges.

10.8.21 Though MSEDCL has mentioned the activities required to be carried out for Open Access consumers, the Commission is of the view that most of the above activities fall under normal activities of MSEDCL as a licensee. At the same time the Commission is of the view that there are a few services required to be provided by MSEDCL to Open Access consumers, where MSEDCL may incur some costs. The Commission also notes that MSEDCL has introduced various online facilities for the benefit of the Open Access consumers.

10.8.22 However, in the absence of any detailed justification and computations, the Commission retains the charges as specified in MTR order in Case 195 of 2017 dated 12 September 2018.

10.8.23 The summary of Open Access charges approved by the Commission is given below:

Table 10-29: Processing and operating charges approved by the Commission

Load Requisitioned	Processing fee per application (Rs.)	Operating Charges per month (Rs.)
Upto 1 MW	14,500	14,500
More than 1 MW and up to 5 MW	22,000	
More than 5 MW and up to 20 MW	44,000	28,000
More than 20 MW and up to 50 MW	75,000	
More than 50 MW		

10.9 Applicable Taxes:

10.9.1 MSEDCL submitted that Goods and Service Tax will be levied extra as per applicable rates on aforementioned charges.

10.9.2 Further, in case any taxes are made applicable or introduced by any Competent Authority in future, MSEDCL request to allow recovery of such charges from the respective consumers for services for which Schedule of Charges are approved.

Commission's Analysis and Rulings:

10.9.3 The Commission accepts the proposal of MSEDCL to levy taxes as applicable. Further, in case any taxes are made applicable or introduced by any Competent Authority in future MSEDCL is allowed to recover such charges from respective consumers.

11 APPLICABILITY OF THE ORDER

11.1.1 This Order shall come into effect from 1 April, 2020.

Special Interim Dispensation:

11.1.2 This Tariff order is being issued at a critical time when the country is passing through one of the most debilitating epidemics in the form of Covid19. In fact taking note of the current situation prevailing in the state, commission issued a practice direction on 26/3/2020 whereby meter reading and physical bill distribution work was suspended and utilities were asked to issue bills on average usage basis till the current crisis gets subsided. Commission is aware that a number of industrial and commercial establishments have been shut down due to the lockdown enforced by Government.

11.1.3 To mitigate to some extent the difficulties being faced by the Electricity consumers of Maharashtra and all out efforts to contain the spread of Corona Pandemic, the Commission deems it fit to put a moratorium on payment of fixed charges of the electricity bill by consumers under Industrial and Commercial category for next three billing cycles beginning from the lockdown date of 25/3/2020.

11.1.4 The Distribution Licensees will be required to borrow/avail additional working capital over and above the Regulations. Also, there will be other additional cost required to be incurred for continuing of operations. Associated with this, there will be an additional working capital interest. The Commission opines that in the present situation, relief needs to be given to the electricity consumers affected by the Lockdown directions. The Commission will take a appropriate view on the additional expenses that are likely to be incurred by the Distribution Licensees on account of additional Interest on Working Capital during the MTR process.

The Petition of Maharashtra State Electricity Distribution Company Limited in Case No. 322 of 2019 stands disposed of accordingly.

(Sd/-)
(Mukesh Khullar)
Member

(Sd/-)
(I. M. Bohari)
Member

(Abhijit Deshpande)
Secretary

ANNEXURE –I TARIFF SCHEDULE FOR FY 2020-21 to FY 2024-25

MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.

APPROVED TARIFF SCHEDULE
(With effect from 1 April, 2020)

Maharashtra Electricity Regulatory Commission, in exercise of the powers vested in it under Sections 61 and 62 of the Electricity Act, 2003 and all other powers enabling it in this behalf, has determined, by its Multi Year Tariff Order dated **_March, 2020** in Case No. 322 of 2019, the Tariff for supply of electricity by the Distribution Licensee, Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) to various classes of consumers as applicable from **_March, 2020**

General

1. These tariffs supersede all tariffs so far in force.

2. The Tariffs are subject to revision and/or surcharge that may be levied by the Distribution Licensee from time to time as per the directives of the Commission.

3. The tariffs are exclusive of the separate Electricity Duty, Tax on Sale of Electricity and other levies by the Government or other competent authorities, which will be payable by consumers over and above the tariffs.

4. The tariffs are applicable for supply at one point only.

5. The Distribution Licensee may measure the Maximum Demand for any period shorter than 30 minutes of maximum use, subject to conformity with the Commission's Electricity Supply Code Regulations, where it considers that there are considerable load fluctuations in operation.

6. The tariffs are subject to the provisions of the applicable Regulations and any directions that may be issued by the Commission from time to time.

7. Unless specifically stated to the contrary, the figures of Energy Charge and Wheeling Charge are denominated in Rupees per unit (kWh or kVAh as case may be) for the energy consumed during the month.

8. Fuel Adjustment Charge (FAC) computed in accordance with provisions of MYT Regulations, 2019 and Commission's directions in this regard from time to time shall be applicable to all categories of consumers, and will be charged over and above the base tariff..

LOW TENSION (LT) TARIFF

LT I (A): LT – Residential (BPL)

Applicability:

This Below Poverty Line (BPL) tariff category is applicable to Residential consumers who have a Sanctioned Load upto 0.25 kW and who have consumed upto 360 units per annum in the previous financial year. The eligibility of such consumers will be reassessed at the end of each financial year. If more than 360 units have been consumed in the previous financial year, the LTI (B) - Residential tariff shall thereafter be applicable, and such consumer cannot revert thereafter to the BPL category irrespective of his future consumption level.

The categorisation of BPL consumers will be reassessed at the end of the financial year on a pro rata basis if there has been consumption for only a part of the year. The categorisation of BPL consumers who have been added during the previous year would be assessed on a pro rata basis, i.e., 30 units per month.

This BPL category will also be applicable to all new consumers subsequently added in any month with a Sanctioned Load of upto 0.25 kW and consumption between 1 to 30 units (on pro rata basis of 1 unit/day) in the first billing month.

The BPL tariff is applicable only to individuals and not to institutions.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	26.00	1.12	-

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	27.00	1.14	-

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	28.00	1.16	-

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	29.00	1.18	-

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	30.00	1.18	-

LT I (B): LT – Residential

Applicability:

This tariff category is applicable for electricity used at Low/Medium Voltage for operating various appliances used for purposes such as lighting, heating, cooling, cooking, washing/cleaning, entertainment/leisure, water pumping in the following premises:

a. Private residential premises, Government/semi-Government residential quarters;

b. Premises used exclusively for worship, such as temples, gurudwaras, churches, mosques, etc.; provided that halls, gardens or any other part of such premises that may be let out for a consideration or used for commercial activities would be charged at the applicable LT-II tariff;

c. Government / Private / Co-operative Housing Colonies/complexes (where electricity is used exclusively for domestic purposes) only for common facilities such as Water Pumping / Street and other common area Lighting / Lifts /Parking Lots/ Fire-fighting Pumps and other equipment, etc.;

d. Sports Clubs or facilities / Health Clubs or facilities / Gymnasium / Swimming Pool / Community Hall of Government / Private / Co-operative Housing Colonies/complexes - provided that they are situated in the same premises, and are for the exclusive use of the members and employees of such Housing Colonies/complexes;

e. Telephone booths owned/operated by Persons with Disabilities/Handicapped persons;

f. Residential premises used by professionals like Lawyers, Doctors, Engineers, Chartered Accountants, etc., in furtherance of their professional activities, but not including Nursing Homes and Surgical Wards or Hospitals;

g. Single-phase household Flour Mills (Ghar-ghanti) used only for captive purposes;

h. A residential LT consumer with consumption up to 500 units per month (current month of supply) who undertakes construction or renovation activity in his existing premises: such consumer shall not require a separate temporary connection, and would be billed at this Residential tariff rate;

Note:

This tariff category shall also be applicable to consumers who are supplied power at High Voltage for any of the purposes (a) to (h) above.

i. Consumers undertaking business or commercial / industrial / non-residential activities from a part of their residence, whose monthly consumption is up to 300 units a month and annual consumption in the previous financial year was up to 3600 units. The applicability of this tariff to such consumers will be assessed at the end of each financial year. In case consumption has exceeded 3600 units in the previous financial year, the consumer will thereafter not be eligible for the tariff under this category but be charged at the tariff otherwise applicable for such consumption, with prior intimation to him.

j. Entities supplied electricity at a single point at Low/Medium Voltage for residential purposes, in accordance with the Electricity (Removal of Difficulties) Eighth Order, 2005, in the following cases:

k. a Co-operative Group Housing Society which owns the premises, for making electricity available to the members of such Society residing in the same premises for residential purposes; and

l. a person, for making electricity available to its employees residing in the same premises for residential purposes.

m. Crematoriums and Burial Grounds for all purposes, including lighting.

n. Temporary purposes for public religious functions like Ganesh Utsav, Navaratri, Eid, Moharrum, Ram Lila, Diwali, Christmas, Guru Nanak Jayanti, etc., and for areas where community prayers are held; and for functions to commemorate anniversaries of personalities and National or State events for which Public Holidays have been declared, such as Gandhi Jayanti, Ambedkar Jayanti, Chhatrapati Shivaji Jayanti, Republic Day, Independence Day, etc.

Provided that such temporary connection shall be subjected to 1.5 times of fixed charges.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 100.00 per month Three Phase - Rs. 340.00 per month[$$]	1.45	3.46
101 – 300 units		1.45	7.43
301 – 500 units		1.45	10.32
Above 500 Units (Balance Units)		1.45	11.71

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs.102.00 per month Three Phase - Rs. 340.00 per month[$$]	1.38	3.44
101 – 300 units		1.38	7.34
301 – 500 units		1.38	10.36
Above 500 Units (Balance Units)		1.38	11.82

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 105.00 per month Three Phase - Rs. 350.00 per month[$$]	1.35	3.36
101 – 300 units		1.35	7.34
301 – 500 units		1.35	10.37
Above 500 Units (Balance Units)		1.35	11.86

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 107.00 per month Three Phase - Rs. 357.00 per month[$$]	1.30	3.28
101 – 300 units		1.30	7.34
301 – 500 units		1.30	10.38
Above 500 Units (Balance Units)		1.30	11.90

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 109.00 per month Three Phase - Rs. 364.00 per month[$$]	1.26	3.28
101 – 300 units		1.26	7.34
301 – 500 units		1.26	10.38
Above 500 Units (Balance Units)		1.26	11.90

Note:

o. [$$]The above Fixed Charges are for single-phase connections. A Fixed Charge of Rs. 135 per month will be levied on Residential consumers availing 3-phase supply. An

Additional Fixed Charge of Rs.135 per 10 kW load or part thereof above 10 kW load shall also be payable for FY 2020-21. This amount will increase to Rs. 140 per month and per 10 KW, respectively, in FY 2021-22, and to Rs. 145 per month and per 10 KW, respectively, in FY 2022-23, and Rs. 155 per month and per 10 KW, respectively, in FY 2023-24, and Rs. 165 per month and per 10 KW, respectively, in FY 2024-25

p. Professionals like Lawyers, Doctors, Professional Engineers, Chartered Accountants, etc., occupying premises exclusively for conducting their profession, shall not be eligible for this Tariff, and will be charged at the Tariff applicable to the respective categories.

q. Additional Fixed Charge of Rs 10 per connection per month shall be applicable for LT-Domestic category consumers in Urban Divisions of MSEDCL.

LT II: LT – Non-Residential or Commercial

Applicability:

This tariff category is applicable for electricity used at Low/Medium voltage in non-residential, non-industrial and/or commercial premises for commercial consumption meant for operating various appliances used for purposes such as lighting, heating, cooling, cooking, washing/cleaning, entertainment/ leisure and water pumping in, but not limited to, the following premises:

a. Non-Residential, Commercial and Business premises, including Shopping Malls and Showrooms;

b. Combined lighting and power supply for facilities relating to Entertainment, including film studios, cinemas and theatres (including multiplexes), Hospitality, Leisure, Meeting/Town Halls, and places of Recreation and Public Entertainment; Offices, including Commercial Establishments; Marriage Halls, Hotels / Restaurants, Ice-cream parlours, Coffee Shops, Guest Houses, Internet / Cyber Cafes, Telephone Booths not covered under the LT I category, and Fax / Photocopy shops;

c. Automobile and all other types of repairs, servicing and maintenance centres (unless specifically covered under another tariff category); Retail Gas Filling Stations, Petrol Pumps and Service Stations, including Garages;

d. Tailoring Shops, Computer Training Institutes, Typing Institutes, Photo Laboratories, Laundries, Beauty Parlours and Saloons;

e. Banks and ATM centres, Telephone Exchanges, TV Stations, Microwave Stations, Radio Stations;

f. Common facilities, like Water Pumping / Lifts / Fire-Fighting Pumps and other equipment / Street and other common area Lighting, etc., in Commercial Complexes;

g. Sports Clubs/facilities, Health Clubs/facilities, Gymnasiums, Swimming Pools not covered under any other category;

h. External illumination of monuments/ historical/ heritage buildings approved by Maharashtra Tourism Development Corporation (MTDC) or the concerned Local Authority;

i. Construction of all types of structures/ infrastructures such as buildings, bridges, fly-overs, dams, Power Stations, roads, Aerodromes, tunnels for laying of pipelines for all purposes;

Note:

Residential LT consumers with consumption above 500 units per month (current month of supply) and who undertake construction or renovation activity in their existing premises shall not require a separate Temporary category connection, and shall be billed at the LT-II Commercial Tariff rate;

j. Milk Collection Centres;

k. Sewage Treatment Plants/ Common Effluent Treatment Plants for Commercial Complexes not covered under the LT – Public Water Works or LT – Industry categories.

l. Advertisements, hoardings (including hoardings fixed on lamp posts/installed along roadsides), and other commercial illumination such as external flood-lights, displays, neon signs at departmental stores, malls, multiplexes, theatres, clubs, hotels and other such establishments.

m. Temporary supply for any of the activity not covered under Residential category

Provided that Temporary supply consumer shall pay 1.5 time applicable fixed/demand charges and 1.25 time applicable energy charge.

Provided further that temporary supply for operating Fire-Fighting pumps and equipment in residential or other premises shall be charged as per the Tariff category applicable to such premises.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 403.00 per Month	1.45	7.36
LT II (B) > 20 kW and ≤ 50 kW	Rs. 403.00 per kW per Month	1.45	10.72
LT II (C) > 50 kW	Rs. 403.00 per kW per Month	1.45	12.83
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 415.00 per Month	1.38	7.18
LT II (B) > 20 kW and ≤ 50 kW	Rs 415.00 per kW per Month	1.38	10.79
LT II (C) > 50 kW	Rs 415.00 per kW per Month	1.38	12.95
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 427.00 per Month	1.35	7.07
LT II (B) > 20 kW and ≤ 50 kW	Rs. 427.00 per kW per Month	1.35	10.79
LT II (C) > 50 kW	Rs. 427.00 per kW per Month	1.35	12.76
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 436.00 per Month	1.30	7.01
LT II (B) > 20 kW and ≤ 50 kW	Rs. 436.00 per kW per Month	1.30	10.84
LT II (C) > 50 kW	Rs. 436.00 per kW per Month	1.30	12.62

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 445.00 per Month	1.26	7.01
LT II (B) > 20 kW and ≤ 50 kW	Rs. 445.00 per kW per Month	1.26	10.84
LT II (C) > 50 kW	Rs. 445.00 per kW per Month	1.26	12.62
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Note: *The ToD tariff is applicable to the LT-II (B) and (C) categories, and optionally available to LT- II (A) category consumers having ToD meter installed.*

LT III: LT-Public Water Works (PWW) and Sewage Treatment Plants

Applicability:

This tariff category is applicable for electricity / power supply at Low / Medium Voltage for pumping of water, purification of water and allied activities relating to Public Water Supply Schemes, Sewage Treatment Plants and Waste Processing Units, provided they are owned or operated or managed by Local Self-Government Bodies (Gram Panchayats, Panchayat Samitis, Zilla Parishads, Municipal Councils and Corporations, etc.), or by Maharashtra Jeevan Pradhikaran (MJP), Maharashtra Industries Development Corporation (MIDC), Cantonment Boards and Housing Societies/complexes.

All other Public Water Supply Schemes and Sewage Treatment Plants (including allied activities) shall be billed under the LT II or LT V category tariff, as the case may be.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 100.00 per Month	1.45	2.40
LT III(B): >20 kW and ≤40 kW	Rs. 121.00 per kW per Month	1.45	3.78
LT III(C): >40 kW	Rs. 150.00 per kW per Month	1.45	5.11
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 103.00 per Month	1.38	2.46
LT III(B): >20 kW and ≤40 kW	Rs. 125.00 per kW per Month	1.38	3.82
LT III(C): >40 kW	Rs. 155.00 per kW per Month	1.38	5.12
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 106.00 per Month	1.35	2.48
LT III(B): >20 kW and ≤40 kW	Rs. 129.00 per kW per Month	1.35	3.84
LT III(C): >40 kW	Rs. 160.00 per kW per Month	1.35	5.09
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs.108.00 per Month	1.30	2.52
LT III(B): >20 kW and ≤40 kW	Rs.132.00 per kW per Month	1.30	3.86
LT III(C): >40 kW	Rs.163.00 per kW per Month	1.30	5.19
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 110.00 per Month	1.26	2.52
LT III(B): >20 kW and ≤40 kW	Rs 135.00 per kW per Month	1.26	3.86
LT III(C): >40 kW	Rs. 166.00 per kW per Month	1.26	5.19
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

LT IV: Agriculture

LT IV (A): LT - Agriculture Un-metered - Pumpsets

Applicability:

This tariff category is applicable for motive power supplied for Agriculture metered pumping loads, and for one lamp of wattage up to 40 Watt to be connected to the motive power circuit for use in pump-houses at Low/Medium Voltage.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
Category 1 Zones*			
(a) 0-5 HP	334.00	145.00	-
(b) > 5 HP and ≤ 7.5 HP	360.00	145.00	-
(c) > 7.5 HP	405.00	145.00	-
Category 2 Zones #			
(a) 0-5 HP	258.00	145.00	-
(b) > 5 HP and ≤ 7.5 HP	282.00	145.00	-
(c) > 7.5 HP	327.00	145.00	-

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff – Pumpsets			
Category 1 Zones*			
(a) 0-5 HP	349.00	138.00	-
(b) > 5 HP and ≤ 7.5 HP	376.00	138.00	-
(c) > 7.5 HP	422.00	138.00	-
Category 2 Zones #			
(a) 0-5 HP	269.00	138.00	-
(b) > 5 HP and ≤ 7.5 HP	295.00	138.00	-
(c) > 7.5 HP	342.00	138.00	-

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			
Category 1 Zones*			
(a) 0-5 HP	359.00	135.00	-
(b) > 5 HP and ≤ 7.5 HP	387.00	135.00	-
(c) > 7.5 HP	435.00	135.00	
Category 2 Zones #			
(a) 0-5 HP	277.00	135.00	-
(b) > 5 HP and ≤ 7.5 HP	304.00	135.00	-
(c) > 7.5 HP	352.00	135.00	

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
Category 1 Zones*			
(a) 0-5 HP	366.00	130.00	-
(b) > 5 HP and ≤ 7.5 HP	395.00	130.00	-
(c) > 7.5 HP	444.00	130.00	-
Category 2 Zones #			
(a) 0-5 HP	283.00	130.00	-
(b) > 5 HP and ≤ 7.5 HP	310.00	130.00	-
(c) > 7.5 HP	359.00	130.00	-

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			
Category 1 Zones*			
(a) 0-5 HP	373.00	126.00	-
(b) > 5 HP and ≤ 7.5 HP	403.00	126.00	-
(c) > 7.5 HP	453.00	126.00	-
Category 2 Zones #			
(a) 0-5 HP	289.00	126.00	-
(b) > 5 HP and ≤ 7.5 HP	316.00	126.00	-
(c) > 7.5 HP	366.00	126.00	-

***Category 1 Zones (with consumption norm above 1,318 hours/HP/year)**		
1) Bhandup (U)	2) Pune	3) Nashik
4) Baramati	5) Jalgaon	
#Category 2 Zones (with consumption norm below 1,318 hours/HP/year)		
1) Amravati	2) Aurangabad	3) Kalyan
4) Konkan	5) Kolhapur	6) Latur
7) Nagpur (U)	8) Chandrapur	9) Gondia
10) Nanded	11) Akola	

Note:

i. *The Flat Rate Tariff as above will remain in force only till meters are installed; once meter is installed, the consumer will be billed as per the Tariff applicable to metered agricultural consumers.*

ii. *The list of Category 1 Zones (with consumption norm above 1318 hours/ HP/year) and Category 2 Zones (with consumption norm below 1318 hours/HP/year) is given above.*

iii. *Supply under this Tariff will be given for a minimum load of 2 HP. If any consumer requires any load less than 2 HP for agricultural purposes, he shall be required to pay the Fixed Charge/Energy Charge on this basis as if a load of 2 HP is connected.*

LT IV (B): LT – Agriculture metered - Pumpsets

Applicability:

This tariff category is applicable for motive power supplied for Agriculture metered pumping loads, and for one lamp of wattage up to 40 Watt to be connected to the motive power circuit for use in pump-houses at Low/Medium Voltage.

It is also applicable for power supply for cane crushers and/or fodder cutters for self-use for agricultural processing operations, but not for operating a flour mill, oil mill or expeller in the same premises, either operated by a separate motor or a change of belt drive.

This Tariff is also applicable to Feeder Input based Group Metering wherein Input recorded on 11/22 kV Feeder minus Technical Loss of that particular feeder is billed to the consumers connected on that Feeder in proportionate to the sanctioned load of pump.

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	41.00	1.45	1.85

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	42.00	1.38	1.91

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	43.00	1.35	1.95

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	44.00	1.30	1.99

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	45.00	1.26	1.99

LT IV (C): LT – Agriculture – Others

Applicability:

This tariff category is applicable for use of electricity / power supply at Low / Medium Voltage for:

a. Pre-cooling plants and cold storage units for Agricultural Products as defined under APMC Act, 1963 – processed or otherwise;

b. Poultries exclusively undertaking layer and broiler activities, including Hatcheries;

c. High-Technology Agriculture (i.e. Tissue Culture, Green House, Mushroom cultivation activities), provided the power supply is exclusively utilized for purposes directly concerned with the crop cultivation process, and not for any engineering or industrial process;

d. Floriculture, Horticulture, Nurseries, Plantations, Aquaculture, Sericulture, Cattle Breeding Farms, etc;

e. Tabela, which involves no associated industrial/commercial activity of milk processing or Dairy/Chilling plant are undertaken, which are separately covered under LT-Industrial/ Commercial .

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	111.00	1.45	3.34

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	114.00	1.38	3.23

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	117.00	1.35	3.29

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	119.00	1.30	3.36

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	121.00	1.26	3.36

LT V: LT- Industry:

Applicability:

This tariff category is applicable for electricity for Industrial use, at Low/Medium Voltage, for purposes of manufacturing and processing, including electricity used within such premises for general lighting, heating/cooling, etc.

It is also applicable for use of electricity / power supply for Administrative Offices / Canteens, Recreation Hall / Sports Club or facilities / Health Club or facilities/ Gymnasium / Swimming Pool exclusively meant for employees of the industry; lifts, water pumps, fire-fighting pumps and equipment, street and common area lighting; Research and Development units, dhobi/laundry etc. -

Provided that all such facilities are situated within the same industrial premises and supplied power from the same point of supply;

This tariff category shall also be applicable for use of electricity / power supply by an Information Technology (IT) or IT-enabled Services (ITeS) Unit as defined in the applicable IT/ITeS Policy of Government of Maharashtra.

It shall also be applicable for use of electricity / power supply for (but not limited to) the following purposes:

a. Flour Mill, Dal Mill, Rice Mill, Poha Mill, Masala Mill, Saw Mill;

b. Ice Factory, Ice-cream manufacturing units, Milk Processing / Chilling Plants (Dairy);

c. Engineering Workshops, Engineering Goods Manufacturing units; Printing Presses; Transformer Repair Workshops; Tyre Remoulding/Rethreading units; and Vulcanizing units;

d. Mining, Quarrying and Stone Crushing units;

e. Garment Manufacturing units;

f. LPG/CNG bottling plants, etc.;

g. Sewage Treatment Plant/ Common Effluent Treatment Plant for industries, and not covered under the LT – Public Water Works category

h. Start-up power for Generating Plants, i.e. the power required for trial run of a Power Plant during commissioning of the Unit and its Auxiliaries, and for its start-up after planned or forced outage (but not for construction);

i. Brick Kiln (Bhatti);

j. Biotechnology Industries covered under the Biotechnology Policy of Government of Maharashtra;

k. Cold Storages not covered under LT IV (C) – Agriculture (Others);

l. Food (including seafood and meat) Processing units;

m. Stand-alone Research and Development units;

n. Telecommunications Towers

o. Powerlooms including other allied activities like, Warping, Doubling, Twisting, etc., connected at Low/Medium Tension only.

Provided that for Powerlooms, 3% discount on Energy Charge (including FAC) shall be applicable.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs. 454.00/month	1.45	5.21
(ii) Above 20 kW	Rs.303.00/kW/month	1.45	6.11
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs .468.00/month	1.38	5.01
(ii) Above 20 kW	Rs. 312.00/kW/month	1.38	5.93
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs .482.00/month	1.35	5.11
(ii) Above 20 kW	Rs 321.00/kW/month	1.35	6.05
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs. 492.00/month	1.30	5.21
(ii) Above 20 kW	Rs. 327.00/kW/month	1.30	6.17
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs. 502.00/ month	1.26	5.21
(ii) Above 20 kW	Rs 334.00/kW/month	1.26	6.17
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Note: *The ToD Tariff is compulsorily applicable for LT V (ii) (i.e., above 20 kW), and optionally available to LT- V (i) (i.e., up to 20 kW) having ToD meter installed.*

*****Lower tariff (discount/rebate) of (2.5%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

LT VI: LT – Street Light

Applicability:

This tariff category is applicable for the electricity used for lighting of public streets/ thoroughfares which are open for use by the general public, at Low / Medium Voltage, and at High Voltage.

Street-lights in residential complexes, commercial complexes, industrial premises, etc. will be billed at the tariff of the respective applicable categories.

This category is also applicable for use of electricity / power supply at Low / Medium Voltage or at High Voltage for (but not limited to) the following purposes, irrespective of who owns, operates or maintains these facilities:

a. Lighting in Public Gardens (i.e. which are open to the general public free of charge);

b. Traffic Signals and Traffic Islands;

c. Public Water Fountains; and

d. Such other public places open to the general public free of charge.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	111.00	1.45	4.90
(B) Municipal Corporation Areas	111.00	1.45	5.97

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	114.00	1.38	5.00
(B) Municipal Corporation Areas	114.00	1.38	6.09

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	117.00	1.35	5.10
(B) Municipal Corporation Areas	117.00	1.35	6.21

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	119.00	1.30	5.20
(B) Municipal Corporation Areas	119.00	1.30	6.33

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	121.00	1.26	5.20
(B) Municipal Corporation Areas	121.00	1.26	6.33

Note:

The above street and other lighting facilities having 'Automatic Timers' for switching On/Off would be levied Demand Charges on the lower of the following–

i) 50 percent of 'Contract Demand' or

ii) Actual 'Recorded Demand'.

LT VII: LT - Public Services

LT VII (A): LT - Government Educational Institutions and Hospitals

Applicability:

This tariff category is applicable for electricity supply at Low/Medium Voltage for Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, Blood Bank and Pathology Laboratories; Libraries and public reading rooms - of the State or Central Government or Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats, etc;

It shall also be applicable for electricity used for Hostels/ Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions / Hospitals, provided that they are situated in the same premises and are meant primarily for their students / faculty/ employees/ patients.

This Tariff is also applicable for electricity supply at Public Sanitary Conveniences;

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs. 333.00/Month	1.45	3.31

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
(ii) >20 - ≤ 50 kW	Rs.333.00/kW/Month	1.45	4.89
(iii) > 50 kW	Rs.333.00/kW/Month	1.45	6.01
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs. 343.00/Month	1.38	3.12
(ii) >20 - ≤ 50 kW	Rs. 343.00/kW/Month	1.38	4.48
(iii) > 50 kW	Rs. 343.00/kW/Month	1.38	5.62
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs.353.00 /Month	1.35	3.18
(ii) >20 - ≤ 50 kW	Rs.353.00/kW/Month	1.35	4.57
(iii) > 50 kW	Rs.353.00/kW/Month	1.35	5.73
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs 360.00/Month	1.30	3.24
(ii) >20 - ≤ 50 kW	Rs. 360.00/kW/Month	1.30	4.66
(iii) > 50 kW	Rs. 360.00/kW/Month	1.30	5.84
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs. 367.00/Month	1.26	3.24
(ii) >20 - ≤ 50 kW	Rs. 367.00/kW/Month	1.26	4.66
(iii) > 50 kW	Rs.367.00/kW/Month	1.26	5.84
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Note: *The ToD Tariff is applicable for LT-VII (A) (ii) and LT-VII (A) (iii) (i.e., above 20 kW) and optionally available to LT- VII (A) (i) (i.e., up to 20 kW) having ToD meter installed.*

LT VII (B): LT - Public Services - Others

Applicability:

This tariff category is applicable for electricity supply at Low/Medium Voltage for:

a. Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, Blood Banks, Laboratories; Libraries and public reading rooms - other than those of the State or Central Government or Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats, etc.

b. Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions /Health Care facilities, provided that they are situated in the same premises and are meant primarily for their students / faculty/ employees/ patients;

c. all offices of Government and Municipal/ Local Authorities/ Local Self-Government bodies, such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats; Police Stations and Police Chowkies; Post Offices; Armed Forces/Defence and Para-Military establishments;

d. Service-oriented Spiritual Organisations;

e. State or Municipal/Local Authority Transport establishments, including their Workshops

f. Fire Service Stations; Jails, Prisons; Courts;

g. Airports;

h. Ports and Jetties;

i. Railway/Metro/Monorail Stations, including Shops, Workshops, Yards, etc, if the supply is at Low/ Medium Voltage.

j. Waste processing units not covered under LT PWW category

k. All Students Hostels affiliated to Educational Institutions not covered under LT Public Service - Government;

l. All other Students' or Working Men/Women's Hostels;

m. Other types of Homes/Hostels, such as (i) Homes/Hostels for Destitutes, Disabled Persons (physically or mentally handicapped persons, etc.) and mentally ill persons (ii) Remand Homes (iii) Dharamshalas, (iv) Rescue Homes, (v) Orphanages - subject to verification and confirmation by the Distribution Licensee's concerned Zonal Chief Engineer or equivalent;

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs. 362.00/Month	1.45	4.86
(ii) >20 - ≤ 50 kW	Rs.362.00/kW/Month	1.45	7.44
(iii) > 50 kW	Rs.362.00/kW/Month	1.45	7.84
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs. 373.00/Month	1.38	4.68
(ii) >20 - ≤ 50 kW	Rs. 373.00/kW/Month	1.38	7.28
(iii) > 50 kW	Rs. 373.00/kW/Month	1.38	7.49
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs 384.00Month	1.35	4.57
(ii) >20 - ≤ 50 kW	Rs.384.00/kW/Month	1.35	7.23

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
(iii) > 50 kW	Rs. 384.00/kW/Month	1.35	7.49
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs 392.00/Month	1.30	4.56
(ii) >20 - ≤ 50 kW	Rs. 392.00/kW/Month	1.30	7.27
(iii) > 50 kW	Rs. 392.00/kW/Month	1.30	7.54
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs. 400.00/Month	1.26	4.56
(ii) >20 - ≤ 50 kW	Rs. 400.00/kW/Month	1.26	7.27
(iii) > 50 kW	Rs. 400.00/kW/Month	1.26	7.54
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
1800 Hrs-2200 Hrs			1.10

Note: *The ToD Tariff is applicable for LT-VII (B) (ii) and LT-VII (B) (iii) (i.e., above 20 kW) and optionally available to LT- VII (B) (i) (i.e., up to 20 kW) having ToD meter installed.*

LT VIII: LT – Electric Vehicle (EV) Charging Stations

Applicability:

This Tariff category is applicable for Electric Vehicle Charging Station including battery swapping station for electric vehicle.

In case the consumer uses the electricity supply for charging his own electric vehicle at his premises, the tariff applicable shall be as per the category of such premises.

Electricity consumption for other facilities at Charging Station such as restaurant, rest rooms, convenience stores, etc., shall be charged at tariff applicable to Commercial Category.

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.45	4.05
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.38	4.12
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.35	4.15
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.30	4.20
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.26	4.24
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

HIGH TENSION (HT) TARIFF

HT I: HT – Industry

HT I (A): Industry – General

Applicability:

This tariff category is applicable for electricity for Industrial use at High Voltage for purposes of manufacturing and processing, including electricity used within such premises for general lighting, heating/cooling, etc.

It is also applicable for use of electricity / power supply for Administrative Offices / Canteen, Recreation Hall / Sports Club or facilities / Health Club or facilities/ Gymnasium / Swimming Pool exclusively meant for employees of the industry; lifts, water pumps, fire-fighting pumps and equipment, street and common area lighting; Research and Development units, etc. -

Provided that all such facilities are situated within the same industrial premises and supplied power from the same point of supply.

This tariff category shall be applicable for use of electricity / power supply by an Information Technology (IT) or IT-enabled Services (ITeS) Unit as defined in the applicable IT/ITeS Policy of Government of Maharashtra.

It shall also be applicable for use of electricity / power supply for (but not limited to) the following purposes:

a. Flour Mills, Dal Mills, Rice Mills, Poha Mills, Masala Mills, Saw Mills;

b. Ice Factories, Ice-cream manufacturing units, Milk Processing / Chilling Plants (Dairy);

c. Engineering Workshops, Engineering Goods manufacturing units; Printing Presses; Transformer Repair Workshops; Tyre Remoulding/Rethreading units, and Vulcanizing units;

d. Mining, Quarrying and Stone Crushing units;

e. Garment Manufacturing units

f. LPG/CNG bottling plants, etc.;

g. Sewage Treatment Plant/ Common Effluent Treatment Plant for industries, and not covered under the HT – PWW category

h. Start-up power for Generating Plants, i.e., the power required for trial run of a Power Plant during commissioning of the Unit and its Auxiliaries, and for its start-up after planned or forced outage (but not for construction);

i. Brick Kiln (Bhatti);

j. Biotechnology Industries covered under the Biotechnology Policy of Government of Maharashtra;

k. Cold Storages not covered under HT – Agriculture (Others);

l. Food (including Seafood and meat) Processing units.

m. Stand-alone Research and Development units.

n. Seed manufacturing.

o. Dedicated Water Supply Schemes to Power Plants

p. Auxiliary Power Supply to EHV/Distribution Substations (but not for construction)

q. Telecommunications Towers

HT I (B): Industry - Seasonal

Applicability:

Applicable to Seasonal consumers, who are defined as those who normally work during a part of the year up to a maximum of 9 months, such as Cotton Ginning Factories, Cotton Seed Oil Mills, Cotton Pressing Factories, Salt Manufacturers, Khandsari/Jaggery Manufacturing Units, excluding Sugar Factories or such other consumers who opt for a seasonal pattern of consumption, such that the electricity requirement is seasonal in nature.

Provided that the period of operation of in a financial year should be limited upto 9 months, and the category should be opted for by the consumer within first quarter of the financial year.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT - Industry		
HT I(A): HT - Industry - General	411.00	7.02
HT I(B): HT - Industry - Seasonal	411.00	7.28

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT - Industry		
HT I(A): HT - Industry - General	432.00	6.96
HT I(B): HT - Industry - Seasonal	432.00	7.22
ToD tariff (in addition to above base tariffs)(Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT – Industry		
HT I(A): HT - Industry - General	454.00	6.89

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I(B): HT - Industry - Seasonal	454.00	7.15
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT - Industry		
HT I(A): HT - Industry - General	463.00	6.85
HT I(B): HT - Industry - Seasonal	463.00	7.11
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT – Industry		
HT I(A): HT - Industry - General	472.00	6.73

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I(B): HT - Industry - Seasonal	472.00	6.99
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Note:

i. High Tension Industrial consumers having captive generation facility synchronised with the grid may opt for Standby Capacity at rate of 25% of applicable Demand Charges.

ii. Demand Charge shall be applicable at 25% of the above rates on the start-up demand contracted by the Power Plant (as referred to at (h) above) with the Distribution Licensee.

iii. Demand Charge shall be applicable at 75% of the above rates for Steel Plant operating with electric arc furnaces.

HT II: HT- Commercial

Applicability:

This tariff category is applicable for electricity used at High Voltage in non-residential, non-industrial and/or commercial premises for commercial consumption meant for operating various appliances used for purposes such as lighting, heating, cooling, cooking, washing/cleaning, entertainment/ leisure and water pumping in, but not limited to, the following premises:

Non-Residential, Commercial and Business premises, including Shopping Malls and Showrooms;

a. Combined lighting and power services for facilities relating to Entertainment, including film studios, cinemas and theatres (including multiplexes), Hospitality, Leisure, Meeting/Town Halls, and places of Recreation and Public Entertainment;

b. Offices, including Commercial Establishments;

c. Marriage Halls, Hotels / Restaurants, Ice-cream parlours, Coffee Shops, Guest Houses, Internet / Cyber Cafes, Telephone Booths and Fax / Photocopy shops;

d. Automobile and all other types of repairs, servicing and maintenance centres (unless specifically covered under another tariff category); Retail Gas Filling Stations, Petrol Pumps & Service Stations, including Garages; -

e. Tailoring Shops, Computer Training Institutes, Typing Institutes, Photo Laboratories, Laundries, Beauty Parlours and Saloons;

f. Banks and ATM centres, Telephone Exchanges, TV Stations, Micro Wave Stations, Radio Stations;

g. Common facilities, like Water Pumping / Lifts / Fire-Fighting Pumps and other equipment / Street and other common area Lighting, etc., in Commercial Complexes;

h. Sports Clubs/facilities, Health Clubs/facilities, Gymnasiums, Swimming Pools not covered under any other category;

i. External illumination of monuments/ historical/heritage buildings approved by Maharashtra Tourism Development Corporation (MTDC) or the concerned Local Authority;

j. Construction of all types of structures/ infrastructures such as buildings, bridges, flyovers, dams, Power Stations, roads, Aerodromes, tunnels for laying of pipelines for all purposes;

k. Milk Collection Centres;

l. Sewage Treatment Plant/ Common Effluent Treatment Plant for Commercial Complexes, not covered under the HT- PWW category or HT I -– Industry

m. Advertisements, hoardings (including hoardings fixed on lamp posts/installed along roadsides), and other commercial illumination such as external flood-lights, displays, neon signs at departmental stores, malls, multiplexes, theatres, clubs, hotels and other such establishments

n. Temporary supply for any of the activity not covered under any other HT category

Provided that Temporary supply consumer shall pay 1.5 time applicable fixed/demand charges and 1.25 time applicable energy charge.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	11.47
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	11.20
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	10.95
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	9.75
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	9.30
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
1800 Hrs - 2200 Hrs		1.10

Note: *A consumer in the HT II category requiring single-point supply for the purpose of downstream consumption by separately identifiable entities shall have to operate as a Franchisee authorised as such by the Distribution Licensee; or such downstream entities shall be required to take separate individual connections and be charged under the tariff category applicable to them.*

HT III - Railways/Metro/Monorail

Applicability:

This tariff category is applicable to power supply at High Voltage for Railways, Metro and Monorail, including Stations and Shops, Workshops, Yards, etc.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	411.00	6.76	-
HT	411.00	6.76	0.57

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	432.00	6.86	-
HT	432.00	6.86	0.56

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	454.00	6.86	-
HT	454.00	6.86	0.55

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	463.00	5.56	-
HT	463.00	5.56	0.54

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	472.00	5.31	-
HT	472.00	5.31	0.53

HT IV: HT - Public Water Works (PWW) and Sewage Treatment Plants

Applicability:

This tariff category is applicable for electricity / power supply at High Voltage for pumping of water, purification of water and allied activities relating to Public Water Supply Schemes, Sewage Treatment Plants and waste processing units, provided they are owned or operated or managed by Local Self-Government Bodies (Gram Panchayats, Panchayat Samitis, Zilla Parishads, Municipal Councils and Corporations, etc.), or by Maharashtra Jeevan Pradhikaran (MJP), Maharashtra Industries Development Corporation (MIDC), Cantonment Boards and Housing Societies/complexes.

All other Public Water Supply Schemes and Sewage Treatment Plants (including allied activities) shall not be eligible under this tariff category but be billed at the tariff applicable to the HT I or HT II categories, as the case may be.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	6.07
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

HT V: HT – Agriculture

HT V(A) : HT – Agriculture Pumpsets

Applicability:

This category shall be applicable for Electricity / Power Supply at High Tension for pumping of water exclusively for the purpose of Agriculture / cultivation of crops including HT Lift Irrigation Schemes (LIS) irrespective of ownership.

It is also applicable for power supply for cane crushers and/or fodder cutters for self-use for agricultural processing operations, but not for operating a flour mill, oil mill or expeller in the same premises, either operated by a separate motor or a change of belt drive

HT V(B) : HT – Agriculture Others

Applicability:

a. This tariff category is applicable for use of electricity / power supply at High Voltage for:

b. Pre-cooling plants and cold storage units for Agriculture Products as defined under APMC Act 1963 – processed or otherwise;

c. Poultries exclusively undertaking layer and broiler activities, including Hatcheries;

d. High-Technology Agriculture (i.e. Tissue Culture, Green House, Mushroom cultivation activities), provided the power supply is exclusively utilized for purposes directly concerned with the crop cultivation process, and not for any engineering or industrial process;

e. Floriculture, Horticulture, Nurseries, Plantations, Aquaculture, Sericulture, Cattle Breeding Farms, etc;

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	72.00	3.79
HT V (B): HT Agriculture Others	72.00	5.20

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	76.00	3.69
HT V (B): HT Agriculture Others	76.00	5.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	80.00	3.69
HT V (B): HT Agriculture Others	80.00	5.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	82.00	3.69
HT V (B): HT Agriculture Others	82.00	5.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	84.00	3.69
HT V (B): HT Agriculture Others	84.00	5.10

HT VI: HT - Group Housing Society (Residential)

Applicability:

Entities supplied electricity at a single point at High Voltage for residential purposes in accordance with the Electricity (Removal of Difficulties) Eighth Order, 2005, in the following cases:

a. Co-operative Group Housing Society which owns the premises, for making electricity available to the members of such Society residing in the same premises for residential purposes; and

b. a person, for making electricity available to its employees residing in the same premises for residential purposes.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	329.00	-	5.70
HT	329.00	0.57	5.70

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	345.00	-	5.70
HT	345.00	0.56	5.70

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	362.00	-	5.70
HT	362.00	0.55	5.70

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	369.00	-	5.20
HT	369.00	0.54	5.20

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	376.00	-	5.20
HT	376.00	0.53	5.20

HT VIII: HT Public Services

HT VIII – (A): HT - Government Educational Institutions and Hospitals

Applicability:

This tariff category is applicable for electricity supply at High Voltage for Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, Blood Banks and Pathology Laboratories; Libraries and public reading rooms - of the State or Central Government, Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats, etc;

It shall also be applicable for electricity used for Hostels/Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions / Health Care facilities, provided that they are situated in the same premises and are meant

primarily for the students / faculty/ employees/ patients of such Educational Institutions and Hospitals.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	7.74
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	7.74
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	7.74
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	7.24
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	7.24
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

HT VIII - (B): Public Service - Others

Applicability:

This tariff category is applicable for electricity supply at High Voltage for:

a. Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, **Blood Banks** and Pathology Laboratories; Libraries and public reading rooms - other than those of the State or Central Government, Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samities, Gram Panchayats, etc.

b. Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions / Health Care facilities, provided that they are situated in the same premises and are meant primarily for their students / faculty/ employees/ patients;

c. all offices of Government and Municipal/ Local Authorities/ Local Self-Government bodies, such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats; Police Stations and Police Chowkies; Post Offices; Armed Forces/Defence and Para-Military establishments;

d. Service-oriented Spiritual Organisations;

e. State or Municipal/Local Authority Transport establishments, including their Workshops;

f. Fire Service Stations; Jails, Prisons; Courts.

g. Airports

h. Ports and Jetties

i. Waste processing units not covered under HT IV category

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	9.48
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	9.21
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	8.96
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	7.76
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	7.31
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

HT IX: HT – Electric Vehicle (EV) Charging Stations

Applicability:

This Tariff category is applicable for Electric Vehicle Charging Station including battery swapping station for Electric Vehicle

In case the consumer uses the electricity supply for charging his own electric vehicle at his premises, the tariff applicable shall be as per the category of such premises.

Electricity consumption for other facilities at Charging Station such as restaurant, rest rooms, convenience stores, etc., shall be charged at tariff applicable to Commercial Category.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.93
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.94
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.95
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.96
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.97
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

MISCELLANEOUS AND GENERAL CHARGES

Fuel Adjustment Charge (FAC) Component of Z-factor Charge

The Fuel Adjustment Charge (FAC) component of the Z-factor Charge will be determined in accordance with the formula specified in the relevant Multi Year Tariff Regulations and any directions that may be given by the Commission from time to time, and will be applicable to all consumer categories for their entire consumption.

In case of any variation in the fuel prices and power purchase prices, the Distribution Licensee shall pass on the adjustments through the FAC component of the Z-factor Charge accordingly.

The details of the applicable Z_{FAC} for each month shall be available on the Distribution Licensee's website www.mahadiscom.in.

Electricity Duty and Tax on Sale of Electricity

Electricity Duty and Tax on Sale of Electricity shall be levied in addition to the tariffs approved by the Commission, and in accordance with the Government of Maharashtra stipulations from time to time. The rate and the reference number of the Government Resolution/ Order under which the Electricity Duty and Tax on Sale of Electricity are applied shall be stated in the consumers' energy bills. A copy of such Resolution / Order shall be provided on the Distribution Licensee's website www.mahadiscom.in

Power Factor Computation

Where the average Power Factor measurement is not possible through the installed meter, the following formula for calculating the average Power Factor during the billing period shall be applied:

$$\textit{Average Power Factor} = \frac{\textit{Total (kWh)}}{\textit{Total (kVAh)}}$$

$$\textit{Wherein the kVAh is} = \sqrt{\sum(\text{KWh})^2 + \sum(\text{RkVAh Lag} + \text{RkVAh Lead})^2}$$

Further, average PF so computed can be considered as leading or lagging based on the following test:

If "RkVAh lead" > "RkVAh lag" then "Average P.F." is to be treated as "Lead P.F."

If "RkVAh lead" = < "RkVAh lag" then "Average P.F." is to be treated as "Lag P.F."

Power Factor Incentive

1. Applicable for LT Non-Residential / Commercial [LT: II (B) , LT II (C)] , LT III: Public Water Works [LT: III (B) , LT III (C)], LT V (A) (ii): Industry - Power Looms (above 20 kW) , LT V (B) (ii): Industry - General (above 20 kW), LT VII (A) Public Services - Government Owned Educational Institutes and Hospitals [LT VII (A) (ii) and LT VII (A) (iii)] , LT VII (B) Public Services - Others [LT VII (B) (ii) and LT VII (B) (iii)] and LT VIII – Electric Vehicle Charging Station having Contract Demand/Sanctioned Load above 20 kW.

2. Whenever the average Power Factor is more than 0.95 (lag or lead) and upto 1, an incentive shall be given at the rate of the following percentages of the amount of the monthly electricity bill, excluding Taxes and Duties:

Sr. No.	Range of Power Factor	Power Factor Level	Incentive
1	0.951 to 0.954	0.95	0%
2	0.955 to 0.964	0.96	0.5%
3	0.965 to 0.974	0.97	1.0%
4	0.975 to 0.984	0.98	1.5%
5	0.985 to 0.994	0.99	2.5%
6	0.995 to 1.000	1.00	3.5%

Note: *Power Factor shall be measured/computed upto 3 decimals, after universal rounding off.*

Power Factor Penalty

3. Applicable for LT Non-Residential / Commercial [LT: II (B) , LT II (C)] , LT III: Public Water Works [LT: III (B) , LT III (C)], LT V (A) (ii): Industry - Power Looms (above 20 kW) , LT V (B) (ii): Industry - General (above 20 kW), LT VII (A) Public Services - Government Owned Educational Institutes and Hospitals [LT VII (A) (ii) and LT VII (A) (iii)] , LT VII (B) Public Services - Others [LT VII (B) (ii) and LT VII (B) (iii)] and LT VIII – Electric Vehicle Charging Station having Contract Demand/Sanctioned Load above 20 kW.

2. Whenever the average PF is less than 0.9 (lag or lead), penal charges shall be levied at the rate of the following percentages of the amount of the monthly electricity bill, excluding Taxes and Duties:

SSlr. No..	Range of Power Factor	Power Factor Level	Penalty
1	0.895 to 0.900	0.90	0%
2	0.885 to 0.894	0.89	1.0%
3	0.875 to 0.884	0.88	1.5%
4	0.865 to 0.874	0.87	2.0%
5	0.855 to 0.864	0.86	2.5%
6	0.845 to 0.854	0.85	3.0%
7	0.835 to 0.844	0.84	3.5%
8	0.825 to 0.834	0.83	4.0%
9	0.815 to 0.824	0.82	4.5%

SSlr. No..	Range of Power Factor	Power Factor Level	Penalty
10	0.805 to 0.814	0.81	5.0%
...	...	...	...

***Note**: Power Factor shall be measured/computed upto 3 decimals, after universal rounding off.*

Prompt Payment Discount

A prompt payment discount of one percent of the monthly bill (excluding Taxes and Duties) shall be provided to consumers for payment of electricity bills within 7 days from the date of their issue.

Delayed Payment Charges

In case the electricity bill is not paid within the due date mentioned on the bill, delayed payment charges on the billed amount, including the taxes, cess, duties, etc., shall be levied on simple interest basis at the rate of 1.25% on the billed amount for the first month of delay.

Discount for digital payment

A discount of 0.25% of the monthly bill (excluding taxes and duties), subject to a cap of Rs. 500/-, shall be provided to LT category consumers for payment of electricity bills through various modes of digital payment such as credit cards, debit cards, UPI, BHIM, internet banking, mobile banking, mobile wallets etc.

Rate of Interest on Arrears

The rate of interest chargeable on the arrears of payment of billed dues shall be as given below:

Sr. No.	Delay in Payment (months)	Interest Rate per annum (%)
1	Payment made after 60 days and before 90 days from the date of billing	12%
2	Payment made after 90 days	15%

Rebate for On-time regular payment for LT-AG, LT-PWW and LT-Streetlight

Rebate of 1% for On-time regular payment before due date shall be available for consumers under LT-AG, LT-PWW and LT-Streetlight categories and the same shall be governed as per following conditions:

a. Consumers under LT-AG, LT-PWW and LT-Streetlight shall be eligible for consistent payment rebate of 1% for consistently making payments within due date.

b. Such rebate would be monitored and offered on quarterly basis to only those consumers upon maintaining regular payment track record with the Utility.

c. For example, if consumer makes regular payment of its monthly within due date during previous quarter then, such consumer shall be entitled to a rebate of 1% in its next monthly bill amount (excluding taxes and duties) for the subsequent quarter.

d. In case of any default or non-adherence to bill payment within due date in previous quarter, such benefit of rebate shall be withdrawn for the full next billing quarter.

e. However, the consumer shall be entitled to rebate in subsequent quarters in case it maintains payment track record within due date in the previous quarter. In case of consumer having quarterly billing, such scheme shall be monitored on six monthly basis and rebate shall be given in next quarterly bill.

Rebate for consumers with Prepaid connections

Consumers with prepaid metered connections shall be entitled for rebate of 5% in the Energy Charge Rate (incl FAC) applicable for the consumer category.

Rebate on Incremental Consumption

Rebate for incremental consumption for applicable consumer categories and eligible consumers shall be governed as per following conditions:

a. The rebate for incremental consumption shall be allowed at the rate of Rs 0.75/KVAh for incremental consumption

b. The rebate for incremental consumption shall be applicable for HT industries, HT commercial, HT public services, HT-PWW, HT Railways/Metro/Mono and HT-Group Housing Society (Residential).

c. The rebate shall be given to eligible consumers including open access consumers falling under above consumer categories to the extent of procurement from MSEDCL.

d. The rebate shall be for a period of 3 years subject to reconsideration during the MTR.

e. The rebate shall be allowed to eligible consumers who consume power above threshold limit.

f. The 3-year average monthly consumption by consumer from FY 2017-18 to FY 2019-20 shall be considered as baseline consumption (or monthly threshold consumption) for determination of incremental consumption by such eligible consumers.

g. In case of a consumer registered into system for duration lower than 3 years, such consumer shall be eligible for availing incremental rebate from the next billing cycle upon completion of 3-year period and average monthly consumption for past three years shall

be considered as its baseline consumption (or monthly threshold consumption) in such cases for determination of their incremental consumption for the purpose of rebate.

h. For the purpose of determination of Incremental consumption post MTR period of 4th Control Period, (i.e. for FY 2023-24 and FY 2024-25), baseline consumption (or monthly threshold consumption) shall be reset based on 3-year average from FY 2020-21 to FY 2022-23.

i. The billing at the reduced rates after allowing the rebate shall be done on monthly basis subject to condition that net entitlement for the rebate under this head of incremental consumption shall be determined on annual basis (April to March) equal to energy units consumption in excess of baseline consumption (i.e. annual threshold consumption). The adjustment for shortfall/excess in case cumulative monthly consumption for the yearly consumption vis-à-vis its baseline consumption (i.e. annual threshold consumption) shall be effected in the last monthly (for March) billing period. No carry-forward of shortfall/excess shall be allowed from one year to next year.

j. For example, If a consumer's 3-year average annual consumption was 12,000 units, the consumer shall be entitled for the rebate of Rs.0.75/kVAh for consumption exceeding its monthly threshold consumption (not below the baseline consumption of 1,000 units per month) in FY 2020-21 onwards. However, in case its cumulative monthly consumption for the yearly period falls short of annual threshold consumption of 12,000 units then, consumer shall not be entitled for incremental consumption rebate for that financial year and adjustment for shortfall (or rebate already availed by consumer in earlier months, if any) shall be adjusted for recovery in monthly billing period for March.

k. The Commission has not considered isolated cases which may become Permanently Disconnected during the year in which a rebate has been availed for some months. The details of such cases, if any will be dealt based on the data as may be submitted by MSEDCL during MTR.

l. The rebate shall be over and above the existing rebates subject to the fact that the consumer's total variable charges should not be less than Rs.4/ kVAh after accounting all applicable rebates.

m. The rebates would also be applicable to Open Access consumers, subject to conditions outlined above.

Rebate on Bulk Consumption

Rebate for Bulk consumption for eligible consumers within HT-Industrial category shall be governed as per following conditions:

a. All HT-Industrial consumers with monthly consumption in excess of 1 lakh units per month (0.1 MU per month) shall be eligible to avail Rebate on Bulk Consumption with a reverse telescopic slab structure as outlined below: Thus, the Commission has decided

to introduce "Bulk Consumption" rebate in a reverse telescopic manner for HT-Industrial consumers in following manner:

I. For monthly consumption (> 1 Lakh units to 1 MU) per month: 2%

II. For monthly consumption (> 1 MU to 5 MU) per month: 1.5%

III. For monthly consumption (> 5 MU) per month: 1%

(Note – Units referred are in kVAh such as Lakh kVAh or Million kVAh)

b. Bulk Consumption Rebate shall be applicable on the Energy Charge component including FAC of the Bill excluding taxes and duty.

Illustration:

Say a consumer consumes 15 MU during month then, its consumption more than 1 Lakh units upto 1 MU units rebate will be 2%/unit, for next 4 MU (i.e. upto consumption of 5 MU) rebate will be 1.5%/unit and for consumption in excess of 5 MU upto 15 MU, rebate will be 1%/unit.

Discount in Demand Charges for Single Shift operation of HT-Indusry

In case of industrial consumer under HT-Industry with single shift operation, Demand Charges at the rate of 60% of Applicable Demand Charges as per Tariff Schedule shall be levied, subject to following conditions:

a. Single shift operation means running of operations at a stretch for maximum 10 Hrs. For illustration, a consumer running 4hrs.in one stretch and 6hrs.in another stretch cannot be considered as running in a single shift. However, a maximum of three instances of running beyond 10hrs up to 12hrs is permitted in a billing cycle.

b. Consumer must declare in advance about one shift operation. In absence of such declaration, it shall be billed as per the applicable demand charges.

c. Billing will be done based on MRI/AMR Data.

Load Factor Incentive

a. Consumers having Load Factor above 75% and upto 85% will be entitled to an incentive in the form of a rebate of 0.75% on the Energy Charges for every percentage point increase in Load Factor from 75% to 85%. Consumers having a Load Factor above 85 % will be entitled to a rebate of 1% on the Energy Charges for every percentage point increase in Load Factor from 85%. The total rebate will be subject to a ceiling of 15% of the Energy Charges applicable to the consumer.

b. This incentive is applicable only to consumers in the tariff categories HT I: Industry, HT II: Commercial and HT VIII: Public Services – HT VIII (A) and HT VIII (B) only.`

c. The Load Factor incentive will be available only if the consumer has no arrears with the Distribution Licensee, and payment is made within seven days from the date of the electricity bill. However, it will be available to consumers in whose case payment of arrears in instalments has been allowed by the Distribution Licensee, and such payment is being made as scheduled. The Distribution Licensee shall take a commercial decision on the schedule for such payments.

1. The Load Factor is to be computed as follows:

$$\text{Load Factor} = \frac{\text{Consumption during the month in MU}}{\text{Maximum Consumption Possible during the month in MU}}$$

Maximum consumption possible = Contract Demand (kVA) x Unity Power Factor

x (Total no. of hours during the month, less actual interruptions hours recorded on meter for billing period)

In case the consumer exceeds its Contract Demand (including during the non-peak hours, i.e., 22:00 hrs to 06:00 hrs.) in any particular month, the Load Factor Incentive will not be payable to the consumer in that month

Penalty for exceeding Contract Demand

In case a consumer (availing Demand-based Tariff) exceeds his Contract Demand, he will be billed at the applicable Demand Charge rate for the Demand actually recorded, and also be charged an additional amount at the rate of 150% of the applicable Demand Charge (only for the Demand in excess of the Contract Demand).

In case a LT consumer with a sanction demand/ contract demand less than 20 kW records actual contract demand above 20 kW, he will be billed at the tariff applicable for the respective load slab approved by the Commission, in which recorded demand falls for that billing cycle only and also be charged an additional amount at the rate of 150% of the applicable charge for the Demand in excess of the Contract Demand.

Further Distribution licensee can enhance the Contract Demand of the consumer when the consumers exceeds the Contract Demand on more than three occasions during a calendar year, irrespective whether the Consumer submits an application for the same or otherwise. However, before such revision of Contact Demand, Distribution Licensee must give 15 days' notice to

such consumer. Also, the Consumer is liable to pay necessary charges as may be stipulated in the approved Schedule of Charges for the revised Contract Demand.

Under these circumstances, the consumer shall not be liable for any other action under Section 126 of the EA, 2003, since the penal additional Demand Charge provides for the penalty that the consumer is liable to pay for exceeding his Contract Demand. In case a consumer exceeds his Contract Demand on more than three occasions in a calendar year, the action to be taken would be governed by the provisions of the Supply Code Regulations.

Additional Demand Charges for Consumers having Captive Power Plant

Consumers having a Captive Power Plant can opt for Standby Demand and Additional Demand Charges for such Standby Demand will be as follows:

a. 25% of the Applicable Demand Charges for months when standby capacity is not utilized

b. Demand Charges at the rate of 100% of Applicable Demand Charges for months when standby capacity is used under planned or un-planned shutdown of CPP

c. In case recorded Demand exceeds Contract Demand + Standby Capacity, then applicable Demand Charge for the Demand actually recorded, and an additional amount at the rate of 150% of the applicable Demand Charge (only for the Demand in excess of the Contract Demand + Standby Capacity)

d. In case no Standby capacity has been opted by consumer having CPP, then additional amount for exceeding Contract Demand be charged at 200% of applicable Demand Change (only for demand excess of Contracted Demand)

Consumers' Security Deposit

1) Subject to the provisions of Section 47(5) of the Electricity Act, 2003, the Distribution Licensee shall require any person to whom supply of electricity has been sanctioned to deposit an amount as security in accordance with the provisions of Section 47(1) (a).

2) The amount of the Security Deposit shall be equal to the average of three months of billing or the billing cycle period, whichever is lesser. For determining the average billing, the average of the billing to the consumer for the last twelve months or, where supply has been provided for a shorter period, the average of the billing of such shorter period, shall be considered

3) Where the Distribution Licensee requires security from a consumer at the time of commencement of service, the amount of such security shall be estimated based on the tariff category and Contract Demand/Sanctioned Load, Load Factor, diversity factor and number of working shifts of the consumer.

4) MSEDCL shall re-calculate the amount of Security Deposit payable, based on the actual billing of the consumer, once in each financial year.

5) Where the amount of Security Deposit maintained by the consumer is higher than the security required to be maintained under the Supply Code Regulations, the Distribution Licensee shall refund the excess amount to the consumer in a single instalment.

6) Such refund shall be made upon a request of the person who gave the security, and with intimation to the consumer if different from such person; and shall be made, at the option of such person, by way of adjustment in the next bill or by way of a separate cheque payment within 30 days from the receipt of such request;

7) No refund shall be required to be made where the amount of refund does not exceed 10% of the amount of the Security Deposit required to be maintained by the consumer or Rs 300/-, whichever is higher.

8) Where the amount of security re-assessed as above is higher than the Security Deposit of the consumer, the Distribution Licensee shall be entitled to raise a demand for additional security deposit. The consumer shall be given not less than 30 days to deposit the additional security pursuant to such demand.

9) Upon termination of supply, the Distribution Licensee shall, after recovery of all amounts due, refund the remaining amount of security to the person who deposited it, with intimation to the consumer if different from such person.

10) A consumer - (i) with a consumption of electricity of not less than one lakh kilo-Watt hours per month; and (ii) with no undisputed sums payable to the Distribution Licensee under Section 56 of the Electricity Act, 2003 may, at the option of such consumer, deposit security by way of cash, irrevocable letter of credit or unconditional Bank Guarantee issued by a scheduled commercial Bank.

11) The Distribution Licensee shall pay interest on the amount of Security Deposit in cash (including by cheque or demand draft) at the Bank Rate of Reserve Bank of India as on 1st April of the financial year for which the interest is payable, plus 150 basis points, provided that the amount of such cash Deposit maintained by the consumer is at least Rs. 50/-.

12) Interest on the Security Deposit made in cash shall be payable from the date of its deposit by the consumer till the date of dispatch of the refund by the Distribution Licensee.

Definitions

Maximum Demand

Maximum Demand in kilo-Watts or kilo-Volt Amperes, in relation to any period shall, unless otherwise provided in any general or specific Order of the Commission, mean twice the highest number of kilo-watt-hours or kilo-Volt Ampere hours supplied and taken during any consecutive thirty minute blocks in that period.

Contract Demand

Contract Demand means the demand in kilo-Watt (kW) or kilo–Volt Amperes (kVA), mutually agreed between the Distribution Licensee and the consumer as entered into in the agreement or agreed through other written communication. (For conversion of kW into kVA, the Power Factor of 0.80 shall be applied.)

Sanctioned Load

Sanctioned Load means the load in kW mutually agreed between the Distribution Licensee and the consumer.

In case the meter is installed on the LV/MV side, the methodology to be followed for billing purpose is as follows

2% to be added to MV demand reading, to determine the kW or kVA billing demand, and

'X' units to the MVA reading to determine the total energy compensation to compensate the transformation losses, where is calculated as follows

'X' = (730 * kVA rating of transformer)/500 Units/month, to compensate for the iron losses, plus one percent of units registered on the LT side for copper losses.

Billing Demand - LT tariff categories

Billing Demand for LT Non-Residential / Commercial [LT: II (B) , LT II (C)] , LT III: Public Water Works [LT: III (B) , LT III (C)], LT V (A) (ii): Industry - Power Looms (above 20 kW) , LT V (B) (ii): Industry - General (above 20 kW), LT VII (A) Public Services - Government Owned Educational Institutes and Hospitals [LT VII (A) (ii) and LT VII (A) (iii)] , LT VII (B) Public Services - Others [LT VII (B) (ii) and LT VII (B) (iii)] and LT VIII – Electric Vehicle Charging Station categories having MD based Tariff:-

Monthly Billing Demand will be the higher of the following:

a) 65% of the actual Maximum Demand recorded in the month during 0600 hours to 2200 hours;
b) 40% of the Contract Demand.

Note:

- *Only the Demand registered during the period 0600 to 2200 Hrs. will be considered for determination of the Billing Demand.*

- *In case of a change in Contract Demand, the above period will be reckoned from the month following the month in which the change in Contract Demand is effected.*

Billing Demand - HT tariff categories

Billing Demand for HT I: Industry, HT II: Commercial, HT III Railway/Metro/Monorail, HT IV: Public Water Works, HT V: Agriculture, HT VI: Group Housing Society (Residential), HT VIII: Public Services and HT IX: HT – Electric Vehicle Charging Station

Monthly Billing Demand will be the higher of the following:

a. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours;

b. 75% of the highest Billing Demand recorded during the preceding eleven months, subject to the limit of Contract Demand;

c. 55% of the Contract Demand.*

**For FY 2020-21: 55%, FY 2021-22: 60%, FY 2022-23: 65%, FY 2023-24: 70%, FY 2024-25: 75%*

Note:

- *Only the Demand registered during the period 0600 to 2200 Hrs. will be considered for determination of the Billing Demand.*

- *In case of a change in Contract Demand, the above period will be reckoned from the month following the month in which the change of Contract Demand is effected.*

HT Seasonal Category (HT I)

During Declared Season, Monthly Billing Demand will be the higher of the following:

i. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours

ii. 75% of the Contract Demand

iii. 50 kVA.

During Declared Off-season, Monthly Billing Demand will be the following:

i. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours

The Billing Demand for the consumers with CPP will be governed as per the CPP Order in Case No. 55 and 56 of 2003.

ANNEXURE – II :- REVENUE
Revenue from revised Tariffs effective from 1 April, 2020

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
HT Category														
HT I(A): HT - Industry (General)	13,912	Rs./kVA/Month	411.00	7.02	0.57	34,038	8,428,370	4,157	23,895	1,432	29,484	-559	28,924	8.50
HT I(C): HT - Industry (Seasonal)	473	Rs./kVA/Month	411.00	7.28	0.57	119	61,625	30	87	7	124	-2	122	10.23
HT I - Industry (Sub-Total)	**14,385**					**34,157**	**8,489,995**	**4,187**	**23,981**	**1,439**	**29,608**	**-562**	**29,046**	**8.50**
HT II: HT - Commercial	3,210	Rs./kVA/Month	411.00	11.47	0.57	1,915	572,226	282	2,197	108	2,587	-6	2,581	13.48
HT III: HT - Railways/Metro/Monorail Traction	85	Rs./kVA/Month	411.00	6.76	0.57	86	16,981	8	58	4	70	-	70	8.24
HT IV: HT - Public Water Works (PWW)	1,005	Rs./kVA/Month	411.00	6.07	0.57	1,735	323,510	160	1,053	93	1,305	-31	1,274	7.35
HT V(A): HT - Agriculture Pumpsets	1,035	Rs./kVA/Month	72.00	3.79	0.57	1,376	377,636	33	522	26	580	-	580	4.22
HT V(B)): HT - Agriculture Others	439	Rs./kVA/Month	72.00	5.20	0.57	271	75,297	7	141	15	163	-	163	6.01
HT VI: HT - Group Housing Societies (Residential)	391	Rs./kVA/Month	329.00	5.70	0.57	246	53,855	21	140	12	174	-	174	7.06
HT VIII(A): HT - Public Services-Government	353	Rs./kVA/Month	411.00	7.74	0.57	281	61,458	30	217	16	263	-3	260	9.28
HT VIII(B): HT - Public Services-Others	1,063	Rs./kVA/Month	411.00	9.48	0.57	842	211,803	104	799	42	945	-9	937	11.12
HT - MSPGCL-Aux Supply	27	Rs./kVA/Month	-	-	-	238	80,156	-	-	-	-	-	-	-
HT IX: HT – Electric Vehicle Charging Station	4	Rs./kVA/Month	70.00	4.93	0.57	0	1,037	0	0	0	0	-	0	8.29
Sub-Total HT Category	**21,996**					**41,147**	**10,262,916**	**4,833**	**29,107**	**1,756**	**35,696**	**-610**	**35,086**	**8.53**
													-	
LT Category													-	
LT I(A): LT - Residential-BPL Category (0-30 units)	371,771	Rs./Connection/Month	26.00	1.12	-	45	44,996	12	5	-	17	-	17	3.69
LT I(B): LT - Residential	20,110,228					22,608	22,939,298	2,413	11,647	3,277	17,337	-	17,337	7.67
0-100	13,890,954	Rs./Connection/Month	100.00	3.46	1.45	14,856	-	1,667	5,140	2,153	8,960	-	8,960	6.03
101-300	5,044,734	Rs./Connection/Month	100.00	7.43	1.45	5,709	-	605	4,242	827	5,675	-	5,675	9.94
301-500	820,826	Rs./Connection/Month	100.00	10.32	1.45	918	-	98	947	133	1,178	-	1,178	12.84
501-1000	353,714	Rs./Connection/Month	100.00	11.71	1.45	1,126	-	42	1,318	163	1,524	-	1,524	13.54
Three Phase Connection	-	Rs./Connection/Month	340.00	-	-	-	-	-	-	-	-	-	-	-
LT I: LT - Residential (Sub-Total)	**20,481,998**					**22,653**	**22,984,293**	**2,425**	**11,652**	**3,277**	**17,354**	**-**	**17,354**	**7.66**
LT II(A): LT - Non-Residential (0-20 kW)	1,922,687	Rs./Connection/Month	403.00	7.36	1.45	5,150	4,046,026	930	3,790	746	5,467	-	5,467	10.61

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT II(B): LT - Non-Residential (>20 kW and ≤ 50 kW)	24,113	Rs./kW/Month	403.00	10.72	1.45	987	372,189	180	1,058	143	1,381	2	1,382	14.01
LT II(C): LT - Non-Residential (Above 50 kW)	16,308	Rs./kW/Month	403.00	12.83	1.45	642	264,585	116	824	93	1,032	2	1,034	16.11
LT II: LT - Non-Residential (Sub-Total)	**1,963,107**					**6,779**	**4,682,800**	**1,226**	**5,672**	**983**	**7,880**	**3**	**7,883**	**11.63**
LT III(A): LT - Public Water Works (0-20 kW)	53,425	Rs./kW/Month	100.00	2.40	1.45	698	106,251	13	168	101	282	-	282	4.03
LT III(B): LT - Public Water Works (>20 kW-40 kW)	1,092	Rs./kW/Month	121.00	3.78	1.45	86	26,579	4	33	13	49	-	49	5.68
LT III (C): LT - Public Water Works (Above 40 kW)	556	Rs./kW/Month	150.00	5.11	1.45	106	33,027	6	54	15	76	-	76	7.12
LT III: LT - Public Water Works (Sub-Total)	**55,073**					**891**	**165,856**	**23**	**255**	**129**	**406**	**-**	**406**	**4.56**
LT IV(A): LT - AG Un-metered-Pumpsets (Category 1 Zones)	**687,152**					**4,733**	**3,470,555**	**1,412**	**-**	**686**	**2,098**	**-**	**2,098**	**4.43**
(a) 0 - 5 HP	555,908	Rs./HP/Month	334.00	-	145	3,751	2,807,691	1,125	-	544	1,669	-	1,669	4.45
(b) > 5 HP - 7.5 HP	131,244	Rs./HP/Month	360.00	-	145	982	662,865	286	-	142	429	-	429	4.37
(c) Above 7.5 HP	-	Rs./HP/Month	405.00	-	145	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Category 2 Zones)	**782,564**					**4,051**	**3,952,444**	**1,253**	**-**	**587**	**1,840**	**-**	**1,840**	**4.54**
(a) 0 - 5 HP	584,163	Rs./HP/Month	258.00	-	145	3,116	2,950,393	913	-	452	1,365	-	1,365	4.38
(b) > 5 HP - 7.5 HP	198,401	Rs./HP/Month	282.00	-	145	935	1,002,051	339	-	135	475	-	475	5.08
(c) Above 7.5 HP	-	Rs./HP/Month	327.00	-	145	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Sub-Total)	**1,469,716**					**8,783**	**7,422,999**	**2,664**	**-**	**1,273**	**3,937**	**-**	**3,937**	**4.48**
LT IV(B): LT -AG Metered-Pumpsets	2,792,958	Rs./HP/Month	41.00	1.85	1.45	17,564	14,691,223	723	3,249	2,546	6,518	-	6,518	3.71
LT IV(C): LT - AG Metered-Others	29,136	Rs./kW/Month	111.00	3.34	1.45	137	323,968	43	46	20	109	-	109	7.95
LT IV - LT - Agriculture (Sub-Total)	**4,291,810**					**26,483**	**22,438,190**	**3,430**	**3,295**	**3,839**	**10,564**	**-**	**10,564**	**3.99**
LT V -Industry (0 - 20 kW)	281,174	Rs./Connection/Month	454.00	5.21	1.45	2,509	2,390,923	153	1,299	364	1,815	-	1,815	7.24
LT V -Industry (Above 20 kW)	4,670	Rs./kW/Month	303.00	6.11	1.45	5,007	1,978,562	719	3,046	726	4,491	-35	4,456	8.90
LT V -Industry(Sub-Total)	**285,844**					**7,515**	**4,369,486**	**873**	**4,344**	**1,089**	**6,306**	**-35**	**6,271**	**8.34**
LT VI (A) Street Light-Gram Panchayat, A,B&C Class MCs	68,803	Rs./Connection/Month	111.00	4.90	1.45	1,740	206,420	27	853	252	1,132	-	1,132	6.51

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT VI (B) Street Light - Municipal Corporation Areas	29,996	Rs./Connection/Month	111.00	5.97	1.45	518	212,179	28	309	75	413	-	413	7.96
LT VI Street Light (Sub-Total)	**98,799**					**2,258**	**418,599**	**56**	**1,162**	**327**	**1,545**	**-**	**1,545**	**6.84**
LT VII (A) Public Services-Government													-	
(i) 0-20 kW	40,521	Rs./Connection/Month	333.00	3.31	1.45	50	42,636	16	17	7	40	-	40	7.99
(ii) 20 kW-50 kW	488	Rs./kW/Month	333.00	4.89	1.45	12	4,593	2	6	2	9	-0	9	7.80
(iii) Above 50 kW	195	Rs./kW/Month	333.00	6.01	1.45	11	3,964	2	7	2	10	-0	10	8.84
LT VII (A) Public Services-Government (Sub-Total)	41,204					73	51,194	20	29	11	59	-0	59	8.09
LT VII (B) Public Services-Others														
(i) 0-20 kW	67,797	Rs./Connection/Month	362.00	4.86	1.45	272	169,476	29	132	39	201	-	201	7.39
(ii) 20 kW-50 kW	2,612	Rs./kW/Month	362.00	7.44	1.45	95	35,500	15	71	14	100	-1	99	10.43
(iii) Above 50 kW	1,244	Rs./kW/Month	362.00	7.84	1.45	124	36,738	16	97	18	131	-1	131	10.52
LT VII (B) Public Services-Others (Sub-Total)	71,653					492	241,713	61	301	71	433	-1	431	8.77
LT VII Public Services	**112,856**					**565**	**292,907**	**80**	**330**	**82**	**492**	**-2**	**490**	**8.68**
LT VIII – Electric Vehicle Charging Station	**-**	**Rs./kW/Month**	**70.00**	**4.05**	**1.45**	**0**	**-**	**-**	**0**	**0**	**0**	**-**	**0**	**5.50**
Sub-Total LT Category	**27,289,486**					**67,145**	**55,352,132**	**8,112**	**26,709**	**9,726**	**44,547**	**-34**	**44,514**	**6.63**
Distribution Franchisees														
Bhiwandi			-	4.75	-	3,758	-	-	1,785	-	1,785		1,785	4.75
Stand By Charges									396	-	396		396	
LF /Incentives/Discount									-243		-243		-243	
											-		-	
MSEDCL Total Revenue	**27,311,482**					**112,050**	**65,615,047**	**12,945**	**57,755**	**11,482**	**82,182**	**-644**	**81,538**	**7.28**

* Energy Charge 'Unit' refers Rs/kVAh for all HT Categories and Rs/kWh for all LT Categories

$ Wheeling charges 'Unit' refers Rs/kVAh for all HT Categories and Rs./kWh for all LT Categories except, LT AG – Un-Metered, where Wheeling Charges is in Rs/HP/mth

Sales in Mn kVAh for all HT Categories and MU for all LT Consumer Categories

** ABR considering sales at input level for DFs

ANNEXURE – III :- REVENUE
Revenue from revised Tariffs effective from 1 April, 2021

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
HT Category														
HT I(A): HT - Industry (General)	14,308	Rs./kVA/Month	432.00	6.96	0.56	35,400	8,749,244	4,536	24,638	1,464	30,637	-582	30,055	8.49
HT I(C): HT - Industry (Seasonal)	473	Rs./kVA/Month	432.00	7.22	0.56	119	61,625	32	86	7	124	-2	122	10.29
HT I - Industry (Sub-Total)	**14,781**					**35,518**	**8,810,869**	**4,568**	**24,724**	**1,470**	**30,762**	**-584**	**30,178**	**8.50**
HT II: HT - Commercial	3,266	Rs./kVA/Month	432.00	11.20	0.56	1,956	583,742	303	2,190	108	2,601	-6	2,595	13.27
HT III: HT - Railways/Metro/Monorail Traction	85	Rs./kVA/Month	432.00	6.86	0.56	87	17,344	9	60	4	73	-	73	8.38
HT IV: HT - Public Water Works (PWW)	1,038	Rs./kVA/Month	432.00	6.17	0.56	1,778	344,314	178	1,097	93	1,369	-32	1,337	7.52
HT V(A): HT - Agriculture Pumpsets	1,061	Rs./kVA/Month	76.00	3.69	0.56	1,419	394,231	36	524	27	586	-	586	4.13
HT V(B)): HT - Agriculture Others	451	Rs./kVA/Month	76.00	5.10	0.56	279	75,297	7	142	16	165	-	165	5.91
HT VI: HT - Group Housing Societies (Residential)	405	Rs./kVA/Month	345.00	5.70	0.56	248	54,271	22	141	12	176	-	176	7.09
HT VIII(A): HT - Public Services-Government	372	Rs./kVA/Month	432.00	7.74	0.56	293	64,018	33	227	16	277	-3	274	9.33
HT VIII(B): HT - Public Services-Others	1,116	Rs./kVA/Month	432.00	9.21	0.56	881	220,621	114	812	44	969	-9	960	10.90
HT - MSPGCL-Aux Supply	27	Rs./kVA/Month	-	-	-	238	80,156	-	-	-	-	-	-	-
HT IX: HT – Electric Vehicle Charging Station	5	Rs./kVA/Month	70.00	4.94	0.56	0	1,060	0	0	0	0	-	0	8.35
Sub-Total HT Category	**22,605**					**42,699**	**10,644,863**	**5,270**	**29,918**	**1,791**	**36,979**	**-634**	**36,344**	**8.51**
													-	
LT Category													-	
LT I(A): LT - Residential-BPL Category (0-30 units)	386,687	Rs./Connection/Month	27.00	1.14	-	47	47,940	13	5	-	18	-	18	3.79
LT I(B): LT - Residential	20,917,251					23,709	24,440,148	2,560	12,146	3,282	17,989	-	17,989	7.59
0-100	14,448,444	Rs./Connection/Month	102.00	3.44	1.38	15,579	-	1,768	5,359	2,157	9,284	-	9,284	5.96
101-300	5,247,141	Rs./Connection/Month	102.00	7.34	1.38	5,987	-	642	4,395	829	5,866	-	5,866	9.80
301-500	853,760	Rs./Connection/Month	102.00	10.36	1.38	962	-	105	997	133	1,235	-	1,235	12.83
501-1000	367,906	Rs./Connection/Month	102.00	11.82	1.38	1,181	-	45	1,396	163	1,604	-	1,604	13.59
Three Phase Connection	-	Rs./Connection/Month	340.00	-	-	-	-	-	-	-	-	-	-	-

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT I: LT - Residential (Sub-Total)	**21,303,938**					**23,756**	**24,488,088**	**2,573**	**12,152**	**3,282**	**18,007**	**-**	**18,007**	**7.58**
LT II(A): LT - Non-Residential (0-20 kW)	2,000,699	Rs./Connection/Month	415.00	7.18	1.38	5,570	4,349,696	996	3,999	771	5,767	-	5,767	10.35
LT II(B): LT - Non-Residential (>20 kW and ≤ 50 kW)	25,091	Rs./kW/Month	415.00	10.79	1.38	1,070	400,124	199	1,155	148	1,502	2	1,504	14.05
LT II(C): LT - Non-Residential (Above 50 kW)	17,466	Rs./kW/Month	415.00	12.95	1.38	694	283,538	128	899	96	1,124	2	1,125	16.21
LT II: LT - Non-Residential (Sub-Total)	**2,043,256**					**7,334**	**5,033,357**	**1,324**	**6,053**	**1,015**	**8,392**	**4**	**8,396**	**11.45**
LT III(A): LT - Public Water Works (0-20 kW)	55,593	Rs./kW/Month	103.00	2.46	1.38	742	114,226	14	183	103	299	-	299	4.03
LT III(B): LT - Public Water Works (>20 kW-40 kW)	1,119	Rs./kW/Month	125.00	3.82	1.38	92	28,419	4	35	13	52	-	52	5.67
LT III (C): LT - Public Water Works (Above 40 kW)	570	Rs./kW/Month	155.00	5.12	1.38	106	35,314	7	54	15	76	-	76	7.12
LT III: LT - Public Water Works (Sub-Total)	**57,281**					**940**	**177,958**	**25**	**272**	**130**	**427**	**-**	**427**	**4.54**
LT IV(A): LT - AG Un-metered-Pumpsets (Category 1 Zones)	**687,152**					**4,733**	**3,470,555**	**1,475**	**-**	**655**	**2,130**	**-**	**2,130**	**4.50**
(a) 0 - 5 HP	555,908	Rs./HP/Month	349.00	-	138	3,751	2,807,691	1,176	-	519	1,695	-	1,695	4.52
(b) > 5 HP - 7.5 HP	131,244	Rs./HP/Month	376.00	-	138	982	662,865	299	-	136	435	-	435	4.43
(c) Above 7.5 HP	-	Rs./HP/Month	422.00	-	138	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Category 2 Zones)	**782,564**					**4,051**	**3,952,444**	**1,307**	**-**	**561**	**1,868**	**-**	**1,868**	**4.61**
(a) 0 - 5 HP	584,163	Rs./HP/Month	269.00	-	138	3,116	2,950,393	952	-	431	1,384	-	1,384	4.44
(b) > 5 HP - 7.5 HP	198,401	Rs./HP/Month	295.00	-	138	935	1,002,051	355	-	129	484	-	484	5.18
(c) Above 7.5 HP	-	Rs./HP/Month	342.00	-	138	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Sub-Total)	**1,469,716**					**8,783**	**7,422,999**	**2,782**	**-**	**1,216**	**3,998**	**-**	**3,998**	**4.55**
LT IV(B): LT -AG Metered-Pumpsets	2,875,948	Rs./HP/Month	42.00	1.91	1.38	18,076	15,120,091	762	3,453	2,502	6,717	-	6,717	3.72
LT IV(C): LT - AG Metered-Others	30,003	Rs./kW/Month	114.00	3.23	1.38	137	333,426	46	44	19	109	-	109	7.95

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT IV - LT - Agriculture (Sub-Total)	**4,375,666**					**26,996**	**22,876,516**	**3,590**	**3,497**	**3,737**	**10,824**	**-**	**10,824**	**4.01**
LT V -Industry (0 - 20 kW)	281,174	Rs./Connection/Month	468.00	5.01	1.38	2,630	2,508,791	158	1,309	364	1,831	-	1,831	6.96
LT V -Industry (Above 20 kW)	64,376	Rs./kW/Month	312.00	5.93	1.38	5,249	2,076,102	777	3,099	727	4,603	-37	4,566	8.70
LT V -Industry(Sub-Total)	**345,550**					**7,879**	**4,584,893**	**935**	**4,407**	**1,091**	**6,433**	**-37**	**6,396**	**8.12**
LT VI (A) Street Light-Gram Panchayat, A,B&C Class MCs	71,107	Rs./Connection/Month	114.00	5.00	1.38	1,851	216,597	30	926	256	1,211	-	1,211	6.54
LT VI (B) Street Light - Municipal Corporation Areas	31,001	Rs./Connection/Month	114.00	6.09	1.38	551	222,640	30	336	76	443	-	443	8.03
LT VI Street Light (Sub-Total)	**102,108**					**2,402**	**439,237**	**60**	**1,261**	**333**	**1,654**	**-**	**1,654**	**6.88**
LT VII (A) Public Services-Government													-	
(i) 0-20 kW	40,521	Rs./Connection/Month	343.00	3.12	1.38	53	44,739	17	17	7	41	-	41	7.65
(ii) 20 kW-50 kW	535	Rs./kW/Month	343.00	4.48	1.38	13	4,820	2	6	2	9	-0	9	7.36
(iii) Above 50 kW	204	Rs./kW/Month	343.00	5.62	1.38	12	4,161	2	7	2	10	-0	10	8.38
LT VII (A) Public Services-Government (Sub-Total)	41,260					78	53,719	20	29	11	60	-0	60	7.72
LT VII (B) Public Services-Others														
(i) 0-20 kW	66,475	Rs./Connection/Month	373.00	4.68	1.38	288	177,831	30	135	40	205	-	205	7.10
(ii) 20 kW-50 kW	2,865	Rs./kW/Month	373.00	7.28	1.38	101	37,251	17	74	14	104	-1	103	10.23
(iii) Above 50 kW	1,295	Rs./kW/Month	373.00	7.49	1.38	135	38,550	17	101	19	137	-1	136	10.10
LT VII (B) Public Services-Others (Sub-Total)	70,635					524	253,631	64	309	73	445	-2	444	8.47
LT VII Public Services	**111,894**					**602**	**307,350**	**84**	**338**	**83**	**506**	**-2**	**504**	**8.38**
LT VIII – Electric Vehicle Charging Station	**-**	**Rs./kW/Month**	**70.00**	**4.12**	**1.38**	**0.23**	**0**	**-**	**0**	**0**	**0**	**-**	**0**	**5.50**
Sub-Total LT Category	**28,339,692**					**69,910**	**57,907,397**	**8,591**	**27,980**	**9,672**	**46,243**	**-35**	**46,207**	**6.61**
Distribution Franchisees														
Bhiwandi			-	4.85	-	3,906	-	-	1,894	-	1,894		1,894	4.85
Stand By Charges									396	-	396		396	
LF/ Incentives /Discount									-255		-255		-255	
											-		-	
MSEDCL Total Revenue	**28,362,297**					**116,515**	**68,552,259**	**13,861**	**59,933**	**11,462**	**85,257**	**-670**	**84,587**	**7.26**

* Energy Charge ‘Unit’ refers Rs/kVAh for all HT Categories and Rs/kWh for all LT Categories
$ Wheeling charges ‘Unit’ refers Rs/kVAh for all HT Categories and Rs./kWh for all LT Categories except, LT AG – Un-Metered, where Wheeling Charges is in Rs/HP/mth
# Sales in Mn kVAh for all HT Categories and MU for all LT Consumer Categories
** ABR considering sales at input level for DFs

ANNEXURE – IV :- REVENUE
Revenue from revised Tariffs effective from 1 April, 2022

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
HT Category														
HT I(A): HT - Industry (General)	14,715	Rs./kVA/Month	454.00	6.89	0.55	36,816	9,082,334	4,948	25,366	1,495	31,809	-605	31,204	8.48
HT I(C): HT - Industry (Seasonal)	473	Rs./kVA/Month	454.00	7.15	0.55	119	61,625	34	85	6	125	-2	123	10.35
HT I - Industry (Sub-Total)	**15,188**					**36,934**	**9,143,959**	**4,982**	**25,451**	**1,501**	**31,934**	**-607**	**31,327**	**8.48**
HT II: HT - Commercial	3,323	Rs./kVA/Month	454.00	10.95	0.55	1,997	595,492	324	2,187	109	2,620	-7	2,613	13.09
HT III: HT - Railways/Metro/Monorail Traction	85	Rs./kVA/Month	454.00	6.86	0.55	89	17,716	10	61	4	75	-	75	8.43
HT IV: HT - Public Water Works (PWW)	1,073	Rs./kVA/Month	454.00	6.17	0.55	1,823	366,456	200	1,125	94	1,418	-33	1,386	7.60
HT V(A): HT - Agriculture Pumpsets	1,087	Rs./kVA/Month	80.00	3.69	0.55	1,464	411,869	40	540	27	607	-	607	4.14
HT V(B)): HT - Agriculture Others	463	Rs./kVA/Month	80.00	5.10	0.55	288	75,297	7	147	16	170	-	170	5.90
HT VI: HT - Group Housing Societies (Residential)	420	Rs./kVA/Month	362.00	5.70	0.55	250	54,691	24	143	12	178	-	178	7.12
HT VIII(A): HT - Public Services-Government	391	Rs./kVA/Month	454.00	7.74	0.55	307	66,685	36	238	17	291	-3	288	9.37
HT VIII(B): HT - Public Services-Others	1,171	Rs./kVA/Month	454.00	8.96	0.55	922	229,807	125	826	45	996	-10	986	10.70
HT - MSPGCL-Aux Supply	27	Rs./kVA/Month	-	-	-	238	80,156	-	-	-	-	-	-	-
HT IX: HT – Electric Vehicle Charging Station	6	Rs./kVA/Month	70.00	4.95	0.55	0	1,083	0	0	0	0	-	0	8.41
Sub-Total HT Category	**23,232**					**44,312**	**11,042,125**	**5,747**	**30,717**	**1,825**	**38,289**	**-659**	**37,630**	**8.49**
													-	
LT Category													-	
LT I(A): LT - Residential-BPL Category (0-30 units)	402,202	Rs./Connection/Month	28.00	1.16	-	50	51,078	14	6	-	19	-	19	3.88
LT I(B): LT - Residential	21,756,671					24,864	26,039,195	2,741	12,613	3,353	18,707	-	18,707	7.52
0-100	15,028,321	Rs./Connection/Month	105.00	3.36	1.35	16,338	-	1,894	5,490	2,203	9,586	-	9,586	5.87
101-300	5,457,669	Rs./Connection/Month	105.00	7.34	1.35	6,279	-	688	4,609	847	6,143	-	6,143	9.78
301-500	888,015	Rs./Connection/Month	105.00	10.37	1.35	1,009	-	112	1,046	136	1,294	-	1,294	12.83
501-1000	382,667	Rs./Connection/Month	105.00	11.86	1.35	1,238	-	48	1,468	167	1,684	-	1,684	13.60
Three Phase Connection	-	Rs./Connection/Month	350.00	-	1.35	-	-	-	-	-	-	-	-	-
LT I: LT - Residential (Sub-Total)	**22,158,873**					**24,914**	**26,090,272**	**2,755**	**12,619**	**3,353**	**18,727**	**-**	**18,727**	**7.52**
LT II(A): LT - Non-Residential (0-20 kW)	2,081,877	Rs./Connection/Month	427.00	7.07	1.35	6,026	4,676,156	1,067	4,260	813	6,139	-	6,139	10.19
LT II(B): LT - Non-Residential (>20 kW and ≤ 50 kW)	26,110	Rs./kW/Month	427.00	10.79	1.35	1,161	430,155	220	1,252	157	1,629	2	1,631	14.05

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT II(C): LT - Non-Residential (Above 50 kW)	18,719	Rs./kW/Month	427.00	12.76	1.35	751	303,868	142	958	101	1,202	2	1,204	16.03
LT II: LT - Non-Residential (Sub-Total)	**2,126,706**					**7,937**	**5,410,178**	**1,429**	**6,471**	**1,070**	**8,970**	**4**	**8,974**	**11.31**
LT III(A): LT - Public Water Works (0-20 kW)	57,849	Rs./kW/Month	106.00	2.48	1.35	788	122,799	16	195	106	317	-	317	4.03
LT III(B): LT - Public Water Works (>20 kW-40 kW)	1,146	Rs./kW/Month	129.00	3.84	1.35	97	30,387	5	37	13	55	-	55	5.67
LT III (C): LT - Public Water Works (Above 40 kW)	584	Rs./kW/Month	160.00	5.09	1.35	106	37,759	7	54	14	76	-	76	7.12
LT III: LT - Public Water Works (Sub-Total)	**59,578**					**992**	**190,944**	**28**	**287**	**134**	**448**	**-**	**448**	**4.52**
LT IV(A): LT - AG Un-metered-Pumpsets (Category 1 Zones)	**687,152**					**4,733**	**3,470,555**	**1,517**	**-**	**638**	**2,156**	**-**	**2,156**	**4.55**
(a) 0 - 5 HP	555,908	Rs./HP/Month	359.00	-	135	3,751	2,807,691	1,210	-	506	1,715	-	1,715	4.57
(b) > 5 HP - 7.5 HP	131,244	Rs./HP/Month	387.00	-	135	982	662,865	308	-	132	440	-	440	4.48
(c) Above 7.5 HP	-	Rs./HP/Month	435.00	-	135	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Category 2 Zones)	**782,564**					**4,051**	**3,952,444**	**1,346**	**-**	**546**	**1,892**	**-**	**1,892**	**4.67**
(a) 0 - 5 HP	584,163	Rs./HP/Month	277.00	-	135	3,116	2,950,393	981	-	420	1,401	-	1,401	4.50
(b) > 5 HP - 7.5 HP	198,401	Rs./HP/Month	304.00	-	135	935	1,002,051	366	-	126	492	-	492	5.26
(c) Above 7.5 HP	-	Rs./HP/Month	352.00	-	135	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Sub-Total)	**1,469,716**					**8,783**	**7,422,999**	**2,864**	**-**	**1,184**	**4,048**	**-**	**4,048**	**4.61**
LT IV(B): LT -AG Metered-Pumpsets	2,961,404	Rs./HP/Month	43.00	1.95	1.35	18,604	15,561,478	803	3,628	2,509	6,939	-	6,939	3.73
LT IV(C): LT - AG Metered-Others	30,895	Rs./kW/Month	117.00	3.29	1.35	137	343,160	48	45	18	112	-	112	8.17
LT IV - LT - Agriculture (Sub-Total)	**4,462,014**					**27,524**	**23,327,637**	**3,715**	**3,673**	**3,712**	**11,099**	**-**	**11,099**	**4.03**
LT V -Industry (0 - 20 kW)	281,174	Rs./Connection/Month	482.00	5.11	1.35	2,757	2,632,469	163	1,400	372	1,934	-	1,934	7.01
LT V -Industry (Above 20 kW)	64,376	Rs./kW/Month	321.00	6.05	1.35	5,503	2,178,450	839	3,315	742	4,896	-39	4,857	8.83
LT V -Industry(Sub-Total)	**345,550**					**8,260**	**4,810,919**	**1,002**	**4,714**	**1,114**	**6,830**	**-39**	**6,791**	**8.22**
LT VI (A) Street Light-Gram Panchayat, A,B&C Class MCs	73,489	Rs./Connection/Month	117.00	5.10	1.35	1,969	227,275	32	1,004	266	1,302	-	1,302	6.61
LT VI (B) Street Light - Municipal Corporation Areas	32,039	Rs./Connection/Month	117.00	6.21	1.35	587	233,616	33	364	79	476	-	476	8.12
LT VI Street Light (Sub-Total)	**105,528**					**2,556**	**460,891**	**65**	**1,369**	**345**	**1,778**	**-**	**1,778**	**6.96**

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT VII (A) Public Services-Government													-	
(i) 0-20 kW	40,521	Rs./Connection/Month	353.00	3.18	1.35	56	46,945	17	18	8	43	-	43	7.58
(ii) 20 kW-50 kW	588	Rs./kW/Month	353.00	4.57	1.35	14	5,058	2	6	2	10	-0	10	7.44
(iii) Above 50 kW	213	Rs./kW/Month	353.00	5.73	1.35	13	4,367	2	7	2	11	-0	11	8.45
LT VII (A) Public Services-Government (Sub-Total)	41,321					83	56,369	21	32	11	64	-0	64	7.70
LT VII (B) Public Services-Others														
(i) 0-20 kW	67,797	Rs./Connection/Month	384.00	4.57	1.35	305	186,598	31	139	41	212	-	212	6.94
(ii) 20 kW-50 kW	3,142	Rs./kW/Month	384.00	7.23	1.35	107	39,088	18	77	14	110	-1	109	10.18
(iii) Above 50 kW	1,348	Rs./kW/Month	384.00	7.49	1.35	146	40,451	19	109	20	148	-1	147	10.06
LT VII (B) Public Services-Others (Sub-Total)	72,287					558	266,136	68	326	75	469	-2	468	8.38
LT VII Public Services	**113,608**					**641**	**322,505**	**89**	**358**	**86**	**533**	**-2**	**531**	**8.29**
LT VIII – Electric Vehicle Charging Station	**-**	**Rs./kW/Month**	**70.00**	**4.15**	**1.35**	**0.23**	**0**	**-**	**0**	**0**	**0**	**-**	**0**	**5.50**
Sub-Total LT Category	**29,371,856**					**72,824**	**60,613,345**	**9,082**	**29,490**	**9,813**	**48,385**	**-37**	**48,348**	**6.64**
Distribution Franchisees														
Bhiwandi			-	4.90	-	4,060	-	-	1,989	-	1,989		1,989	4.90
Stand By Charges									396	-	396		396	
LF/ Incentives//Discount									-268		-268		-268	
											-		-	
MSEDCL Total Revenue	**29,395,088**					**121,196**	**71,655,470**	**14,829**	**62,324**	**11,638**	**88,791**	**-696**	**88,095**	**7.27**

* Energy Charge 'Unit' refers Rs/kVAh for all HT Categories and Rs/kWh for all LT Categories

$ Wheeling charges 'Unit' refers Rs/kVAh for all HT Categories and Rs./kWh for all LT Categories except, LT AG – Un-Metered, where Wheeling Charges is in Rs/HP/mth

Sales in Mn kVAh for all HT Categories and MU for all LT Consumer Categories

** ABR considering sales at input level for DFs

ANNEXURE – V :- REVENUE

Revenue from revised Tariffs effective from 1 April, 2023*

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
HT Category														
HT I(A): HT - Industry (General)	15,133	Rs./kVA/Month	463.00	6.85	0.54	38,288	13,378,255	5,203	26,227	1,526	32,957	-629	32,328	8.44
HT I(C): HT - Industry (Seasonal)	473	Rs./kVA/Month	463.00	7.11	0.54	119	121,927	47	85	6	138	-2	136	11.46
HT I - Industry (Sub-Total)	**15,606**					**38,407**	**13,500,182**	**5,250**	**26,312**	**1,533**	**33,095**	**-631**	**32,464**	**8.45**
HT II: HT - Commercial	3,380	Rs./kVA/Month	463.00	9.75	0.54	2,039	1,362,396	530	1,988	109	2,627	-7	2,620	12.85
HT III: HT - Railways/Metro/Monorail Traction	85	Rs./kVA/Month	463.00	5.56	0.54	91	56,465	22	50	4	77	-	77	8.45
HT IV: HT - Public Water Works (PWW)	1,108	Rs./kVA/Month	463.00	6.17	0.54	1,869	601,431	234	1,153	95	1,482	-33	1,448	7.75
HT V(A): HT - Agriculture Pumpsets	1,114	Rs./kVA/Month	82.00	3.69	0.54	1,510	838,405	58	557	27	642	-	642	4.25
HT V(B)): HT - Agriculture Others	475	Rs./kVA/Month	82.00	5.10	0.54	297	132,178	9	152	16	177	-	177	5.95
HT VI: HT - Group Housing Societies (Residential)	435	Rs./kVA/Month	369.00	5.20	0.54	252	120,492	37	131	12	180	-	180	7.15
HT VIII(A): HT - Public Services-Government	412	Rs./kVA/Month	463.00	7.24	0.54	321	140,972	55	232	17	305	-3	301	9.38
HT VIII(B): HT - Public Services-Others	1,229	Rs./kVA/Month	463.00	7.76	0.54	964	480,557	187	748	46	981	-10	971	10.07
HT - MSPGCL-Aux Supply	27	Rs./kVA/Month	-	-	-	238	175,507	-	-	-	-	-	-	-
HT IX: HT – Electric Vehicle Charging Station	7	Rs./kVA/Month	70.00	4.96	0.54	0	1,112	0	0	0	0	-	0	7.59
Sub-Total HT Category	**23,876**					**45,989**	**17,408,587**	**6,382**	**31,324**	**1,859**	**39,565**	**-685**	**38,881**	**8.45**
													-	
LT Category													-	
LT I(A): LT - Residential-BPL Category (0-30 units)	418,340	Rs./Connection/Month	29.00	1.18	-	52	54,420	15	6	-	21	-	21	3.98
LT I(B): LT - Residential	22,629,791					26,076	27,742,864	2,906	13,097	3,398	19,400	-	19,400	7.44
0-100	15,631,483	Rs./Connection/Month	107.00	3.28	1.30	17,134	-	2,007	5,620	2,233	9,860	-	9,860	5.75
101-300	5,676,644	Rs./Connection/Month	107.00	7.34	1.30	6,585	-	729	4,833	858	6,420	-	6,420	9.75
301-500	923,644	Rs./Connection/Month	107.00	10.38	1.30	1,058	-	119	1,098	138	1,355	-	1,355	12.80
501-1000	398,020	Rs./Connection/Month	107.00	11.90	1.30	1,298	-	51	1,545	169	1,766	-	1,766	13.60
Three Phase Connection	-	Rs./Connection/Month	357.00	-	-	-	-	-	-	-	-	-	-	-
LT I: LT - Residential (Sub-Total)	**23,048,130**					**26,128**	**27,797,284**	**2,920**	**13,103**	**3,398**	**19,421**	**-**	**19,421**	**7.43**
LT II(A): LT - Non-Residential (0-20 kW)	2,166,349	Rs./Connection/Month	436.00	7.01	1.30	6,520	5,027,119	1,133	4,570	850	6,553	-	6,553	10.05

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT II(B): LT - Non-Residential (>20 kW and ≤ 50 kW)	27,170	Rs./kW/Month	436.00	10.84	1.30	1,259	462,440	242	1,365	164	1,771	2	1,772	14.08
LT II(C): LT - Non-Residential (Above 50 kW)	20,074	Rs./kW/Month	436.00	12.62	1.30	813	325,676	156	1,026	106	1,288	2	1,290	15.87
LT II: LT - Non-Residential (Sub-Total)	**2,213,592**					**8,591**	**5,815,234.00**	**1,531**	**6,961**	**1,120**	**9,612**	**4**	**9,616**	**11.19**
LT III(A): LT - Public Water Works (0-20 kW)	60,196	Rs./kW/Month	108.00	2.52	1.30	837	132,016	17	211	109	337	-	337	4.03
LT III(B): LT - Public Water Works (>20 kW-40 kW)	1,173	Rs./kW/Month	132.00	3.86	1.30	103	32,490	5	40	13	59	-	59	5.66
LT III (C): LT - Public Water Works (Above 40 kW)	599	Rs./kW/Month	163.00	5.19	1.30	106	40,373	8	55	14	77	-	77	7.24
LT III: LT - Public Water Works (Sub-Total)	**61,968**					**1,047**	**204,879**	**30**	**306**	**136**	**473**	**-**	**473**	**4.51**
LT IV(A): LT - AG Un-metered-Pumpsets (Category 1 Zones)	**687,152**					**4,733**	**3,470,555**	**1,547**	**-**	**617**	**2,164**	**-**	**2,164**	**4.57**
(a) 0 - 5 HP	555,908	Rs./HP/Month	366.00	-	130	3,751	2,807,691	1,233	-	489	1,722	-	1,722	4.59
(b) > 5 HP - 7.5 HP	131,244	Rs./HP/Month	395.00	-	130	982	662,865	314	-	128	442	-	442	4.50
(c) Above 7.5 HP	-	Rs./HP/Month	444.00	-	130	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Category 2 Zones)	**782,564**					**4,051**	**3,952,444**	**1,375**	**-**	**528**	**1,903**	**-**	**1,903**	**4.70**
(a) 0 - 5 HP	584,163	Rs./HP/Month	283.00	-	130	3,116	2,950,393	1,002	-	406	1,408	-	1,408	4.52
(b) > 5 HP - 7.5 HP	198,401	Rs./HP/Month	310.00	-	130	935	1,002,051	373	-	122	495	-	495	5.29
(c) Above 7.5 HP	-	Rs./HP/Month	359.00	-	130	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Sub-Total)	**1,469,716**					**8,783**	**7,422,999**	**2,922**	**-**	**1,145**	**4,067**	**-**	**4,067**	**4.63**
LT IV(B): LT -AG Metered-Pumpsets	3,049,399	Rs./HP/Month	44.00	1.99	1.30	19,147	16,015,750	846	3,810	2,495	7,151	-	7,151	3.73
LT IV(C): LT - AG Metered-Others	31,813	Rs./kW/Month	119.00	3.36	1.30	137	353,178	50	46	18	114	-	114	8.36
LT IV - LT - Agriculture (Sub-Total)	**4,550,928**					**28,067**	**23,791,927**	**3,818**	**3,856**	**3,657**	**11,332**	**-**	**11,332**	**4.04**
LT V -Industry (0 - 20 kW)	281,174	Rs./Connection/Month	492.00	5.21	1.30	2,890	2,762,245	166	1,496	377	2,039	-	2,039	7.05
LT V -Industry (Above 20 kW)	64,376	Rs./kW/Month	327.00	6.17	1.30	5,769	2,285,844	897	3,544	752	5,193	-41	5,152	8.93
LT V -Industry(Sub-Total)	**345,550**					**8,659**	**5,048,089**	**1,063**	**5,040**	**1,128**	**7,232**	**-41**	**7,191**	**8.30**
LT VI (A) Street Light-Gram Panchayat, A,B&C Class MCs	75,950	Rs./Connection/Month	119.00	5.20	1.30	2,095	238,479	34	1,089	273	1,396	-	1,396	6.67

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT VI (B) Street Light - Municipal Corporation Areas	33,113	Rs./Connection/Month	119.00	6.33	1.30	624	245,133	35	395	81	511	-	511	8.19
LT VI Street Light (Sub-Total)	**109,063**					**2,719**	**483,612**	**69**	**1,484**	**354**	**1,908**	**-**	**1,908**	**7.02**
LT VII (A) Public Services-Government													-	
(i) 0-20 kW	41,327	Rs./Connection/Month	360.00	3.24	1.30	60	49,259	18	19	8	45	-	45	7.54
(ii) 20 kW-50 kW	645	Rs./kW/Month	360.00	4.66	1.30	14	5,308	2	7	2	11	-0	11	7.50
(iii) Above 50 kW	222	Rs./kW/Month	360.00	5.84	1.30	14	4,583	2	8	2	12	-0	12	8.50
LT VII (A) Public Services-Government (Sub-Total)	42,194					88	59,150	22	34	11	68	-0	68	7.69
LT VII (B) Public Services-Others														
(i) 0-20 kW	67,797	Rs./Connection/Month	392.00	4.56	1.30	323	195,798	32	147	42	221	-	221	6.85
(ii) 20 kW-50 kW	3,446	Rs./kW/Month	392.00	7.27	1.30	114	41,015	19	83	15	117	-1	116	10.19
(iii) Above 50 kW	1,403	Rs./kW/Month	392.00	7.54	1.30	158	42,446	20	119	21	160	-1	159	10.05
LT VII (B) Public Services-Others (Sub-Total)	72,646					595	279,258	71	349	78	498	-2	496	8.34
LT VII Public Services	**114,840**					**683**	**338,408**	**93**	**383**	**89**	**566**	**-2**	**564**	**8.26**
LT VIII – Electric Vehicle Charging Station	**-**	**Rs./kW/Month**	**70.00**	**4.20**	**1.30**	**0.23**	**-**	**-**	**0**	**0**	**0**	**-**	**0**	**5.50**
Sub-Total LT Category	**30,444,070**					**75,894**	**63,479,432**	**9,525**	**31,134**	**9,883**	**50,542**	**-39**	**50,503**	**6.65**
Distribution Franchisees														
Bhiwandi			-	4.90	-	4,220	-	-	2,068	-	2,068		2,068	4.90
Stand By Charges									396	-	396		396	
LF/ Incentives/Discount									-281		-281		-281	
											-		-	
MSEDCL Total Revenue	**30,467,945**					**126,103**	**80,888,018**	**15,907**	**64,641**	**11,742**	**92,290**	**-723**	**91,567**	**7.26**

* Energy Charge 'Unit' refers Rs/kVAh for all HT Categories and Rs/kWh for all LT Categories

$ Wheeling charges 'Unit' refers Rs/kVAh for all HT Categories and Rs./kWh for all LT Categories except, LT AG – Un-Metered, where Wheeling Charges is in Rs/HP/mth

Sales in Mn kVAh for all HT Categories and MU for all LT Consumer Categories

** ABR considering sales at input level for DFs

ANNEXURE – VI :- REVENUE

Revenue from revised Tariffs effective from 1 April, 2024*

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
HT Category														
HT I(A): HT - Industry (General)	15,563	Rs./kVA/Month	472.00	6.73	0.53	39,820	13,887,572	5,899	26,799	1,558	34,256	-655	33,602	8.44
HT I(C): HT - Industry (Seasonal)	473	Rs./kVA/Month	472.00	6.99	0.53	119	121,927	52	83	6	141	-2	139	11.70
HT I - Industry (Sub-Total)	**16,036**					**39,939**	**14,009,499**	**5,951**	**26,882**	**1,564**	**34,397**	**-657**	**33,741**	**8.45**
HT II: HT - Commercial	3,439	Rs./kVA/Month	472.00	9.30	0.53	2,082	1,389,545	590	1,936	109	2,636	-7	2,629	12.63
HT III: HT - Railways/Metro/Monorail Traction	85	Rs./kVA/Month	472.00	5.31	0.53	93	57,782	25	49	4	78	-	78	8.43
HT IV: HT - Public Water Works (PWW)	1,143	Rs./kVA/Month	472.00	6.17	0.53	1,915	640,104	272	1,182	95	1,549	-34	1,515	7.91
HT V(A): HT - Agriculture Pumpsets	1,141	Rs./kVA/Month	84.00	3.69	0.53	1,557	879,007	66	575	28	669	-	669	4.29
HT V(B)): HT - Agriculture Others	488	Rs./kVA/Month	84.00	5.10	0.53	306	132,178	10	156	16	183	-	183	5.96
HT VI: HT - Group Housing Societies (Residential)	451	Rs./kVA/Month	376.00	5.20	0.53	254	121,420	41	132	12	185	-	185	7.27
HT VIII(A): HT - Public Services-Government	433	Rs./kVA/Month	472.00	7.24	0.53	336	146,841	62	243	18	323	-4	320	9.52
HT VIII(B): HT - Public Services-Others	1,289	Rs./kVA/Month	472.00	7.31	0.53	1,009	500,563	213	737	47	997	-10	987	9.78
HT - MSPGCL-Aux Supply	27	Rs./kVA/Month	-	-	-	238	175,507	-	-	-	-	-	-	-
HT IX: HT – Electric Vehicle Charging Station	8	Rs./kVA/Month	70.00	4.97	0.53	0	1,136	0	0	0	0	-	0	7.79
Sub-Total HT Category	**24,538**					**47,730**	**18,052,446**	**7,231**	**31,893**	**1,894**	**41,017**	**-712**	**40,306**	**8.44**
													-	
LT Category													-	
LT I(A): LT - Residential-BPL Category (0-30 units)	435,125	Rs./Connection/Month	30.00	1.18	-	55	57,981	16	6	-	22	-	22	4.05
LT I(B): LT - Residential	23,537,964					27,346	29,558,002	3,079	13,735	3,441	20,254	-	20,254	7.41
0-100	16,258,867	Rs./Connection/Month	109.00	3.28	1.26	17,969	-	2,127	5,894	2,261	10,281	-	10,281	5.72
101-300	5,904,404	Rs./Connection/Month	109.00	7.34	1.26	6,906	-	772	5,069	869	6,710	-	6,710	9.72
301-500	960,703	Rs./Connection/Month	109.00	10.38	1.26	1,110	-	126	1,152	140	1,417	-	1,417	12.77
501-1000	413,990	Rs./Connection/Month	109.00	11.90	1.26	1,362	-	54	1,620	171	1,846	-	1,846	13.56
Three Phase Connection	-	Rs./Connection/Month	364.00	-	-	-	-	-	-	-	-	-	-	-
LT I: LT - Residential (Sub-Total)	**23,973,089**					**27,400**	**29,615,983**	**3,094**	**13,741**	**3,441**	**20,277**	**-**	**20,277**	**7.40**
LT II(A): LT - Non-Residential (0-20 kW)	2,254,248	Rs./Connection/Month	445.00	7.01	1.26	7,056	5,404,422	1,204	4,946	888	7,038	-	7,038	9.97
LT II(B): LT - Non-Residential (>20 kW and ≤ 50 kW)	28,273	Rs./kW/Month	445.00	10.84	1.26	1,365	497,148	265	1,480	172	1,917	2	1,919	14.06

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT II(C): LT - Non-Residential (Above 50 kW)	21,540	Rs./kW/Month	445.00	12.62	1.26	880	349,072	171	1,110	111	1,392	2	1,394	15.85
LT II: LT - Non-Residential (Sub-Total)	**2,304,060**					**9,301**	**6,250,642.00**	**1,641**	**7,536**	**1,170**	**10,347**	**4**	**10,351**	**11.13**
LT III(A): LT - Public Water Works (0-20 kW)	62,639	Rs./kW/Month	110.00	2.52	1.26	889	141,925	19	224	112	355	-	355	3.99
LT III(B): LT - Public Water Works (>20 kW-40 kW)	1,202	Rs./kW/Month	135.00	3.86	1.26	110	34,740	6	42	14	62	-	62	5.63
LT III (C): LT - Public Water Works (Above 40 kW)	614	Rs./kW/Month	166.00	5.19	1.26	106	43,169	9	55	13	77	-	77	7.26
LT III: LT - Public Water Works (Sub-Total)	**64,454**					**1,106**	**219,833**	**33**	**322**	**139**	**494**	**-**	**494**	**4.47**
LT IV(A): LT - AG Un-metered-Pumpsets (Category 1 Zones)	**687,152**					**4,733**	**3,470,555**	**1,577**	**-**	**596**	**2,173**	**-**	**2,173**	**4.59**
(a) 0 - 5 HP	555,908	Rs./HP/Month	373.00	-	126	3,751	2,807,691	1,257	-	472	1,729	-	1,729	4.61
(b) > 5 HP - 7.5 HP	131,244	Rs./HP/Month	403.00	-	126	982	662,865	321	-	124	444	-	444	4.52
(c) Above 7.5 HP	-	Rs./HP/Month	453.00	-	126	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Category 2 Zones)	**782,564**					**4,051**	**3,952,444**	**1,403**	**-**	**510**	**1,913**	**-**	**1,913**	**4.72**
(a) 0 - 5 HP	584,163	Rs./HP/Month	289.00	-	126	3,116	2,950,393	1,023	-	392	1,415	-	1,415	4.54
(b) > 5 HP - 7.5 HP	198,401	Rs./HP/Month	316.00	-	126	935	1,002,051	380	-	118	498	-	498	5.32
(c) Above 7.5 HP	-	Rs./HP/Month	366.00	-	126	-	-	-	-	-	-	-	-	
LT IV(A): LT - AG Un-metered-Pumpsets (Sub-Total)	**1,469,716**					**8,783**	**7,422,999**	**2,980**	**-**	**1,105**	**4,086**	**-**	**4,086**	**4.65**
LT IV(B): LT -AG Metered-Pumpsets	3,140,010	Rs./HP/Month	45.00	1.99	1.26	19,706	16,483,283	890	3,921	2,480	7,291	-	7,291	3.70
LT IV(C): LT - AG Metered-Others	32,759	Rs./kW/Month	121.00	3.36	1.26	137	363,489	53	46	17	116	-	116	8.48
LT IV - LT - Agriculture (Sub-Total)	**4,642,485**					**28,626**	**24,269,770**	**3,923**	**3,967**	**3,602**	**11,493**	**-**	**11,493**	**4.01**
LT V -Industry (0 - 20 kW)	281,174	Rs./Connection/Month	502.00	5.21	1.26	3,030	2,898,419	169	1,568	381	2,119	-	2,119	6.99
LT V -Industry (Above 20 kW)	64,376	Rs./kW/Month	334.00	6.17	1.26	6,048	2,398,532	961	3,716	761	5,438	-43	5,395	8.92
LT V -Industry(Sub-Total)	**345,550**					**9,078**	**5,296,950**	**1,131**	**5,284**	**1,142**	**7,557**	**-43**	**7,514**	**8.28**
LT VI (A) Street Light-Gram Panchayat, A,B&C Class MCs	78,494	Rs./Connection/Month	121.00	5.20	1.26	2,228	250,236	36	1,159	280	1,475	-	1,475	6.62
LT VI (B) Street Light - Municipal Corporation Areas	34,222	Rs./Connection/Month	121.00	6.33	1.26	664	257,218	37	420	84	541	-	541	8.15
LT VI Street Light (Sub-Total)	**112,716**					**2,892**	**507,454**	**74**	**1,579**	**364**	**2,016**	**-**	**2,016**	**6.97**

Category	No. of Consumers	Fixed/Demand Charge		Variable Charges		Energy Sales (MU / Mn kVAh)#	Connected Load/ Contract Demand	Revenue (Rs. Crore)						Average Billing Rate (Rs./Unit)
		Unit	Rate	Energy Charge (Rs/ Unit)*	Wheeling Charge (Rs/Unit)$			Fixed / Demand Charge	Energy Charge	Wheeling Charge	Total Revenue	ToD Rebate	Net Revenue	
LT VII (A) Public Services-Government													-	
(i) 0-20 kW	40,521	Rs./Connection/Month	367.00	3.24	1.26	63	51,688	18	20	8	46	-	46	7.33
(ii) 20 kW-50 kW	708	Rs./kW/Month	367.00	4.66	1.26	15	5,570	2	7	2	11	-0	11	7.47
(iii) Above 50 kW	231	Rs./kW/Month	367.00	5.84	1.26	15	4,809	2	9	2	13	-0	13	8.43
LT VII (A) Public Services-Government (Sub-Total)	41,460					94	62,067	22	36	12	71	-0	71	7.53
LT VII (B) Public Services-Others														
(i) 0-20 kW	67,797	Rs./Connection/Month	400.00	4.56	1.26	342	205,451	33	156	43	231	-	231	6.77
(ii) 20 kW-50 kW	3,780	Rs./kW/Month	400.00	7.27	1.26	120	43,038	21	88	15	123	-1	122	10.16
(iii) Above 50 kW	1,461	Rs./kW/Month	400.00	7.54	1.26	172	44,539	21	129	22	172	-1	171	9.99
LT VII (B) Public Services-Others (Sub-Total)	73,037					634	293,027	75	373	80	527	-2	525	8.29
LT VII Public Services	**114,497**					**728**	**355,093**	**97**	**409**	**92**	**598**	**-2**	**596**	**8.19**
LT VIII – Electric Vehicle Charging Station	**-**	**Rs./kW/Month**	**70.00**	**4.24**	**1.26**	**0.23**	**-**	**-**	**0**	**0**	**0**	**-**	**0**	**5.50**
Sub-Total LT Category	**31,556,850**					**79,130**	**66,515,725**	**9,993**	**32,839**	**9,950**	**52,781**	**-40**	**52,741**	**6.67**
Distribution Franchisees														
Bhiwandi			-	5.10	-	4,389	-	-	2,238	-	2,238		2,238	5.10
Stand By Charges									396	-	396		396	
LF/ Incentives/Discount									-295		-295		-295	
											-		-	
MSEDCL Total Revenue	**31,581,388**					**131,249**	**84,568,171**	**17,223**	**67,071**	**11,844**	**96,137**	**-752**	**95,385**	**7.27**

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* Energy Charge 'Unit' refers Rs/kVAh for all HT Categories and Rs/kWh for all LT Categories

$ Wheeling charges 'Unit' refers Rs/kVAh for all HT Categories and Rs./kWh for all LT Categories except, LT AG – Un-Metered, where Wheeling Charges is in Rs/HP/mth

Sales in Mn kVAh for all HT Categories and MU for all LT Consumer Categories

** ABR considering sales at input level for DFs

ANNEXURE VII – Monthly Approved Stack approved for FY 2020-21 to FY 2024-25

Generator Name	VC per unit (Rs/kWh)	Apr-20		May-20		Jun-20		Jul-20		Aug-20		Sep-20		Oct-20		Nov-20		Dec-20		Jan-21		Feb-21		Mar-21	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Must Run Stations																									
KAPP	2.47	80	20	83	21	80	20	83	21	83	21	80	20	83	21	80	20	83	21	83	21	75	19	83	21
TAPP 1 & 2	2.19	94	21	97	21	94	21	97	21	97	21	94	21	97	21	94	21	97	21	97	21	88	19	97	21
TAPP 3&4	3.42	231	79	239	81	231	79	239	81	239	81	231	79	239	81	231	79	239	81	239	81	216	74	239	81
SSP	2.12	99	21	103	22	99	21	103	22	103	22	99	21	103	22	99	21	103	22	103	22	93	20	103	22
Pench	2.12	11	2	12	2	11	2	12	2	12	2	11	2	12	2	11	2	12	2	12	2	10	2	12	2
Dodson I	1.68	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1
Dodson II	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-
Renewable - Solar	3.62	634	229	672	243	542	196	392	142	415	150	559	202	638	231	596	216	594	215	645	233	600	217	701	254
Renewable - Non-Solar	4.93	803	396	856	422	1,245	614	1,789	883	1,652	815	654	323	698	344	1,031	509	1,161	573	1,088	537	1,107	546	1,200	592
Hydro (Incl. Ghatghar)	-	271	-	280	-	271	-	280	-	280	-	271	-	280	-	271	-	280	-	280	-	253	-	280	-
Stations under MOD																									
SIPAT TPS 1	1.47	293	43	302	44	293	43	302	44	302	44	293	43	302	44	293	43	302	44	302	44	273	40	302	44
SIPAT TPS 2	1.48	148	22	153	23	148	22	153	23	153	23	148	22	153	23	148	22	153	23	153	23	138	20	153	23
KSTPS VII	1.49	62	9	64	10	62	9	64	10	64	10	62	9	64	10	62	9	64	10	64	10	58	9	64	10
KSTPS	1.54	347	53	359	55	347	53	359	55	359	55	347	53	359	55	347	53	359	55	359	55	324	50	359	55
VSTP II	1.73	183	32	189	33	183	32	189	33	189	33	183	32	189	33	183	32	189	33	189	33	171	30	189	33
VSTP IV	1.76	155	27	160	28	155	27	160	28	160	28	155	27	160	28	155	27	160	28	160	28	145	26	160	28
VSTP V	1.77	85	15	87	15	85	15	87	15	87	15	85	15	87	15	85	15	87	15	87	15	79	14	87	15
VSTP III	1.77	148	26	153	27	148	26	153	27	153	27	148	26	153	27	148	26	153	27	153	27	138	25	153	27
Adani power 1320 MW	1.84	755	139	781	143	755	139	781	143	781	143	755	139	781	143	755	139	781	143	781	143	705	130	781	143
VSTP I	1.84	228	42	236	43	228	42	236	43	236	43	228	42	236	43	228	42	236	43	236	43	213	39	236	43
Mundra UMPP	2.07	424	88	438	91	424	88	438	91	438	91	424	88	438	91	424	88	438	91	438	91	396	82	438	91
KhSTPS II	2.27	85	19	88	20	85	19	88	20	88	20	85	19	88	20	85	19	88	20	88	20	79	18	88	20
Koradi R U-8	2.28	268	61	277	63	268	61	277	63	277	63	268	61	277	63	268	61	277	63	277	63	250	57	277	63
Koradi 9	2.28	268	61	277	63	268	61	277	63	277	63	268	61	277	63	268	61	277	63	277	63	250	57	277	63
Koradi10	2.28	268	61	277	63	268	61	277	63	277	63	268	61	277	63	268	61	277	63	277	63	250	57	277	63
Chandrapur 8	2.45	281	69	291	71	281	69	291	71	291	71	281	69	291	71	281	69	291	71	291	71	263	64	291	71
Chandrapur 9	2.45	281	69	291	71	281	69	291	71	291	71	281	69	291	71	281	69	291	71	291	71	263	64	291	71
KHAPARKHEDA 5	2.46	276	68	285	70	276	68	285	70	285	70	276	68	285	70	276	68	285	70	285	70	257	63	285	70
Lara Chattisgarh - Stg. I - I	2.46	65	16	67	17	65	16	67	17	67	17	65	16	67	17	65	16	67	17	67	17	61	15	67	17
Lara Chattisgarh - Stg. I - II	2.46	65	16	67	17	65	16	67	17	67	17	65	16	67	17	65	16	67	17	67	17	61	15	67	17
CHANDRAPUR - 3	2.54	94	24	97	25	94	24	97	25	97	25	94	24	97	25	94	24	97	25	97	25	88	22	97	25
CHANDRAPUR - 4	2.54	94	24	97	25	94	24	97	25	97	25	94	24	97	25	94	24	97	25	97	25	88	22	97	25
CHANDRAPUR - 5	2.54	224	57	232	59	224	57	232	59	232	59	224	57	232	59	224	57	232	59	232	59	209	53	232	59
CHANDRAPUR - 6	2.54	224	57	232	59	224	57	232	59	232	59	224	57	232	59	224	57	232	59	232	59	209	53	232	59
CHANDRAPUR - 7	2.54	224	57	232	59	224	57	232	59	232	59	224	57	232	59	224	57	232	59	232	59	209	53	232	59
EMCO Power	2.58	113	29	116	30	113	29	116	30	116	30	113	29	116	30	113	29	116	30	116	30	105	27	116	30
GTPS URAN	2.68	238	64	246	66	238	64	246	66	246	66	238	64	246	66	238	64	246	66	246	66	222	60	246	66
IPP - JSW	2.79	159	44	164	46	159	44	164	46	164	46	159	44	164	46	159	44	164	46	164	46	148	41	164	46
KHAPARKHEDA -1	2.81	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	24	95	27
KHAPARKHEDA - 2	2.81	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	24	95	27
KHAPARKHEDA - 3	2.81	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	24	95	27
KHAPARKHEDA - 4	2.81	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	24	95	27
Adani power 125 MW	2.84	72	20	74	21	72	20	74	21	74	21	72	20	74	21	72	20	74	21	74	21	67	19	74	21

Generator Name	VC per unit (Rs/kWh)	Apr-20		May-20		Jun-20		Jul-20		Aug-20		Sep-20		Oct-20		Nov-20		Dec-20		Jan-21		Feb-21		Mar-21	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Adani power 1200 MW	2.84	646	183	668	189	646	183	668	189	668	189	646	183	668	189	646	183	668	189	668	189	603	171	668	189
Adani power 440mw	2.90	252	73	260	75	252	73	260	75	260	75	252	73	260	75	252	73	260	75	260	75	235	68	260	75
GANDHAR	2.98	21	6	22	6	21	6	22	6	22	6	21	6	22	6	21	6	22	6	22	6	20	6	22	6
Paras - 3	2.99	130	39	135	40	130	39	135	40	135	40	130	39	135	40	130	39	135	40	135	40	122	36	135	40
Paras - 4	2.99	130	39	135	40	130	39	135	40	135	40	130	39	135	40	130	39	135	40	135	40	122	36	135	40
KAWAS	3.03	29	9	30	9	29	9	30	9	30	9	29	9	30	9	29	9	30	9	30	9	27	8	30	9
Khargone - I	3.13	14	4	15	5	14	4	15	5	15	5	14	4	15	5	14	4	15	5	15	5	13	4	15	5
Khargone - II	3.13	14	4	15	5	14	4	15	5	15	5	14	4	15	5	14	4	15	5	15	5	13	4	15	5
KORADI - 6	3.14	48	15	50	16	48	15	50	16	50	16	48	15	50	16	48	15	50	16	50	16	45	14	50	16
KORADI - 7	3.14	48	15	50	16	48	15	50	16	50	16	48	15	50	16	48	15	50	16	50	16	45	14	50	16
MSTPS-II	3.16	287	91	297	94	287	91	297	94	297	94	287	91	297	94	287	91	195	62	297	94	268	85	297	94
BHUSAWAL 4	3.27	288	94	297	97	288	94	152	50	119	39	288	94	297	97	288	94	-	-	297	97	268	88	297	97
BHUSAWAL 5	3.27	288	94	297	97	288	94	-	-	-	-	288	94	297	97	288	94	-	-	225	74	268	88	297	97
NASHIK- 3	3.39	108	37	112	38	108	37	-	-	-	-	18	6	112	38	108	37	-	-	-	-	101	34	112	38
NASHIK- 4	3.39	108	37	112	38	108	37	-	-	-	-	-	-	112	38	96	33	-	-	-	-	34	11	112	38
NASHIK- 5	3.39	108	37	112	38	108	37	-	-	-	-	-	-	112	38	-	-	-	-	-	-	-	-	112	38
MSTPS-I	3.45	213	73	220	76	62	22	-	-	-	-	-	-	220	76	-	-	-	-	-	-	-	-	220	76
Rattanindia Amravati	3.46	676	234	698	242	-	-	-	-	-	-	-	-	578	200	-	-	-	-	-	-	-	-	134	46
Gadarwara - I	3.64	14	5	15	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gadarwara - II	3.64	14	5	15	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parli replacement U 8	3.83	121	46	125	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - I	3.87	141	55	110	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - II	3.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BHUSAWAL - 3	3.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-6	4.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-7	4.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The above table depicts projection of month-wise MoD stack based on approved variable charge for FY 2020-21. However, actual operation of MoD stack shall be governed as per the ABT Order in Case No.42 of 2006, MERC DSM Regulations, 2019, and the State Grid Code and amendments thereof. Accordingly the actual MoD stack shall vary based on the energy charge inclusive of FAC, if any, of various generating stations.

Generator Name	VC per unit (Rs/kWh)	Apr-21		May-21		Jun-21		Jul-21		Aug-21		Sep-21		Oct-21		Nov-21		Dec-21		Jan-22		Feb-22		Mar-22	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Must Run Stations																									
KAPP	2.50	80	20	83	21	80	20	83	21	83	21	80	20	83	21	80	20	83	21	83	21	75	19	83	21
TAPP 1 & 2	2.22	94	21	97	22	94	21	97	22	97	22	94	21	97	22	94	21	97	22	97	22	88	19	97	22
TAPP 3&4	3.52	231	81	239	84	231	81	239	84	239	84	231	81	239	84	231	81	239	84	239	84	216	76	239	84
SSP	2.12	99	21	103	22	99	21	103	22	103	22	99	21	103	22	99	21	103	22	103	22	93	20	103	22
Pench	2.12	11	2	12	2	11	2	12	2	12	2	11	2	12	2	11	2	12	2	12	2	10	2	12	2
Dodson I	1.68	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1
Dodson II	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-

Generator Name	VC per unit (Rs/kWh)	Apr-21		May-21		Jun-21		Jul-21		Aug-21		Sep-21		Oct-21		Nov-21		Dec-21		Jan-22		Feb-22		Mar-22	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Renewable - Solar	3.52	842	297	893	315	721	254	521	184	552	194	743	262	944	333	882	311	879	310	953	336	888	313	1,037	365
Renewable - Non-Solar	4.76	903	430	952	453	1,397	665	2,019	961	1,848	880	380	181	695	331	1,127	537	1,483	706	1,107	527	1,132	539	1,266	603
Hydro (Incl. Ghatghar)	-	271	-	280	-	271	-	280	-	280	-	271	-	280	-	271	-	280	-	280	-	253	-	280	-
Stations under MOD																									
SIPAT TPS 1	1.52	293	44	302	46	293	44	302	46	302	46	293	44	302	46	293	44	302	46	302	46	273	41	302	46
SIPAT TPS 2	1.53	148	23	153	23	148	23	153	23	153	23	148	23	153	23	148	23	153	23	153	23	138	21	153	23
KSTPS VII	1.53	62	9	64	10	62	9	64	10	64	10	62	9	64	10	62	9	64	10	64	10	58	9	64	10
KSTPS	1.61	347	56	359	58	347	56	359	58	359	58	347	56	359	58	347	56	359	58	359	58	324	52	359	58
VSTP II	1.77	183	32	189	34	183	32	189	34	189	34	183	32	189	34	183	32	189	34	189	34	171	30	189	34
VSTP IV	1.81	155	28	160	29	155	28	160	29	160	29	155	28	160	29	155	28	160	29	160	29	145	26	160	29
VSTP V	1.83	85	15	87	16	85	15	87	16	87	16	85	15	87	16	85	15	87	16	87	16	79	14	87	16
VSTP III	1.84	148	27	153	28	148	27	153	28	153	28	148	27	153	28	148	27	153	28	153	28	138	25	153	28
Adani power 1320 MW	1.88	755	142	781	146	755	142	781	146	781	146	755	142	781	146	755	142	781	146	781	146	705	132	781	146
VSTP I	1.90	228	43	236	45	228	43	236	45	236	45	228	43	236	45	228	43	236	45	236	45	213	41	236	45
Mundra UMPP	2.18	424	92	438	95	424	92	438	95	438	95	424	92	438	95	424	92	438	95	438	95	396	86	438	95
KhSTPS II	2.30	85	20	88	20	85	20	88	20	88	20	85	20	88	20	85	20	88	20	88	20	79	18	88	20
Koradi R U-8	2.34	268	63	277	65	268	63	277	65	277	65	268	63	277	65	268	63	277	65	277	65	250	59	277	65
Koradi 9	2.34	268	63	277	65	268	63	277	65	277	65	268	63	277	65	268	63	277	65	277	65	250	59	277	65
Koradi10	2.34	268	63	277	65	268	63	277	65	277	65	268	63	277	65	268	63	277	65	277	65	250	59	277	65
Chandrapur 8	2.51	281	71	291	73	281	71	291	73	291	73	281	71	291	73	281	71	291	73	291	73	263	66	291	73
Chandrapur 9	2.51	281	71	291	73	281	71	291	73	291	73	281	71	291	73	281	71	291	73	291	73	263	66	291	73
KHAPARKHEDA 5	2.52	276	69	285	72	276	69	285	72	285	72	276	69	285	72	276	69	285	72	285	72	257	65	285	72
Lara Chattisgarh - Stg. I - I	2.52	65	16	67	17	65	16	67	17	67	17	65	16	67	17	65	16	67	17	67	17	61	15	67	17
Lara Chattisgarh - Stg. I - II	2.52	65	16	67	17	65	16	67	17	67	17	65	16	67	17	65	16	67	17	67	17	61	15	67	17
CHANDRAPUR - 3	2.54	94	24	97	25	94	24	97	25	97	25	94	24	97	25	94	24	97	25	97	25	88	22	97	25
CHANDRAPUR - 4	2.54	94	24	97	25	94	24	97	25	97	25	94	24	97	25	94	24	97	25	97	25	88	22	97	25
CHANDRAPUR - 5	2.54	224	57	232	59	224	57	232	59	232	59	224	57	232	59	224	57	232	59	232	59	209	53	232	59
CHANDRAPUR - 6	2.54	224	57	232	59	224	57	232	59	232	59	224	57	232	59	224	57	232	59	232	59	209	53	232	59
CHANDRAPUR - 7	2.54	224	57	232	59	224	57	232	59	232	59	224	57	232	59	224	57	232	59	232	59	209	53	232	59
EMCO Power	2.76	113	31	116	32	113	31	116	32	116	32	113	31	116	32	113	31	116	32	116	32	105	29	116	32
GTPS URAN	2.76	238	66	246	68	238	66	246	68	246	68	238	66	246	68	238	66	246	68	246	68	222	61	246	68
KHAPARKHEDA -1	2.88	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	25	95	27
KHAPARKHEDA - 2	2.88	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	25	95	27
KHAPARKHEDA - 3	2.88	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	25	95	27
KHAPARKHEDA - 4	2.88	92	26	95	27	92	26	95	27	95	27	92	26	95	27	92	26	95	27	95	27	86	25	95	27
Adani power 125 MW	2.94	72	21	74	22	72	21	74	22	74	22	72	21	74	22	72	21	74	22	74	22	67	20	74	22
Adani power 1200 MW	2.94	646	190	668	197	646	190	668	197	668	197	646	190	668	197	646	190	668	197	668	197	603	178	668	197
GANDHAR	3.00	21	6	22	7	21	6	22	7	22	7	21	6	22	7	21	6	22	7	22	7	20	6	22	7
IPP - JSW	3.00	159	48	164	49	159	48	164	49	164	49	159	48	164	49	159	48	164	49	164	49	148	45	164	49
Adani power 440mw	3.01	252	76	260	78	252	76	260	78	260	78	252	76	260	78	252	76	260	78	260	78	235	71	260	78
Paras - 3	3.07	130	40	135	41	130	40	135	41	135	41	130	40	135	41	130	40	135	41	135	41	122	37	135	41
Paras - 4	3.07	130	40	135	41	130	40	135	41	135	41	130	40	135	41	130	40	52	16	135	41	122	37	135	41
KAWAS	3.07	29	9	30	9	29	9	30	9	30	9	29	9	30	9	29	9	-	-	30	9	27	8	30	9
Khargone - I	3.20	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	-	-	15	5	13	4	15	5
Khargone - II	3.20	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	-	-	15	5	13	4	15	5
KORADI - 6	3.22	48	15	50	16	48	15	50	16	50	16	48	15	50	16	48	15	-	-	50	16	45	14	50	16

Generator Name	VC per unit (Rs/kWh)	Apr-21		May-21		Jun-21		Jul-21		Aug-21		Sep-21		Oct-21		Nov-21		Dec-21		Jan-22		Feb-22		Mar-22	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
KORADI - 7	3.22	48	15	50	16	48	15	50	16	50	16	48	15	50	16	48	15	-	-	50	16	45	14	50	16
MSTPS-II	3.24	287	93	297	96	287	93	287	93	279	90	287	93	297	96	287	93	-	-	297	96	268	87	297	96
BHUSAWAL 4	3.35	288	96	297	100	288	96	-	-	-	-	288	96	297	100	288	96	-	-	297	100	268	90	297	100
BHUSAWAL 5	3.35	288	96	297	100	288	96	-	-	-	-	288	96	297	100	288	96	-	-	79	26	256	86	297	100
NASHIK- 3	3.48	108	38	112	39	108	38	-	-	-	-	108	38	112	39	4	1	-	-	-	-	-	-	112	39
NASHIK- 4	3.48	108	38	112	39	108	38	-	-	-	-	108	38	112	39	-	-	-	-	-	-	-	-	112	39
NASHIK- 5	3.48	108	38	112	39	44	15	-	-	-	-	83	29	112	39	-	-	-	-	-	-	-	-	112	39
MSTPS-I	3.52	213	75	220	77	-	-	-	-	-	-	-	-	220	77	-	-	-	-	-	-	-	-	165	58
Rattanindia Amravati	3.57	676	241	698	249	-	-	-	-	-	-	-	-	482	172	-	-	-	-	-	-	-	-	-	-
Gadarwara - I	3.72	14	5	15	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gadarwara - II	3.72	14	5	15	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parli replacement U 8	3.94	121	48	125	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - I	3.96	49	19	21	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - II	3.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BHUSAWAL - 3	4.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-6	4.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-7	4.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The above table depicts projection of month-wise MoD stack based on approved variable charge for FY 2021-22. However, actual operation of MoD stack shall be governed as per the ABT Order in Case No.42 of 2006, MERC DSM Regulations, 2019 and the State Grid Code and amendments thereof. Accordingly the actual MoD stack shall vary based on the energy charge inclusive of FAC, if any, of various generating stations.

Generator Name	VC per unit (Rs/kWh)	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		Oct-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Must Run Stations																									
KAPP	2.53	80	20	83	21	80	20	83	21	83	21	80	20	83	21	80	20	83	21	83	21	75	19	83	21
TAPP 1 & 2	2.25	94	21	97	22	94	21	97	22	97	22	94	21	97	22	94	21	97	22	97	22	88	20	97	22
TAPP 3&4	3.62	231	84	239	86	231	84	239	86	239	86	231	84	239	86	231	84	239	86	239	86	216	78	239	86
SSP	2.12	99	21	103	22	99	21	103	22	103	22	99	21	103	22	99	21	103	22	103	22	93	20	103	22
Pench	2.12	11	2	12	2	11	2	12	2	12	2	11	2	12	2	11	2	12	2	12	2	10	2	12	2
Dodson I	1.68	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1
Dodson II	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-
Renewable - Solar	3.49	1,019	356	1,081	378	873	305	630	220	668	233	900	314	1,016	355	949	332	946	331	1,026	359	955	334	1,116	390
Renewable - Non-Solar	4.52	969	438	1,081	488	1,581	714	2,289	1,033	2,113	954	831	375	816	369	1,173	530	1,328	600	1,233	557	1,265	571	1,389	627
Hydro (Incl. Ghatghar)	-	271	-	280	-	271	-	280	-	280	-	271	-	280	-	271	-	280	-	280	-	253	-	280	-
Stations under MOD																									
SIPAT TPS 1	1.56	293	46	302	47	293	46	302	47	302	47	293	46	302	47	293	46	302	47	302	47	273	43	302	47
KSTPS VII	1.57	62	10	64	10	62	10	64	10	64	10	62	10	64	10	62	10	64	10	64	10	58	9	64	10
SIPAT TPS 2	1.57	148	23	153	24	148	23	153	24	153	24	148	23	153	24	148	23	153	24	153	24	138	22	153	24
KSTPS	1.68	347	58	359	60	347	58	359	60	359	60	347	58	359	60	347	58	359	60	359	60	324	54	359	60
VSTP II	1.82	183	33	189	34	183	33	189	34	189	34	183	33	189	34	183	33	189	34	189	34	171	31	189	34

Generator Name	VC per unit (Rs/kWh)	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		Oct-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
VSTP IV	1.86	155	29	160	30	155	29	160	30	160	30	155	29	160	30	155	29	160	30	160	30	145	27	160	30
VSTP V	1.90	85	16	87	17	85	16	87	17	87	17	85	16	87	17	85	16	87	17	87	17	79	15	87	17
VSTP III	1.91	148	28	153	29	148	28	153	29	153	29	148	28	153	29	148	28	153	29	153	29	138	26	153	29
VSTP I	1.97	228	45	236	46	228	45	236	46	236	46	228	45	236	46	228	45	236	46	236	46	213	42	236	46
Adani power 1320 MW	2.03	755	153	781	159	755	153	781	159	781	159	755	153	781	159	755	153	781	159	781	159	705	143	781	159
Mundra UMPP	2.29	424	97	438	100	424	97	438	100	438	100	424	97	438	100	424	97	438	100	438	100	396	91	438	100
KhSTPS II	2.32	85	20	88	20	85	20	88	20	88	20	85	20	88	20	85	20	88	20	88	20	79	18	88	20
Koradi R U-8	2.40	268	64	277	66	268	64	277	66	277	66	268	64	277	66	268	64	277	66	277	66	250	60	277	66
Koradi 9	2.40	268	64	277	66	268	64	277	66	277	66	268	64	277	66	268	64	277	66	277	66	250	60	277	66
Koradi10	2.40	268	64	277	66	268	64	277	66	277	66	268	64	277	66	268	64	277	66	277	66	250	60	277	66
Chandrapur 8	2.57	281	72	291	75	281	72	291	75	291	75	281	72	291	75	281	72	291	75	291	75	263	68	291	75
Chandrapur 9	2.57	281	72	291	75	281	72	291	75	291	75	281	72	291	75	281	72	291	75	291	75	263	68	291	75
Lara Chattisgarh - Stg. I - I	2.58	65	17	67	17	65	17	67	17	67	17	65	17	67	17	65	17	67	17	67	17	61	16	67	17
Lara Chattisgarh - Stg. I - II	2.58	65	17	67	17	65	17	67	17	67	17	65	17	67	17	65	17	67	17	67	17	61	16	67	17
KHAPARKHEDA 5	2.58	276	71	285	74	276	71	285	74	285	74	276	71	285	74	276	71	285	74	285	74	257	66	285	74
CHANDRAPUR - 3	2.66	94	25	97	26	94	25	97	26	97	26	94	25	97	26	94	25	97	26	97	26	88	23	97	26
CHANDRAPUR - 4	2.66	94	25	97	26	94	25	97	26	97	26	94	25	97	26	94	25	97	26	97	26	88	23	97	26
CHANDRAPUR - 5	2.66	224	60	232	62	224	60	232	62	232	62	224	60	232	62	224	60	232	62	232	62	209	56	232	62
CHANDRAPUR - 6	2.66	224	60	232	62	224	60	232	62	232	62	224	60	232	62	224	60	232	62	232	62	209	56	232	62
CHANDRAPUR - 7	2.66	224	60	232	62	224	60	232	62	232	62	224	60	232	62	224	60	232	62	232	62	209	56	232	62
GTPS URAN	2.85	238	68	246	70	238	68	246	70	246	70	238	68	246	70	238	68	246	70	246	70	222	63	246	70
KHAPARKHEDA -1	2.95	92	27	95	28	92	27	95	28	95	28	92	27	95	28	92	27	95	28	95	28	86	25	95	28
KHAPARKHEDA - 2	2.95	92	27	95	28	92	27	95	28	95	28	92	27	95	28	92	27	95	28	95	28	86	25	95	28
KHAPARKHEDA - 3	2.95	92	27	95	28	92	27	95	28	95	28	92	27	95	28	92	27	95	28	95	28	86	25	95	28
KHAPARKHEDA - 4	2.95	92	27	95	28	92	27	95	28	95	28	92	27	95	28	92	27	95	28	95	28	86	25	95	28
EMCO Power	2.96	113	33	116	34	113	33	116	34	116	34	113	33	116	34	113	33	116	34	116	34	105	31	116	34
GANDHAR	3.01	21	6	22	7	21	6	22	7	22	7	21	6	22	7	21	6	22	7	22	7	20	6	22	7
Adani power 125 MW	3.06	72	22	74	23	72	22	74	23	74	23	72	22	74	23	72	22	74	23	74	23	67	20	74	23
Adani power 1200 MW	3.06	646	198	668	204	646	198	668	204	668	204	646	198	668	204	646	198	668	204	668	204	603	184	668	204
KAWAS	3.12	29	9	30	9	29	9	30	9	30	9	29	9	30	9	29	9	30	9	30	9	27	8	30	9
Adani power 440mw	3.12	252	79	260	81	252	79	260	81	260	81	252	79	260	81	252	79	260	81	260	81	235	73	260	81
Paras - 3	3.15	130	41	135	42	130	41	135	42	135	42	130	41	135	42	130	41	135	42	135	42	122	38	135	42
Paras - 4	3.15	130	41	135	42	130	41	135	42	135	42	130	41	135	42	130	41	135	42	135	42	122	38	135	42
IPP - JSW	3.23	159	51	164	53	159	51	164	53	164	53	159	51	164	53	159	51	164	53	164	53	148	48	164	53
Khargone - I	3.28	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	15	5	15	5	13	4	15	5
Khargone - II	3.28	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	15	5	15	5	13	4	15	5
KORADI - 6	3.31	48	16	50	16	48	16	50	16	50	16	48	16	50	16	48	16	50	16	50	16	45	15	50	16
KORADI - 7	3.31	48	16	50	16	48	16	50	16	50	16	48	16	50	16	48	16	50	16	50	16	45	15	50	16
MSTPS-II	3.32	287	95	297	98	287	95	114	38	104	35	287	95	297	98	287	95	43	14	297	98	268	89	297	98
BHUSAWAL 4	3.44	288	99	297	102	288	99	-	-	-	-	288	99	297	102	288	99	-	-	297	102	268	92	297	102
BHUSAWAL 5	3.44	288	99	297	102	288	99	-	-	-	-	184	63	297	102	288	99	-	-	75	26	236	81	297	102
NASHIK- 3	3.57	108	39	112	40	108	39	-	-	-	-	-	-	112	40	87	31	-	-	-	-	-	-	112	40
NASHIK- 4	3.57	108	39	112	40	38	14	-	-	-	-	-	-	112	40	-	-	-	-	-	-	-	-	112	40
NASHIK- 5	3.57	108	39	112	40	-	-	-	-	-	-	-	-	112	40	-	-	-	-	-	-	-	-	112	40
MSTPS-I	3.58	213	76	220	79	-	-	-	-	-	-	-	-	220	79	-	-	-	-	-	-	-	-	195	70
Rattanindia Amravati	3.69	676	249	698	258	-	-	-	-	-	-	-	-	510	188	-	-	-	-	-	-	-	-	-	-
Gadarwara - I	3.81	14	5	15	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generator Name	VC per unit (Rs/kWh)	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		Oct-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Gadarwara - II	3.81	14	5	15	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - I	4.06	164	67	78	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - II	4.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parli replacement U 8	4.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BHUSAWAL - 3	4.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-6	4.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-7	4.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The above table depicts projection of month-wise MoD stack based on approved variable charge for FY 2022-23. However, actual operation of MoD stack shall be governed as per the ABT Order in Case No.42 of 2006, MERC DSM Regulations, 2019 and the State Grid Code and amendments thereof. Accordingly the actual MoD stack shall vary based on the energy charge inclusive of FAC, if any, of various generating stations.

Generator Name	VC per unit (Rs/kWh)	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Must Run Stations																									
KAPP	2.56	80	21	83	21	80	21	83	21	83	21	80	21	83	21	80	21	83	21	83	21	78	20	83	21
TAPP 1 & 2	2.28	94	21	97	22	94	21	97	22	97	22	94	21	97	22	94	21	97	22	97	22	91	21	97	22
TAPP 3&4	3.73	231	86	239	89	231	86	239	89	239	89	231	86	239	89	231	86	239	89	239	89	223	83	239	89
SSP	2.12	99	21	103	22	99	21	103	22	103	22	99	21	103	22	99	21	103	22	103	22	96	20	103	22
Pench	2.12	11	2	12	2	11	2	12	2	12	2	11	2	12	2	11	2	12	2	12	2	11	2	12	2
Dodson I	1.68	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1
Dodson II	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-
Renewable - Solar	3.44	1,434	494	1,520	523	1,228	423	888	305	940	324	1,266	436	1,327	457	1,239	426	1,235	425	1,340	461	1,247	429	1,457	501
Renewable - Non-Solar	4.46	999	445	1,115	497	1,629	726	2,359	1,051	2,178	970	856	382	841	375	1,209	539	1,369	610	1,271	566	1,303	581	1,432	638
Hydro (Incl. Ghatghar)	-	270	-	279	-	270	-	279	-	279	-	270	-	279	-	270	-	279	-	279	-	261	-	279	-
Stations under MOD																									
KSTPS VII	1.60	62	10	64	10	62	10	64	10	64	10	62	10	64	10	62	10	64	10	64	10	60	10	64	10
SIPAT TPS 1	1.61	293	47	302	49	293	47	302	49	302	49	293	47	302	49	293	47	302	49	302	49	283	46	302	49
SIPAT TPS 2	1.62	148	24	153	25	148	24	153	25	153	25	148	24	153	25	148	24	153	25	153	25	143	23	153	25
KSTPS	1.75	347	61	359	63	347	61	359	63	359	63	347	61	359	63	347	61	359	63	359	63	335	59	359	63
VSTP II	1.86	183	34	189	35	183	34	189	35	189	35	183	34	189	35	183	34	189	35	189	35	177	33	189	35
VSTP IV	1.92	155	30	160	31	155	30	160	31	160	31	155	30	160	31	155	30	160	31	160	31	150	29	160	31
VSTP V	1.97	85	17	87	17	85	17	87	17	87	17	85	17	87	17	85	17	87	17	87	17	82	16	87	17
VSTP III	1.98	148	29	153	30	148	29	153	30	153	30	148	29	153	30	148	29	153	30	153	30	143	28	153	30
VSTP I	2.03	228	46	236	48	228	46	236	48	236	48	228	46	236	48	228	46	236	48	236	48	221	45	236	48
Adani power 1320 MW	2.06	755	155	781	161	755	155	781	161	781	161	755	155	781	161	755	155	781	161	781	161	730	150	781	161
KhSTPS II	2.34	85	20	88	21	85	20	88	21	88	21	85	20	88	21	85	20	88	21	88	21	82	19	88	21
Mundra UMPP	2.41	424	102	438	105	424	102	438	105	438	105	424	102	438	105	424	102	438	105	438	105	410	99	438	105
Koradi R U-8	2.46	268	66	277	68	268	66	277	68	277	68	268	66	277	68	268	66	277	68	277	68	259	64	277	68
Koradi 9	2.46	268	66	277	68	268	66	277	68	277	68	268	66	277	68	268	66	277	68	277	68	259	64	277	68

Generator Name	VC per unit (Rs/kWh)	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Koradi10	2.46	268	66	277	68	268	66	277	68	277	68	268	66	277	68	268	66	277	68	277	68	259	64	277	68
Chandrapur 8	2.64	281	74	291	77	281	74	291	77	291	77	281	74	291	77	281	74	291	77	291	77	272	72	291	77
Chandrapur 9	2.64	281	74	291	77	281	74	291	77	291	77	281	74	291	77	281	74	291	77	291	77	272	72	291	77
Lara Chattisgarh - Stg. I - I	2.64	65	17	67	18	65	17	67	18	67	18	65	17	67	18	65	17	67	18	67	18	63	17	67	18
Lara Chattisgarh - Stg. I - II	2.64	65	17	67	18	65	17	67	18	67	18	65	17	67	18	65	17	67	18	67	18	63	17	67	18
KHAPARKHEDA 5	2.65	276	73	285	75	276	73	285	75	285	75	276	73	285	75	276	73	285	75	285	75	266	71	285	75
CHANDRAPUR - 3	2.72	94	26	97	26	94	26	97	26	97	26	94	26	97	26	94	26	97	26	97	26	91	25	97	26
CHANDRAPUR - 4	2.72	94	26	97	26	94	26	97	26	97	26	94	26	97	26	94	26	97	26	97	26	91	25	97	26
CHANDRAPUR - 5	2.72	224	61	232	63	224	61	232	63	232	63	224	61	232	63	224	61	232	63	232	63	217	59	232	63
CHANDRAPUR - 6	2.72	224	61	232	63	224	61	232	63	232	63	224	61	232	63	224	61	232	63	232	63	217	59	232	63
CHANDRAPUR - 7	2.72	224	61	232	63	224	61	232	63	232	63	224	61	232	63	224	61	232	63	232	63	217	59	232	63
GTPS URAN	2.93	238	70	246	72	238	70	246	72	246	72	238	70	246	72	238	70	246	72	246	72	230	68	246	72
KHAPARKHEDA -1	3.02	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	89	27	95	29
KHAPARKHEDA - 2	3.02	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	89	27	95	29
KHAPARKHEDA - 3	3.02	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	89	27	95	29
KHAPARKHEDA - 4	3.02	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	89	27	95	29
GANDHAR	3.03	21	6	22	7	21	6	22	7	22	7	21	6	22	7	21	6	22	7	22	7	20	6	22	7
KAWAS	3.16	29	9	30	9	29	9	30	9	30	9	29	9	30	9	29	9	30	9	30	9	28	9	30	9
Adani power 125 MW	3.17	72	23	74	23	72	23	74	23	74	23	72	23	74	23	72	23	74	23	74	23	69	22	74	23
Adani power 1200 MW	3.17	646	205	668	212	646	205	668	212	668	212	646	205	668	212	646	205	668	212	668	212	625	198	668	212
EMCO Power	3.17	113	36	116	37	113	36	116	37	116	37	113	36	116	37	113	36	116	37	116	37	109	35	116	37
Paras - 3	3.23	130	42	135	43	130	42	135	43	135	43	130	42	135	43	130	42	135	43	135	43	126	41	135	43
Paras - 4	3.23	130	42	135	43	130	42	135	43	135	43	130	42	135	43	130	42	135	43	135	43	126	41	135	43
Adani power 440mw	3.24	252	82	260	84	252	82	260	84	260	84	252	82	260	84	252	82	260	84	260	84	243	79	260	84
Khargone - I	3.36	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	15	5	15	5	14	5	15	5
Khargone - II	3.36	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	15	5	15	5	14	5	15	5
KORADI - 6	3.40	48	16	50	17	48	16	50	17	50	17	48	16	50	17	48	16	50	17	50	17	46	16	50	17
KORADI - 7	3.40	48	16	50	17	48	16	50	17	50	17	48	16	50	17	48	16	50	17	50	17	46	16	50	17
MSTPS-II	3.40	287	98	297	101	287	98	297	101	290	99	287	98	297	101	287	98	208	71	297	101	277	94	297	101
IPP - JSW	3.47	159	55	164	57	159	55	16	5	-	-	159	55	164	57	159	55	-	-	164	57	154	53	164	57
BHUSAWAL 4	3.52	288	101	297	105	288	101	-	-	-	-	288	101	297	105	288	101	-	-	297	105	190	67	297	105
BHUSAWAL 5	3.52	288	101	297	105	288	101	-	-	-	-	129	45	297	105	288	101	-	-	57	20	-	-	297	105
MSTPS-I	3.65	213	78	220	80	111	41	-	-	-	-	-	-	220	80	98	36	-	-	-	-	-	-	220	80
NASHIK- 3	3.66	108	40	112	41	-	-	-	-	-	-	-	-	112	41	-	-	-	-	-	-	-	-	112	41
NASHIK- 4	3.66	108	40	112	41	-	-	-	-	-	-	-	-	112	41	-	-	-	-	-	-	-	-	112	41
NASHIK- 5	3.66	108	40	112	41	-	-	-	-	-	-	-	-	112	41	-	-	-	-	-	-	-	-	88	32
Rattanindia Amravati	3.81	676	257	698	266	-	-	-	-	-	-	-	-	547	208	-	-	-	-	-	-	-	-	-	-
Gadarwara - I	3.91	14	5	15	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gadarwara - II	3.91	14	5	15	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - I	4.16	105	44	9	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - II	4.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parli replacement U 8	4.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BHUSAWAL - 3	4.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-6	4.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-7	4.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The above table depicts projection of month-wise MoD stack based on approved variable charge for FY 2023-24. However, actual operation of MoD stack shall be governed as per the ABT Order in Case No.42 of 2006, MERC DSM Regulations, 2019, and the State Grid Code and amendments thereof. Accordingly the actual MoD stack shall vary based on the energy charge inclusive of FAC, if any, of various generating stations.

Generator Name	VC per unit (Rs/kWh)	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		Oct-24		Nov-24		Dec-24		Jan-25		Feb-25		Mar-25	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
Must Run Stations																									
KAPP	2.59	80	21	83	22	80	21	83	22	83	22	80	21	83	22	80	21	83	22	83	22	75	19	83	22
TAPP 1 & 2	2.30	94	22	97	22	94	22	97	22	97	22	94	22	97	22	94	22	97	22	97	22	88	20	97	22
TAPP 3&4	3.84	231	89	239	92	231	89	239	92	239	92	231	89	239	92	231	89	239	92	239	92	216	83	239	92
SSP	2.12	99	21	103	22	99	21	103	22	103	22	99	21	103	22	99	21	103	22	103	22	93	20	103	22
Pench	2.12	11	2	12	2	11	2	12	2	12	2	11	2	12	2	11	2	12	2	12	2	10	2	12	2
Dodson I	1.68	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1
Dodson II	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-	5	-
Renewable - Solar	3.40	1,894	645	1,922	654	1,622	552	1,172	399	1,241	423	1,673	569	1,778	605	1,661	566	1,655	564	1,795	611	1,672	569	1,953	665
Renewable - Non-Solar	4.40	1,030	453	1,149	505	1,679	739	2,432	1,069	2,245	987	883	388	867	381	1,246	548	1,411	620	1,310	576	1,343	591	1,476	649
Hydro (Incl. Ghatghar)	-	271	-	280	-	271	-	280	-	280	-	271	-	280	-	271	-	280	-	280	-	253	-	280	-
Stations under MOD																									
KSTPS VII	1.64	62	10	64	11	62	10	64	11	64	11	62	10	64	11	62	10	64	11	64	11	58	10	64	11
SIPAT TPS 2	1.66	148	25	153	25	148	25	153	25	153	25	148	25	153	25	148	25	153	25	153	25	138	23	153	25
SIPAT TPS 1	1.66	293	49	302	50	293	49	302	50	302	50	293	49	302	50	293	49	302	50	302	50	273	45	302	50
KSTPS	1.82	347	63	359	65	347	63	359	65	359	65	347	63	359	65	347	63	359	65	359	65	324	59	359	65
VSTP II	1.90	183	35	189	36	183	35	189	36	189	36	183	35	189	36	183	35	189	36	189	36	171	33	189	36
VSTP IV	1.97	155	31	160	32	155	31	160	32	160	32	155	31	160	32	155	31	160	32	160	32	145	29	160	32
VSTP V	2.04	85	17	87	18	85	17	87	18	87	18	85	17	87	18	85	17	87	18	87	18	79	16	87	18
VSTP III	2.05	148	30	153	31	148	30	153	31	153	31	148	30	153	31	148	30	153	31	153	31	138	28	153	31
Adani power 1320 MW	2.08	755	157	781	162	755	157	781	162	781	162	755	157	781	162	755	157	781	162	781	162	705	146	781	162
VSTP I	2.10	228	48	236	50	228	48	236	50	236	50	228	48	236	50	228	48	236	50	236	50	213	45	236	50
KhSTPS II	2.36	85	20	88	21	85	20	88	21	88	21	85	20	88	21	85	20	88	21	88	21	79	19	88	21
Koradi R U-8	2.52	268	68	277	70	268	68	277	70	277	70	268	68	277	70	268	68	277	70	277	70	250	63	277	70
Koradi 9	2.52	268	68	277	70	268	68	277	70	277	70	268	68	277	70	268	68	277	70	277	70	250	63	277	70
Koradi10	2.52	268	68	277	70	268	68	277	70	277	70	268	68	277	70	268	68	277	70	277	70	250	63	277	70
Mundra UMPP	2.53	424	107	438	111	424	107	438	111	438	111	424	107	438	111	424	107	438	111	438	111	396	100	438	111
Chandrapur 8	2.70	281	76	291	78	281	76	291	78	291	78	281	76	291	78	281	76	291	78	291	78	263	71	291	78
Chandrapur 9	2.70	281	76	291	78	281	76	291	78	291	78	281	76	291	78	281	76	291	78	291	78	263	71	291	78
Lara Chattisgarh - Stg. I - I	2.71	65	18	67	18	65	18	67	18	67	18	65	18	67	18	65	18	67	18	67	18	61	16	67	18
Lara Chattisgarh - Stg. I - II	2.71	65	18	67	18	65	18	67	18	67	18	65	18	67	18	65	18	67	18	67	18	61	16	67	18
KHAPARKHEDA 5	2.71	276	75	285	77	276	75	285	77	285	77	276	75	285	77	276	75	285	77	285	77	257	70	285	77
CHANDRAPUR - 3	2.78	94	26	97	27	94	26	97	27	97	27	94	26	97	27	94	26	97	27	97	27	88	24	97	27
CHANDRAPUR - 4	2.78	94	26	97	27	94	26	97	27	97	27	94	26	97	27	94	26	97	27	97	27	88	24	97	27
CHANDRAPUR - 5	2.78	224	62	232	64	224	62	232	64	232	64	224	62	232	64	224	62	232	64	232	64	209	58	232	64
CHANDRAPUR - 6	2.78	224	62	232	64	224	62	232	64	232	64	224	62	232	64	224	62	232	64	232	64	209	58	232	64
CHANDRAPUR - 7	2.78	224	62	232	64	224	62	232	64	232	64	224	62	232	64	224	62	232	64	232	64	209	58	232	64
GTPS URAN	3.02	238	72	246	74	238	72	246	74	246	74	238	72	246	74	238	72	246	74	246	74	222	67	246	74

Generator Name	VC per unit (Rs/kWh)	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		Oct-24		Nov-24		Dec-24		Jan-25		Feb-25		Mar-25	
		Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)	Energy (MU)	VC (Rs. Cr.)
GANDHAR	3.05	21	6	22	7	21	6	22	7	22	7	21	6	22	7	21	6	22	7	22	7	20	6	22	7
KHAPARKHEDA -1	3.09	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	86	26	95	29
KHAPARKHEDA - 2	3.09	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	86	26	95	29
KHAPARKHEDA - 3	3.09	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	86	26	95	29
KHAPARKHEDA - 4	3.09	92	28	95	29	92	28	95	29	95	29	92	28	95	29	92	28	95	29	95	29	86	26	95	29
KAWAS	3.21	29	9	30	9	29	9	30	9	30	9	29	9	30	9	29	9	30	9	30	9	27	9	30	9
Adani power 125 MW	3.29	72	24	74	24	72	24	74	24	74	24	72	24	74	24	72	24	74	24	74	24	67	22	74	24
Adani power 1200 MW	3.29	646	213	668	220	646	213	668	220	668	220	646	213	668	220	646	213	668	220	668	220	603	199	668	220
Paras - 3	3.31	130	43	135	45	130	43	135	45	135	45	130	43	135	45	130	43	135	45	135	45	122	40	135	45
Paras - 4	3.31	130	43	135	45	130	43	135	45	135	45	130	43	135	45	130	43	135	45	135	45	122	40	135	45
Adani power 440mw	3.36	252	85	260	88	252	85	260	88	260	88	252	85	260	88	252	85	260	88	260	88	235	79	260	88
EMCO Power	3.40	113	38	116	40	113	38	116	40	116	40	113	38	116	40	113	38	116	40	116	40	105	36	116	40
Khargone - I	3.44	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	15	5	15	5	13	5	15	5
Khargone - II	3.44	14	5	15	5	14	5	15	5	15	5	14	5	15	5	14	5	15	5	15	5	13	5	15	5
MSTPS-II	3.48	287	100	297	103	287	100	297	103	297	103	287	100	297	103	287	100	180	63	297	103	268	93	297	103
KORADI - 6	3.49	48	17	50	17	48	17	50	17	50	17	48	17	50	17	48	17	-	-	50	17	45	16	50	17
KORADI - 7	3.49	48	17	50	17	48	17	50	17	42	15	48	17	50	17	48	17	-	-	50	17	45	16	50	17
BHUSAWAL 4	3.61	288	104	297	107	288	104	29	10	-	-	288	104	297	107	288	104	-	-	297	107	268	97	297	107
BHUSAWAL 5	3.61	288	104	297	107	288	104	-	-	-	-	205	74	297	107	288	104	-	-	73	26	221	80	297	107
MSTPS-I	3.72	213	79	220	82	210	78	-	-	-	-	-	-	220	82	147	55	-	-	-	-	-	-	220	82
IPP - JSW	3.73	159	59	164	61	-	-	-	-	-	-	-	-	164	61	-	-	-	-	-	-	-	-	164	61
NASHIK- 3	3.75	108	41	112	42	-	-	-	-	-	-	-	-	112	42	-	-	-	-	-	-	-	-	112	42
NASHIK- 4	3.75	108	41	112	42	-	-	-	-	-	-	-	-	112	42	-	-	-	-	-	-	-	-	60	22
NASHIK- 5	3.75	108	41	112	42	-	-	-	-	-	-	-	-	112	42	-	-	-	-	-	-	-	-	-	-
Rattanindia Amravati	3.93	676	266	698	275	-	-	-	-	-	-	-	-	457	180	-	-	-	-	-	-	-	-	-	-
Gadarwara - I	4.00	14	6	15	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gadarwara - II	4.00	14	6	10	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - I	4.26	14	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solapur - II	4.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parli replacement U 8	4.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BHUSAWAL - 3	4.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-6	4.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PARLI UNIT-7	4.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The above table depicts projection of month-wise MoD stack based on approved variable charge for FY 2024-25. However, actual operation of MoD stack shall be governed as per the ABT Order in Case No.42 of 2006, MERC DSM Regulations, 2019, and the State Grid Code and amendments thereof. Accordingly the actual MoD stack shall vary based on the energy charge inclusive of FAC, if any, of various generating stations.

Appendix – 1

List of persons who attended the Technical Validation Session held on 26 December, 2020

Sr. No.	Name	Organisation
1.	Shri. Satish Chavan	Director Commercial, MSEDCL
2.	Shri. Y. M Gadkari	Executive Director, MSEDCL
3.	Smt.Swati Vyavahare	Executive Director, MSEDCL
4.	Shri. A. K Raidurg	Chief Engineer, MSEDCL
5.	Shri. K. S Pardeshi	Chief Engineer, MSEDCL
6.	Smt. Shailaja Sawant	General Manager, MSEDCL
7.	Shri. Milind Digaraskar	SE, MSEDCL
8.	Shri. Ravi Kadam	MSEDCL
9.	Shri. Dilip Pandhare	CRISIL
10.	Shri. Sachin Navgire	MSEDCL
11.	Shri.Jitendra Joshi	MSEDCL
12.	Shri.S.B.Agre	MSEDCL
13.	Shri S. V Tawade	MSEDCL
14.	Smt. Pallavi Sherkar	MSEDCL
15.	Shri.S. A Ghorat	MSEDCL
16.	Shri. Rajendra Ambekar	Executive Director, MERC
17.	Shri. Prafulla Varhade	Director (EE), MERC
18.	Shri. Ghanshyam D. Patil	Director (Tariff), MERC
19.	Shri. Ajit Pandit	Idam Infra
20.	Shri. Krishnajith M U	Idam Infra

Appendix – II

List of persons who submitted written suggestions and objections and/or attended the Public Hearings

(Enclosed separately)

Annexure 6

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.

MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.

(A Govt. of Maharashtra Undertaking)
CIN : U40109MH20005SGC153645
Prakashgad, Plot No.G-9, Bandra (East), Mumbai – 400 051
Website: www.mahadiscom.in

No. CE/COMM/Tariff/MYT20-25/9061 Date: 03/04/2020

COMMERCIAL CIRCULAR NO.323

Subject: **Revision in Electricity Tariff w.e.f. 1st April 2020 and implementation thereof. [For Control Period FY 2020-21 to FY 2024-25]**

Ref: **MERC Order in Case No. 322 of 2019 dated 30 March 2020.**

The Maharashtra Electricity Regulatory Commission, in exercise of the powers vested in it under Sections 61, 62 and 86 of the Electricity Act, 2003 (EA, 2003) and all other powers enabling it in this behalf, and after taking into consideration all the submissions made by MSEDCL and in the public consultation process, and all other relevant material, has approved the Truing-up of ARR for FY 2017-18 and FY 2018-19, Provisional Truing-up of ARR for FY 2019-20 and ARR and Tariff of Control Period FY 2020-21 to FY 2024-25 vide **Order in Case No. 322 of 2019 dated 30 March 2020.**

Accordingly, the guidelines as under are issued for implementation of the said Order of the Hon'ble Commission without prejudice to the right of MSEDCL to take any action as provided in the law.

1. Applicability of Tariffs

a) The revised Tariff as per this Order shall be applicable from 1 April, 2020 and will be continue to be in force till further Orders.

b) Where the billing cycle of a consumer is different from the date of applicability of the revised tariffs, the tariffs should be applicable for the consumption on pro-rat basis. The bills for the respective periods as per the existing and revised tariffs shall be calculated based on the pro rata consumptions (units consumed during the respective periods arrived on the basis of average unit consumption per day multiplied with number of days in the respective period falling under the billing cycle).

2. Special Interim Dispensation in view of epidemic Covid19:

To mitigate to some extent the difficulties being faced by the Electricity consumers of Maharashtra and all out efforts to contain the spread of Corona Pandemic;

a) Commission issued a practice direction on 26/3/2020 whereby meter reading and physical bill distribution work was suspended and utilities were asked to issue bills on average usage basis till the current crisis gets subsided.

b) To put a moratorium on payment of fixed charges of the electricity bill by consumers under Industrial and Commercial category for next three billing cycles beginning from the lockdown date of 25/3/2020.

3. kVAh Based Billing:

a) Hon'ble Commission allows MSEDCL to implement kVAh based billing for HT Consumers at present. The same shall be effective from 1 April, 2020.

b) As regards, the LT consumers above 20 kW load, the Commission directs MSEDCL to complete its meter conversion process alongwith other system modifications for such consumer categories and shall target to implement the same at the time of MTR i.e. by 1 April, 2023.

c) For implementation of kVAh based billing for the remaining LT consumer categories below 20 kW, a comprehensive study will have to be undertaken based on experience gained through introduction of kVAh billing for more than 20 kW category, to assess pros/cons of introduction for below 20 kW alongwith implementation aspects etc. MSEDCL should evaluate the same and process for introduction of kVAh billing for such below 20 kW consumers can be undertaken in the 5th Control Period in a phased manner, if found feasible.

d) However, with implementation of kVAh billing, any adverse impact due to poor PF will be recorded in increased consumption in kVAh and Consumer will not be aware of actual PF for the month unless it is being recorded and monitored separately. For smooth transition to new billing system and to keep Consumer aware at all times, the Commission directs MSEDCL to display PF (computed by considering leading and lagging RkVAh) recorded during the month in the bill of all the Consumer categories till further directions. Further, such PF can be used for converting kVAh into kWh for arriving at payment to be made towards taxes / duties imposed by the GoM, if applicable.

e) For the HT Consumer category will now have been determined in term of Rs./kVAh in case of HT consumer category where kVAh billing has been introduced:

- Energy Charges
- Wheeling Charges
- Transmission Charges
- ToD Charges
- Cross-Subsidy Surcharge
- Additional Surcharge

f) In case of Energy Balance, the utility shall always maintain sale in kWh only. Tax on Sale of Electricity and Electricity duty shall be converted from kVAh to kWh. All the OA transactions will be maintained in kWh sale only, kVAh based sales shall be converted in kWh based on the Power Factor for the month provided in the Energy Bills.

4. Fixed Charges

a) Fixed Charges for Residential consumers

i. A Fixed Charge of Rs. 135 per month will be levied on Residential consumers availing 3-phase supply. An Additional Fixed Charge of Rs.135 per 10 kW load or part thereof above 10 kW load shall also be payable for FY 2020-21. This amount will increase to Rs. 140 per month and per 10 KW, respectively, in FY 2021-22, and to Rs. 145 per month and per 10 KW, respectively, in FY 2022-23, and Rs. 155 per month and per 10 KW, respectively, in FY 2023-24, and Rs. 165 per month and per 10 KW, respectively, in FY 2024-25

ii. In view of Differentiation between Urban and Rural Areas in terms of investment in capex schemes and delays in accruing benefit of higher capitalization scheme in rural areas as compared to urban areas and distinction in performance standards for Class-I cities, Urban Areas and Rural Areas as per SOP Regulations the Commission has introduced Additional Fixed Charge of Rs 10 per connection per month to be applicable for LT-Domestic category consumers in Urban Divisions of MSEDCL.

b) Demand Charges for Steel Plant operating with electric arc furnaces.

i. Demand Charge shall be applicable at 75% of the rates applicable to HT I Industry for Steel Plant operating with electric arc furnaces.

c) Discount in Demand Charges for Single Shift operation of HT-Industry.

i. In case of industrial consumer under HT-Industry with single shift operation, Demand Charges at the rate of 60% of Applicable Demand Charges as per Tariff Schedule shall be levied, subject to following conditions;

a. Single shift operation means running of operations at a stretch for maximum 10 Hrs. For illustration, a consumer running 4hrs.in one stretch and 6hrs.in another stretch cannot be considered as running in a single shift. However, a maximum of three instances of running beyond 10hrs up to 12hrs is permitted in a billing cycle.

b. Consumer must declare in advance about one shift operation. In absence of such declaration, it shall be billed as per the applicable demand charges.

c. Billing will be done based on MRI/AMR Data.

5. Wheeling charges on account of Infrastructure limitations

a) Wherein the load is required to be availed at lower voltage due to non availability of the requisite voltage level in such cases only (non availability of EHV or requisite voltage level), the wheeling charges to the consumer shall be applicable as per the Billing Demand recorded. To avoid misuse of this concession, the applicability shall be subject to MSEDCL internally certifying the non availability of the requisite voltage level and further that the billing demand shall be as per the requisite voltage level is met by the consumer for at least 9 months in a financial year.

6. ToD features in three phase meters

a) The Commission also suggested to include ToD features in three phase meters so that all new connection would have these facilities and need not be replaced if in future, depending upon feasibility, it is decided to introduce ToD tariff structure to 10 kW and above consumers.

7. Tariff Categorisation

a) **Independent R&D Units:** Presently categorised under Commercial Category. In order to promote Research and Development, the Commission has categorised Independent R&D Units under Industrial Category.

b) **IT and ITeS Units:** Under existing tariff structure, IT and ITeS units having registration certificate under GoM's IT and ITeS Policy are categorised under Industrial Category. The APTEL in its Judgment dated 12 February, 2020 in Appeal No. 337 of 2016 & Others has ruled that tariff categorisation cannot be based on any certification under Policy and it should be based on criteria specified under Section 62 (3) of the Act. Accordingly, the Commission has removed the requirement of having certification under GoM Policy for claiming Industrial Tariff for IT and ITeS Units

c) **Hostels:** Presently all Student Hostels are covered under Residential Category. All Education Institutes are covered under Public Service category. Hence, it would be appropriate to categories Hostels into Public Service Category. This will avoid subjecting these Hostels at high tariff rate on account of telescopic tariff structure in Residential Category.

d) **Tabela:** The Commission has noted the submissions of stakeholders, where dairy or cattle farming is dependent and related to agricultural sector. Thus, the Commission has decided to classify Tabela under Consumer Category under LT IV (C) Agriculture (Others) so long as no associated industrial or commercial activity of milk processing or

Dairy/Chilling plant are undertaken, which are separately covered under LT-Industrial (General) or activities of milk collection centres, which are covered under LT-Commercial.

e) **Temporary Supply (Religious) and Temporary Supply (Others):** In an effort to rationalise the tariff categories, the Commission has done away with Temporary tariff category and merged Temporary Supply (Religious) with domestic category with benefit of telescopic slab and Temporary Supply (others) have been merged with Commercial category.

f) **Public Sanitary Convenience:** The Commission has decided to classify these activities for purpose of tariff applicability under LT - Public Service (Govt), category and expand the scope of applicability of tariff under this category to cover such public sanitation and public convenience facilities, which would benefit consumers/consumption for these categories.

8. **Powerloom industry**:

a) The Commission has merged LT-Industry(General) and LT-Industry (Powerloom) sub-categories, however, lower tariff (discount/rebate) of (2.5%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for Powerloom as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.

9. Merging or elimination of existing consumer categories

a) Merging or elimination of existing consumer categories can be done considering the End Use, Energy Consumption, Socio-Economic Profile, Consumption Pattern/ Loan Factor etc. These factors have been examined by the Commission while deciding on merging of categories.

i. Merging of HT VIII (B) – Temporary Supply Others into HT II – Commercial However, in order to maintain difference in rate on account of nature of supply i.e. temporary vs permanent supply, temporary supply consumer shall pay 1.5 times fixed charges and 1.25 times energy charge applicable for the category.

ii. Merging of LT VIII – Advertisement & Hoardings into LT II – Commercial

iii. Merging of LT VII (A) – Temporary Supply (Religious) into LT I (B) – Residential in order to maintain difference in rate on account of nature of supply i.e. temporary vs permanent supply, temporary supply consumer shall pay 1.5 times fixed charges.

iv. Merging of LT VII (B) – Temporary Supply (Others) into LT II – Commercial in order to maintain difference in rate on account of nature of supply i.e. temporary vs permanent supply, temporary supply consumer shall pay 1.5 times fixed charges and 1.25 time energy charge applicable for the category.

b) Based on the above changes, the summary of the categories merged by the Commission is given below:

Existing Category	Merged in Category
HT VIII(B) - Temporary Supply (others)	HT – Commercial
LT V - Advertisement and Hoardings	LT - Non-Residential or Commercial
LT VII - Temporary Supply (Religious)	LT – Residential
LT VII - Temporary Supply (Others)	LT - Non-Residential or Commercial
LT VIII - Crematoriums and Burial Grounds	LT – Residential
HT VIII (A) HT – Temporary Supply Religious	LT – Residential
LT-V(A) – Power Loom and LT-V(B) - Industry (General)	LT-Industry

10. Cold Storages:

a) To clarify the scope of the term 'agriculture products processed or otherwise', to remove any ambiguity or interpretation with reference to 'Agriculture produce as defined under APMC Act, 1963 – processed or otherwise'. The Commission has accepted the suggestion and the applicability conditions under Tariff Schedule has been modified accordingly.

11. Revision in Load Factor Formula

b) The Commission after understanding the above illustration provided by MSEDCL finds it evident that, the removal of '60 Hours' from LF formula and using actual hours of interruptions will provide the correct estimation of LF and the proposal of correcting LF formula has been accepted by the Commission.

c) In addition, with AMR/MRI enabled meters being installed to all HT consumers, actual hours of interruptions are recorded in meter and are readily available at the time of processing of monthly bill. Hence, in order to compute correct Load Factor, the Commission has modified the formula and has included the actual interruptions hours recorded in the meter instead of provision for 60 hours. In case of faulty meter where interruptions hours are not recorded in the meter, the interruptions hours recorded on feeder meter shall be considered for calculation of Load Factor Incentive for the individual consumer

12. Rebate for Incremental Consumption

a) Detailed modalities for operationalization of rebate for incremental consumption alongwith relevant conditions for applicable consumer categories and eligible consumers shall be governed as per following conditions:

i. The rebate for incremental consumption shall be applicable for HT industries, HT commercial, HT public services, HT-PWW, HT Railways/Metro/Mono and HT-Group Housing Society (Residential).

ii. The rebate shall be given to eligible consumers including partial open access consumers falling under above consumer categories to the extent of procurement from MSEDCL.

iii. The rebate shall be for a period of 3 years subject to reconsideration during the MTR.

iv. The rebate shall be allowed to eligible consumers who consume power above threshold limit.

v. The 3-year average monthly consumption by consumer from FY 2017-18 to FY 2019-20 shall be considered as baseline consumption (or monthly threshold consumption) for determination of incremental consumption by such eligible consumers.

vi. In case of a consumer registered into system for duration lower than 3 years, such consumer shall be eligible for availing incremental rebate from the next billing cycle upon completion of 3-year period and average monthly consumption for past three years shall be considered as its baseline consumption (or monthly threshold consumption) in such cases for determination of their incremental consumption for the purpose of rebate.

vii. For the purpose of determination of Incremental consumption post MTR period of 4th Control Period, (i.e. for FY 2023-24 and FY 2024-25), baseline consumption (or monthly threshold consumption) shall be reset based on 3-year average from FY 2020-21 to FY 2022-23.

viii. The billing at the reduced rates after allowing the rebate shall be done on monthly basis subject to condition that net entitlement for the rebate under this head of incremental consumption shall be determined on annual basis (April to March) equal to energy units consumption in excess of baseline consumption (i.e. annual threshold consumption). The adjustment for shortfall/excess in case cumulative monthly consumption for the yearly consumption vis-à-vis its baseline consumption (i.e. annual threshold

consumption) shall be effected in the last monthly (for March) billing period. No carry-forward of shortfall/excess shall be allowed from one year to next year.

ix. Provided that such adjustment of rebate for yearly incremental consumption vis-à-vis baseline consumption (i.e. annual threshold consumption) shall be undertaken from FY 2021-22 onwards and no such adjustment shall be undertaken for FY 2020-21 wherein monthly rebate shall continue considering emergent situation arising in FY 2020-21 due to global pendemic of COVID-19 and its possible fall out on annual electricity consumption by industry and society at large.

x. For example, If a consumer's 3-year average annual consumption in was 12,000 units, the consumer shall be entitled for the rebate of Rs.0.75/kVAh for consumption exceeding its monthly threshold consumption (not below the baseline consumption of 1,000 units per month) in FY 2021-22 onwards. However, in case its cumulative monthly consumption for the yearly period falls short of annual threshold consumption of 12,000 units then, consumer shall not be entitled for incremental consumption rebate for that financial year and shortfall (or rebate already availed by consumer in earlier months, if any) shall be adjusted for recovery in monthly billing period for March.

xi. The Commission has not considered isolated cases which may become Permanently Disconnected during the year in which a rebate has been availed for some months. The details of such cases, if any will be dealt based on the data as may be submitted by MSEDCL during MTR.

xii. The rebate shall be over and above the existing rebates subject to the fact that the consumer's total variable charges should not be less than Rs.4/ kVAh after accounting for all applicable rebates.

xiii. The rebates would also be applicable to Open Access consumers, subject to conditions outlined above.

13. Rebate for Bulk Consumption

a) The Commission has decided to introduce "Bulk Consumption" rebate in a reverse telescopic manner for HT-Industrial consumers in following manner:

a) For monthly consumption (> 1 Lakh units to 1 MU) per month: 2%

b) For monthly consumption (> 1 MU to 5 MU) per month: 1.5%

c) For monthly consumption (> 5 MU) per month: 1%

b) Bulk Consumption Rebate shall be applicable on the Energy Charge component including FAC of the Bill excluding taxes and duty.

Illustration:

Say a consumer consumes 15 MU during month then, its consumption more than 1 Lakh units upto 1 MU units rebate will be 2%/unit, for next 4 MU (i.e. upto consumption of 5 MU) rebate will be 1.5%/unit and for consumption in excess of 5 MU upto 15 MU, rebate will be 1%/unit.

14. Payment discipline:

a) Commission has introduced consistent payment rebate of 1% to the consumers in these three categories LT-AG, LT-PWW and LT-Streetlight for consistently making payments within due date.

b) Such rebate would be monitored and offered on quarterly basis to only those consumers upon maintaining regular payment track record with the Utility. For example, if consumer makes regular payment of its monthly within due date during previous quarter then, such consumer shall be entitled to a rebate of 1% in its next monthly bill amount (excluding taxes and duties) for the subsequent quarter. In case of any default or non-adherence to bill payment within due date in previous quarter, such benefit of rebate shall be withdrawn for the full next billing quarter.

However, the consumer shall be entitled to rebate in subsequent quarters in case it maintains payment track record within due date in the previous quarter. In case of consumer having quarterly billing, such scheme shall be monitored on six monthly basis and rebate shall be given in next quarterly bill.

15. Prepaid Meter

a) The Commission directed that all the HVDS connections shall be released through prepaid meters only. Also, HVDS Ag connections released earlier should also be converted into prepaid meters within 6 months. Also, in case of non-availability of prepaid meters, the released connections should be converted to prepaid meters within 6/12 months.

b) **Rebate for consumers with Prepaid connections** : Consumers with prepaid metered connections shall be entitled for rebate of 5% in the Energy Charge Rate (incl FAC) applicable for the consumer category.

16. Open Access Charges

a. Cross Subsidy Surcharge

With the rationalisation effected by the Distribution Open Access Regulations, 2016 and its First amendment thereof, adoption of the CSS formulae in accordance with the Tariff Policy and the preferential tariff approved for purchase from RE sources, no concession would be provided to the RE sector in terms of discounted CSS levy. Thus, from the date of applicability of this Order, in case of an OA consumer purchases power from a RE source, the full CSS as determined as below shall be payable.

The CSS so approved as below shall be applicable on the energy actually consumed by the OA consumer, i.e., on the metered consumption.

Consumer Category	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
HT Category - EHV (66kV and Above)					
HT I (A) (i): HT - Industry	1.67	1.67	1.68	1.60	1.60
HT I (B): HT - Industry (Seasonal)	2.20	2.23	2.26	2.66	2.75
HT II (A): HT – Commercial	2.92	2.89	2.88	2.83	2.82
HT III (A): HT - Railways/Metro/Monorail Traction	1.42	1.44	1.44	1.50	1.48
HT IV: HT - Public Water Works (PWW)	1.33	1.37	1.38	1.34	1.36
HT V(A): HT - Agriculture Pumpsets	-	-	-	-	-
HT VI: HT - Group Housing Societies (Residential)	0.73	0.74	0.75	0.26	0.27
HT IX(B): HT - Public Services-Others	2.03	1.98	1.94	1.70	1.62
HT Category - HT (33kV, 22kV and 11 kV)					
HT I (A) (i): HT – Industry	1.71	1.71	1.70	1.72	1.72
HT I (B): HT - Industry (Seasonal)	2.04	2.06	2.07	2.29	2.34
HT II (A): HT – Commercial	2.69	2.65	2.61	2.57	2.52

HT III (A): HT - Railways/Metro/Monorail Traction	1.68	1.71	1.72	1.72	1.71
HT IV: HT - Public Water Works (PWW)	1.48	1.51	1.53	1.56	1.60
HT V(A): HT - Agriculture Pumpsets	-	-	-	-	-
HT V(B): HT - Agriculture Others	0.14	0.05	0.07	0.13	0.16
HT VI: HT - Group Housing Societies (Residential)	1.40	1.46	1.47	1.49	1.52
HT VIII(B): HT - Temporary Supply Others (TSO)	2.86	2.83	2.81	2.65	2.59
HT IX(A): HT - Public Services-Govt. Edu. Institutions and Hospitals	1.86	1.87	1.87	1.88	1.90
HT IX(B): HT - Public Services-Others	1.86	1.87	1.87	1.88	1.90
HT X: HT – Electric Vehicle Charging Station	1.66	1.67	1.68	1.52	1.56

b. Additional Surcharge

Additional Surcharge shall be applicable to Captive Users of Group Captive Power Plants, in addition to Open Access consumers

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Per Unit Additional Surcharge (to be applicable on OA Consumers) **Rs/kWh**	1.31	1.29	1.27	1.23	1.20
Per Unit Additional Surcharge (to be applicable on OA Consumers) **Rs/Kvah**	1.28	1.26	1.24	1.20	1.18

c. Wheeling Charges and Wheeling Losses for HT

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Wheeling Charge – LT (Rs/kWh)	1.45	1.38	1.35	1.30	1.26
Wheeling Charges - HT (Rs/Kwh)	0.58	0.57	0.57	0.55	0.54
Wheeling Charges - HT (Rs/Kvah)	0.57	0.56	0.55	0.54	0.53
Wheeling loss – LT	12 %				
Wheeling loss – HT	7.5 %				

d. Transmission Loss & Transmission Charges

MERC Order in Case No 327 of 2019 filed by Maharashtra State Electricity Transmission Company Limited for determination of Multi-Year Tariff for Intra-Sate Transmission System for the 4th MYT Control Period from FY 2020-21 to FY 2024-25, dated 30.3.2020 has determined the Transmission Charges and Transmission loss as below.

i) Transmission Charges:-

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Transmission Tariff (Short term/Short term Collective/ Renewable Energy (**Rs/Kwh)**	0.41	0.41	0.41	0.40	0.39
Transmission Tariff (Short term/Short term Collective/ Renewable Energy **(Rs/Kvah)**	0.40	0.40	0.40	0.39	0.38
Transmission Tariff (Long term/Medium Term) **Rs/KW/Month**	266	263	260	256	250

ii) Transmission Loss:-

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Intra-State Transmission Loss (%)	3.18	3.18	3.18	3.18	3.18

e. Processing and operating charges

Load Requisitioned	Processing fee per application (Rs.)	Operating Charges per month (Rs.)
Upto 1 MW	14,500	14,500
More than 1 MW and up to 5 MW	22,000	
More than 5 MW and up to 20 MW	44,000	28,000
More than 20 MW and up to 50 MW	75,000	
More than 50 MW		

17. Grid Support Charges for Rooftop Net Metering Arrangements

a. To incentivize installation of RTPV, the Commission has decided not to impose any Grid Support Charge on RTPV under net-metering arrangement till cumulative installed capacity of RTPV in the State reaches 2000 MW. Subsequent to that Commission will reconsider option of imposing Grid Support Charge as provided under the Regulations

b. However till the Grid Support Charges as envisaged in the Regulations stay exempted, in order to enable MSEDCL to at least recover cost of banking service, the Commission has decided to levy banking charge. For this purpose, the Commission has linked such Banking Charge to Wheeling Loss allowed in this Order i.e. 7.5% for HT and 12% to LT. Accordingly, for RTPV connected on HT network, from the energy injected into the grid, 7.5% energy will be deducted by MSEDCL as a Banking Charge. Similarly, for RTPV connected on LT side such deduction of energy would be 12%.

c. **Applicability of Banking Charges for future installations of rooftop systems under net metering arrangement:** In pursuance of the principles specified under Net Metering Regulations, 2019 and in view of the foregoing, the Banking Charges shall be applicable to all categories of consumers for future installations

of rooftop systems under net metering arrangement to be commissioned from the date of issuance of this Order in MSEDCL area, except for the following:

i. All Categories having Sanctioned Load up to 10 kW shall be exempted from payment of Grid Support Charges or Banking Charges for Net Metering systems

ii. Roof top PV systems under Net Billing arrangement and

iii. Rooftop PV systems installations Behind the Consumer's meter not availing Net Metering or Net Billing arrangement

ACTION PLAN:

For proper implementation of the revised Tariff Order, Billing & Revenue, IT Department and All Filed Offices shall follow guidelines given below;

1. The revised Tariff as per this Order shall be applicable from 1 April, 2020 and will be in continuation till issuance of further Orders.
2. The approved HT and LT Tariff for FY 2020-21 to FY 2024-25, as indicated in **Annexure I.** All field Officers are requested to download the same from MSEDCL's website www.mahadiscom.in and adequate copies of these booklets should be printed and made available upto Section Lever and also make available to outsider / Consumer at the rate of Rs.50 per booklet.
3. The field Officers are directed to ensure that wherever the tariff category is redefined or newly created by the Hon'ble Commission the existing / prospective consumers should be properly categorized by actual field inspection immediately and data to be immediately updated in IT base data.
4. All field Officers shall sensitize staff about the various aspects of the Tariff Order and give proper guidelines to all the Officers and the Staff members working under them.
5. These are only the important guidelines for actual implementation of the Tariff Order, the field Officers are requested to refer the detail MERC Tariff Order in Case No. 322 of 2019 dated 30 March 2020. All the stipulations and provisions are to be strictly followed.

All field Officers are therefore requested to take due note of the revised tariff and should follow the same hereafter.

Encl.1. Annexure I: Tariff Schedule for FY 2020-21 to FY 2024-25.
2. Annexure II: Tariff Applicable to AG & Powerloom.

Sd/-

Chief Engineer (Commercial)

Copy to: As per mailing list.

ANNEXURE –I TARIFF SCHEDULE FOR FY 2020-21 to FY 2024-25

MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.

APPROVED TARIFF SCHEDULE
(With effect from 1 April, 2020)

Maharashtra Electricity Regulatory Commission, in exercise of the powers vested in it under Sections 61 and 62 of the Electricity Act, 2003 and all other powers enabling it in this behalf, has determined, by its Multi Year Tariff Order dated **_March, 2020** in Case No. 322 of 2019, the Tariff for supply of electricity by the Distribution Licensee, Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) to various classes of consumers as applicable from **_March, 2020**

General

1. These tariffs supersede all tariffs so far in force.

2. The Tariffs are subject to revision and/or surcharge that may be levied by the Distribution Licensee from time to time as per the directives of the Commission.

3. The tariffs are exclusive of the separate Electricity Duty, Tax on Sale of Electricity and other levies by the Government or other competent authorities, which will be payable by consumers over and above the tariffs.

4. The tariffs are applicable for supply at one point only.

5. The Distribution Licensee may measure the Maximum Demand for any period shorter than 30 minutes of maximum use, subject to conformity with the Commission's Electricity Supply Code Regulations, where it considers that there are considerable load fluctuations in operation.

6. The tariffs are subject to the provisions of the applicable Regulations and any directions that may be issued by the Commission from time to time.

7. Unless specifically stated to the contrary, the figures of Energy Charge and Wheeling Charge are denominated in Rupees per unit (kWh or kVAh as case may be) for the energy consumed during the month.

8. Fuel Adjustment Charge (FAC) computed in accordance with provisions of MYT Regulations, 2019 and Commission's directions in this regard from time to time shall be applicable to all categories of consumers, and will be charged over and above the base tariff..

LOW TENSION (LT) TARIFF

LT I (A): LT – Residential (BPL)

Applicability:

This Below Poverty Line (BPL) tariff category is applicable to Residential consumers who have a Sanctioned Load upto 0.25 kW and who have consumed upto 360 units per annum in the previous financial year. The eligibility of such consumers will be reassessed at the end of each financial year. If more than 360 units have been consumed in the previous financial year, the LTI (B) - Residential tariff shall thereafter be applicable, and such consumer cannot revert thereafter to the BPL category irrespective of his future consumption level.

The categorisation of BPL consumers will be reassessed at the end of the financial year on a pro rata basis if there has been consumption for only a part of the year. The categorisation of BPL consumers who have been added during the previous year would be assessed on a pro rata basis, i.e., 30 units per month.

This BPL category will also be applicable to all new consumers subsequently added in any month with a Sanctioned Load of upto 0.25 kW and consumption between 1 to 30 units (on pro rata basis of 1 unit/day) in the first billing month.

The BPL tariff is applicable only to individuals and not to institutions.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	26.00	1.12	-

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	27.00	1.14	-

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	28.00	1.16	-

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	29.00	1.18	-

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab	Fixed/Demand Charges (Rs. /Month)	Energy Charges (Rs. /kWh)	Wheeling Charges (Rs. /kWh)
BPL Category	30.00	1.18	-

LT I (B): LT – Residential

Applicability:

This tariff category is applicable for electricity used at Low/Medium Voltage for operating various appliances used for purposes such as lighting, heating, cooling, cooking, washing/cleaning, entertainment/leisure, water pumping in the following premises:

a. Private residential premises, Government/semi-Government residential quarters;

b. Premises used exclusively for worship, such as temples, gurudwaras, churches, mosques, etc.; provided that halls, gardens or any other part of such premises that may be let out for a consideration or used for commercial activities would be charged at the applicable LT-II tariff;

c. Government / Private / Co-operative Housing Colonies/complexes (where electricity is used exclusively for domestic purposes) only for common facilities such as Water Pumping / Street and other common area Lighting / Lifts /Parking Lots/ Fire-fighting Pumps and other equipment, etc.;

d. Sports Clubs or facilities / Health Clubs or facilities / Gymnasium / Swimming Pool / Community Hall of Government / Private / Co-operative Housing Colonies/complexes - provided that they are situated in the same premises, and are for the exclusive use of the members and employees of such Housing Colonies/complexes;

e. Telephone booths owned/operated by Persons with Disabilities/Handicapped persons;

f. Residential premises used by professionals like Lawyers, Doctors, Engineers, Chartered Accountants, etc., in furtherance of their professional activities, but not including Nursing Homes and Surgical Wards or Hospitals;

g. Single-phase household Flour Mills (Ghar-ghanti) used only for captive purposes;

h. A residential LT consumer with consumption up to 500 units per month (current month of supply) who undertakes construction or renovation activity in his existing premises: such consumer shall not require a separate temporary connection, and would be billed at this Residential tariff rate;

Note:

This tariff category shall also be applicable to consumers who are supplied power at High Voltage for any of the purposes (a) to (h) above.

i. Consumers undertaking business or commercial / industrial / non-residential activities from a part of their residence, whose monthly consumption is up to 300 units a month and annual consumption in the previous financial year was up to 3600 units. The applicability of this tariff to such consumers will be assessed at the end of each financial year. In case consumption has exceeded 3600 units in the previous financial year, the consumer will thereafter not be eligible for the tariff under this category but be charged at the tariff otherwise applicable for such consumption, with prior intimation to him.

j. Entities supplied electricity at a single point at Low/Medium Voltage for residential purposes, in accordance with the Electricity (Removal of Difficulties) Eighth Order, 2005, in the following cases:

k. a Co-operative Group Housing Society which owns the premises, for making electricity available to the members of such Society residing in the same premises for residential purposes; and

l. a person, for making electricity available to its employees residing in the same premises for residential purposes.

m. Crematoriums and Burial Grounds for all purposes, including lighting.

n. Temporary purposes for public religious functions like Ganesh Utsav, Navaratri, Eid, Moharrum, Ram Lila, Diwali, Christmas, Guru Nanak Jayanti, etc., and for areas where community prayers are held; and for functions to commemorate anniversaries of personalities and National or State events for which Public Holidays have been declared, such as Gandhi Jayanti, Ambedkar Jayanti, Chhatrapati Shivaji Jayanti, Republic Day, Independence Day, etc.

Provided that such temporary connection shall be subjected to 1.5 times of fixed charges.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 100.00 per month Three Phase - Rs. 340.00 per month[$$]	1.45	3.46
101 – 300 units		1.45	7.43
301 – 500 units		1.45	10.32
Above 500 Units (Balance Units)		1.45	11.71

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs.102.00 per month Three Phase - Rs. 340.00 per month[$$]	1.38	3.44
101 – 300 units		1.38	7.34
301 – 500 units		1.38	10.36
Above 500 Units (Balance Units)		1.38	11.82

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 105.00 per month Three Phase - Rs. 350.00 per month[$$]	1.35	3.36
101 – 300 units		1.35	7.34
301 – 500 units		1.35	10.37
Above 500 Units (Balance Units)		1.35	11.86

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 107.00 per month Three Phase - Rs. 357.00 per month[$$]	1.30	3.28
101 – 300 units		1.30	7.34
301 – 500 units		1.30	10.38
Above 500 Units (Balance Units)		1.30	11.90

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/Demand Charge (Rs. per month) #(ref. note (o))	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
0-100 units	Single Phase: Rs. 109.00 per month Three Phase - Rs. 364.00 per month[$$]	1.26	3.28
101 – 300 units		1.26	7.34
301 – 500 units		1.26	10.38
Above 500 Units (Balance Units)		1.26	11.90

Note:

o. [$$]The above Fixed Charges are for single-phase connections. A Fixed Charge of Rs. 135 per month will be levied on Residential consumers availing 3-phase supply. An

Additional Fixed Charge of Rs.135 per 10 kW load or part thereof above 10 kW load shall also be payable for FY 2020-21. This amount will increase to Rs. 140 per month and per 10 KW, respectively, in FY 2021-22, and to Rs. 145 per month and per 10 KW, respectively, in FY 2022-23, and Rs. 155 per month and per 10 KW, respectively, in FY 2023-24, and Rs. 165 per month and per 10 KW, respectively, in FY 2024-25

p. Professionals like Lawyers, Doctors, Professional Engineers, Chartered Accountants, etc., occupying premises exclusively for conducting their profession, shall not be eligible for this Tariff, and will be charged at the Tariff applicable to the respective categories.

q. Additional Fixed Charge of Rs 10 per connection per month shall be applicable for LT-Domestic category consumers in Urban Divisions of MSEDCL.

LT II: LT – Non-Residential or Commercial

Applicability:

This tariff category is applicable for electricity used at Low/Medium voltage in non-residential, non-industrial and/or commercial premises for commercial consumption meant for operating various appliances used for purposes such as lighting, heating, cooling, cooking, washing/cleaning, entertainment/ leisure and water pumping in, but not limited to, the following premises:

a. Non-Residential, Commercial and Business premises, including Shopping Malls and Showrooms;

b. Combined lighting and power supply for facilities relating to Entertainment, including film studios, cinemas and theatres (including multiplexes), Hospitality, Leisure, Meeting/Town Halls, and places of Recreation and Public Entertainment; Offices, including Commercial Establishments; Marriage Halls, Hotels / Restaurants, Ice-cream parlours, Coffee Shops, Guest Houses, Internet / Cyber Cafes, Telephone Booths not covered under the LT I category, and Fax / Photocopy shops;

c. Automobile and all other types of repairs, servicing and maintenance centres (unless specifically covered under another tariff category); Retail Gas Filling Stations, Petrol Pumps and Service Stations, including Garages;

d. Tailoring Shops, Computer Training Institutes, Typing Institutes, Photo Laboratories, Laundries, Beauty Parlours and Saloons;

e. Banks and ATM centres, Telephone Exchanges, TV Stations, Microwave Stations, Radio Stations;

f. Common facilities, like Water Pumping / Lifts / Fire-Fighting Pumps and other equipment / Street and other common area Lighting, etc., in Commercial Complexes;

g. Sports Clubs/facilities, Health Clubs/facilities, Gymnasiums, Swimming Pools not covered under any other category;

h. External illumination of monuments/ historical/ heritage buildings approved by Maharashtra Tourism Development Corporation (MTDC) or the concerned Local Authority;

i. Construction of all types of structures/ infrastructures such as buildings, bridges, fly-overs, dams, Power Stations, roads, Aerodromes, tunnels for laying of pipelines for all purposes;

Note:

Residential LT consumers with consumption above 500 units per month (current month of supply) and who undertake construction or renovation activity in their existing premises shall not require a separate Temporary category connection, and shall be billed at the LT-II Commercial Tariff rate;

j. Milk Collection Centres;

k. Sewage Treatment Plants/ Common Effluent Treatment Plants for Commercial Complexes not covered under the LT – Public Water Works or LT – Industry categories.

l. Advertisements, hoardings (including hoardings fixed on lamp posts/installed along roadsides), and other commercial illumination such as external flood-lights, displays, neon signs at departmental stores, malls, multiplexes, theatres, clubs, hotels and other such establishments.

m. Temporary supply for any of the activity not covered under Residential category

Provided that Temporary supply consumer shall pay 1.5 time applicable fixed/demand charges and 1.25 time applicable energy charge.

Provided further that temporary supply for operating Fire-Fighting pumps and equipment in residential or other premises shall be charged as per the Tariff category applicable to such premises.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 403.00 per Month	1.45	7.36
LT II (B) > 20 kW and ≤ 50 kW	Rs. 403.00 per kW per Month	1.45	10.72
LT II (C) > 50 kW	Rs. 403.00 per kW per Month	1.45	12.83
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 415.00 per Month	1.38	7.18
LT II (B) > 20 kW and ≤ 50 kW	Rs 415.00 per kW per Month	1.38	10.79
LT II (C) > 50 kW	Rs 415.00 per kW per Month	1.38	12.95
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 427.00 per Month	1.35	7.07
LT II (B) > 20 kW and ≤ 50 kW	Rs. 427.00 per kW per Month	1.35	10.79
LT II (C) > 50 kW	Rs. 427.00 per kW per Month	1.35	12.76
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 436.00 per Month	1.30	7.01
LT II (B) > 20 kW and ≤ 50 kW	Rs. 436.00 per kW per Month	1.30	10.84
LT II (C) > 50 kW	Rs. 436.00 per kW per Month	1.30	12.62

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT II (A) 0-20 kW	Rs. 445.00 per Month	1.26	7.01
LT II (B) > 20 kW and ≤ 50 kW	Rs. 445.00 per kW per Month	1.26	10.84
LT II (C) > 50 kW	Rs. 445.00 per kW per Month	1.26	12.62
TOD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Note: *The ToD tariff is applicable to the LT-II (B) and (C) categories, and optionally available to LT- II (A) category consumers having ToD meter installed.*

LT III: LT-Public Water Works (PWW) and Sewage Treatment Plants

Applicability:

This tariff category is applicable for electricity / power supply at Low / Medium Voltage for pumping of water, purification of water and allied activities relating to Public Water Supply Schemes, Sewage Treatment Plants and Waste Processing Units, provided they are owned or operated or managed by Local Self-Government Bodies (Gram Panchayats, Panchayat Samitis, Zilla Parishads, Municipal Councils and Corporations, etc.), or by Maharashtra Jeevan Pradhikaran (MJP), Maharashtra Industries Development Corporation (MIDC), Cantonment Boards and Housing Societies/complexes.

All other Public Water Supply Schemes and Sewage Treatment Plants (including allied activities) shall be billed under the LT II or LT V category tariff, as the case may be.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 100.00 per Month	1.45	2.40
LT III(B): >20 kW and ≤40 kW	Rs. 121.00 per kW per Month	1.45	3.78
LT III(C): >40 kW	Rs. 150.00 per kW per Month	1.45	5.11
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 103.00 per Month	1.38	2.46
LT III(B): >20 kW and ≤40 kW	Rs. 125.00 per kW per Month	1.38	3.82
LT III(C): >40 kW	Rs. 155.00 per kW per Month	1.38	5.12
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 106.00 per Month	1.35	2.48
LT III(B): >20 kW and ≤40 kW	Rs. 129.00 per kW per Month	1.35	3.84
LT III(C): >40 kW	Rs. 160.00 per kW per Month	1.35	5.09
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs.108.00 per Month	1.30	2.52
LT III(B): >20 kW and ≤40 kW	Rs.132.00 per kW per Month	1.30	3.86
LT III(C): >40 kW	Rs.163.00 per kW per Month	1.30	5.19
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charges	Wheeling Charges (Rs. /kWh)	Energy Charge (Rs. /kWh)
LT III(A): 0-20 kW	Rs. 110.00 per Month	1.26	2.52
LT III(B): >20 kW and ≤40 kW	Rs 135.00 per kW per Month	1.26	3.86
LT III(C): >40 kW	Rs. 166.00 per kW per Month	1.26	5.19
ToD tariff (in addition to above base tariffs) (Rs/kWh)			
2200 Hrs - 0600 Hrs			-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs			0.00
0900 Hrs - 1200 Hrs			0.80
1800 Hrs - 2200 Hrs			1.10

LT IV: Agriculture

LT IV (A): LT - Agriculture Un-metered - Pumpsets

Applicability:

This tariff category is applicable for motive power supplied for Agriculture metered pumping loads, and for one lamp of wattage up to 40 Watt to be connected to the motive power circuit for use in pump-houses at Low/Medium Voltage.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
Category 1 Zones*			
(a) 0-5 HP	334.00	145.00	-
(b) > 5 HP and ≤ 7.5 HP	360.00	145.00	-
(c) > 7.5 HP	405.00	145.00	-
Category 2 Zones #			
(a) 0-5 HP	258.00	145.00	-
(b) > 5 HP and ≤ 7.5 HP	282.00	145.00	-
(c) > 7.5 HP	327.00	145.00	-

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff – Pumpsets			
Category 1 Zones*			
(a) 0-5 HP	349.00	138.00	-
(b) > 5 HP and ≤ 7.5 HP	376.00	138.00	-
(c) > 7.5 HP	422.00	138.00	-
Category 2 Zones #			
(a) 0-5 HP	269.00	138.00	-
(b) > 5 HP and ≤ 7.5 HP	295.00	138.00	-
(c) > 7.5 HP	342.00	138.00	-

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			
Category 1 Zones*			
(a) 0-5 HP	359.00	135.00	-
(b) > 5 HP and ≤ 7.5 HP	387.00	135.00	-
(c) > 7.5 HP	435.00	135.00	
Category 2 Zones #			
(a) 0-5 HP	277.00	135.00	-
(b) > 5 HP and ≤ 7.5 HP	304.00	135.00	-
(c) > 7.5 HP	352.00	135.00	

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
Category 1 Zones*			
(a) 0-5 HP	366.00	130.00	-
(b) > 5 HP and ≤ 7.5 HP	395.00	130.00	-
(c) > 7.5 HP	444.00	130.00	-
Category 2 Zones #			
(a) 0-5 HP	283.00	130.00	-
(b) > 5 HP and ≤ 7.5 HP	310.00	130.00	-
(c) > 7.5 HP	359.00	130.00	-

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumer Category	Fixed / Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/HP/Month)	Energy Charge (Rs/kWh)
LT IV (A): LT - Agriculture Un-metered Tariff - Pumpsets			
Category 1 Zones*			
(a) 0-5 HP	373.00	126.00	-
(b) > 5 HP and ≤ 7.5 HP	403.00	126.00	-
(c) > 7.5 HP	453.00	126.00	-
Category 2 Zones #			
(a) 0-5 HP	289.00	126.00	-
(b) > 5 HP and ≤ 7.5 HP	316.00	126.00	-
(c) > 7.5 HP	366.00	126.00	-

***Category 1 Zones (with consumption norm above 1,318 hours/HP/year)**		
1) Bhandup (U)	2) Pune	3) Nashik
4) Baramati	5) Jalgaon	
#Category 2 Zones (with consumption norm below 1,318 hours/HP/year)		
1) Amravati	2) Aurangabad	3) Kalyan
4) Konkan	5) Kolhapur	6) Latur
7) Nagpur (U)	8) Chandrapur	9) Gondia
10) Nanded	11) Akola	

Note:

i. *The Flat Rate Tariff as above will remain in force only till meters are installed; once meter is installed, the consumer will be billed as per the Tariff applicable to metered agricultural consumers.*

ii. *The list of Category 1 Zones (with consumption norm above 1318 hours/ HP/year) and Category 2 Zones (with consumption norm below 1318 hours/HP/year) is given above.*

iii. *Supply under this Tariff will be given for a minimum load of 2 HP. If any consumer requires any load less than 2 HP for agricultural purposes, he shall be required to pay the Fixed Charge/Energy Charge on this basis as if a load of 2 HP is connected.*

LT IV (B): LT – Agriculture metered - Pumpsets

Applicability:

This tariff category is applicable for motive power supplied for Agriculture metered pumping loads, and for one lamp of wattage up to 40 Watt to be connected to the motive power circuit for use in pump-houses at Low/Medium Voltage.

It is also applicable for power supply for cane crushers and/or fodder cutters for self-use for agricultural processing operations, but not for operating a flour mill, oil mill or expeller in the same premises, either operated by a separate motor or a change of belt drive.

This Tariff is also applicable to Feeder Input based Group Metering wherein Input recorded on 11/22 kV Feeder minus Technical Loss of that particular feeder is billed to the consumers connected on that Feeder in proportionate to the sanctioned load of pump.

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	41.00	1.45	1.85

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	42.00	1.38	1.91

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	43.00	1.35	1.95

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	44.00	1.30	1.99

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ HP/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	45.00	1.26	1.99

LT IV (C): LT – Agriculture – Others

Applicability:

This tariff category is applicable for use of electricity / power supply at Low / Medium Voltage for:

a. Pre-cooling plants and cold storage units for Agricultural Products as defined under APMC Act, 1963 – processed or otherwise;

b. Poultries exclusively undertaking layer and broiler activities, including Hatcheries;

c. High-Technology Agriculture (i.e. Tissue Culture, Green House, Mushroom cultivation activities), provided the power supply is exclusively utilized for purposes directly concerned with the crop cultivation process, and not for any engineering or industrial process;

d. Floriculture, Horticulture, Nurseries, Plantations, Aquaculture, Sericulture, Cattle Breeding Farms, etc;

e. Tabela, which involves no associated industrial/commercial activity of milk processing or Dairy/Chilling plant are undertaken, which are separately covered under LT-Industrial/ Commercial .

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	111.00	1.45	3.34

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	114.00	1.38	3.23

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	117.00	1.35	3.29

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	119.00	1.30	3.36

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs/ kW/ month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
All Units	121.00	1.26	3.36

LT V: LT- Industry:

Applicability:

This tariff category is applicable for electricity for Industrial use, at Low/Medium Voltage, for purposes of manufacturing and processing, including electricity used within such premises for general lighting, heating/cooling, etc.

It is also applicable for use of electricity / power supply for Administrative Offices / Canteens, Recreation Hall / Sports Club or facilities / Health Club or facilities/ Gymnasium / Swimming Pool exclusively meant for employees of the industry; lifts, water pumps, fire-fighting pumps and equipment, street and common area lighting; Research and Development units, dhobi/laundry etc. -

Provided that all such facilities are situated within the same industrial premises and supplied power from the same point of supply;

This tariff category shall also be applicable for use of electricity / power supply by an Information Technology (IT) or IT-enabled Services (ITeS) Unit as defined in the applicable IT/ITeS Policy of Government of Maharashtra.

It shall also be applicable for use of electricity / power supply for (but not limited to) the following purposes:

a. Flour Mill, Dal Mill, Rice Mill, Poha Mill, Masala Mill, Saw Mill;

b. Ice Factory, Ice-cream manufacturing units, Milk Processing / Chilling Plants (Dairy);

c. Engineering Workshops, Engineering Goods Manufacturing units; Printing Presses; Transformer Repair Workshops; Tyre Remoulding/Rethreading units; and Vulcanizing units;

d. Mining, Quarrying and Stone Crushing units;

e. Garment Manufacturing units;

f. LPG/CNG bottling plants, etc.;

g. Sewage Treatment Plant/ Common Effluent Treatment Plant for industries, and not covered under the LT – Public Water Works category

h. Start-up power for Generating Plants, i.e. the power required for trial run of a Power Plant during commissioning of the Unit and its Auxiliaries, and for its start-up after planned or forced outage (but not for construction);

i. Brick Kiln (Bhatti);

j. Biotechnology Industries covered under the Biotechnology Policy of Government of Maharashtra;

k. Cold Storages not covered under LT IV (C) – Agriculture (Others);

l. Food (including seafood and meat) Processing units;

m. Stand-alone Research and Development units;

n. Telecommunications Towers

o. Powerlooms including other allied activities like, Warping, Doubling, Twisting, etc., connected at Low/Medium Tension only.

Provided that for Powerlooms, 3% discount on Energy Charge (including FAC) shall be applicable.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs. 454.00/month	1.45	5.21
(ii) Above 20 kW	Rs.303.00/kW/month	1.45	6.11
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs .468.00/month	1.38	5.01
(ii) Above 20 kW	Rs. 312.00/kW/month	1.38	5.93
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs .482.00/month	1.35	5.11
(ii) Above 20 kW	Rs 321.00/kW/month	1.35	6.05
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs. 492.00/month	1.30	5.21
(ii) Above 20 kW	Rs. 327.00/kW/month	1.30	6.17
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
1800 Hrs-2200 Hrs.			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumer Category	Fixed/Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
LT-V: LT – Industry*			
(i) 0-20 kW	Rs. 502.00/ month	1.26	5.21
(ii) Above 20 kW	Rs 334.00/kW/month	1.26	6.17
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs.			-1.50
0600 Hrs-0900 Hrs. & 1200 Hrs-1800 Hrs.			0.00
0900 Hrs-1200 Hrs.			0.80
1800 Hrs-2200 Hrs.			1.10

Note: *The ToD Tariff is compulsorily applicable for LT V (ii) (i.e., above 20 kW), and optionally available to LT- V (i) (i.e., up to 20 kW) having ToD meter installed.*

**Lower tariff (discount/rebate) of (2.5%) shall be available in Energy Charge Component (including FAC, if applicable)of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom) as against approved Energy Charge Component of Tariff applicable for respective slabs under LT-Industry.*

LT VI: LT – Street Light

Applicability:

This tariff category is applicable for the electricity used for lighting of public streets/ thoroughfares which are open for use by the general public, at Low / Medium Voltage, and at High Voltage.

Street-lights in residential complexes, commercial complexes, industrial premises, etc. will be billed at the tariff of the respective applicable categories.

This category is also applicable for use of electricity / power supply at Low / Medium Voltage or at High Voltage for (but not limited to) the following purposes, irrespective of who owns, operates or maintains these facilities:

a. Lighting in Public Gardens (i.e. which are open to the general public free of charge);

b. Traffic Signals and Traffic Islands;

c. Public Water Fountains; and

d. Such other public places open to the general public free of charge.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	111.00	1.45	4.90
(B) Municipal Corporation Areas	111.00	1.45	5.97

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	114.00	1.38	5.00
(B) Municipal Corporation Areas	114.00	1.38	6.09

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	117.00	1.35	5.10
(B) Municipal Corporation Areas	117.00	1.35	6.21

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	119.00	1.30	5.20
(B) Municipal Corporation Areas	119.00	1.30	6.33

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumer Category	Fixed/Demand Charge (Rs/kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VI: LT – Street Light			
(A) Gram Panchayat, A, B & C Class Municipal Councils	121.00	1.26	5.20
(B) Municipal Corporation Areas	121.00	1.26	6.33

Note:

The above street and other lighting facilities having 'Automatic Timers' for switching On/Off would be levied Demand Charges on the lower of the following–

i) 50 percent of 'Contract Demand' or

ii) Actual 'Recorded Demand'.

LT VII: LT - Public Services

LT VII (A): LT - Government Educational Institutions and Hospitals

Applicability:

This tariff category is applicable for electricity supply at Low/Medium Voltage for Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, Blood Bank and Pathology Laboratories; Libraries and public reading rooms - of the State or Central Government or Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats, etc;

It shall also be applicable for electricity used for Hostels/ Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions / Hospitals, provided that they are situated in the same premises and are meant primarily for their students / faculty/ employees/ patients.

This Tariff is also applicable for electricity supply at Public Sanitary Conveniences;

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs. 333.00/Month	1.45	3.31

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
(ii) >20 - ≤ 50 kW	Rs.333.00/kW/Month	1.45	4.89
(iii) > 50 kW	Rs.333.00/kW/Month	1.45	6.01
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs. 343.00/Month	1.38	3.12
(ii) >20 - ≤ 50 kW	Rs. 343.00/kW/Month	1.38	4.48
(iii) > 50 kW	Rs. 343.00/kW/Month	1.38	5.62
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs.353.00 /Month	1.35	3.18
(ii) >20 - ≤ 50 kW	Rs.353.00/kW/Month	1.35	4.57
(iii) > 50 kW	Rs.353.00/kW/Month	1.35	5.73
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs 360.00/Month	1.30	3.24
(ii) >20 - ≤ 50 kW	Rs. 360.00/kW/Month	1.30	4.66
(iii) > 50 kW	Rs. 360.00/kW/Month	1.30	5.84
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (A): LT - Public Services –Government Educational Institutions and Hospitals			
(i) < 20 kW	Rs. 367.00/Month	1.26	3.24
(ii) >20 - ≤ 50 kW	Rs. 367.00/kW/Month	1.26	4.66
(iii) > 50 kW	Rs.367.00/kW/Month	1.26	5.84
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Note: *The ToD Tariff is applicable for LT-VII (A) (ii) and LT-VII (A) (iii) (i.e., above 20 kW) and optionally available to LT- VII (A) (i) (i.e., up to 20 kW) having ToD meter installed.*

LT VII (B): LT - Public Services - Others

Applicability:

This tariff category is applicable for electricity supply at Low/Medium Voltage for:

a. Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, Blood Banks, Laboratories; Libraries and public reading rooms - other than those of the State or Central Government or Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats, etc.

b. Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions /Health Care facilities, provided that they are situated in the same premises and are meant primarily for their students / faculty/ employees/ patients;

c. all offices of Government and Municipal/ Local Authorities/ Local Self-Government bodies, such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats; Police Stations and Police Chowkies; Post Offices; Armed Forces/Defence and Para-Military establishments;

d. Service-oriented Spiritual Organisations;

e. State or Municipal/Local Authority Transport establishments, including their Workshops

f. Fire Service Stations; Jails, Prisons; Courts;

g. Airports;

h. Ports and Jetties;

i. Railway/Metro/Monorail Stations, including Shops, Workshops, Yards, etc, if the supply is at Low/ Medium Voltage.

j. Waste processing units not covered under LT PWW category

k. All Students Hostels affiliated to Educational Institutions not covered under LT Public Service - Government;

l. All other Students' or Working Men/Women's Hostels;

m. Other types of Homes/Hostels, such as (i) Homes/Hostels for Destitutes, Disabled Persons (physically or mentally handicapped persons, etc.) and mentally ill persons (ii) Remand Homes (iii) Dharamshalas, (iv) Rescue Homes, (v) Orphanages - subject to verification and confirmation by the Distribution Licensee's concerned Zonal Chief Engineer or equivalent;

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs. 362.00/Month	1.45	4.86
(ii) >20 - ≤ 50 kW	Rs.362.00/kW/Month	1.45	7.44
(iii) > 50 kW	Rs.362.00/kW/Month	1.45	7.84
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs. 373.00/Month	1.38	4.68
(ii) >20 - ≤ 50 kW	Rs. 373.00/kW/Month	1.38	7.28
(iii) > 50 kW	Rs. 373.00/kW/Month	1.38	7.49
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs 384.00Month	1.35	4.57
(ii) >20 - ≤ 50 kW	Rs.384.00/kW/Month	1.35	7.23

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
(iii) > 50 kW	Rs. 384.00/kW/Month	1.35	7.49
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs 392.00/Month	1.30	4.56
(ii) >20 - ≤ 50 kW	Rs. 392.00/kW/Month	1.30	7.27
(iii) > 50 kW	Rs. 392.00/kW/Month	1.30	7.54
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
LT VII (B): LT - Public Services – Others			
(i) < 20 kW	Rs. 400.00/Month	1.26	4.56
(ii) >20 - ≤ 50 kW	Rs. 400.00/kW/Month	1.26	7.27
(iii) > 50 kW	Rs. 400.00/kW/Month	1.26	7.54
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80

Consumption Slab (kWh)	Fixed/ Demand Charge	Wheeling Charge (Rs/kWh)	Energy Charge (Rs/kWh)
1800 Hrs-2200 Hrs			1.10

Note: *The ToD Tariff is applicable for LT-VII (B) (ii) and LT-VII (B) (iii) (i.e., above 20 kW) and optionally available to LT- VII (B) (i) (i.e., up to 20 kW) having ToD meter installed.*

LT VIII: LT – Electric Vehicle (EV) Charging Stations

Applicability:

This Tariff category is applicable for Electric Vehicle Charging Station including battery swapping station for electric vehicle.

In case the consumer uses the electricity supply for charging his own electric vehicle at his premises, the tariff applicable shall be as per the category of such premises.

Electricity consumption for other facilities at Charging Station such as restaurant, rest rooms, convenience stores, etc., shall be charged at tariff applicable to Commercial Category.

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.45	4.05
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.38	4.12
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.35	4.15
ToD Tariffs (in addition to above base Tariffs) (Rs/kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kVA/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.30	4.20
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab (kWh)	Fixed/ Demand Charge (Rs./kW/Month)	Wheeling Charge (Rs/kWh)	Energy Charge (Rs./kWh)
All Units	70.00	1.26	4.24
ToD Tariffs (in addition to above base Tariffs) (kWh)			
2200 Hrs-0600 Hrs			-1.50
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs			0.00
0900 Hrs-1200 Hrs			0.80
1800 Hrs-2200 Hrs			1.10

HIGH TENSION (HT) TARIFF

HT I: HT – Industry

HT I (A): Industry – General

Applicability:

This tariff category is applicable for electricity for Industrial use at High Voltage for purposes of manufacturing and processing, including electricity used within such premises for general lighting, heating/cooling, etc.

It is also applicable for use of electricity / power supply for Administrative Offices / Canteen, Recreation Hall / Sports Club or facilities / Health Club or facilities/ Gymnasium / Swimming Pool exclusively meant for employees of the industry; lifts, water pumps, fire-fighting pumps and equipment, street and common area lighting; Research and Development units, etc. -

Provided that all such facilities are situated within the same industrial premises and supplied power from the same point of supply.

This tariff category shall be applicable for use of electricity / power supply by an Information Technology (IT) or IT-enabled Services (ITeS) Unit as defined in the applicable IT/ITeS Policy of Government of Maharashtra.

It shall also be applicable for use of electricity / power supply for (but not limited to) the following purposes:

a. Flour Mills, Dal Mills, Rice Mills, Poha Mills, Masala Mills, Saw Mills;

b. Ice Factories, Ice-cream manufacturing units, Milk Processing / Chilling Plants (Dairy);

c. Engineering Workshops, Engineering Goods manufacturing units; Printing Presses; Transformer Repair Workshops; Tyre Remoulding/Rethreading units, and Vulcanizing units;

d. Mining, Quarrying and Stone Crushing units;

e. Garment Manufacturing units

f. LPG/CNG bottling plants, etc.;

g. Sewage Treatment Plant/ Common Effluent Treatment Plant for industries, and not covered under the HT – PWW category

h. Start-up power for Generating Plants, i.e., the power required for trial run of a Power Plant during commissioning of the Unit and its Auxiliaries, and for its start-up after planned or forced outage (but not for construction);

i. Brick Kiln (Bhatti);

j. Biotechnology Industries covered under the Biotechnology Policy of Government of Maharashtra;

k. Cold Storages not covered under HT – Agriculture (Others);

l. Food (including Seafood and meat) Processing units.

m. Stand-alone Research and Development units.

n. Seed manufacturing.

o. Dedicated Water Supply Schemes to Power Plants

p. Auxiliary Power Supply to EHV/Distribution Substations (but not for construction)

q. Telecommunications Towers

HT I (B): Industry - Seasonal

Applicability:

Applicable to Seasonal consumers, who are defined as those who normally work during a part of the year up to a maximum of 9 months, such as Cotton Ginning Factories, Cotton Seed Oil Mills, Cotton Pressing Factories, Salt Manufacturers, Khandsari/Jaggery Manufacturing Units, excluding Sugar Factories or such other consumers who opt for a seasonal pattern of consumption, such that the electricity requirement is seasonal in nature.

Provided that the period of operation of in a financial year should be limited upto 9 months, and the category should be opted for by the consumer within first quarter of the financial year.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT - Industry		
HT I(A): HT - Industry - General	411.00	7.02
HT I(B): HT - Industry - Seasonal	411.00	7.28

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT - Industry		
HT I(A): HT - Industry - General	432.00	6.96
HT I(B): HT - Industry - Seasonal	432.00	7.22
ToD tariff (in addition to above base tariffs)(Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT – Industry		
HT I(A): HT - Industry - General	454.00	6.89

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I(B): HT - Industry - Seasonal	454.00	7.15
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT - Industry		
HT I(A): HT - Industry - General	463.00	6.85
HT I(B): HT - Industry - Seasonal	463.00	7.11
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I: HT – Industry		
HT I(A): HT - Industry - General	472.00	6.73

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT I(B): HT - Industry - Seasonal	472.00	6.99
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Note:

i. High Tension Industrial consumers having captive generation facility synchronised with the grid may opt for Standby Capacity at rate of 25% of applicable Demand Charges.

ii. Demand Charge shall be applicable at 25% of the above rates on the start-up demand contracted by the Power Plant (as referred to at (h) above) with the Distribution Licensee.

iii. Demand Charge shall be applicable at 75% of the above rates for Steel Plant operating with electric arc furnaces.

HT II: HT- Commercial

Applicability:

This tariff category is applicable for electricity used at High Voltage in non-residential, non-industrial and/or commercial premises for commercial consumption meant for operating various appliances used for purposes such as lighting, heating, cooling, cooking, washing/cleaning, entertainment/ leisure and water pumping in, but not limited to, the following premises:

Non-Residential, Commercial and Business premises, including Shopping Malls and Showrooms;

a. Combined lighting and power services for facilities relating to Entertainment, including film studios, cinemas and theatres (including multiplexes), Hospitality, Leisure, Meeting/Town Halls, and places of Recreation and Public Entertainment;

b. Offices, including Commercial Establishments;

c. Marriage Halls, Hotels / Restaurants, Ice-cream parlours, Coffee Shops, Guest Houses, Internet / Cyber Cafes, Telephone Booths and Fax / Photocopy shops;

d. Automobile and all other types of repairs, servicing and maintenance centres (unless specifically covered under another tariff category); Retail Gas Filling Stations, Petrol Pumps & Service Stations, including Garages; -

e. Tailoring Shops, Computer Training Institutes, Typing Institutes, Photo Laboratories, Laundries, Beauty Parlours and Saloons;

f. Banks and ATM centres, Telephone Exchanges, TV Stations, Micro Wave Stations, Radio Stations;

g. Common facilities, like Water Pumping / Lifts / Fire-Fighting Pumps and other equipment / Street and other common area Lighting, etc., in Commercial Complexes;

h. Sports Clubs/facilities, Health Clubs/facilities, Gymnasiums, Swimming Pools not covered under any other category;

i. External illumination of monuments/ historical/heritage buildings approved by Maharashtra Tourism Development Corporation (MTDC) or the concerned Local Authority;

j. Construction of all types of structures/ infrastructures such as buildings, bridges, flyovers, dams, Power Stations, roads, Aerodromes, tunnels for laying of pipelines for all purposes;

k. Milk Collection Centres;

l. Sewage Treatment Plant/ Common Effluent Treatment Plant for Commercial Complexes, not covered under the HT- PWW category or HT I –– Industry

m. Advertisements, hoardings (including hoardings fixed on lamp posts/installed along roadsides), and other commercial illumination such as external flood-lights, displays, neon signs at departmental stores, malls, multiplexes, theatres, clubs, hotels and other such establishments

n. Temporary supply for any of the activity not covered under any other HT category

Provided that Temporary supply consumer shall pay 1.5 time applicable fixed/demand charges and 1.25 time applicable energy charge.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	11.47
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	11.20
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	10.95
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	9.75
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	9.30
ToD tariff (in addition to above base tariffs) (Rs/kVAh)		
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
1800 Hrs - 2200 Hrs		1.10

Note: *A consumer in the HT II category requiring single-point supply for the purpose of downstream consumption by separately identifiable entities shall have to operate as a Franchisee authorised as such by the Distribution Licensee; or such downstream entities shall be required to take separate individual connections and be charged under the tariff category applicable to them.*

HT III - Railways/Metro/Monorail

Applicability:

This tariff category is applicable to power supply at High Voltage for Railways, Metro and Monorail, including Stations and Shops, Workshops, Yards, etc.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	411.00	6.76	-
HT	411.00	6.76	0.57

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	432.00	6.86	-
HT	432.00	6.86	0.56

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	454.00	6.86	-
HT	454.00	6.86	0.55

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	463.00	5.56	-
HT	463.00	5.56	0.54

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)	Wheeling Charges (Rs. /kVAh)
EHV	472.00	5.31	-
HT	472.00	5.31	0.53

HT IV: HT - Public Water Works (PWW) and Sewage Treatment Plants

Applicability:

This tariff category is applicable for electricity / power supply at High Voltage for pumping of water, purification of water and allied activities relating to Public Water Supply Schemes, Sewage Treatment Plants and waste processing units, provided they are owned or operated or managed by Local Self-Government Bodies (Gram Panchayats, Panchayat Samitis, Zilla Parishads, Municipal Councils and Corporations, etc.), or by Maharashtra Jeevan Pradhikaran (MJP), Maharashtra Industries Development Corporation (MIDC), Cantonment Boards and Housing Societies/complexes.

All other Public Water Supply Schemes and Sewage Treatment Plants (including allied activities) shall not be eligible under this tariff category but be billed at the tariff applicable to the HT I or HT II categories, as the case may be.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	6.07
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	6.17
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

HT V: HT – Agriculture

HT V(A) : HT – Agriculture Pumpsets

Applicability:

This category shall be applicable for Electricity / Power Supply at High Tension for pumping of water exclusively for the purpose of Agriculture / cultivation of crops including HT Lift Irrigation Schemes (LIS) irrespective of ownership.

It is also applicable for power supply for cane crushers and/or fodder cutters for self-use for agricultural processing operations, but not for operating a flour mill, oil mill or expeller in the same premises, either operated by a separate motor or a change of belt drive

HT V(B) : HT – Agriculture Others

Applicability:

a. This tariff category is applicable for use of electricity / power supply at High Voltage for:

b. Pre-cooling plants and cold storage units for Agriculture Products as defined under APMC Act 1963 – processed or otherwise;

c. Poultries exclusively undertaking layer and broiler activities, including Hatcheries;

d. High-Technology Agriculture (i.e. Tissue Culture, Green House, Mushroom cultivation activities), provided the power supply is exclusively utilized for purposes directly concerned with the crop cultivation process, and not for any engineering or industrial process;

e. Floriculture, Horticulture, Nurseries, Plantations, Aquaculture, Sericulture, Cattle Breeding Farms, etc;

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	72.00	3.79
HT V (B): HT Agriculture Others	72.00	5.20

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	76.00	3.69
HT V (B): HT Agriculture Others	76.00	5.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	80.00	3.69
HT V (B): HT Agriculture Others	80.00	5.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	82.00	3.69
HT V (B): HT Agriculture Others	82.00	5.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumption Slab	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
HT V: HT Agriculture		
HT V (A): HT Agriculture Pumpsets	84.00	3.69
HT V (B): HT Agriculture Others	84.00	5.10

HT VI: HT - Group Housing Society (Residential)

Applicability:

Entities supplied electricity at a single point at High Voltage for residential purposes in accordance with the Electricity (Removal of Difficulties) Eighth Order, 2005, in the following cases:

a. Co-operative Group Housing Society which owns the premises, for making electricity available to the members of such Society residing in the same premises for residential purposes; and

b. a person, for making electricity available to its employees residing in the same premises for residential purposes.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	329.00	-	5.70
HT	329.00	0.57	5.70

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	345.00	-	5.70
HT	345.00	0.56	5.70

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	362.00	-	5.70
HT	362.00	0.55	5.70

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	369.00	-	5.20
HT	369.00	0.54	5.20

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Consumption Slab	Demand Charges (Rs. /kVA/month)	Wheeling Charges (Rs. /kVAh)	Energy Charges (Rs. /kVAh)
EHV	376.00	-	5.20
HT	376.00	0.53	5.20

HT VIII: HT Public Services

HT VIII – (A): HT - Government Educational Institutions and Hospitals

Applicability:

This tariff category is applicable for electricity supply at High Voltage for Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, Blood Banks and Pathology Laboratories; Libraries and public reading rooms - of the State or Central Government, Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats, etc;

It shall also be applicable for electricity used for Hostels/Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions / Health Care facilities, provided that they are situated in the same premises and are meant

primarily for the students / faculty/ employees/ patients of such Educational Institutions and Hospitals.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	7.74
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	7.74
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	7.74
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	7.24
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	7.24
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

HT VIII - (B): Public Service - Others

Applicability:

This tariff category is applicable for electricity supply at High Voltage for:

a. Educational Institutions, such as Schools and Colleges; Health Care facilities, such as Hospitals, Dispensaries, Clinics, Primary Health Care Centres, Diagnostic Centres, **Blood Banks** and Pathology Laboratories; Libraries and public reading rooms - other than those of the State or Central Government, Local Self-Government bodies such as Municipalities, Zilla Parishads, Panchayat Samities, Gram Panchayats, etc.

b. Sports Clubs and facilities / Health Clubs and facilities / Gymnasium / Swimming Pools attached to such Educational Institutions / Health Care facilities, provided that they are situated in the same premises and are meant primarily for their students / faculty/ employees/ patients;

c. all offices of Government and Municipal/ Local Authorities/ Local Self-Government bodies, such as Municipalities, Zilla Parishads, Panchayat Samitis, Gram Panchayats; Police Stations and Police Chowkies; Post Offices; Armed Forces/Defence and Para-Military establishments;

d. Service-oriented Spiritual Organisations;

e. State or Municipal/Local Authority Transport establishments, including their Workshops;

f. Fire Service Stations; Jails, Prisons; Courts.

g. Airports

h. Ports and Jetties

i. Waste processing units not covered under HT IV category

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	411.00	9.48
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	432.00	9.21
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	454.00	8.96
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	463.00	7.76
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	472.00	7.31
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

HT IX: HT – Electric Vehicle (EV) Charging Stations

Applicability:

This Tariff category is applicable for Electric Vehicle Charging Station including battery swapping station for Electric Vehicle

In case the consumer uses the electricity supply for charging his own electric vehicle at his premises, the tariff applicable shall be as per the category of such premises.

Electricity consumption for other facilities at Charging Station such as restaurant, rest rooms, convenience stores, etc., shall be charged at tariff applicable to Commercial Category.

Rate Schedule

Tariff w.e.f. 1 April, 2020 to 31 March, 2021

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.57

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.93
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2021 to 31 March, 2022

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.56

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.94
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2022 to 31 March, 2023

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.55

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.95
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2023 to 31 March, 2024

Supply Voltage Level	Wheeling Charges (Rs. /kVAh)
EHV	-
HT	0.54

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.96
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

Tariff w.e.f. 1 April, 2024 to 31 March, 2025

Supply Voltage Level	Wheeling Charges (Rs. /kWh)
EHV	-
HT	0.53

PLUS

Demand/Fixed Charge and Energy Charge (for all Supply Voltage Levels)

Consumer Category	Demand Charges (Rs. /kVA/month)	Energy Charges (Rs. /kVAh)
All Units	70.00	4.97
ToD tariff (in addition to above base tariffs)	**(Rs/kVAh)**	
2200 Hrs - 0600 Hrs		-1.50
0600 Hrs - 0900 Hrs & 1200 Hrs - 1800 Hrs		0.00
0900 Hrs - 1200 Hrs		0.80
1800 Hrs - 2200 Hrs		1.10

MISCELLANEOUS AND GENERAL CHARGES

Fuel Adjustment Charge (FAC) Component of Z-factor Charge

The Fuel Adjustment Charge (FAC) component of the Z-factor Charge will be determined in accordance with the formula specified in the relevant Multi Year Tariff Regulations and any directions that may be given by the Commission from time to time, and will be applicable to all consumer categories for their entire consumption.

In case of any variation in the fuel prices and power purchase prices, the Distribution Licensee shall pass on the adjustments through the FAC component of the Z-factor Charge accordingly.

The details of the applicable Z_{FAC} for each month shall be available on the Distribution Licensee's website www.mahadiscom.in.

Electricity Duty and Tax on Sale of Electricity

Electricity Duty and Tax on Sale of Electricity shall be levied in addition to the tariffs approved by the Commission, and in accordance with the Government of Maharashtra stipulations from time to time. The rate and the reference number of the Government Resolution/ Order under which the Electricity Duty and Tax on Sale of Electricity are applied shall be stated in the consumers' energy bills. A copy of such Resolution / Order shall be provided on the Distribution Licensee's website www.mahadiscom.in

Power Factor Computation

Where the average Power Factor measurement is not possible through the installed meter, the following formula for calculating the average Power Factor during the billing period shall be applied:

$$\textit{Average Power Factor} = \frac{\textit{Total (kWh)}}{\textit{Total (kVAh)}}$$

$$\textit{Wherein the kVAh is} = \sqrt{\sum(\text{KWh})^2 + \sum(\text{RkVAh Lag} + \text{RkVAh Lead})^2}$$

Further, average PF so computed can be considered as leading or lagging based on the following test:

If "RkVAh lead" > "RkVAh lag" then "Average P.F." is to be treated as "Lead P.F."

If "RkVAh lead" = < "RkVAh lag" then "Average P.F." is to be treated as "Lag P.F."

Power Factor Incentive

1. Applicable for LT Non-Residential / Commercial [LT: II (B) , LT II (C)] , LT III: Public Water Works [LT: III (B) , LT III (C)], LT V (A) (ii): Industry - Power Looms (above 20 kW) , LT V (B) (ii): Industry - General (above 20 kW), LT VII (A) Public Services - Government Owned Educational Institutes and Hospitals [LT VII (A) (ii) and LT VII (A) (iii)] , LT VII (B) Public Services - Others [LT VII (B) (ii) and LT VII (B) (iii)] and LT VIII – Electric Vehicle Charging Station having Contract Demand/Sanctioned Load above 20 kW.

2. Whenever the average Power Factor is more than 0.95 (lag or lead) and upto 1, an incentive shall be given at the rate of the following percentages of the amount of the monthly electricity bill, excluding Taxes and Duties:

Sr. No.	Range of Power Factor	Power Factor Level	Incentive
1	0.951 to 0.954	0.95	0%
2	0.955 to 0.964	0.96	0.5%
3	0.965 to 0.974	0.97	1.0%
4	0.975 to 0.984	0.98	1.5%
5	0.985 to 0.994	0.99	2.5%
6	0.995 to 1.000	1.00	3.5%

Note: *Power Factor shall be measured/computed upto 3 decimals, after universal rounding off.*

Power Factor Penalty

3. Applicable for LT Non-Residential / Commercial [LT: II (B) , LT II (C)] , LT III: Public Water Works [LT: III (B) , LT III (C)], LT V (A) (ii): Industry - Power Looms (above 20 kW) , LT V (B) (ii): Industry - General (above 20 kW), LT VII (A) Public Services - Government Owned Educational Institutes and Hospitals [LT VII (A) (ii) and LT VII (A) (iii)] , LT VII (B) Public Services - Others [LT VII (B) (ii) and LT VII (B) (iii)] and LT VIII – Electric Vehicle Charging Station having Contract Demand/Sanctioned Load above 20 kW.

2. Whenever the average PF is less than 0.9 (lag or lead), penal charges shall be levied at the rate of the following percentages of the amount of the monthly electricity bill, excluding Taxes and Duties:

SSlr. No..	Range of Power Factor	Power Factor Level	Penalty
1	0.895 to 0.900	0.90	0%
2	0.885 to 0.894	0.89	1.0%
3	0.875 to 0.884	0.88	1.5%
4	0.865 to 0.874	0.87	2.0%
5	0.855 to 0.864	0.86	2.5%
6	0.845 to 0.854	0.85	3.0%
7	0.835 to 0.844	0.84	3.5%
8	0.825 to 0.834	0.83	4.0%
9	0.815 to 0.824	0.82	4.5%

SSlr. No..	Range of Power Factor	Power Factor Level	Penalty
10	0.805 to 0.814	0.81	5.0%
...	...	...	...

***Note**: Power Factor shall be measured/computed upto 3 decimals, after universal rounding off.*

Prompt Payment Discount

A prompt payment discount of one percent of the monthly bill (excluding Taxes and Duties) shall be provided to consumers for payment of electricity bills within 7 days from the date of their issue.

Delayed Payment Charges

In case the electricity bill is not paid within the due date mentioned on the bill, delayed payment charges on the billed amount, including the taxes, cess, duties, etc., shall be levied on simple interest basis at the rate of 1.25% on the billed amount for the first month of delay.

Discount for digital payment

A discount of 0.25% of the monthly bill (excluding taxes and duties), subject to a cap of Rs. 500/-, shall be provided to LT category consumers for payment of electricity bills through various modes of digital payment such as credit cards, debit cards, UPI, BHIM, internet banking, mobile banking, mobile wallets etc.

Rate of Interest on Arrears

The rate of interest chargeable on the arrears of payment of billed dues shall be as given below:

Sr. No.	Delay in Payment (months)	Interest Rate per annum (%)
1	Payment made after 60 days and before 90 days from the date of billing	12%
2	Payment made after 90 days	15%

Rebate for On-time regular payment for LT-AG, LT-PWW and LT-Streetlight

Rebate of 1% for On-time regular payment before due date shall be available for consumers under LT-AG, LT-PWW and LT-Streetlight categories and the same shall be governed as per following conditions:

a. Consumers under LT-AG, LT-PWW and LT-Streetlight shall be eligible for consistent payment rebate of 1% for consistently making payments within due date.

b. Such rebate would be monitored and offered on quarterly basis to only those consumers upon maintaining regular payment track record with the Utility.

c. For example, if consumer makes regular payment of its monthly within due date during previous quarter then, such consumer shall be entitled to a rebate of 1% in its next monthly bill amount (excluding taxes and duties) for the subsequent quarter.

d. In case of any default or non-adherence to bill payment within due date in previous quarter, such benefit of rebate shall be withdrawn for the full next billing quarter.

e. However, the consumer shall be entitled to rebate in subsequent quarters in case it maintains payment track record within due date in the previous quarter. In case of consumer having quarterly billing, such scheme shall be monitored on six monthly basis and rebate shall be given in next quarterly bill.

Rebate for consumers with Prepaid connections

Consumers with prepaid metered connections shall be entitled for rebate of 5% in the Energy Charge Rate (incl FAC) applicable for the consumer category.

Rebate on Incremental Consumption

Rebate for incremental consumption for applicable consumer categories and eligible consumers shall be governed as per following conditions:

a. The rebate for incremental consumption shall be allowed at the rate of Rs 0.75/KVAh for incremental consumption

b. The rebate for incremental consumption shall be applicable for HT industries, HT commercial, HT public services, HT-PWW, HT Railways/Metro/Mono and HT-Group Housing Society (Residential).

c. The rebate shall be given to eligible consumers including open access consumers falling under above consumer categories to the extent of procurement from MSEDCL.

d. The rebate shall be for a period of 3 years subject to reconsideration during the MTR.

e. The rebate shall be allowed to eligible consumers who consume power above threshold limit.

f. The 3-year average monthly consumption by consumer from FY 2017-18 to FY 2019-20 shall be considered as baseline consumption (or monthly threshold consumption) for determination of incremental consumption by such eligible consumers.

g. In case of a consumer registered into system for duration lower than 3 years, such consumer shall be eligible for availing incremental rebate from the next billing cycle upon completion of 3-year period and average monthly consumption for past three years shall

be considered as its baseline consumption (or monthly threshold consumption) in such cases for determination of their incremental consumption for the purpose of rebate.

h. For the purpose of determination of Incremental consumption post MTR period of 4th Control Period, (i.e. for FY 2023-24 and FY 2024-25), baseline consumption (or monthly threshold consumption) shall be reset based on 3-year average from FY 2020-21 to FY 2022-23.

i. The billing at the reduced rates after allowing the rebate shall be done on monthly basis subject to condition that net entitlement for the rebate under this head of incremental consumption shall be determined on annual basis (April to March) equal to energy units consumption in excess of baseline consumption (i.e. annual threshold consumption). The adjustment for shortfall/excess in case cumulative monthly consumption for the yearly consumption vis-à-vis its baseline consumption (i.e. annual threshold consumption) shall be effected in the last monthly (for March) billing period. No carry-forward of shortfall/excess shall be allowed from one year to next year.

j. For example, If a consumer's 3-year average annual consumption was 12,000 units, the consumer shall be entitled for the rebate of Rs.0.75/kVAh for consumption exceeding its monthly threshold consumption (not below the baseline consumption of 1,000 units per month) in FY 2020-21 onwards. However, in case its cumulative monthly consumption for the yearly period falls short of annual threshold consumption of 12,000 units then, consumer shall not be entitled for incremental consumption rebate for that financial year and adjustment for shortfall (or rebate already availed by consumer in earlier months, if any) shall be adjusted for recovery in monthly billing period for March.

k. The Commission has not considered isolated cases which may become Permanently Disconnected during the year in which a rebate has been availed for some months. The details of such cases, if any will be dealt based on the data as may be submitted by MSEDCL during MTR.

l. The rebate shall be over and above the existing rebates subject to the fact that the consumer's total variable charges should not be less than Rs.4/ kVAh after accounting all applicable rebates.

m. The rebates would also be applicable to Open Access consumers, subject to conditions outlined above.

Rebate on Bulk Consumption

Rebate for Bulk consumption for eligible consumers within HT-Industrial category shall be governed as per following conditions:

a. All HT-Industrial consumers with monthly consumption in excess of 1 lakh units per month (0.1 MU per month) shall be eligible to avail Rebate on Bulk Consumption with a reverse telescopic slab structure as outlined below: Thus, the Commission has decided

to introduce "Bulk Consumption" rebate in a reverse telescopic manner for HT-Industrial consumers in following manner:

I. For monthly consumption (> 1 Lakh units to 1 MU) per month: 2%

II. For monthly consumption (> 1 MU to 5 MU) per month: 1.5%

III. For monthly consumption (> 5 MU) per month: 1%

(Note – Units referred are in kVAh such as Lakh kVAh or Million kVAh)

b. Bulk Consumption Rebate shall be applicable on the Energy Charge component including FAC of the Bill excluding taxes and duty.

Illustration:

Say a consumer consumes 15 MU during month then, its consumption more than 1 Lakh units upto 1 MU units rebate will be 2%/unit, for next 4 MU (i.e. upto consumption of 5 MU) rebate will be 1.5%/unit and for consumption in excess of 5 MU upto 15 MU, rebate will be 1%/unit.

Discount in Demand Charges for Single Shift operation of HT-Indusry

In case of industrial consumer under HT-Industry with single shift operation, Demand Charges at the rate of 60% of Applicable Demand Charges as per Tariff Schedule shall be levied, subject to following conditions:

a. Single shift operation means running of operations at a stretch for maximum 10 Hrs. For illustration, a consumer running 4hrs.in one stretch and 6hrs.in another stretch cannot be considered as running in a single shift. However, a maximum of three instances of running beyond 10hrs up to 12hrs is permitted in a billing cycle.

b. Consumer must declare in advance about one shift operation. In absence of such declaration, it shall be billed as per the applicable demand charges.

c. Billing will be done based on MRI/AMR Data.

Load Factor Incentive

a. Consumers having Load Factor above 75% and upto 85% will be entitled to an incentive in the form of a rebate of 0.75% on the Energy Charges for every percentage point increase in Load Factor from 75% to 85%. Consumers having a Load Factor above 85 % will be entitled to a rebate of 1% on the Energy Charges for every percentage point increase in Load Factor from 85%. The total rebate will be subject to a ceiling of 15% of the Energy Charges applicable to the consumer.

b. This incentive is applicable only to consumers in the tariff categories HT I: Industry, HT II: Commercial and HT VIII: Public Services – HT VIII (A) and HT VIII (B) only.`

c. The Load Factor incentive will be available only if the consumer has no arrears with the Distribution Licensee, and payment is made within seven days from the date of the electricity bill. However, it will be available to consumers in whose case payment of arrears in instalments has been allowed by the Distribution Licensee, and such payment is being made as scheduled. The Distribution Licensee shall take a commercial decision on the schedule for such payments.

1. The Load Factor is to be computed as follows:

$$\text{Load Factor} = \frac{\text{Consumption during the month in MU}}{\text{Maximum Consumption Possible during the month in MU}}$$

Maximum consumption possible = Contract Demand (kVA) x Unity Power Factor

x (Total no. of hours during the month, less actual interruptions hours recorded on meter for billing period)

In case the consumer exceeds its Contract Demand (including during the non-peak hours, i.e., 22:00 hrs to 06:00 hrs.) in any particular month, the Load Factor Incentive will not be payable to the consumer in that month

Penalty for exceeding Contract Demand

In case a consumer (availing Demand-based Tariff) exceeds his Contract Demand, he will be billed at the applicable Demand Charge rate for the Demand actually recorded, and also be charged an additional amount at the rate of 150% of the applicable Demand Charge (only for the Demand in excess of the Contract Demand).

In case a LT consumer with a sanction demand/ contract demand less than 20 kW records actual contract demand above 20 kW, he will be billed at the tariff applicable for the respective load slab approved by the Commission, in which recorded demand falls for that billing cycle only and also be charged an additional amount at the rate of 150% of the applicable charge for the Demand in excess of the Contract Demand.

Further Distribution licensee can enhance the Contract Demand of the consumer when the consumers exceeds the Contract Demand on more than three occasions during a calendar year, irrespective whether the Consumer submits an application for the same or otherwise. However, before such revision of Contact Demand, Distribution Licensee must give 15 days' notice to

such consumer. Also, the Consumer is liable to pay necessary charges as may be stipulated in the approved Schedule of Charges for the revised Contract Demand.

Under these circumstances, the consumer shall not be liable for any other action under Section 126 of the EA, 2003, since the penal additional Demand Charge provides for the penalty that the consumer is liable to pay for exceeding his Contract Demand. In case a consumer exceeds his Contract Demand on more than three occasions in a calendar year, the action to be taken would be governed by the provisions of the Supply Code Regulations.

Additional Demand Charges for Consumers having Captive Power Plant

Consumers having a Captive Power Plant can opt for Standby Demand and Additional Demand Charges for such Standby Demand will be as follows:

a. 25% of the Applicable Demand Charges for months when standby capacity is not utilized

b. Demand Charges at the rate of 100% of Applicable Demand Charges for months when standby capacity is used under planned or un-planned shutdown of CPP

c. In case recorded Demand exceeds Contract Demand + Standby Capacity, then applicable Demand Charge for the Demand actually recorded, and an additional amount at the rate of 150% of the applicable Demand Charge (only for the Demand in excess of the Contract Demand + Standby Capacity)

d. In case no Standby capacity has been opted by consumer having CPP, then additional amount for exceeding Contract Demand be charged at 200% of applicable Demand Change (only for demand excess of Contracted Demand)

Consumers' Security Deposit

1) Subject to the provisions of Section 47(5) of the Electricity Act, 2003, the Distribution Licensee shall require any person to whom supply of electricity has been sanctioned to deposit an amount as security in accordance with the provisions of Section 47(1) (a).

2) The amount of the Security Deposit shall be equal to the average of three months of billing or the billing cycle period, whichever is lesser. For determining the average billing, the average of the billing to the consumer for the last twelve months or, where supply has been provided for a shorter period, the average of the billing of such shorter period, shall be considered

3) Where the Distribution Licensee requires security from a consumer at the time of commencement of service, the amount of such security shall be estimated based on the tariff category and Contract Demand/Sanctioned Load, Load Factor, diversity factor and number of working shifts of the consumer.

4) MSEDCL shall re-calculate the amount of Security Deposit payable, based on the actual billing of the consumer, once in each financial year.

5) Where the amount of Security Deposit maintained by the consumer is higher than the security required to be maintained under the Supply Code Regulations, the Distribution Licensee shall refund the excess amount to the consumer in a single instalment.

6) Such refund shall be made upon a request of the person who gave the security, and with intimation to the consumer if different from such person; and shall be made, at the option of such person, by way of adjustment in the next bill or by way of a separate cheque payment within 30 days from the receipt of such request;

7) No refund shall be required to be made where the amount of refund does not exceed 10% of the amount of the Security Deposit required to be maintained by the consumer or Rs 300/-, whichever is higher.

8) Where the amount of security re-assessed as above is higher than the Security Deposit of the consumer, the Distribution Licensee shall be entitled to raise a demand for additional security deposit. The consumer shall be given not less than 30 days to deposit the additional security pursuant to such demand.

9) Upon termination of supply, the Distribution Licensee shall, after recovery of all amounts due, refund the remaining amount of security to the person who deposited it, with intimation to the consumer if different from such person.

10) A consumer - (i) with a consumption of electricity of not less than one lakh kilo-Watt hours per month; and (ii) with no undisputed sums payable to the Distribution Licensee under Section 56 of the Electricity Act, 2003 may, at the option of such consumer, deposit security by way of cash, irrevocable letter of credit or unconditional Bank Guarantee issued by a scheduled commercial Bank.

11) The Distribution Licensee shall pay interest on the amount of Security Deposit in cash (including by cheque or demand draft) at the Bank Rate of Reserve Bank of India as on 1st April of the financial year for which the interest is payable, plus 150 basis points, provided that the amount of such cash Deposit maintained by the consumer is at least Rs. 50/-.

12) Interest on the Security Deposit made in cash shall be payable from the date of its deposit by the consumer till the date of dispatch of the refund by the Distribution Licensee.

Definitions

Maximum Demand

Maximum Demand in kilo-Watts or kilo-Volt Amperes, in relation to any period shall, unless otherwise provided in any general or specific Order of the Commission, mean twice the highest number of kilo-watt-hours or kilo-Volt Ampere hours supplied and taken during any consecutive thirty minute blocks in that period.

Contract Demand

Contract Demand means the demand in kilo-Watt (kW) or kilo–Volt Amperes (kVA), mutually agreed between the Distribution Licensee and the consumer as entered into in the agreement or agreed through other written communication. (For conversion of kW into kVA, the Power Factor of 0.80 shall be applied.)

Sanctioned Load

Sanctioned Load means the load in kW mutually agreed between the Distribution Licensee and the consumer.

In case the meter is installed on the LV/MV side, the methodology to be followed for billing purpose is as follows

2% to be added to MV demand reading, to determine the kW or kVA billing demand, and

'X' units to the MVA reading to determine the total energy compensation to compensate the transformation losses, where is calculated as follows

'X' = (730 * kVA rating of transformer)/500 Units/month, to compensate for the iron losses, plus one percent of units registered on the LT side for copper losses.

Billing Demand - LT tariff categories

Billing Demand for LT Non-Residential / Commercial [LT: II (B) , LT II (C)] , LT III: Public Water Works [LT: III (B) , LT III (C)], LT V (A) (ii): Industry - Power Looms (above 20 kW) , LT V (B) (ii): Industry - General (above 20 kW), LT VII (A) Public Services - Government Owned Educational Institutes and Hospitals [LT VII (A) (ii) and LT VII (A) (iii)] , LT VII (B) Public Services - Others [LT VII (B) (ii) and LT VII (B) (iii)] and LT VIII – Electric Vehicle Charging Station categories having MD based Tariff:-

Monthly Billing Demand will be the higher of the following:

a) 65% of the actual Maximum Demand recorded in the month during 0600 hours to 2200 hours;
b) 40% of the Contract Demand.

Note:

- *Only the Demand registered during the period 0600 to 2200 Hrs. will be considered for determination of the Billing Demand.*

- *In case of a change in Contract Demand, the above period will be reckoned from the month following the month in which the change in Contract Demand is effected.*

Billing Demand - HT tariff categories

Billing Demand for HT I: Industry, HT II: Commercial, HT III Railway/Metro/Monorail, HT IV: Public Water Works, HT V: Agriculture, HT VI: Group Housing Society (Residential), HT VIII: Public Services and HT IX: HT – Electric Vehicle Charging Station

Monthly Billing Demand will be the higher of the following:

a. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours;

b. 75% of the highest Billing Demand recorded during the preceding eleven months, subject to the limit of Contract Demand;

c. 55% of the Contract Demand.*

**For FY 2020-21: 55%, FY 2021-22: 60%, FY 2022-23: 65%, FY 2023-24: 70%, FY 2024-25: 75%*

Note:

- *Only the Demand registered during the period 0600 to 2200 Hrs. will be considered for determination of the Billing Demand.*

- *In case of a change in Contract Demand, the above period will be reckoned from the month following the month in which the change of Contract Demand is effected.*

HT Seasonal Category (HT I)

During Declared Season, Monthly Billing Demand will be the higher of the following:

i. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours

ii. 75% of the Contract Demand

iii. 50 kVA.

During Declared Off-season, Monthly Billing Demand will be the following:

i. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours

The Billing Demand for the consumers with CPP will be governed as per the CPP Order in Case No. 55 and 56 of 2003.

ANNEXURE II: AG & POWERLOOM TARIFF APPLICABLE FOR FY 2020-21

A) AGRICULTURE CATEGORY

TYPE	Category	Apr-20 to Mar-21					
		MERC RATE		CONSUMER PAY RATE		GOM SUBSIDY RATE	
		DC+WC	EC	DC+WC	EC	DC+WC	EC
		Rs/HP/ Month	Rs/Unit	Rs/HP/ Month	Rs/Unit	Rs/HP/ Month	Rs/Unit
		Order No.322/2019 dt.30.03.2020 Rate w.e.f.01.04.2020		Rate w.e.f. 01.04.2020 to 31.03.2021		As per GoM Letter dt.31.05.2017	
LT	**LOW TENSION (UNMETERED)**						
	0 to 3HP						
	Cate, I	479		220		259	
	Cate. II	403		221		182	
	3 to 5 HP						
	Cate, I	479		236		243	
	Cate. II	403		237		166	
	5 to 7.5 HP						
	Cate, I	505		251		254	
	Cate. II	427		254		173	
	More than 7.5 HP						
	Cate, I	550		296		254	
	Cate. II	472		299		173	
	LT Unmetered	**DC**	**EC+WC**	**DC**	**EC+WC**	**DC**	**EC+WC**
	LOW TENSION (METERED)	**Rs/HP/ Month**	**Rs/Unit**	**Rs/HP/ Month**	**Rs/Unit**	**Rs/HP/ Month**	**Rs/Unit**
	0 to 3HP	41	3.30	26	1.27	15	2.03
	3 HP to 5 HP	41	3.30	26	1.57	15	1.73
	5 HP to 7.5 HP	41	3.30	26	1.57	15	1.73
	More than 7.5 HP	41	3.30	26	1.57	15	1.73
	LT LIS	41	3.30	26	1.36	15	1.94
HT	**Category**	**MERC RATE**		**CONSUMER PAY RATE**		**GOM SUBSIDY RATE**	
		DC	**EC+WC**	**DC**	**EC+WC**	**DC**	**EC+WC**
		Rs/kVA/ Month	**Rs/kVAh**	**Rs/kVA/ Month**	**Rs/kVAh**	**Rs/kVA/ Month**	**Rs/kVAh**
	HIGH TENSION (METERED)						
	LIS consumers						
	66KV and above	72	3.79	47	1.16	25	2.63
	33 KV	72	4.36	47	1.16	25	3.20
	22KV	72	4.36	47	1.16	25	3.20
	11KV	72	4.36	47	1.16	25	3.20
	Individual consumers (NON LIS)						
	66KV and above	72	3.79	47	1.83	25	1.96
	33 KV	72	4.36	47	2.40	25	1.96
	22KV	72	4.36	47	2.40	25	1.96
	11KV	72	4.36	47	2.40	25	1.96

Note - 1) Energy Charges is inclusive of Wheeling Charges

2) In case of LT-Unmetereed AG-Pumpset Demand Charges is inclusive of Wheeling Charges

B) POWERLOOM / TEXTILE CATEGORY RATES

	Category	Apr-20 to Mar-21					
		MERC RATE		CONSUMER PAY RATE		GOM SUBSIDY RATE	
		DC	EC+WC	DC	EC+WC	DC	EC+WC
LT	**LT Powerloom**	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA / Month**	**Rs/Unit**
	0-20 kW	Rs. 454/Connection	6.53	304	2.76	150	3.77
	Above 20 kW	303	7.41	203	3.26	100	4.15
	LT Knitting, Hosiery & Garments	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA / Month**	**Rs/Unit**
	0-20 kW	Rs. 454/Connection	6.66	304	2.89	150	3.77
	Above 20 kW	303	7.56	203	3.41	100	4.15
	LT Co-Op Soot Girni	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA / Month**	**Rs/Unit**
	0-20 kW	Rs. 454/Connection	6.66	Rs. 454/Connection	2.89	0.00	3.77
	Above 20 kW	303	7.56	303	3.41	0.00	4.15
	LT Non Co-Op Soot Girni	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA / Month**	**Rs/Unit**
	0-20 kW	Rs. 454/Connection	6.66	Rs. 454/Connection	4.66	0.00	2.00
	Above 20 kW	303	7.56	303	5.56	0.00	2.00
	LT Process Industry & All Other Textile Units (Having load above 107 HP)	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA/ Month**	**Rs/Unit**	**Rs/kVA / Month**	**Rs/Unit**
	b) Above 107 HP	303	7.56	303	5.56	0.00	2.00
HT	**HT Powerloom, Non Co-Op Soot Girni, Knitting, Hosiery & Garments, Process Industry & All Other Textile Units**	**Rs/kVA/ Month**	**Rs/kVAh**	**Rs/kVA/ Month**	**Rs/kVAh**	**Rs/kVA / Month**	**Rs/kVAh**
	66 KV & Above	411	7.02	411	5.02	0.00	2.00
	33 KV	411	7.59	411	5.59	0.00	2.00
	22 KV	411	7.59	411	5.59	0.00	2.00
	11 KV	411	7.59	411	5.59	0.00	2.00
	HT Co-Op Soot Girni	**Rs/kVA/ Month**	**Rs/kVAh**	**Rs/kVA/ Month**	**Rs/kVAh**	**Rs/kVA / Month**	**RskVAh**
	66 KV & Above	411	7.02	411	4.02	0.00	3.00
	33 KV	411	7.59	411	4.59	0.00	3.00
	22 KV	411	7.59	411	4.59	0.00	3.00
	11 KV	411	7.59	411	4.59	0.00	3.00

Note -

1) Energy Charges is inclusive of Wheeling Charges

2) Demand Charges for LT Powerloom for slab upto 20 kW is charged Rs./Connection/Month and for demand based tariff is charged Rs/KVA/month.

3) Lower tariff (discount/rebate) of (2.5%) shall be available in Energy Charge Component (including FAC, if applicable) of Tariff for both slabs (<20 kW and > 20 kW) for LT – Industry (Powerloom).

DC - Demand Charges EC- Energy Charges WC-Wheeling Charges

Annexure 7

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

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विद्युत मंत्रालय

संकल्प

नई दिल्ली, 28 जनवरी, 2016

टैरिफ नीति

सं. 23/2/2005-आर एंड आर (खंड-IX).–1.0 प्रस्तावना

1.1 विद्युत अधिनियम, 2003 की धारा 3 का अनुपालन करते हुए, केंद्र सरकार ने दिनांक 6 जनवरी, 2006 को टैरिफ नीति अधिसूचित की। टैरिफ नीति में और संशोधन 31 मार्च, 2008, 20 जनवरी, 2011 और 08 जुलाई, 2011 को अधिसूचित किए गए थे। विद्युत अधिनियम, 2003 की धारा 3(3) के अंतर्गत प्रदत्त शक्तियों का प्रयोग करते हुए केंद्र सरकार एतदद्वारा भारत के राजपत्र में इस संकल्प के प्रकाशन की तारीख से प्रभावी किए जाने हेतु संशोधित टैरिफ नीति अधिसूचित करती है।

06 जनवरी, 2006 को अधिसूचित टैरिफ नीति के प्रावधानों के अंतर्गत तथा इसमें किए गए संशोधनों के अंतर्गत किसी भी किए गए कार्य अथवा की गई कार्रवाई अथवा तथाकथित किए गए अथवा किए जाने वाले कार्य के होते हुए भी, जहां तक कि इस नीति से असंगत नहीं हैं, उन्हें इस संशोधित नीति के प्रावधानों के अंतर्गत किया गया अथवा किया जाने वाला माना जाएगा।

1.2 राष्ट्रीय विद्युत नीति ने नयी उत्पादन क्षमता की अभिवृद्धि एवं प्रतिवर्ष विद्युत की प्रतिव्यक्ति उपलब्धता बढ़ाने का लक्ष्य निर्धारित किया है एवं न केवल ऊर्जा और व्यस्ततमकालीन कमी को दूर करने के लिए, बल्कि केंद्रीय विद्युत प्राधिकरण द्वारा निर्दिष्ट स्पिनिंग रिजर्व रखा जाना भी है। विद्युत क्षेत्र को आगामी पांच वर्षो में सभी घरों को सस्ती बिजली की उपलब्धता को सुगम बनाने हेतु चुनौती को भी पूरा करना है।

1.3 केन्द्र और राज्य सरकार, बजटीय संसाधनों से अपेक्षित धनराशि मुहैया कराने में असमर्थ हैं अतः विद्युत क्षेत्र में निवेश को आकर्षित करने के लिए निवेश पर उपयुक्त रिटर्न मुहैया कराना अनिवार्य है। देश के आर्थिक विकास में तेजी लाने और लोगों के जीवन स्तर में सुधार लाने का लक्ष्य प्राप्त करने हेतु

उपभोक्ताओं की विभिन्न श्रेणियों को उचित दर पर बिजली की उपलब्धता को सुनिश्चित कराना भी समान रूप से आवश्यक है।

1.4 क्षेत्र में पर्याप्त निवेशों को आकर्षित करने की जरूरत तथा उपभोक्ताओं हेतु औचित्यपूर्ण उपयोगकर्त्ता शुल्क (यूजर चार्ज) के बीच संतुलन को सुनिश्चित करना विनियामक प्रक्रिया के लिए गंभीर चुनौती है। विद्युत क्षेत्र का त्वरित विकास और आवश्यक निवेशों को आकर्षित करने की इसकी क्षमता के साथ-साथ पूरे देश में नियामक दृष्टिकोण का विस्तार करना अपेक्षित है। राज्यों की अधिक संख्या और विविधताओं पर विचार करते हुए दृष्टिकोण में निरंतरता अत्यंत आवश्यक है।

2.0 विधायी स्थिति

2.1 विद्युत अधिनियम, 2003 की धारा 3(1) के जरिए केन्द्र सरकार को टैरिफ नीति निरूपण का अधिकार दिया गया है। अधिनियम की धारा 3 (3) के जरिए केन्द्र सरकार को समय-समय पर टैरिफ नीति की समीक्षा अथवा संशोधित करने का अधिकार दिया गया है।

2.2 केंद्रीय विद्युत विनियामक आयोग (सीईआरसी) और राज्य विद्युत विनियामक आयोग (एसईआरसी) विनियम निरूपण के साथ-साथ अपने कार्य निष्पादन में टैरिफ नीति से निर्देशित होंगे।

2.3 विनियामक आयोग, उत्पादन कंपनियों और पारेषण लाइसेंस धारकों के लिए टैरिफ के निर्धारण हेतु केन्द्रीय आयोग द्वारा विनिर्दिष्ट सिद्धांतों और कार्य प्रणालियों से निर्देशित होंगे।

2.4 केन्द्र सरकार द्वारा अधिनियम के प्रावधान के अंतर्गत विनियामक मंच का गठन किया गया है, जो अन्य बातों के साथ-साथ विशेषकर वितरण के क्षेत्र में नीतिगत निरंतरता बनाए रखने में सहयोग करेगा।

3.0 नीति का विकास

टैरिफ नीति को राज्य सरकारों, केन्द्रीय विद्युत प्राधिकरण (सीईए), केन्द्रीय विद्युत विनियामक आयोग और विभिन्न पणधारियों (स्टेक होल्डरों) के साथ परामर्श करके तैयार किया गया है।

4.0 नीति के उद्देश्य

टैरिफ नीति के उद्देश्य निम्नानुसार हैं :

(क) उपभोक्ताओं को उचित एवं प्रतिस्पर्द्धी दरों पर विद्युत की उपलब्धता सुनिश्चित करना;

(ख) क्षेत्र की वित्तीय व्यवहार्यता सुनिश्चित करना और निवेश को आकर्षित करना;

(ग) विनियामक क्षेत्राधिकार में पारदर्शिता, निरंतरता और पूर्वानुमेयता को बढ़ावा देना और विनियामक जोखिमों को कम करना;

(घ) प्रचालन में प्रतिस्पर्धा, दक्षता का संवर्द्धन करना और आपूर्ति की गुणवत्ता में सुधार करना;

(ङ) नवीकरणीय स्रोतों से विद्युत उत्पादन को प्रोत्साहित करना;

(च) पर्याप्त व्यस्ततमकालीन रिजर्व, विश्वसनीय ग्रिड प्रचालन तथा विभिन्न नवीकरणीय ऊर्जा स्रोतों को एकीकरण प्रदान करने के लिए पम्प्ड स्टोरेज परियोजनाओं (पीएसपी) सहित जल विद्युत उत्पादन को बढ़ाना;

(छ) बेहतर उपभोक्ता सेवाओं के लिए एक गतिशील और सुदृढ़ विद्युत अवसंरचना विकसित करना;

(ज) उपभोक्ताओं की सभी श्रेणियों को पर्याप्त और निर्बाध विद्युत की आपूर्ति सुविधाजनक बनाना;

(झ) उपभोक्ताओं को विद्युत आपूर्ति की विश्वसनीयता के लिए अग्रिम रूप से उत्पादन, पारेषण और वितरण में संचय सहित पर्याप्त क्षमता निर्माण सुनिश्चित करना।

5.0 टैरिफ के प्रति सामान्य दृष्टिकोण

5.1 विद्युत उद्योग के विभिन्न खंडों में प्रतिस्पर्धा का समावेश करना, विद्युत अधिनियम, 2003 की मुख्य विशेषताओं में से एक है। प्रतिस्पर्धा से पूंजी लागत में कमी तथा प्रचालन में दक्षता के जरिए उपभोक्ताओं को पर्याप्त लाभ होगा। इससे प्रतिस्पर्धात्मक रूप से मूल्य निर्धारण की सुविधा उपलब्ध होंगी। केन्द्र सरकार ने वितरण लाइसेंसधारकों द्वारा विद्युत उपलब्ध कराने हेतु बोली प्रक्रिया पर आधारित टैरिफ के विस्तृत निर्देश पहले ही जारी कर दिए हैं।

5.2 वितरण लाइसेंस धारकों द्वारा विद्युत की सभी भावी आवश्यकताओं को प्रतिस्पर्धात्मक रूप से प्राप्त किया जाता रहेगा सिवाय मौजूदा परियोजनाओं का विस्तार करने के मामले में, अथवा जहां पर चिन्हित किए गए विकासकर्त्ता के रूप में राज्य सरकार द्वारा नियंत्रणाधीन अथवा स्वामित्व वाली कंपनी हो और जहां पर विनियामकों को मानकों पर आधारित टैरिफ निर्धारण का सहारा लेना पड़ता हो बशर्ते कि इस प्रयोजनार्थ निजी विकासकर्ताओं द्वारा विद्युत उत्पादन क्षमता का विस्तार किया जाना एकबारगी अभिवृद्धि तक सीमित होगी जो कि विद्यमान क्षमता के 100% से अधिक नहीं होगी।

बशर्ते कि उपयुक्त आयोग, जैसा कि विद्युत अधिनियम, 2003 में परिभाषित है कि ऐसी विस्तार परियोजनाओं के मामले में, मौजूदा परियोजना की अवसंरचना और नई प्रौद्योगिकी की दक्षता साझा करने का लाभ टैरिफ के माध्यम से उपभोक्ताओं तक पहुँचाने को सुनिश्चित करेगा।

बशर्ते कि इसके अतिरिक्त राज्य सरकार राज्य में निवेश को बढ़ावा देने के लिए नीति अधिसूचित कर सकती है जिसके अंतर्गत उत्पादन संयंत्रों की स्थापना की अनुमति देते हुए जिसमें नवीकरणीय ऊर्जा स्रोत शामिल हैं, से उस राज्य के वितरण लाइसेंसियों द्वारा अधिकतम 35% संस्थापित क्षमता का प्रापण किया जा सकता है और जिसके लिए विद्युत अधिनियम, 2003 की धारा 62 के अंतर्गत टैरिफ निर्धारित किया जा सकता है।

बशर्ते कि नीति के पैरा 5.11 (ञ) में शामिल किसी भी प्रावधान के होते हुए भी, ऐसी 35% संस्थापित क्षमता के टैरिफ को एसईआरसी द्वारा निर्धारित किया जाएगा।

तथापि, राष्ट्रीय विद्युत नीति के पैरा 5.7.1 के अंतर्गत अनुमत दीर्घकालिक पीपीए से अलग 15% विद्युत, राज्य के वितरण लाइसेंसी द्वारा प्रापण की जाने वाली 35% विद्युत में शामिल नहीं की जाएगी।

5.3 केंद्र सरकार द्वारा नियंत्रणाधीन अथवा इसके स्वामित्व वाली सभी नई विद्युत उत्पादन एवं पारेषण परियोजनाओं के टैरिफ का निर्धारण 6 जनवरी, 2006 को अधिसूचित टैरिफ नीति के अनुसार प्रतिस्पर्धात्मक बोली के आधार पर किया जाता रहेगा, जब तक कि अन्यथा केंद्र सरकार द्वारा मामला-दर-मामला आधार पर विनिर्दिष्ट न किए जाए।

इसके अतिरिक्त, अंतरा-राज्य पारेषण परियोजनाएं एक थ्रेशहोल्ड सीमा, जिसका निर्धारण एसईआरसी द्वारा किया जाएगा, से ज्यादा लागत वाली परियोजनाएं राज्य सरकार द्वारा प्रतिस्पर्धात्मक बोली प्रक्रिया के माध्यम से विकसित की जाएंगी।

5.4 केंद्रीय विद्युत विनियामक आयोग, केंद्रीय विद्युत प्राधिकरण तथा अन्य पणधारकों से परामर्श करके, छः माह के अंदर, कोल वाशरी रिजेक्ट्स का प्रयोग कर रही परियोजनाओं से विद्युत उत्पादन के टैरिफ के निर्धारण हेतु विनियमों को तैयार करेगा। इन विनियमों का राज्य विद्युत विनियामक आयोगों द्वारा भी पालन किया जाएगा।

बशर्ते, केंद्रीय/राज्य पीएसयू, सरकारी कंपनी और सरकारी कंपनी से भिन्न कंपनी, जिसमें सरकारी कंपनी से भिन्न कंपनी की प्रत्यक्ष रूप से अथवा इसकी किसी भी सहायक कंपनी या संबद्ध कंपनी के माध्यम से शेयरधारिता प्रदत्त शेयर पूंजी के 26% से ज्यादा नहीं होगी, वाले संयुक्त उपक्रम द्वारा कोल वाशरी

रिजेक्ट्स आधारित परियोजनाओं से विद्युत का प्रापण अधिनियम की धारा 62 के अंतर्गत किया जा सकता है।

5.5 पम्प्ड स्टोरेज प्लांट (पीएसपी) सहित जल विद्युत परियोजना के विकासकर्ता को दीर्घकालीन विद्युत क्रय करारों (पीपीए) के माध्यम से बेची जाने वाली विद्युत के लिए सेवा विनियमों की कार्यनिष्पादन आधारित लागत के आधार पर उपयुक्त आयोग द्वारा टैरिफ निर्धारित कराने का विकल्प होगा, यदि निम्नलिखित शर्तों को पूरा कर लिया जाता हैः

(क) उपयुक्त आयोग संतुष्ट है कि एक पारदर्शी द्विस्तरीय प्रक्रिया अपनाने के पश्चात संबंधित राज्य सरकार द्वारा परियोजना स्थल का आबंटन किया गया है। प्रथम चरण वित्तीय क्षमता, समान आकार की अवसरचनात्मक परियोजनाओं को विकसित करने का विगत अनुभव, परियोजनाओं को समय पर तथा अनुमानित लागत, में तैयार करने का विगत ट्रेक रिकार्ड, टर्न-ओवर तथा कार्यनिष्पादन गारंटी को पूरा करने की योग्यता इत्यादि के मानकों के आधार पर पूर्व-अर्हता के लिए होना चाहिए। दूसरे चरण में, केवल एक सकल मात्रानिर्धारक पैरामीटर जैसा कि केंद्र सरकार द्वारा यथा अधिसूचित निःशुल्क विद्युत की प्रतिशतता से अधिक निःशुल्क विद्युत, राज्य सरकार को प्रदान की गई इक्विटी भागीदारी अथवा केंद्र सरकार द्वारा समय-समय पर अधिसूचित किए जाने वाले अन्य पैरामीटर के आधार पर बोलियां आमंत्रित की जाए।

(ख) के.वि.प्रा. की स्वीकृति (यदि अधिनियम की धारा 8 के तहत अपेक्षित हो) वित्तीय समापन, कार्य सौंपने और वितरण लाइसेंसधारियों के साथ नीचे (ग) में निर्धारित क्षमता को दीर्घकालीन पीपीए (35 वर्षों अथवा इससे अधिक अवधि के) करने के कार्य 15.08.2022 तक पूरे कर लिए जाएं।

(ग) कुल विक्रय योग्य डिजाइन ऊर्जा का 60% या इससे ज्यादा, दीर्घावधि पीपीए के लिए निश्चित है और शेष मर्चेंट विक्रय हेतु अनुमत है।

बशर्ते कि, वितरण लाइसेंसी उपयुक्त आयोग के अनुमोदन से अध्यधीन मौजूदा निबंधन एवं शर्तों पर दीर्घकालीन पीपीए की अवधि 35 वर्षों से अगले 15 वर्षों के लिए बढ़ा सकता है।

बशर्ते कि इस खंड में निहित प्रावधान पम्प्ड स्टोरेज प्लांट (पीएसपी) के लिए लागू नहीं होंगे।

(घ) परियोजना की सभी यूनिटों को शुरू करने के लिए समयावधि उपयुक्त आयोग द्वारा आरंभिक सूची के अनुमोदन की तारीख से 4 वर्ष निर्धारित होगी। तथापि उपयुक्त आयोग कारणों का लिखित में अभिलेखन करने के पश्चात् 100 मेगावाट क्षमता से अधिक की (जलाशय तथा रन-ऑफ-रिवर परियोजनाओं) जल विद्युत परियोजनाओं के लिए लंबी समयावधि निर्धारित कर सकेगा। चालू करने के निर्धारित समय की प्राप्ति हेतु दंड सहित सहमत समय सीमाओं का निर्धारण केंद्रीय विद्युत प्राधिकरण के परामर्श से उपयुक्त आयोग द्वारा निश्चित किया जाएगा। उपयुक्त आयोग, निर्माण के दौरान ब्याज (आईडीसी) तथा वित्त पोषण लागत (एफसी) को सीईए के अनुमोदन से, विलंब की अवधि, जो कि विकासकर्ता के कारण नहीं हुआ, तक ही पास-थ्रू कर सकेगा।

(ङ) उपकरण की आपूर्ति एवं परियोजना के निर्माण के लिए ठेका सौपने का कार्य या तो टर्नकी के माध्यम से अथवा सुपरिभाषित पैकेजों के माध्यम से अंतर्राष्ट्रीय प्रतिस्पर्द्धी बोली के आधार पर किया जाता है।

5.6 ऊपर पैरा 5.5 में किसी भी बात के होते हुए भी 100 मेगावाट से ज्यादा की डिजाइन क्षमता वाली जल विद्युत परियोजनाओं, जिनके लिए स्थल को या तो पारदर्शी प्रक्रिया का पालन करते हुए तथा मानदंड के पूर्व-निर्धारित समुच्चय के आधार पर पहले अवार्ड किया जा चुका है, के विकासकर्ता के पास, अधिनियम की धारा 62 के अंतर्गत, लागत आधिक्य के आधार पर दीर्घकालीन पीपीए के माध्यम से बेची जाने वाली विद्युत के लिए उपयुक्त आयोग द्वारा टैरिफ निर्धारित करवाए जाने का विकल्प होगा।

5.7 पैरा 5.5 एवं 5.6 के अंदर शामिल परियोजनाओं के मामलों में उपयुक्त आयोग निम्नलिखित को सुनिश्चित करते हुए टैरिफ निर्धारित करेगा-

(i) परियोजना स्थल आबंटित करने (अधिसूचित निःशुल्क विद्युत के अलावा) के लिए परियोजना विकासकर्ता द्वारा वहन किए गए अथवा वहन किए जाने के लिए प्रतिबद्ध कोई व्यय न तो परियोजना लागत में शामिल किया जाएगा और न ही इस प्रकार का कोई व्यय टैरिफ में शामिल किया जाएगा।

(ii) परियोजना लागत में परियोजना की अनुमोदित आर एंड आर योजना की लागत शामिल होगी जो निम्नलिखित के अनुसार होगीः

(क) वर्तमान में मान्य राष्ट्रीय पुनर्वास एवं पुनर्स्थापन नीति;

(ख) आर एंड आर पैकेज जैसा कि परिशिष्ट के रूप में संलग्न है।

(iii) वार्षिक निर्धारित प्रभार कुल विक्रय योग्य, डिजाइन ऊर्जा के संबंध में दीर्घावधि पीपीए के आधार पर टाई-अप की गई विक्रय योग्य डिजाइन ऊर्जा के लिए आनुपातिक रूप से ली जाएगी जिसे कुल विक्रय योग्य डिजाइन ऊर्जा के निम्नलिखित को घटाकर प्राप्त किया जाएगा।

(क) मेजबान राज्य तथा राइपेरियन राज्य के लिए समय-समय पर केंद्र सरकार द्वारा अधिसूचित अनुसार निःशुल्क विद्युत तथा राज्य सरकार द्वारा गठित स्थानीय क्षेत्र विकास निधि के लिए अंशदान हेतु प्रतिशतता। इस निःशुल्क विद्युत को राज्य सरकार के निर्णय के अनुसार वितरित किया जाए।

(ख) आरंभन की तारीख से 10 वर्ष की अवधि के लिए नामोदिष्ट पुनर्स्थापन क्षेत्र/परियोजना क्षेत्रों में वितरण लाइसेंसी के माध्यम से राज्य सरकार द्वारा अधिसूचित प्रत्येक परियोजना प्रभावित परिवार को प्रत्येक माह 100 यूनिट बिजली के बराबर ऊर्जा निःशुल्क प्रदान की जाएगी।

5.8 उपयुक्त आयोग, प्रारंभिक वर्षों में, टैरिफ भार को कम करने के क्रम में दीर्घकालीन वित्तीय लिखतों का प्रयोग करने के लिए जल विद्युत परियोजनाओं (एचईपी) के विकासकर्ताओं को प्रोत्साहित करने हेतु उपयुक्त विनियामक संरचना की व्यवस्था करेगा।

5.9 प्रतिस्पर्धा का वास्तविक लाभ उपयुक्त बाजार परिस्थितियां उत्पन्न होने पर ही उपलब्ध होगा। विद्युत आपूर्ति की कमी को नियंत्रित करने की जरूरत होगी। विभिन्न निष्पादनकर्त्ता प्रतिस्पर्धा के जरिए सेवा की गुणवत्ता में वृद्धि करेगें। विद्युत उद्योग को उस स्थिति में लाने हेतु सभी प्रयास किए जाने की जरूरत होगी जिसमें उपभोक्ताओं के समग्र हितों की रक्षा हो। पारेषण और वितरण अर्थात् वायर के व्यवसाय को प्राकृतिक एकाधिकार की विशेषताओं के कारण अंतर्राष्ट्रीय रूप से मान्यता प्राप्त है, जिसमें लागत की संवीक्षा के आधार पर रेगुलेटेड रिटर्न में जटिलताएं अंतर्निहित हैं।

5.10 उपभोक्ता का हित विद्युत उत्पादन, पारेषण एवं वितरण जैसी संपूर्ण मूल्य श्रंखला की व्यवहार्यता तथा सततता को सुनिश्चित करने और ठीक इसी समय उपभोक्ताओं को उचित मूल्य पर विद्युत आपूर्ति किए जाने को सुगम बनाने से सर्वोत्तम रूप से पूरा होता है। इन उद्देश्यो को हासिल करने के लिए उपयुक्त सरकार द्वारा समय-समय पर वित्तीय टर्न-अराउंड/पुनःसंरचना योजनाएं अनुमोदित की जाती हैं। उपयुक्त सरकार तथा उपयुक्त आयोग ऐसी योजनाएं कार्यान्वित करते समय सभी विवेकपूर्ण लागतों की वसूली के संदर्भ में, उत्पादन, पारेषण एवं वितरण की व्यवहार्यता सुनिश्चित करेंगे।

5.11 उत्पादन, पारेषण तथा वितरण के सामान्य पहलुओं के संदर्भ में सेवा नियमन की निष्पादन आधारित लागत हेतु टैरिफ नीति निम्नांकित फ्रेमवर्क प्रस्तुत करती है। पैरा 6.1 और पैरा 7.1(6) में संदर्भित प्रतिस्पर्धात्मक बोली वाली परियोजनाओं के लिए ये फ्रेमवर्क लागू नहीं होंगे। क्षेत्रगत पहलुओं पर उत्तरवर्ती खंडों में विचार किया गया है।

(क) निवेश पर रिटर्न

रिटर्न की दर को तय करते समय उपभोक्ताओं के हितों और निवेश की जरूरत के मध्य संतुलन की जरूरत है। रिटर्न द्वारा निवेश को आकर्षित करने के लिए यदि विद्युत क्षेत्र को वरीयता प्राप्त न हो तो भी उसे अन्य क्षेत्रों के बराबर रखा जाए ताकि विद्युत क्षेत्र पर्याप्त क्षमता का सृजन करने में समर्थ हो सके। रिटर्न दर ऐसी होनी चाहिए जिसमें सेक्टर का विकास करने में उचित सरप्लस उत्पादन की गुंजाइश हो।

केन्द्रीय आयोग समग्र जोखिम और पूंजी की प्रचालित लागत को ध्यान में रखते हुए उत्पादन तथा पारेषण परियोजनाओं के लिए इक्विटी पर रिटर्न दर को समय-समय पर अधिसूचित करेगा, जिसका एसईआरसी द्वारा भी अनुसरण किया जाएगा। पारेषण के लिए सीईआरसी द्वारा अधिसूचित रिटर्न दर को एसईआरसी द्वारा वितरण के लिए उपयुक्त संशोधन के साथ अपनाया जा सकता है, ऐसा करते समय जोखिमों को भी ध्यान में रखा जाएगा। इस मामले में समान दृष्टिकोण हेतु विनियामक मंच के माध्यम से आम सहमति बनाना वांछनीय होगा ।

परियोजना की सम्पूर्ण पूँजीगत लागत की अनुमति प्रदान करते समय यथोचित आयोग यह सुनिश्चित करेगा कि ये युक्तिसंगत है और इस लक्ष्य को प्राप्त करने के लिए विनियामक आयोगों द्वारा पूँजीगत लागत संबंधी अपेक्षित बेंचमार्कों को तैयार किया जाना चाहिए। केंद्रीय आयोग इक्विटी पर रिटर्न अथवा पूंजी पर रिटर्न, जो भी उपभोक्ताओं के हित में उचित समझा जाए, दृष्टिकोण अपना सकता है।

राज्य आयोग उपयुक्त समय पर वितरण व्यवसाय में रिटर्न के लिए "वितरण और आपूर्ति मार्जिन" पर विचार कर सकता है। राज्य आयोग विस्तृत अध्ययन के आधार पर मूल्य कैप विनियम पर भी विचार कर सकता है। विनियामक मंच को इस संबंध में एक व्यापक दृष्टिकोण विकसित करना चाहिए। ऐसा प्रस्ताव तैयार करते समय विचार-विमर्श में अन्य बातों के साथ साथ कुल तकनीकी एवं वाणिज्यिक हानियों में कमी करना, कार्य निष्पादन मानकों में सुधार करना और आपूर्ति लागत में कमी करना जैसे मुद्दों को शामिल किया जायेगा।

(ख) इक्विटी मानदंड

परियोजनाओं की पूंजीगत लागत की वित्त-व्यवस्था के लिए 70:30 का ऋण:इक्विटी अनुपात अपनाया जाना चाहिए। प्रवर्तक, इक्विटी निवेशों की उच्चतर मात्रा प्राप्त करने के लिए स्वतंत्र होंगे। इक्विटी इस मानदंड से अधिक होने पर, इसे ब्याज की औसत भारित दर पर और ब्याज दरों की उपयुक्तता सुनिश्चित करने के पश्चात परियोजना के दीर्घावधिक ऋण घटक की औसत भारित टैनर के लिए और की गई ऋण पुनर्संरचना, यदि कोई हो, के प्रभाव को ध्यान में रखते हुए अग्रिम ऋण माना जाए। यदि इक्विटी, नियामक स्तर से कम हो तो टैरिफ परिकलन में इक्विटी पर रिटर्न के निर्धारण के लिए वास्तविक इक्विटी को प्रयोग में लाया जाएगा।

(ग) मूल्यह्रास

केन्द्रीय आयोग, उत्पादन और पारेषण परिसम्पतियों के ह्रास दरों को अधिसूचित कर सकता है। अधिसूचित की गई ऐसी ह्रास दरें विनियामक मंच द्वारा किए गए उचित संशोधन के साथ वितरण परिसंपत्तियों के लिए भी लागू की जाएगी।

बशर्ते कि, उपयुक्त आयोग परियोजना के उपयोगी कार्यकाल के दौरान लागू किए जाने वाले मूल्यह्रास की दर की ऊपरी सीमा टैरिफ निर्धारण के उद्देश्य से निर्दिष्ट करेगा और विकासकर्ता के पास, टैरिफ का अनुमोदन मांगते समय, उक्त सीमा के अधीन मूल्यह्रास की निम्न दर दर्शाने का विकल्प होगा।

मूल्यह्रास की अधिसूचित दरें टैरिफों और लेखांकन के प्रयोजन हेतु भी लागू होंगी।

मूल्यह्रास के विरूद्ध किसी अग्रिम की जरूरत नहीं होनी चाहिए।

परिसंपत्तियों के पूर्ण मूल्यह्रास के पश्चात् कम किए गए टैरिफ का लाभ उपभोक्ताओं को मिलते रहना चाहिए।

उपर्युक्त के होते हुए भी, जिस उत्पादन कंपनी के उन संयंत्रों जिनका पीपीए समाप्त हो चुका हो, या उन संयंत्रों जिनका उपयोगी जीवनकाल पूरा हो चुका है, की विद्युत को उन नवीकरणीय उत्पादन संयंत्रों की विद्युत के साथ मिलाया जा सकता है जो बोली की प्रक्रिया के माध्यम से स्थापित किए जाने हैं अथवा जिन संयंत्रों की स्थापना के लिए उपस्कर का प्रापण प्रतिस्पर्धात्मक बोली के माध्यम से किया जाता है। ऐसे मामलों में, ऐसे संयंत्रों की विद्युत की उपयुक्त सरकार द्वारा निर्धारित किए जाने वाले सिद्धांतों पर नवीकरणीय ऊर्जा उत्पादक संयंत्रों से विद्युत खरीद रहे लाभग्राहियों को पुनःआबंटित किया जा सकता है। आबद्धकर निकाय जो अंततः ऐसी विद्युत खरीदते हैं, वे नवीकरणीय ऊर्जा उत्पादक संयंत्रों से खरीदी गई विद्युत की मात्रा को, अपने नवीकरणीय क्रय दायित्व मानेंगे।

ऐसे पारंपरिक तथा नवीकरणीय उत्पादक संयंत्रों का अनुसूचीकरण एवं प्रेषण पृथक रूप से किया जाएगा।

(घ) ऋण की लागत

टैरिफ घटाने के मद्देनज़र ऋण की अवधि समेत उसकी संरचना को प्रोत्साहित किया जाना चाहिए। ऋण की अनुवर्ती पुनर्संरचना के कारण लागतों में बचत को विनियामक आयोगों द्वारा उपभोक्ताओं के हितों का ध्यान रखते हुए प्रोत्साहित किया जाना चाहिए।

(ड.) विदेशी विनिमय जोखिम प्रबंधन की लागतः

विदेशी विनिमय की भिन्नता संबंधी जोखिम पास थ्रू नहीं होंगे। तथापि, विदेशी मुद्राओं में प्राप्त ऋणों के संबंध में विदेशी विनिमय भिन्नताओं को रोकने के लिए यथाचित लागतों की अनुमति होनी चाहिए। यह प्रावधान केवल उन परियोजनाओं के लिए होना चाहिए जहाँ कि टैरिफ का निर्धारण प्रतिस्पर्धात्मक बोली के आधार पर नहीं किया गया है।

(च) प्रचालन मानदंड

उपभोक्ताओं के साथ दक्षतापूर्वक प्रचालनों का लाभ शेयर करने हेतु प्रोत्साहन और अप्रोत्साहन को ध्यान में रखते हुए उपयुक्त निष्पादन मानदंड विकसित किए जाने की जरूरत होगी। पैरा 5.11(ज)(2) में उल्लिखित मामलों को छोड़कर टैरिफ में प्रचालन पैरामीटर को केवल "नियामक स्तर" पर होना चाहिए और "नियामक और वास्तविकता के स्तर से कम" का नहीं होना चाहिए। प्रचालन संबंधी बेहतर निष्पादन के लिए इसे प्रोत्साहित किया जाना जरूरी है। मानदंड विगत निष्पादन से जुड़े हुए उत्तरोत्तर दक्षताओं को प्रतिबिंबित करते हुए, ईंधन, बेहतर उपकरणों का संग्रहण, प्रचालनों की प्रकृति, उपभोक्ताओं आदि को दी जाने वाली सेवा के स्तर पर भी प्रौद्योगिकी नवीनता लिए हुए होने चाहिए। सतत् एवं प्रमाणित अक्षमता को नियंत्रित एवं दंडित किया जाना चाहिए।

केन्द्रीय आयोग, केन्द्रीय विद्युत प्राधिकरण के परामर्श से उत्पादन और पारेषण हेतु समय-समय पर प्रचालनगत मानदंडों को अधिसूचित करेगा। राज्य विद्युत विनियामक आयोग (एसईआरसी) इन मानदंडों को अपनाएगा। उन मामलों में, जहां पर पिछले कई वर्षों से मानदंड अत्यंत कम होने की स्थिति में राज्य विद्युत विनियामक आयोग, उचित रूप से आसान मानदंड निर्धारित कर सकते हैं और केन्द्रीय आयोग द्वारा अधिसूचित किए गए मानदंडों को प्राप्त करने के लिए समय रहते ही तरीका बदल सकते हैं, अथवा इस संबंध में प्राधिकरण द्वारा विनिर्दिष्ट मानकों के अनुरूप उन्हें चरणबद्ध ढंग से हटा सकते हैं।

वितरण नेटवर्कों हेतु प्रचालन मानदंडों को संबंधित राज्य विद्युत विनियमामक आयोग द्वारा अधिसूचित किया जाएगा। एकरूपता के लिए, विनियामक मंच राज्य विनिर्दिष्ट विशिष्टताओं को ध्यान में रखते हुए मॉडल दिशा-निर्देश तैयार करें।

(छ) नवीकरण और आधुनिकीकरण

उच्चतर दक्षता स्तरों के लिए उत्पादन संयंत्रों (पवन ऊर्जा उत्पादन संयंत्रों के पुनःशक्तिकरण सहित) के लिए नवीकरण और आधुनिकीकरण को प्रोत्साहित किए जाने की जरूरत है, चाहे इन्होंने अपना उपयोगी कार्यकाल पूरा न

भी किया हो। इसमें आवधिक मरम्मत शामिल नहीं है। बहुवर्षीय टैरिफ (एमवाईटी) फ्रेमवर्क का निर्धारण किया जाए, जिसमें नवीकरण और आधुनिकीकरण के लिए आवश्यक पूंजीगत निवेश शामिल हों, साथ ही जिसमें यथोचित आयोग द्वारा निर्धारित किए जाने वाले विशेष व संशोधित निष्पादन मानकों के संबंध में यूटिलिटियों एवं लाभार्थियों के बीच दक्षता सुधार के लाभों का आदान-प्रदान करने संबंधी प्रोत्साहन ढांचा भी शामिल हो। पूर्व निर्धारित दक्षता लाभों के लिए अपेक्षित पूंजी लागत और उच्चस्तरीय निष्पादन को बनाए रखने के लिए जरूरी है कि उपयुक्त आयोग इसका मूल्यांकन करे।

(ज) बहुवर्षीय टैरिफ

1) अधिनियम की धारा 61 के अनुसार टैरिफ निर्धारण के लिए निबंधन एवं शर्तों के लिए उपयुक्त आयोग अन्य बातों के साथ-साथ बहुवर्षीय टैरिफ (एमवाईटी) सिद्धान्तों से निर्देशित होगा। फ्रेमवर्क में 5 वर्ष की नियंत्रण अवधि होनी चाहिए। आंकड़ो संबंधी अनिश्चितता व अन्य व्यावहारिक कारणों से विनियामक आयोग द्वारा जरूरी माने जाने पर पारेषण व वितरण के लिए आरंभिक तौर पर तीन वर्ष की नियंत्रण अवधि भी हो सकती है। विश्वसनीय आंकड़ों के अभाव वाले मामलों में उपयुक्त आयोग प्रथम नियंत्रण अवधि के लिए एमवाईटी में अनुमान प्रस्तुत कर सकता है तथा और अधिक विश्वसनीय आंकड़े प्राप्त होने पर नियंत्रण अवधि नये सिरे से शुरू हो सकती है।

2) ऐसे मामले जहां पर प्रचालन पिछले कई वर्षों से मानदंड से काफी कम है वहां पर राजस्व जरूरत निर्धारित करने संबंधी व्यवस्था अपेक्षित स्तर की बजाय " लचीले " स्तर की होनी चाहिए। अपेक्षित निष्पादन मानक प्राप्त करने के लिए उपयुक्त बेंचमार्किंग अध्ययन आयोजित किए जायें। न्यूनतम सेवा संबंधी मानकों को पूरा करने के लिए आवश्यक पूंजीगत व्यय के निमित्त प्रत्येक यूटिलिटी के लिए पृथक से अध्ययनों की जरूरत होगी।

3) एक बार नियंत्रण अवधि की शुरूआत में राजस्व जरूरत तय हो जाने के पश्चात् विनियामक आयोग को निवेश लागत घटकों के बजाय उत्पादन विनियमन पर ध्यान देना चाहिए। नियंत्रण अवधि की समाप्ति पर निष्पादन की व्यापक समीक्षा की जाए ।

4) विगत लागतों के बोझ से भावी उपभोक्ताओं को बचाने के लिए नियंत्रित न की जा सकने वाली लागतों को तेजी से वसूल किया जाना चाहिए। नियंत्रित न की जा सकने वाली लागतों (सीमित नहीं) में ये शामिल है- ईंधन लागत, मुद्रास्फीति के कारण लागत, कर एवं उपकर, विपरीत प्राकृतिक घटनाओं के मामले समेत विद्युत क्रय यूनिट लागतों में भिन्नता।

5) विनियामक आयोग सूचना देने के बारे में स्पष्ट दिशा-निर्देश व नियम बनाएं। अधिनियम की धारा 62(2) उपयुक्त आयोग को यह अधिकार प्रदान करती है कि वह टैरिफ निर्धारण के लिए उत्पादन, पारेषण व वितरण के बारे में विनिर्दिष्ट पृथक ब्योरों को दर्शाने के लिए लाइसेंसधारकों से कहे।

(झ) क्लीन डेवलेपमेंट मैकेनिज्म (सीडीएम) के अंतर्गत लाभ

ऐसी सभी विद्युत परियोजनाओं (उत्पादन पारेषण व वितरण) जो संबंधित बेस लाईन की तुलना में ग्रीनहाऊस गैस (जीएचजी) का अपेक्षाकृत कम उत्सर्जन करती है, के लिए टैरिफ निर्धारित करते समय क्लीन डेवलेपमेंट मैकेनिज्म (सीडीएम) से प्राप्त लाभों को भी इस प्रकार ध्यान में रखा जाना चाहिए ताकि परियोजना विकासकों को पर्याप्त प्रोत्साहन प्रदान किया जा सके।

(ञ) कंपोजिट स्कीम

अधिनियम की धारा 79 (1) की उपधारा (ख) में व्यवस्था की गई है कि केंद्रीय आयोग उत्पादन कंपनी के टैरिफ को नियंत्रित करेगा, यदि वह उत्पादन कंपनी एक से अधिक राज्यों में विद्युत के उत्पादन एवं विक्रय हेतु एक कंपोजिट स्कीम में शामिल होती है अथवा अन्यथा उसके पास एक कंपोजिट स्कीम हो।

स्पष्टीकरणः अधिनियम की धारा 79(1) के अंतर्गत विनिर्दिष्ट कंपोजिट स्कीम का अर्थ होगा - जिस राज्य में ऐसी परियोजना स्थित है, उससे बाहर वितरण लाइसेंसी को परियोजना की न्यूनतम 10% क्षमता के विक्रय के लिए

परियोजना के वाणिज्यिक प्रचालन की तिथि (परियोजना की अंतिम इकाई की सीओडी परियोजना के वाणिज्यिक प्रचालन की तिथि मानी जाएगी) से पहले दीर्घकालीन अथवा मध्यमकालीन पीपीए पर हस्ताक्षर करने वाली उत्पादन कंपनी द्वारा विद्युत का उत्पादन एवं विक्रय एक से ज्यादा राज्य में करने वाली स्कीम।

5.12 जैसा कि विदित है कि राज्य सरकारों के पास विद्युत क्रय और उपभोग पर शुल्क, कर और उपकर लगाने के अधिकार होते हैं, ये संसाधनों का इष्टतम उपयोग एवं प्रतिस्पर्द्धा को प्रभावपूर्ण ढंग से विकृत कर सकता है, विशेष रूप से जब इन करों का उपयोग चयनित आधार पर और असमान रूप से किया जाए।

कुछ मामलों में विद्युत खपत संबंधी शुल्कों आदि को उत्पादन (यथा कैप्टिव उत्पादन) आदि से जोड़ा जाता है और लगाए गए शुल्कों का स्तर ग्रिड से विद्युत लेने वाले उसी श्रेणी के उपभोक्ताओं पर लगाए जा रहे शुल्क की तुलना में काफी अधिक होता है। इस प्रकार का भेदभाव पक्षपातपूर्ण और अनुपयुक्त है। कैप्टिव उत्पादन को पूर्ण स्वतंत्रता देने का प्रयोजन यह है कि उद्योग विश्वसनीय, गुणवत्तापरक और किफायती विद्युत प्राप्त कर सकें। विशेषतया उपभोक्ता समूह द्वारा स्थापित किए जा सकने वाले कैप्टिव विद्युत संयंत्रों संबंधी प्रावधानों को इस लक्ष्य को ध्यान में रखकर मान्यता दी गई है कि देश भर में लघु एवं मध्यम उद्योगों के विस्तार से तीव्र आर्थिक विकास को गति मिलेगी और बड़े पैमाने पर रोज़गार के अवसर पैदा होंगे।

उपभोक्ताओं को उचित और प्रतिस्पर्धात्मक कीमतों पर विद्युत उपलब्ध कराने संबंधी लक्ष्य की प्राप्ति हेतु जरूरी है कि ऐसे शुल्कों को उचित स्तर पर रखा जाए।

5.13 अधिनियम में, एक मेगावाट या इससे अधिक के उपभोक्ताओं के लिए समयबद्ध ढंग से खुली पहुँच प्रारंभ करने की व्यवस्था है। विनियामक आयोग अधिनियम के प्रावधानों के अनुसार, उपभोक्ताओं की विभिन्न श्रेणियों के लिए खुली पहुँच प्रारंभ करेंगे।

6.0 उत्पादन

मांग में अनुमानित वृद्धि को पूरा करने के लिए उत्पादन क्षमता क्षेत्र का त्वरित विकास आवश्यक है। विद्युत बाजारों की दक्ष कार्यप्रणाली के लिए पर्याप्त उत्पादन भी जरूरी है। साथ ही, उपभोक्ता हितों की रक्षा के लिए नई क्षमता अभिवृद्धि पर अत्यन्त किफायती दरों पर विद्युत का वितरण सुनिश्चित किया जाए। इन उद्देश्यों की पूर्ति हेतु यह नीति निम्नांकित उपाय निर्धारित करती है।

6.1 विद्युत की प्राप्ति

जैसा कि पैरा 5.1 में निर्धारित है, भावी जरूरतों की दृष्टि से विद्युत अर्जन, केंद्र सरकार द्वारा समय-समय पर जारी दिशा-निर्देशों के आलोक में पारदर्शी प्रतिस्पर्धात्मक बोली प्रक्रिया के जरिए होना चाहिए। इन दिशानिर्देशों में आधारभूत भार जरूरत और व्यस्ततमकालीन भार जरूरतों के लिए पृथक से विद्युत अर्जन व्यवस्था है। इससे इस प्रकार की ऐसी जरूरतों को पूरा करने के लिए उत्पादन क्षमता बढ़ोत्तरी में मदद मिलेगी।

तथापि, दिनांक 19 जनवरी, 2005 के दिशानिर्देशों के अनुसार कुछ प्रतिस्पर्द्धात्मक बोली परियोजनाओं में कोल इंडिया लिमिटेड (सीआईएल) से कोयले की अपेक्षित मात्रा प्राप्त करने में कठिनाइयां आई हैं। आश्वासन पत्र/एफएसए में दर्शाई गई मात्रा की तुलना में सीआईएल द्वारा आपूर्ति किए गए घरेलू कोयले की कम मात्रा की स्थिति में, कमी को पूरा करने के लिए अधिप्राप्त आयातित/बाजार आधारित ई-नीलामी वाले कोयले की लागत पर दिनांक 31.7.2013 के कार्यालय ज्ञापन संख्या एफयू-12/2011-आईपीसी (वाल्यूम-III) में विद्युत मंत्रालय द्वारा जारी की गई परामर्शिका के अनुसार मामला दर मामला आधार पर उपयुक्त आयोग द्वारा पास-थ्रू बनाए जाने पर विचार किया जाएगा।

6.2 टैरिफ ढांचा और संबद्ध मामले

(1) मैरिट आर्डर डिस्पैच को सरल बनाने के लिए सभी दीर्घावधिक और मध्यावधिक अनुबंधों के लिए द्वि-भागीय टैरिफ ढांचा अपनाया जाना चाहिए। राष्ट्रीय विद्युत नीति के अनुसार उपलब्धता आधारित टैरिफ (एबीटी) को राज्य स्तर पर भी आरंभ किया जाना है। इस ढांचे का उत्पादन स्टेशनों (एसईआरसी द्वारा यथा निर्धारित क्षमताओं

वाले ग्रिड से जुड़े कैप्टिव संयंत्रों समेत) तक विस्तार किया जाएगा। उपयुक्त आयोग बेहतर भार प्रबंधन के लिए व्यवस्ततम व गैर-व्यस्ततमकालीन घंटों के लिए निर्धारित प्रभार की पृथक दरें दो वर्षों की अवधि के भीतर करेगा।

विद्युत स्टेशनों से हर समय उपलब्ध रहने और प्रेषण हेतु तैयार रहने की अपेक्षा की जाती है। विद्युत क्रय करार (पीपीए) में वर्णित किसी प्रावधान के होते हुए भी, विद्युत अधिनियम, 2003 की धारा 62 के अंतर्गत विनियमित टैरिफ के आधार पर उत्पादन स्टेशनों की गैर मांग वाली उत्पादन क्षमता के बेहतर उपयोग को सुनिश्चित करने के लिए प्राप्तकर्ता द्वारा विद्युत की मांग न किए जाने की स्थिति में, दिन के 00:00 घंटों से कम से कम 24 घंटे पहले और उसकी मात्रा के बारे में सूचना देगा ताकि उत्पादन केंद्र, इस संबंध में केंद्र सरकार द्वारा निर्धारित नीति के अनुरूप इसे बाजार में बेच सकें। विकासकर्ता और पीपीए पर हस्ताक्षर करने वाले प्राप्तकर्ता, यदि पीपीए में पहले से ही व्यवस्था नहीं की गई है तो आपस में की गई सहमति के आधार पर बाजार में, इस प्रकार की मांग न की गई विद्युत के विक्रय, यदि कोई है, से प्राप्त होने वाले लाभों में 50:50 के अनुपात की हिस्सेदारी करेंगे। इस प्रकार के लाभ की गणना ऐसी विद्युत और ईंधन प्रभार के बिक्री मूल्य के बीच अंतर के रूप में की जाएगी। तथापि, यह सुनिश्चित किया जाए कि ऐसी मर्चेंट बिक्री के परिणामस्वरूप मूल लाभार्थी (लाभार्थियों को) उच्चतम औसत ऊर्जा के रूप में जिसमें मर्चेंट बिक्री को छोड़कर भुगतान योग्य ऊर्जा प्रभार शामिल है, पर प्रतिकूल प्रभाव न पड़े। अधिनियम की धारा 63 के अंतर्गत परियोजनाओं के लिए ऐसी बिक्री की प्रणाली को उपयुक्त आयोग द्वारा प्रापक तथा उत्पादक के बीच परस्पर रूप से सहमत शर्तों पर निर्धारित किया जाएगा, अथवा जब तक कि यदि पहले से ही पीपीए में विनिर्दिष्ट न हो।

(2) विद्युत खरीद समझौते में उत्पादन कंपनियों के लिए पर्याप्त एवं बैंक ग्राह्य भुगतान सुरक्षा प्रबंध सुनिश्चित किया जाना चाहिए। लैटर ऑफ क्रेडिट, एस्क्रो ऑफ कैश फ्लों आदि जैसी उपलब्ध भुगतान सुरक्षा तंत्र के बावजूद भी पीपीए के अनुसार सहमत टैरिफ के भुगतान की लगातार डिफॉल्ट के मामले में उत्पादन कंपनियां दूसरे क्रेताओं को ऐसी विद्युत बिक्री कर सकती है।

(3) कोयला आधारित उत्पादन केंद्रों के मामले में कोल वाशरीज़, कोयला हितकारी प्रणाली, शुष्क राख लदान एवं निपटान प्रणाली स्थापना की उपयुक्त लागत भी परियोजना लागत में शामिल होगी।

(4) बोलियां अवार्ड किए जाने के बाद यदि केंद्र सरकार, राज्य सरकारों/संघ राज्य क्षेत्रों अथवा अन्य किसी सरकारी तंत्र द्वारा लगाए गए घरेलू शुल्कों, लेवीज, उपकरों और करों जिनसे लागत में तदनुसार परिवर्तन होते हैं, तो इसे "विधि में परिवर्तन" के रूप में माना जाएगा जब तक कि पीपीए में अन्यथा प्रावधान न हो, इसे उपयुक्त आयोग के अनुमोदन के अध्यधीन पास-थ्रू के रूप में अनुमति दी जाए।

(5) नगर पालिका/स्थानीय निकायों/समान संगठन के 50 किलोमीटर के दायरे के भीतर आने वाले विद्यमान संयंत्रों सहित ताप विद्युत संयंत्र (संयंत्रों), इन निकायों के सीवेज ट्रीटमेंट प्लांट के निकटता के क्रम में उत्पादित शोधित सीवेज जल का अनिवार्यतः प्रयोग करेंगे और इस कारण संबद्ध लागत की टैरिफ में पास-थ्रू की अनुमति होगी। सीवेज ट्रीटमेंट प्लांट द्वारा आपूर्ति की कमी की स्थिति में ऐसे थर्मल संयंत्र अपनी आवश्यकताओं को पूरा करने के लिए पानी के बैकअप स्रोत को भी सुनिश्चित करेंगे। इस कारण संबद्ध लागत, स्थिर लागत में शामिल होगी ताकि ऐसे ताप विद्युत संयंत्र का मैरिट ऑर्डर बाधित न हो। सीवेज ट्रीटमेंट प्लांट को विद्युत संयंत्र के विकासकर्ता के परामर्श से ही बंद किया जाएगा।

6.3 कैप्टिव उत्पादन को उपयोग में लाना

कैप्टिव उत्पादन प्रतिस्पर्द्धी विद्युत उपलब्ध कराने के लिए एक महत्वपूर्ण साधन है। उपयुक्त आयोग को ऐसा वातावरण तैयार करना चाहिए जो कैप्टिव विद्युत संयंत्रों को ग्रिड के साथ जोड़ने में प्रोत्साहन प्रदान करे।

ऐसे कैप्टिव संयंत्र, अधिशेष विद्युत की आपूर्ति उत्पादन कंपनियों पर लागू होने वाले उसी विनियम के अध्यधीन ग्रिड के जरिए कर सकते हैं। इस नीति के पैरा 5.2 के दूसरे परंतुक को ध्यान में रखते हुए अधिनियम की धारा 63 के अंतर्गत केंद्र सरकार द्वारा जारी किए गए दिशानिर्देशों का अनुपालन करते हुए वितरण लाइसेंसियों द्वारा कैप्टिव संयंत्रों से सुनिश्चित आपूर्ति खरीदी जा सकती है।

व्यस्ततम और गैर-व्यस्ततमकीन आपूर्ति के लिए पृथक-पृथक कीमत तय की जानी चाहिए और टैरिफ में वास्तविक स्तर पर उत्पादन की परिवर्तनीय लागत और क्षमता प्रभारों हेतु उचित मुआवजा शामिल किया जाना चाहिए।

संबंधित राज्य आयोग प्रभारों को उचित एवं सही ठहराते हुए कार्यान्वयन के लिए व्हीलिंग प्रभार और अन्य सेवा शर्तें जोड़ना निर्धारित करे।

ग्रिड से संबद्ध कैप्टिव संयंत्र सहमत टैरिफ के आधार पर उपलब्ध पारेषण सुविधाओं के माध्यम से ग्रिड से संबद्ध नॉन-कैप्टिव प्रयोगकर्त्ताओं को भी विद्युत आपूर्ति कर सकते हैं। विद्युत का ऐसा क्रय खुली पहुंच के लिए संगत नियमों के अधीन होगा जिसमें विद्युत नियमावली, 2005 के नियम 3 के संबद्ध प्रावधानों का अनुपालन शामिल है।

6.4 नवीकरणीय ऊर्जा स्रोतों से सह-उत्पादन सहित ऊर्जा उत्पादन के नवीकरणीय स्रोतः

(1) अधिनियम की धारा 86(1)(ङ) के प्रावधानों के अनुसरण में, उपयुक्त आयोग नवीकरणीय ऊर्जा स्रोतों से ऊर्जा की खरीद के लिए किसी वितरण लाइसेंसी के क्षेत्र में विद्युत की कुल खपत की न्यूनतम प्रतिशतता इस प्रकार के संसाधनों की उपलब्धता और रिटेल टैरिफ पर इसके प्रभाव को ध्यान में रखते हुए निर्धारित करेगा। नवीकरणीय ऊर्जा की खरीद की लागत एसईआरसी द्वारा प्रशुल्क निर्धारण के समय ध्यान में रखी जाएगी। नवीकरणीय क्रय बाध्यता (आरपीओ) की दीर्घावधि ग्रोथ ट्रेजेक्टरी विद्युत मंत्रालय द्वारा एमएनआरई के परामर्श से निर्धारित की जाएगी।

बशर्ते कि नवीकरणीय स्रोतों के इतर स्रोतों से सह-उत्पादन को आरपीओ की प्रयोज्यता से बाहर नहीं रखा जाएगा।

(i) इस प्रकार लागू किए गए प्रतिशत के भीतर राज्य विद्युत विनियामक आयोग इस नीति में अधिसूचना की तारीख से सौर ऊर्जा के क्रय के लिए भी न्यूनतम प्रतिशत रखेगा जो मार्च, 2022 तक अथवा जैसा केंद्र सरकार द्वारा समय-समय पर अधिसूचित अनुसार, जल विद्युत को छोड़कर, कुल ऊर्जा खपत के 8% तक पहुँचेगा।

(ii) वितरण लाइसेंसी, अधिनियम की धारा 62 के अंतर्गत उपयुक्त आयोग द्वारा निर्धारित टैरिफ पर अपने स्रोतों सहित सभी स्रोतों से विद्युत के प्रापण के अनुपात में राज्य में सभी "बेस्ट टू एनर्जी प्लांट्स" से उत्पादित 100 प्रतिशत विद्युत का प्रापण अनिवार्य रूप से करेंगे।

(iii) वांछनीय है कि ऊर्जा के नवीकरणीय संसाधनों से ऊर्जा का क्रय विभिन्न राज्यों में कमोवेश इसी अनुपात में हो। देश के केवल कुछ भागों में इन स्रोतों की व्यापक उपलब्धता के वर्तमान परिदृश्य में इस लक्ष्य की प्राप्ति हेतु नवीकरणीय ऊर्जा प्रमाण-पत्रों (आरईसी) जैसी उपयुक्त प्रणाली को प्रोन्नत किए जाने की आवश्यकता होगी। इस प्रकार की प्रणाली के जरिए नवीकरणीय ऊर्जा आधारित उत्पादन कम्पनियां परम्परागत विद्युत हेतु निर्धारित दरों पर स्थानीय वितरण लाइसेंसी को विद्युत का विक्रय कर सकती हैं और अन्य वितरण कम्पनियों तथा आबद्धकर निकायों को प्रमाण-पत्रों का विक्रय करके शेष लागत की वसूली कर सकती है ताकि परवर्ती कंपनियां नवीकरणीय विद्युत क्रय दायित्वों को पूरा कर सकें। आरईसी प्रणाली में सौर विनिर्दिष्ट आरईसी भी होना चाहिए।

(iv) उपयुक्त आयोग, पृथक प्रौद्योगिकी आधारित आरईसी और 'आरईसी मल्टीप्लायर' (अर्थात् ऐसी उभरती हुई प्रौद्योगिकियों में इस स्तर के उत्पादन को उच्चतर अथवा निम्नतर आरईसी प्रदान करके) निर्धारित करके ऐसी अन्य उभरती हुई नवीकरणीय ऊर्जा प्रौद्योगिकियों को बढ़ावा देने के लिए उपयुक्त विनियामक ढांचा प्रदान कर सकता है। इसी प्रकार, समय के साथ नवीकरणीय ऊर्जा प्रौद्योगिकियों के मूल्यों में परिवर्तन को ध्यान में रखते हुए, आरईसी मल्टीप्लायर आधारित विंटेज (अर्थात संयंत्र के चालू करने के वर्ष के आधार पर उत्पादन के उस स्तर के लिए आरईसी की उच्चतर अथवा निम्नतर संख्या प्रदान करके) निर्धारित कर सकता है।

(2) टैरिफ कम रखने के लिए राज्य प्रतिस्पर्द्धी बोली के माध्यम से बेस्ट टू एनर्जी संयंत्रों को छोड़कर, नवीकरणीय ऊर्जा स्रोतों से विद्युत का प्रापण करने का प्रयास करेंगे। वितरण लाइसेंसियों द्वारा, अधिसूचित क्षमता से ज्यादा क्षमता वाली परियोजनाओं से नवीकरणीय ऊर्जा स्रोतों से विद्युत का प्रापण केंद्र सरकार द्वारा अधिसूचित की जाने वाली तिथि से, प्रतिस्पर्द्धात्मक बोली प्रक्रिया के माध्यम से किया जाएगा।

तथापि, ऐसी अधिसूचना तक, नवीकरणीय ऊर्जा स्रोत परियोजनाओं से विद्युत का ऐसा कोई प्रापण विद्युत अधिनियम, 2003 की धारा 62 के अंतर्गत किया जाएगा। ऐसे स्रोतों से टैरिफ निर्धारित करते समय उपयुक्त आयोग यह सुनिश्चित करने के लिए सौर विकिरण और पवन की तीव्रता, जो एक क्षेत्र से दूसरे क्षेत्र में भिन्न हो सकती है, को ध्यान में रखेगा ताकि लाभ उपभोक्ताओं तक पहुँच सके।

(3) केंद्रीय आयोग को अनिरंतर विद्युत, विशेषकर नवीकरणीय ऊर्जा स्रोतों के मूल्य निर्धारण हेतु दिशानिर्देश निर्धारित करना चाहिए जहां पर विद्युत का प्रापण प्रतिस्पर्द्धी बोली के माध्यम से नहीं है। सीईआरसी द्वारा अनुबंधित टैरिफ उस श्रेणी के लिए ऊपरी सीमा के रूप में कार्य करेगा।

(4) वितरण कंपनियों को नवीकरणीय ऊर्जा स्रोतों से विद्युत के प्रापण के लिए प्रोत्साहित करने हेतु केन्द्र सरकार, समय-समय पर जनहित में बैक-लोडेड तरीके अथवा किसी अन्य तरीके से उत्तरोत्तर रूप से टैरिफ बढ़ाए जाने की अनुमति देकर, नवीकरणीय ऊर्जा के लिए पीपीए की अवधि के दौरान ऐसे उत्पादन संयंत्रों की आयु चक्र में उपयुक्त बोली आधारित टैरिफ ढांचा अधिसूचित कर सकती है। तदनुरूप, ऐसी बोली आधारित नवीकरणीय ऊर्जा का प्रापक, इस प्रकार से निर्धारित टैरिफ के भुगतान के लिए दायित्वों का अनुपालन करेगा।

(5) नवीकरणीय ऊर्जा स्रोतों को बढ़ावा देने के लिए, किसी भी उत्पादन कंपनी को, जो एक विनिर्दिष्ट तिथि के बाद कोयला/लिग्नाइट आधारित ताप विद्युत आधारित उत्पादन केन्द्र स्थापित करने का प्रस्ताव करती है, ऐसी नवीकरणीय ऊर्जा उत्पादन क्षमता स्थापित करना अथवा ऐसी क्षमता के बराबर नवीकरणीय ऊर्जा का प्रापण अथवा आपूर्ति करना आवश्यक होगा जो केंद्र सरकार पणधारकों के साथ अपेक्षित परामर्श के पश्चात समय-समय पर निर्धारित करेगी। प्रत्येक उत्पादक द्वारा उत्पादित नवीकरणीय ऊर्जा को बिक्री के उद्देश्य से इसके ताप विद्युत उत्पादन के साथ मिलाया जा सकता है। यदि कोई आबद्धकर इकाई इस नवीकरणीय विद्युत का प्रापण करती है, तब एसईआरसी यह मान लेगी कि आबद्धकर निकाय द्वारा ऐसे नवीकरणीय ऊर्जा उत्पादन स्टेशनों से खरीदी गई विद्युत की मात्रा तक नवीकरणीय क्रय दायित्व (आरपीओ) को पूरा कर लिया गया है।

बशर्ते कि यदि कोई मौजूदा कोयला और लिग्नाइट आधारित ताप विद्युत उत्पादन केन्द्र मौजूदा विद्युत क्रय करारों के अंतर्गत विद्युत प्रापकों की सहमति से अतिरिक्त नवीकरणीय ऊर्जा उत्पादन क्षमता स्थापित करना चाहता है तो इस प्रकार के संयंत्र से उत्पादित विद्युत को मिलाने की अनुमति दी जाएगी और इस प्रकार की नवीकरणीय ऊर्जा के टैरिफ के पास-थ्रू की अनुमति उपयुक्त आयोग द्वारा दी जाएगी। आबद्धकर निकाय, जो अंततः ऐसी विद्युत खरीदते हैं, अपने नवीकरणीय क्रय दायित्व में मानेंगे।

बशर्ते, ऐसे पारंपरिक तथा नवीकरणीय उत्पादक संयंत्रों का अनुसूचीकरण एवं प्रेषण पृथक रूप से किया जाएगा।

(6) ऊर्जा के नवीकरणीय स्रोतों को आगे प्रोत्साहन देने के लिए, अन्तर-राज्यीय पारेषण प्रणाली के माध्यम से बिक्री हेतु ऊर्जा के सौर और पवन स्रोतों से उत्पादित विद्युत के पारेषण पर कोई भी अन्तर-राज्यीय पारेषण प्रभार और हानियां उस अवधि तक, जो केन्द्र सरकार द्वारा अधिसूचित की जाए, नहीं लगाई जाएंगी।

(7) उपयुक्त आयोग स्थानीय प्राधिकरण, पंचायत संस्थान, प्रयोक्ता संस्थान, सहकारी सोसायटी, गैर-सरकारी संगठन, फ्रेंचाइजी अथवा नवीकरणीय ऊर्जा सेवा कंपनी सहित किसी निकाय द्वारा नवीकरणीय ऊर्जा स्रोतों, विशेष रूप से छत पर सौर प्रणाली से विद्युत के उत्पादन और बिक्री को सुगम बनाने के लिए विनियामक फ्रेमवर्क की व्यवस्था कर सकता है। उपयुक्त सरकार इस प्रयोजन के लिए पूरक नीतिगत सहायता भी उपलब्ध करा सकती है।

व्याख्याः नवीकरणीय ऊर्जा सेवा कंपनी का अभिप्राय ऐसी ऊर्जा सेवा कंपनी से है जो उपभोक्ताओं को विद्युत के रूप में नवीकरणीय ऊर्जा उपलब्ध कराती है।

7.0 पारेषण

देश की पारेषण प्रणाली में क्षेत्रीय नेटवर्क, अंतःक्षेत्रीय कनेक्शन, जो पांच क्षेत्रों और राज्य नेटवर्कों को विद्युत पहुँचाते हैं, शामिल हैं। राज्य नेटवर्कों का विकास एक समान नहीं रहा है और इन नेटवर्कों की क्षमता में विस्तार की जरूरत

है। ये नेटवर्क अंतःराज्यीय विद्युत प्रवाह और क्षेत्रीय व राष्ट्रीय प्रवाह में भी महत्वपूर्ण भूमिका निभायेंगे। जहां तक पारेषण का संबंध है, टैरिफ नीति निम्नलिखित उद्देश्यों की पूर्ति करेगी-

1. विश्वसनीयता के लिए पर्याप्त मार्जिन के साथ उत्पादन से पूर्व पारेषण नेटवर्क का इष्टतम विकास सुनिश्चित करना और देश में उत्पादन एवं पारेषण परिसंपत्तियों का दक्षतापूर्वक उपयोग संवर्द्धित करना।

2. पारेषण क्षेत्र में अपेक्षित निवेश आकर्षित करना और पर्याप्त रिटर्न उपलब्ध कराना।

7.1 पारेषण कीमत निर्धारण

(1) राज्य के भीतर हस्तांतरण और मध्यवर्ती राज्य में विद्युत पारेषण, जो ऐसे अंतःराज्य पारेषण के आनुषांगिक हो, को मिलाकर अंतःराज्य पारेषण के लिए उपयुक्त पारेषण टैरिफ ढांचा कार्यान्वित किया गया है ताकि समूचे देश में सभी परिसंपत्तियों के प्रभावी उपयोग को प्रोत्साहित किया जा सके और अपेक्षित नई पारेषण क्षमताओं का तीव्र विकास किया जा सके।

(2) राष्ट्रीय विद्युत नीति के अनुसार कार्यान्वयनाधीन राष्ट्रीय टैरिफ ढांचा दूरी, दिशा और विद्युत प्रवाह परिमाण के प्रति संवेदनशील होना चाहिए। इसे सीईए के परामर्श को ध्यान में रखते हुए सीईआरसी द्वारा विकसित किया गया है। पारेषण प्रभारों को समय-समय पर संशोधित किए गए ऐसे टैरिफ तंत्र के अनुसार साझा किया जाएगा।

(3) इस ढांचे के अंतर्गत पारेषण प्रभार मेगावाट प्रति सर्किल किलोमीटर आधार, जोनल पोस्टल स्टैम्प आधार अथवा व्यावहारिकता आधार पर निर्धारित किया जा सकता है। इसका प्रयोजन यही है कि पारेषण प्रणाली प्रयोक्ताओं के बीच पारेषण लागत का बंटवारा पारेषण प्रणाली उपयोग के आधार पर हो सके। सभी द्वारा उपयोग किए जाने के बाद 'उपयोगिता' घटक द्वारा विश्वसनीयता का यथासमय लाभ लिया जाना चाहिए। न्यूतनम और अधिकता पारेषण दरों के बीच अंतर इस प्रकार होना चाहिए कि वह नियोजित विकास/पारेषण प्रणाली के विस्तार को प्रभावित न करे बल्कि गैर-इष्टतम पारेषण निवेश को हतोत्साहित करे।

(4) एनईपी द्वारा निर्धारित दृष्टिकोण को ध्यान में रखते हुए नेटवर्क विस्तार के लिए लाभार्थियों के साथ पूर्व करार पूर्ण शर्त नहीं होनी चाहिए। सीटीयू/एसटीयू को नेटवर्क का विस्तार स्टेकहोल्डरों के साथ परामर्श करके और राष्ट्रीय विद्युत योजना के अनुसार आवश्यकता का पता लगाने के पश्चात और उचित नियामक अनुमोदनों के पश्चात् कार्य आरंभ करने के बाद करना चाहिए। ग्रिड के सुचारु प्रचालन के लिए, पारेषण प्रणाली को उत्पादन से पहले विकसित करने के लिए प्रयास किए जाने चाहिए।

(5) केन्द्रीय आयोग ने पूंजी एवं प्रचालन संबंधी लागत के लिए मानदंड विनिर्दिष्ट किए हैं तथा अंतर-राज्यीय पारेषण लाइसेंसियों के लिए कार्य निष्पादन मानक निर्धारित किए हैं। टैरिफ निर्धारण और कार्य निष्पादन के मानकों का अनुपालन समय-समय पर यथासंशोधित इन मानदंडों के अनुसार किया जाएगा।

(6) सीटीयू/एसटीयू सहित पारेषण विकासकर्ता द्वारा निवेश केंद्र सरकार द्वारा समय-समय पर जारी किए गए दिशा-निर्देशों के अनुसार प्रतिस्पर्द्धी बोली के जरिए आमंत्रित किया जाएगा।

(7) सभी भावी अंतर-राज्यीय पारेषण परियोजनाएं, सामान्यत: प्रतिस्पर्द्धी बोली प्रक्रिया के माध्यम से विकसित की जाएगी, तथापि, केंद्र सरकार (क) नीतिगत महत्व, तकनीकी उन्नयन इत्यादि विशेष श्रेणी की परियोजनाओं अथवा (ख) मामला दर मामला आधार पर अत्यावश्यक स्थिति का प्रबंध करने के लिए किए जाने वाले आवश्यक कार्य के लिए, प्रतिस्पर्द्धी बोली से छूट प्रदान कर सकती है।

(8) सीईआरसी ने अंतराराज्य पारेषण के लिए फ्रेमवर्क संबंधी विनियम विनिर्दिष्ट किया है। अंतःराज्य पारेषण के लिए एसईआरसी द्वारा वोल्टेज, दूरी, दिशा व प्रवाह परिमाण आदि जैसे कारकों पर भली भांति विचार करते हुए इसी प्रकार का दृष्टिकोण कार्यान्वित किया जाए।

(9) प्रस्तावित पारेषण टैरिफ ढांचे की जरूरतों के मुताबिक मीटिरंग को प्राथमिकता आधार पर पूरा किया जाए। मीटिरंग एबीटी जरूरतों के अनुकूल होनी चाहिए, इससे टाइम ऑफ डे (टीओडी) टैरिफ का कार्यान्वयन भी आसान होगा।

7.2 पारेषण हानि आबंटन

(1) पारेषण प्रणाली संबंधी संगत वोल्टेज स्तर पर दूरी एवं दिशागत संवेदनशीलता पर उपयुक्त रूप से विचार करने के पश्चात् औसत हानियों के आधार पर यथायोग्य लेन-देन प्रभारित किए जा रहे हैं। अंतरराज्यीय पारेषण के लिए सीईआरसी द्वारा इस बारे में निर्धारित कार्यप्रणाली के आधार पर एसईआरसी अंतःराज्य पारेषण के लिए इसी प्रकार का फ्रेमवर्क तैयार कर सकता है।

लॉस फ्रेमवर्क में यह सुनिश्चित किया जाना चाहिए कि हानि संबंधी मुआवजा युक्तिसंगत हो और प्रयोज्य तकनीकी हानि बेंचमार्कों से संबद्ध हो। यह बेंचमार्क उपयुक्त आयोग द्वारा सीईए की सलाह पर विचार करते हुए तय किया जा सकता है।

(2) यह वांछनीय होगा कि वृद्धिशील हानियों के आधार पर हानि क्षतिपूर्ति प्रणाली की ओर अग्रसर हुआ जाए क्योंकि पारेषण क्षमताओं में वर्तमान कमियां नेटवर्क विस्तार से पूरी की जाती हैं। उपयुक्त आयोग को नेटवर्क विन्यास के लिए पारेषण हानि की अनुमत स्तर को स्थापित करने के लिए आवश्यक अध्ययनों को करना अपेक्षित है तथा पारेषण प्रणाली का संवर्द्धन करना एवं प्रणाली हानियों में कमी लाने के लिए पूंजीगत व्यय की आवश्यकता होती है। चूंकि लाइन लोडिंग के एक स्तर से अतिरिक्त प्रवाह हानियां अत्यधिक रूप से बढ़ जाती हैं, इसलिए ओवरलोडिंग की स्थिति से बचने के लिए सीटीयू/एसटीयू को पारेषण प्रणालियों के उन्नयन को सुनिश्चित करना चाहिए। उपयुक्त आयोग को पारेषण प्रणाली के उन्नयन के लिए नई परिसंपत्तियों में पर्याप्त पूंजी निवेशों को अनुमति प्रदान करनी चाहिए।

7.3 पारेषण में अन्य मामले

(1) सीटीयू तथा एसटीयू के लिए इन संगठनों हेतु "की परफॉर्मेंस इंडीकेटर्स" (केपीआई) के अनुसार वित्तीय प्रोत्साहन व अप्रोत्साहन लागू किए जाने चाहिए। ऐसे केपीआई में कुशल नेटवर्क निर्माण, प्रणालीगत उपलब्धता व हानि में कमी शामिल होगी।

(2) सीटीयू/एसटीयू तथा भार प्रेषण केंद्रों द्वारा भावी प्रयोक्ताओं के साथ सभी उपलब्ध सूचना, विशेषतया उपलब्ध पारेषण क्षमता व भार प्रवाह अध्ययन संबंधी सूचना को साझा किया जाना चाहिए।

(3) असाधारण परिस्थितियों, जिनमें ऊर्जा सुरक्षा, सार्वजनिक व्यवस्था अथवा प्राकृतिक आपदा सहित राज्य की सुरक्षा के लिए खतरा शामिल है, यदि केंद्र सरकार केंद्रीय उत्पादन स्टेशनों के अनावंटित हिस्से से विद्युत का आवंटन करती है अथवा अन्यथा विद्युत के ऐसे आवंटन को लघु अवधि, मध्यावधि और दीर्घकालिक पहुंच के क्रम में प्राथमिकता दी जाएगी।

7.4 सहायक सेवाएं

(1) केंद्रीय आयोग, प्रभारों के बंटवारे की पद्धति, विद्युत की गुणवत्ता, विश्वसनीयता और ग्रिड की सुरक्षा का रख-रखाव करने के लिए विद्युत प्रणाली अथवा ग्रिड प्रचालन के सहायक के रूप में आवश्यक सहायक सेवा हेतु मानक और ढांचे को शुरु करें।

(2) केंद्रीय आयोग सहायक सेवाओं के लिए मानक विनिर्दिष्ट करते समय केंद्रीय विद्युत प्राधिकरण, एसईआरसी/जेईआरसी, सीटीयू/एसटीयू और एनएलडीसी/आरएलडीसी/एसएलडीसी से भी परामर्श करेगा।

(3) राज्य आयोग, केंद्रीय आयोग द्वारा विनिर्दिष्ट सहायक सेवाओं के लिए मानक और ढांचा भी अपनाएगा।

8.0 वितरण

कुशल तरीके से तथा युक्तिसंगत दरों पर विनिर्दिष्ट मानकों के मुताबिक विश्वसनीय एवं गुणवत्ता वाली बिजली की आपूर्ति राष्ट्रीय विद्युत नीति के मुख्य उद्देश्यो में से एक उद्देश्य है। राज्य आयोग को सभी उपभोक्ताओं के लिए सेवा की गुणवत्ता, निरंतरता एवं विश्वसनीयता के संबंध में लाइसेंसियों के निष्पादन-मानक निर्धारित एवं अधिसूचित करने चाहिए। यह आवश्यक है कि विनियामक मंच सेवा मानकों संबंधी मूल ढाँचा निर्धारित करे। यथाशीघ्र सेवा के अपेक्षित स्तर तक पहुंचने के लिए लाइसेंसियों को एक उपयुक्त ट्रांजिशन फ्रेमवर्क उपलब्ध कराया जा सकता है। उक्त मानकों का पालन नहीं करने पर अधिनियम की धारा 57 के अनुसार लाइसेंसियों पर दंड लगाए जा सकते हैं

उद्योग के वितरण क्षेत्र को कुशल एवं समृद्ध बनाने हेतु विद्युत क्षेत्र में सुधार तथा विनिर्दिष्ट मानकों के अनुसार सेवा का प्रावधान सफलता की कुंजी है। यह जरूरी है कि विनियामक आयोग वितरण लाइसेंसियों की वाणिज्यिक व्यवहार्यता की आवश्यकताओं तथा उपभोक्ता हितों के बीच संतुलन सुनिश्चित करे। हानि वाली यूटिलिटियों को लाभ वाली यूटिलिटियों, जो अपनी पूर्ण विकास क्षमता को हासिल करने के लिए भारत को सक्षम बनाने हेतु अंतरराष्ट्रीय मानकों की सेवाएं उपलब्ध कराने के लिए पूंजीगत बाजारों से आवश्यक संसाधन जुटा सकती हैं, में बदलने की आवश्यकता है। प्रचालनगत क्षमता को प्रोत्साहित किया जाए। नियामक प्राचलों के संदर्भ में दक्ष प्रचालनों के लाभ उपभोक्ताओं और लाइसेंसियों के बीच उपयुक्त ढंग से साझा किए जाएं।

उपयुक्त आयोग द्वारा वितरण लाइसेंसी के लिए प्रत्येक वर्ष भार का पूर्वानुमान लगाने और भार को पूरा करने के लिए अपनी संक्षिप्त, मध्यावधि एवं दीर्घावधि विद्युत प्रापण योजनाएं आयोग के समक्ष प्रस्तुत करना अनिवार्य किया जाना चाहिए।

राज्य विनियामक आयोग एक विशिष्ट ट्रेजेक्टरी तैयार करेगा ताकि राज्य में विद्यमान परिस्थिति पर निर्भर करते हुए वर्ष 2021-22 तक अथवा उससे पूर्व सभी वर्ग के उपभोक्ताओं को 24 घंटे पर्याप्त और निर्बाधित विद्युत की आपूर्ति सुनिश्चित की जा सके।

ऐसे क्षेत्रों में, जहां ग्रिड नहीं पहुंची है या ग्रिड में पर्याप्त विद्युत उपलब्ध नहीं है, नवीकरणीय ऊर्जा की आपूर्ति करने वाले माइक्रो-ग्रिड्स स्थापित किए जा रहे हैं। ऐसे माइक्रो-ग्रिड्स स्थापित करने में लगने वाला निवेश बहुत अधिक होता है। परियोजना के जीवन काल के पूरा होने से पहले ग्रिड का क्षेत्र में पहुंच जाना निवेश के जोखिमों में से एक है और जिससे माइक्रोग्रिड्स से विद्युत बनाना महंगा और अव्यवहार्य है। माइक्रो-ग्रिड में ऐसे जोखिम को कम करने के लिए और माइक्रो-ग्रिड्स में निवेश को प्रोत्साहित करने के लिए उपयुक्त आयोग द्वारा यथानुमोदित निवेशों की अवमूल्ययित लागतों तथा उद्योग बेंचमार्क और एक सीमा, यदि आवश्यक हो, पर विचार करते हुए अधिनियम की धारा 62 के अंतर्गत निर्धारित किए जाने वाले टैरिफ पर ऐसे माइक्रो-ग्रिड से ग्रिड में विद्युत की अनिवार्य खरीद को अधिदेशित करने के लिए उपयुक्त विनियामक संरचना बनाए जाने की आवश्यकता है। इस संबंध में उपयुक्त आयोग छः माह के भीतर आवश्यक विनियम अधिसूचित करेगा।

8.1 बहुवर्षीय टैरिफ (एमवाईटी) ढांचे का कार्यान्वयन

(1) एमवाईटी ढांचा यूटिलिटियों और उपभोक्ताओं का जोखिम कम करेगा, क्षमता में सुधार होगा तथा प्रणालीगत हानियों में कमी आएगी और निवेश आकर्षित करेगा। इससे विद्युत खरीद कीमतों और मुद्रास्फीति सूचकांकों के ज्ञात सूचकों में टैरिफ समायोजन को सीमित करके समग्र रूप से उपभोक्ता टैरिफ के संबंध में व्यापक अनुमान तैयार हो सकेंगे। यह ढांचा सरकारी तथा निजी दोनों यूटिलिटियों पर लागू होगा ।

(2) राज्य आयोग समग्र एमवाईटी ढांचे के भाग के रूप में उपभोक्ताओं के साथ अधिक लाभ और हानियों को साझा करने का तंत्र शुरू करे। पहली नियंत्रण अवधि में यूटिलिटियों के लिए प्रोत्साहन, यूटिलिटी द्वारा वहन की जाने वाली हानियों की प्रतिशतता की अपेक्षा निर्धारित उच्च स्तर पर यूटिलिटी द्वारा रखे जा रहे अधिक लाभ की प्रतिशतता के साथ असंयमित की जाए। निष्पादन में त्वरित सुधार करने और हानियों में कमी के लिए यह जरूरी है और दीर्घकाल में टैरिफ में कमी के जरिए इससे उपभोक्ताओं के हितों की रक्षा हो सकेगी।

(3) जैसा कि पैरा 5.11 (ज) में इंगित है। आरंभिक नियंत्रण अवधि में कार्यान्वित किया गया एमवाईटी ढांचा पूरी की जा रही मीटरिंग के परिणामस्वरूप बेसलाइनों में होने वाले परिवर्तनों का समायोजन करने के लिए पर्याप्त रूप से लचीला होना चाहिए।

(4) यदि प्रतिस्पर्धात्मक दशाओं में आवश्यक हो तो लाइसेंसियों के पास राज्य आयोग द्वारा अनुमोदित टैरिफ से कम टैरिफ वसूलने की नम्यता हो सकती है, बशर्ते वे अधिनियम की धारा 62 के अनुसार इसके कारण अतिरिक्त राजस्व की आवश्यकता के लिए दावा न करें।

(5) नियंत्रण अवधि के आरंभ में, जब "वास्तविक" लागत भावी अनुमानों के लिए आधार तैयार करती हो, अपेक्षित टैरिफ और इस समय लागू टैरिफों के बीच लार्ज अन्कवर्ड गैप हो सकता है। इस अंतराल को टैरिफ शुल्कों और वैकल्पिक साधनों के माध्यम से पूरा किया जाना चाहिए जिसमें अन्य बातों के साथ-साथ वित्तीय पुनर्गठन और ट्रांजिशन फाइनेंसिंग शामिल है।

(6) वर्तमान लाइसेंसधारियों के पास उस क्षेत्र के लिए पृथक राजस्व आवश्यकताओं और टैरिफ फाइल करने का विकल्प होना चाहिए जहाँ राज्य आयोग ने राष्ट्रीय विद्युत नीति के पैरा 5.4.7 के साथ पठित अधिनियम की धारा 14 के प्रावधानों के अनुसरण में बहुवितरण लाइसेंस जारी किए हैं।

(7) उपयुक्त आयोगों को लाइसेंसधारियों द्वारा समय पर फाइल न किए जाने की स्थिति में स्वतः आधार पर टैरिफ निर्धारण और विनियामक जांच शुरू करनी चाहिए। यह वांछनीय है कि अपेक्षित टैरिफ परिवर्तन प्रत्येक वित्तीय वर्ष के आरंभ की तारीख से प्रभावी हों और फाइलिंग में विलम्ब के कारण होने वाला कोई अंतर लाइसेंसधारियों के कारण होना चाहिए।

8.2 राजस्व आवश्यकताओं और लागतों हेतु ढांचा

8.2.1 टैरिफ निर्धारण में निम्नलिखित तथ्यों पर ध्यान दिया जाना आवश्यक है-

(1) सभी विद्युत क्रय लागतों का वैध समझा जाना आवश्यक है जब तक कि यह प्रमाणित न हो जाए कि मेरिट आदेश सिद्धांत का उल्लंघन किया गया है अथवा अनुचित दरों पर विद्युत का क्रय किया गया है। सकल तकनीकी एवं वाणिज्यिक (एटीएंडसी) हानियों को प्रकट किए जाने की आवश्यकता है, किन्तु 24 घंटे की आपूर्ति के लिए विद्युत क्रय और आवश्यक एवं उचित ओ एंड एम तथा प्रणाली उन्नयन हेतु निवेश के लिए अपेक्षित राजस्व को अस्वीकार किए बिना। विशेष रूप से उन उपभोक्ताओं को, जो ऐसी टैरिफ का भुगतान करने के लिए तैयार है जो दक्ष लागतें दर्शाते हैं, को गुणवत्तापरक विद्युत की चौबीसों घण्टे निर्बाध आपूर्ति पाने का अधिकार है। एम वाई टी ट्रेजेक्टरी में इंगित टी एंड डी हानियों के नियामक स्तर के अनुसार कुल फुटकर बिक्री का वास्तविक आकलन करना चाहिए ताकि उचित विद्युत खरीद अनुपात अंतर (उदाहरणार्थ, कम बारिश होने की स्थिति में ताप विद्युत उत्पादन से और अधिक ऊर्जा खरीदी जा सकती है) की शर्त पर एसईआरसी के विनियमों के अनुसार विद्युत खरीद की लागत तथा ईंधन अधिभार समायोजन को अनुमति दी जा सके।

(2) प्राप्त किए जाने योग्य ट्रेजेक्टरी को किसी एमवाईटी ढांचे में रिटर्न से जोड़कर एटीएंडसी हानि कमी को प्रोत्साहित किया जाना चाहिए। व्यापक पारदर्शिता और उपभोक्ता समूहों का पोषण प्रभावकारी होगा। सरकारी स्वामित्व वाली यूटिलिटियों के संबंध में एटीएंडसी हानि में कमी लाने के लिए शासन प्रणाली में सुधार करना राज्य विद्युत नियामक आयोगों के लिए एक बहुत ही कठिन कार्य एवं गंभीर चुनौती होगी। पूरी लागतों को सम्मिलित करने का लक्ष्य रखने वाले विभिन्न एटीएंडसी हानि स्तरों से सम्बद्ध आगामी वर्षों में उपभोक्ता टैरिफों के विभिन्न स्तरों के साथ एमवाईटी व्यवस्था चोरी को कम करने के लिए प्रभावी कार्यवाही हेतु अपेक्षित राजनीतिक इच्छा का सृजन कर सकता है क्योंकि इसका विकल्प टैरिफ में अधिक वृद्धि होगा। विभिन्न क्षेत्रों/इलाकों के ऊर्जा लेखा परीक्षाओं की तृतीय पक्ष जांच का इस्तेमाल एटीएंडसी हानि के उच्च

स्तरों हेतु क्षेत्र/इलाकों में विशिष्ट अधिभार लगाने के लिए किया जा सकता है और इससे बेहतर शासन प्रणाली के लिए प्रभावी कार्यवाही हेतु स्थानीय सहमति का सृजन हो सकता है। राज्य विद्युत विनियामक आयोग हानियों में कमी से सम्बद्ध यूटिलिटियों के स्टाफ के लिए उपयुक्त स्थानीय क्षेत्र आधारित प्रोत्साहन एवं अप्रोत्साहन योजना को भी प्रोत्साहित कर सकते हैं।

एसईआरसी, लाइसेंसी के प्रत्येक वितरण सर्किल के संबंध में विभिन्न पैरामीटरों हेतु बेस लाईन आंकड़ों का स्वतंत्र मूल्यांकन करेगा।

एसईआरसी, लाइसेंसियों द्वारा प्रस्तुत वित्तीय और तकनीकी आंकड़ों की स्वतंत्र जांच की एक प्रणाली भी स्थापित करेगा।

चूंकि मीटरिंग वितरण नेटवर्क में उपयुक्त स्तर तक पूरी हो चुकी है इसलिए तकनीकी हानियों को पृथक करना संभव होना चाहिए। तदनुसार, एमवाईटी ढांचे के अंतर्गत तकनीकी हानि कमी को वाणिज्यिक हानि कमी से अलग समझा जाना चाहिए जिसके लिए अलग दृष्टिकोण अपेक्षित होता है।

(3) अधिनियम की धारा 65 प्रावधान करती है कि राज्य आयोग द्वारा निर्धारित किए गए टैरिफ में उपभोक्ताओं को सब्सिडी प्रदान करने के संबंध में राज्य सरकार का कोई निर्देश प्रभावी नहीं होगा यदि राज्य आयोग द्वारा निर्धारित सब्सिडी का भुगतान यूटिलिटियों को नहीं किया जाता है और राज्य आयोग द्वारा निर्धारित टैरिफ इस संबंध में आयोग द्वारा जारी किए गए आदेशों की तारीख से लागू होगा। राज्य आयोगों को यूटिलिटियों की वित्तीय व्यवहार्यता सुनिश्चित करने के लिए कानून के इस प्रावधान के अनुपालन को सुनिश्चित करना चाहिए। कानून के इस प्रावधान के कार्यान्वयन को सुनिश्चित करने के लिए, राज्य आयोग को राज्य सरकार द्वारा सब्सिडी प्रतिबद्धता पर विचार किए बिना आरंभ में टैरिफ निर्धारिण करना चाहिए और उपभोक्ताओं की संबंधित श्रेणियों के लिए राज्य सरकार द्वारा सब्सिडी पर विचार करने के पश्चात् सब्सिडी प्राप्त टैरिफ का निर्धारण किया जाएगा।

(4) यूटिलिटियों द्वारा सामना किए जा रहे ट्रांजिशन मामलों जैसे कि बिलों की वसूली में प्रगामी सुधार आदि की पर्याप्त रूप से पहचान करते हुए कार्यशील पूंजी की अनुमति दी जानी चाहिए। डूबंत ऋणों को विकसित नीतियों के अनुसार तथा राज्य आयोग के अनुमोदन के अध्यधीन माना जाना चाहिए।

(5) पिछली हानियों अथवा लाभों के पास-थ्रू की अनुमति गैर-नियंत्रणीय कारकों की सीमा तक दी जानी चाहिए। संक्रमणकालीन अवधि के दौरान नियंत्रणीय कारक एमवाईटी ढांचे के अंतर्गत निर्धारित अनुपातों में यूटिलिटियों और उपभोक्ताओं के लिए माना जाना चाहिए।

(6) आकस्मिक संचय राज्य आयोग द्वारा विनियमों के माध्यम से विनिर्दिष्ट आकस्मिक दशाओं की स्थिति में ही केवल राज्य आयोग के पूर्व अनुमोदन के साथ बनाए जाने चाहिएं। विकासात्मक संचय और टैरिफ एवं लाभांश नियंत्रण संचय बनाने की वर्तमान पद्धतियों को समाप्त किया जाना चाहिए।

(7) अधिनियम की धारा 61 में यह अनिवार्य है कि उपयुक्त आयोग, टैरिफ निर्धारित करते समय, न केवल उपभोक्ताओं के हितों की रक्षा सुनिश्चित करेगा बल्कि यथोचित ढंग से विद्युत की लागत की वसूली भी सुनिश्चित करेगा। अधिनियम की धारा 62 में ईंधन मूल्य में अंतर, जो विनिर्दिष्ट किया जाए, को पूरा करने के लिए वर्ष के दौरान आवधिक टैरिफ समायोजन की व्यवस्था भी है।

इसलिए, उपयुक्त आयोग को उत्पादन कंपनी और लाइसेंसी की सभी तर्कसंगत लागतों की वसूली के लिए मासिक/त्रैमासिक आधार पर ईंधन के मूल्य, विद्युत क्रय आदि में भिन्नता के कारण उत्पन्न होने वाली लागतों की वसूली के लिए उपयुक्त मूल्य समायोजन फॉर्मूला विनिर्दिष्ट करना चाहिए।

8.2.2 विशेष वर्ष में टैरिफ प्रभाव को सीमित करने के लिए गत समय में विनियामक परिसम्पत्ति की सुविधा को कुछ विनियामक आयोगों द्वारा अपनाया गया है। यह केवल प्राकृतिक आपदा अथवा अप्रत्याशित घटनाओं के मामले में बहुत ही अपवाद के रूप में ही किया जाना चाहिए और निम्नलिखित के अध्यधीन होना चाहिएः

क. सामान्य परिस्थितियों में व्यापार के अंतर्गत, किसी विनियामक परिसंपत्ति के सृजन की अनुमति नहीं दी जाएगी।

ख. विनियामक परिसंपत्तियों की वहन लागत सहित बकाया विनियामक परिसम्पत्तियों की वसूली समयबद्ध होनी चाहिए और अधिकतम सात वर्षों की अवधि के भीतर होनी चाहिए। राज्य आयोग इसके लिए ट्रेजेक्टरी विनिर्दिष्ट कर सकता है।

8.3 टैरिफ डिजाइनः टैरिफ को सेवा लागत से जोड़ा जाना

यह व्यापक रूप से विदित है कि विद्युत का यौक्तिक एवं आर्थिक मूल्य निर्धारण ऊर्जा संरक्षण और भू-जल संसाधनों के स्थिर प्रयोग हेतु प्रमुख उपायों में से एक हो सकता है।

अधिनियम की धारा 61 (छ) की शर्तों के अनुसार उपयुक्त आयोग इस उद्देश्य से दिशानिर्देशित होगा कि टैरिफ विद्युत की आपूर्ति की दक्ष एवं विवेकशील लागत को प्रगामी रूप से प्रदर्शित करे।

राज्य सरकारें अधिनियम की धारा 65 के प्रावधानों के अनुसार उपयुक्त मानी गई सीमा तक सब्सिडी दे सकती हैं। प्रत्यक्ष सब्सिडी, सभी को टैरिफ में क्रास सब्सिडी के तंत्र की अपेक्षा उपभोक्ताओं की गरीब श्रेणियों को सहायता देने के लिए बेहतर तरीका है। सब्सिडियों को प्रभावी रूप से और पारदर्शक रूप में लक्षित किया जाना चाहिए। क्रास-सब्सिडियों के विकल्प के रूप में, राज्य सरकार के पास विद्युत शुल्क प्रणाली के माध्यम से संसाधन जुटाने और केवल जरुरतमंद उपभोक्ताओं को प्रत्यक्ष सब्सिडियों का लाभ प्रदान करने का एक विकल्प विद्यमान है, सब्सिडी का प्रभावी रूप से लक्ष्य बनाने का यह बेहतर तरीका है।

तदनुसार निम्नलिखित सिद्धांत अपनाएं जाएंगेः

1. राष्ट्रीय विद्युत नीति में निर्धारित अनुसार, गरीबी रेखा से नीचे के उपभोक्ता, विनिर्दिष्ट स्तर से नीचे उपभोग करते हैं, को क्रॉस सब्सिडी के माध्यम से विशेष सहायता प्राप्त हो सकती है। उपभोक्ताओं के ऐसे नामित समूह के लिए टैरिफ, आपूर्ति की औसत लागत का कम से कम 50 प्रतिशत होगी।

2. विद्युत आपूर्ति की लागत को टैरिफ द्वारा प्रगामी रूप से प्रदर्शित करने के लक्ष्य को प्राप्त करने के लिए, उपयुक्त आयोग रोडमैप इस प्रकार अधिसूचित करेगा कि टैरिफ, आपूर्ति की औसत लागत के $\pm$ 20% के भीतर हो। क्रॉस सब्सिडी में क्रमिक कमी के दृष्टिकोण के आधार पर रोड मैप में मध्यवर्ती लक्ष्य भी होंगे।

3. कृषि उपयोग हेतु टैरिफ निर्धारित करते समय, स्थायी तरीके से भू-जल संसाधनों के प्रयोग की आवश्यकता के अनिवार्यता को भी आपूर्ति की औसत लागत के अतिरिक्त ध्यान में रखना होगा। कृषि उपयोग हेतु टैरिफ भू-जल की अत्यधिक हानि को रोकने के लिए भू-जल तालिका की स्थिति के आधार पर राज्य के विभिन्न भागों के लिए विभिन्न स्तरों पर निर्धारित की जा सकती है। अधिनियम की धारा 62 (3) प्रबंध करती है कि किसी क्षेत्र की भौगोलिक स्थिति टैरिफ अंतर के लिए एक मानदंड हो सकती है। उस क्षेत्र के गरीब किसानों को सहायता देने के लिए सब्सिडी के अधिकतम स्तर का विचार किया जा सकता है जहाँ भू-जल स्तरों की देखरेख और सतत् भू-जल प्रयोग को सुनिश्चित करने के लिए उचित प्रतिबंधों के अधीन सिचांई उद्देश्यों हेतु विद्युत की बड़ी मात्रा की आवश्यकता होती है।

4. उपभोक्ताओं की विभिन्न श्रेणियों के लिए सब्सिडी की सीमा विभिन्न संबंधित पहलुओं को ध्यान में रखते हुए राज्य सरकार द्वारा निर्धारित की जा सकती है। किन्तु निशुल्क विद्युत का प्रावधान वांछनीय नहीं है क्योंकि यह विद्युत के व्यर्थ उपभोग को प्रोत्साहित करता है। इसके अलावा बहुत से मामलों में जल तालिका

में कमी होती है जिससे आने वाली पीढ़ियों के लिए सिंचाई और पीने के पानी की कमी की परिहार्य समस्या पैदा होती है। इससे विद्युत की मांग में तीव्र वृद्धि होने की भी संभावना है जिससे वितरण नेटवर्क पर काफी दबाव पड़ता है और इस प्रकार विद्युत की आपूर्ति की गुणवत्ता पर प्रतिकूल प्रभाव पड़ता है। अतः यह आवश्यक है कि उचित स्तर के प्रयोक्ता प्रभार लगाएँ जाएं। विद्युत की सब्सिडी प्राप्त दरों को उपभोग की पूर्व-निर्धारित सीमा तक ही अनुमति दी जानी चाहिए जिसके बाद उपभोक्ताओं से सेवा की दक्ष लागत को दर्शाने वाला टैरिफ वसूल किया जाना चाहिए। यदि राज्य सरकार उपभोक्ताओं की गरीब श्रेणी को विद्युत की लागत का कुछ भाग ही प्रतिपूर्ति के रूप में देना चाहती है तो इस राशि को नकद अथवा किसी अन्य उपयुक्त तरीके से दिया जा सकता है। उपभोक्ताओं को सब्सिडी का यह अंतरण पूर्व-भुगतान मीटर के प्रयोग से भी सुगम हो सकता है।

5. कृषि/ग्रामीण उपभोक्ताओं के संबंध में आपूर्ति की मीटरिंग पंचायत संस्थानों, प्रयोगकर्ता संगठनों, सहकारी समितियों आदि की भागेदारी से फ्रैंचाइजियों के साथ वाणिज्यिक व्यवस्था के माध्यम से ग्रामीण क्षेत्रों में स्थानीय वितरण के प्रबन्धन द्वारा प्रभावी तरीके से तथा उपभोक्ता की सुविधानुसार प्राप्त की जा सकती है। सीमित प्रयोग उपभोक्ताओं, जो सब्सिडी प्राप्त विद्युत के लिए पात्र हैं, के मामलों में मीटरिंग हेतु किफायती विकल्प के रूप में स्मार्ट मीटरों को प्रोत्साहित किया जा सकता है।

8.4 टैरिफ घटकों की परिभाषा और उनको लागू करना

1) अलग-अलग स्थायी और परिवर्तनीय शुल्कों तथा समय अंतराल वाले टैरिफ की विशेषता वाले द्विभागीय टैरिफों को बड़े उपभोक्ताओं (अर्थात् 1 मेगावाट से अधिक की मांग वाले उपभोक्ता) के लिए प्राथमिक रूप से एक वर्ष के भीतर शुरू किया जाएगा और बाद में सभी उपभोक्ताओं के लिए पाँच वर्षों की अवधि के भीतर अथवा इस प्रकार की अवधि जो विनिर्दिष्ट की जा सकती है, शुरू किया जाएगा। इससे व्यस्ततम मांग को पूरा करने और विभिन्न ऊर्जा संरक्षण उपायों को कार्यान्वित करने में भी मदद मिलेगी।

2) राष्ट्रीय विद्युत नीति में उल्लेख है कि उत्पादन कंपनियों के साथ हुए विद्यमान पीपीए को उत्तराधिकारी वितरण कंपनियों को उपयुक्त रूप से सौंपे जाने की आवश्यकता होगी। राज्य सरकारें वितरण कंपनियों की विभिन्न लोड प्रोफाइलों को ध्यान में रखते हुए ऐसी व्यवस्था कर सकती है ताकि उपभोक्ताओं की विभिन्न श्रेणियों के लिए राज्य में रिटेल टैरिफ एकसमान रहें। इसके पश्चात् रिटेल टैरिफ, प्रतिस्पर्द्धी लागतों पर विद्युत का प्रापण करने, चोरी को नियंत्रित करने और अन्य वितरण हानियों को कम करने में वितरण कंपनियों की सापेक्ष दक्षता को प्रदर्शित करेगा।

3) उपयुक्त आयोग विशेषरूप से उपभोक्ताओं की उन श्रेणियों, जो बड़े पैमाने पर बिना मीटर के हैं, के लिए मीटर टैरिफ आधारित मीटरिंग और बिलिंग को बढ़ावा देने के लिए प्रोत्साहन दे सकता है। मीटरिंग टैरिफ और प्रोत्साहनों का व्यापक प्रचार किया जाना चाहिए। स्मार्ट मीटरों से दूरस्थ मीटरिंग और बिलिंग, व्यस्ततम और गैर-व्यस्ततम टैरिफ का कार्यान्वयन तथा मांग प्रतिक्रिया के माध्यम से मांग पक्ष प्रबंधन में लाभ होता है। यह भविष्य में, पवन और सौर विद्युत जैसे उत्पादन की मध्यवर्ती किस्मों की वृद्धि के कारण भार-उत्पादन संतुलन के लिए आवश्यक होगा।

इसलिए, उपयुक्त आयोग निम्नलिखित के लिए स्मार्ट मीटर अधिदेशित करता है:

(क) यथाशीघ्र किंतु 31.12.2017 से पहले 500 यूनिट अथवा इससे अधिक की मासिक खपत वाले उपभोक्ता;

(ख) 31.12.2019 तक 200 यूनिट से अधिक की मासिक खपत वाले उपभोक्ता।

इसके अतिरिक्त, सभी प्रोस्यूमर्स को टू-वे स्मार्ट मीटर उपलब्ध कराए जाएंगे जो ग्रिड को वापस बिजली बेच सकते हैं जब उन्हें इसकी आवश्यकता है।

वितरण क्षेत्र में ऊर्जा लेखा परीक्षा को सक्षम बनाने के लिए, वितरण प्रणाली में, सभी वितरण कंपनियां 132 केवी स्तर के ट्रांसफार्मरों से 11 केवी स्तर तक के वितरण ट्रांसफार्मरों के लिए तथा इसके अतिरिक्त प्रत्येक उपभोक्ता तक संपूर्ण चेन में अपनी विद्युत प्रणाली में स्मार्ट मीटर सुनिश्चित करेगी। इसके अतिरिक्त, बिजली की चोरी रोकने के लिए, वितरण कंपनियों के पास वितरण प्रबंधन की प्रणाली और ऊर्जा लेखा परीक्षा कार्यों वाली वितरण स्काडा जैसी सक्षम विशेषताएं होनी चाहिएं। एसईआरसी इसे दो वर्षों के भीतर लागू करना अनिवार्य करेगा।

4) राज्य विद्युत विनियामक आयोग वितरण लाइसेंसी द्वारा वसूल किए जाने वाले कनेक्शन प्रभारों को पर्याप्त रूप से विनियमित भी कर सकती है ताकि यह सुनिश्चित किया जा सके कि दूसरा वितरण लाइसेंसी अनुचित कनैक्शन प्रभारों की मांग द्वारा चैरी पिकिंग का सहारा न ले। दूसरे लाइसेंसी का कनेक्शन शुल्क वर्तमान लाइसेंसी द्वारा देय शुल्क से अधिक नहीं होना चाहिए।

8.5 खुली पहुंच के लिए क्रास सब्सिडी अधिभार एवं अतिरिक्त अधिभार

8.5.1 राष्ट्रीय विद्युत नीति में निर्धारित है कि क्रास सब्सिडी अधिभार और खुली पहुंच की अनुमति वाले उपभोक्ताओं से वसूल किया जाने वाला अतिरिक्त अधिभार इतना अधिक नहीं होना चाहिए कि वह प्रतिस्पर्धा को समाप्त कर दे जो कि उत्पादन और खुली पहुंच के माध्यम से उपभोक्ताओं को विद्युत की प्रत्यक्ष आपूर्ति के लिए विकसित की जानी है।

उपभोक्ता, जिसे खुली पहुंच की अनुमति प्राप्त है, उत्पादनकर्ता को, पारेषण लाइसेंसधारक, जिसकी पारेषण प्रणालियां प्रयोग की जाती हैं, वितरण यूटिलिटी को क्रॉस सब्सिडी अधिभार के अतिरिक्त व्हीलिंग प्रभारों का भुगतान करना होगा। अतः क्रास सब्सिडी अधिभार का परिकलन इस प्रकार से करने की जरुरत है कि वितरण लाइसेंसी की क्षतिपूर्ति करते समय खुली पहुंच के जरिए प्रतिस्पर्द्धा लाने में बाधा नहीं आए। उपभोक्ता खुली पहुंच की सुविधा तभी लेगा जब सभी प्रभारों का भुगतान करने पर भी उसे लाभ प्राप्त हो। वितरण लाईसेंसी के हित संरक्षण की स्थिति में यह जरुरी होगा कि अधिनियम के प्रावधानों, जिसमें चरणबद्ध ढंग से खुली पहुंच को शुरू करने की अपेक्षा की गई है, को उपभोक्ताओं के व्यापक हित में प्रतिस्पर्धा हेतु उपयोग में लाया जाए।

एसईआरसी, विद्युत आपूर्ति की लागत की गणना उपभोक्ताओं की उस श्रेणी के लिए, वितरण लाइसेंसी द्वारा (क) नवीकरणीय क्रय दायित्व को पूरा करने सहित विद्युत क्रय की प्रति यूनिट भारित औसत लागत (ख) एसईआरसी द्वारा अनुमति प्राप्त संबंधित वोल्टेज स्तर और वाणिज्यिक हानियों के लिए लागू पारेषण और वितरण हानियां (ग) संबंधित वोल्टेज स्तर तक पारेषण, वितरण और व्हीलिंग प्रभार, और (घ) वहन विनियामक परिसंपत्तियों की प्रति यूनिट लागत, यदि लागू हो, के योग के रूप में कर सकता है।

सरचार्ज फार्मूला

$$S=T-[C/(1-L/100)+D+R]$$

जहां

S सरचार्ज है

T संबंधित उपभोक्ता श्रेणी द्वारा भुगतानयोग्य टैरिफ है जिसमें नवीकरणीय क्रय दायित्व दर्शाना शामिल है।

C लाइसेंसी द्वारा विद्युत क्रय की प्रति यूनिट भारित औसत लागत है जिसमें नवीकरणीय क्रय दायित्व पूरा करना शामिल है।

D संबंधित वोल्टेज स्तर के लिए लागू पारेषण, वितरण और व्हीलिंग चार्ज का योग है।

L संबंधित वोल्टेज स्तर के लिए लागू प्रतिशत के रूप में व्यक्त पारेषण, वितरण और वाणिज्यिक हानियों का योग है।

R वहन विनियामक परिसंपत्तियों की प्रति यूनिट लागत है।

उपरोक्त फार्मूला सभी वितरण लाइसेंसियों के लिए, विशेष रूप से, जहां विद्युत की कमी है, कार्य नहीं कर सकता, राज्य विनियामक आयोग विद्युत अधिनियम के समग्र उद्देश्यों को ध्यान में रखते हुए वितरण लाइसेंसी के क्षेत्र में विद्यमान विभिन्न परिस्थितियों को ध्यान में रखते हुए इसकी समीक्षा और इसमें परिवर्तन कर सकता है।

बशर्ते कि यह सरचार्ज खुली पहुँच प्राप्त करने वाले उपभोक्ताओं की श्रेणी के लिए लागू टैरिफ के 20% से अधिक नहीं होना चाहिए।

बशर्ते कि उपयुक्त आयोग, उपयुक्त सरकार के परामर्श से रेलवे, जैसा कि भारतीय रेलवे अधिनियम, 1989 में परिभाषित है, के डीम्ड लाइसेंसी होने के कारण, इसकी अपनी खपत के लिए क्रय की गई विद्युत पर किसी क्रास सब्सिडी चार्ज की वसूली से छूट प्रदान करेगा।

8.5.2 विद्युत अधिनियम, 1948 (अब निरस्त) की धारा 43(ए)(1)(सी) के अंतर्गत सक्षम सरकार की सहमति के साथ विद्युत उत्पादन कंपनियों द्वारा बेची जा रही विद्युत पर और भारतीय विद्युत अधिनियम, 1910 (अब निरस्त) की धारा 27 के अंतर्गत राज्य सरकार की अनुमति के आधार पर जब तक कि यह अनुमति वैध है, वितरण लाइसेंसी द्वारा आपूर्ति की जा रही विद्युत पर किसी प्रभार का भुगतान करना अपेक्षित नहीं होगा।

8.5.3 अधिभार, वितरण लाइसेंसी, पारेषण लाइसेंसी, एसटीयू अथवा सीटीयू, जिसकी सुविधाएं विद्युत आपूर्ति के लिए उपयोग में लाई जा रही हैं, किसी के भी द्वारा एकत्रित किया जा सकता है। सभी मामलों में किसी विशेष उपभोक्ता से एकत्रित राशियां उस वितरण लाइसेंसी को दी जानी चाहिए जिसके क्षेत्र में उपभोक्ता स्थित है। एक ही क्षेत्र में आपूर्ति कर रहे दो लाइसेंसधारियों के मामले में उस लाइसेंसधारी को एकत्रित की गई राशियाँ दी जाएंगी जिससे उपभोक्ता आपूर्ति का लाभ उठा रहा है।

8.5.4 अधिनियम की धारा 42(4) के अनुसार आपूर्ति के दायित्व हेतु अतिरिक्त अधिभार केवल तभी लागू होना चाहिए जब अंतिम रूप से यह दर्शा दिया जाए कि विद्युत क्रय प्रतिबद्धताओं की दृष्टि से लाइसेंसी का दायित्व समाप्त हो गया है या हो रहा है या ऐसी संविदा के परिणामस्वरूप निर्धारित की गई लागतों को वहन करने की अपरिहार्य देयताएं और स्थिति मौजूद हैं। नेटवर्क परिसम्पत्तियों से संबंधित स्थायी लागतों को व्हीलिंग प्रभारों के माध्यम से वसूल किया जाएगा।

8.5.5 व्हीलिंग प्रभार अंतःराज्यीय पारेषण प्रभारों के लिए निर्धारित किए गए उन्हीं सिद्धांतों के आधार पर निर्धारित किए जाने चाहिए और इसके अलावा इसमें संबंधित वोल्टेज स्तर का औसतन हानि क्षतिपूर्ति शामिल होगा।

8.5.6 खुली पहुंच वाले उपभोक्ता को आपूर्तिकर्ता उत्पादक द्वारा कटौती किए जाने के मामले में लाइसेंसी द्वारा उस उपभोक्ता श्रेणी को, अस्थायी कनेक्शन के लिए उपयुक्त आयोग द्वारा यथानिर्धारित टैरिफ के भुगतान पर वैकल्पिक व्यवस्था की जाए। बशर्ते कि ऐसे प्रभार उस श्रेणी के सामान्य प्रभार के 125 प्रतिशत से ज्यादा नहीं होंगे।

9.0 व्यापार मार्जिन

अधिनियम में यह व्यवस्था है कि उपयुक्त आयोग जरुरत होने पर व्यापार मार्जिन तय करे। बाजार को प्रतिस्पर्धात्मक बनाने के लिए बिजली क्षेत्र में व्यापार को प्रोत्साहित करने की जरुरत है, यद्यपि उपयुक्त आयोग व्यापार लेन-देन की लगातार निगरानी करे और यह सुनिश्चित करे कि बिजली के व्यापारी बिजली कमी की स्थिति में अनुचित लाभ न उठाएं। इस उद्देश्य की पूर्ति हेतु व्यापार मार्जिन का निर्धारण जरुरी है।

ज्योति अरोरा, संयुक्त सचिव

परिशिष्ट

जल विद्युत परियोजनाओं के लिए अनुमोदित आर एंड आर प्रावधानों की मुख्य विशेषताएँ

1 समावेशन सीमा

किसी जल विद्युत परियोजना के विकास से, यदि एक भी परिवार प्रभावित हो तो निम्नलिखित प्रावधान लागू होंगेः

2 परियोजना प्रभावित परिवार (पीएएफ) की परिभाषा

परियोजना प्रभावित परिवार (पीएएफ) से वह परिवार अभिप्रेत है जिसका निवास-स्थान या अन्य संपत्ति या आजीविका का स्रोत जल विद्युत परियोजना के कार्य से प्रभावित हुआ हो और जो एलएआरआर अधिनियम की धारा-11 के अंतर्गत अधिसूचना की घोषणा की तारीख से दो वर्ष पूर्व से प्रभावित क्षेत्र में रह रहा हो। प्रभावित परिवार में अनाधिकृत निवासी (स्क्वॉटर) भी शामिल होंगे।

3 कृषि श्रमिक की परिभाषा

ऐसा व्यक्ति जो सामान्यतः प्रभावित क्षेत्र के घोषित होने की तारीख से दो वर्ष पूर्व से प्रभावित क्षेत्र में रह रहा हो और कृषि भूमि पर मुख्यतः शारीरिक श्रम के जरिए आजीविका चलाता हो।

4 गैर-कृषि श्रमिकों की परिभाषा

ऐसा व्यक्ति जो सामान्यतः प्रभावित क्षेत्र के घोषित होने की तारीख से दो वर्ष पूर्व से प्रभावित क्षेत्र में रह रहा हो और उसकी प्रभावित क्षेत्र में कोई भूमि न हो और वह अपनी आजीविका मुख्यतः शारीरिक श्रम से या ग्रामीण शिल्पकार या समुदाय सेवा प्रदाताओं के रूप में चलाता हो।

5 स्क्वॉटर (अनधिकृत निवासी) की परिभाषा

प्रभावित क्षेत्र में कानूनी अधिकार रहित सरकारी भूमि का कब्जादार परिवार और वह एलएआरआर अधिनियम की धारा 11 के अंतर्गत अधिसूचना की घोषणा की तारीख से 5 वर्ष पूर्व से वहाँ रह रहा हो।

6 पुनर्वास/पुनःस्थापन कॉलोनियाँ

इस नीति का उद्देश्य उन परियोजना प्रभावित परिवारों, जो हाइड्रो परियोजनाओं के विकास के कारण विस्थापित हो गए हों, को जहां तक संभव हो सके, बना बनाया मकान उपलब्ध कराना है। हालांकि जहां पर विकल्प दिया जाए, इसके बदले में उदार आवास निर्माण भत्ता दिया जाएगा।

7 प्रशिक्षण एवं क्षमता निर्माण

यह नीति परियोजना प्रभावित परिवारों तथा स्थानीय लोगों को सतत आजीविका के लिए प्रशिक्षण देने की आवश्यकता पर बल देती है। निर्माण शुरू होने से कम से कम छह महीने पूर्व परियोजना विकासकर्ताओं द्वारा स्थानीय लोगों को आवश्यक कौशल प्रदान करने के लिए आई टी आई द्वारा विशेष प्रशिक्षण कार्यक्रम शुरू किया जाएगा। इससे पीएएफ एवं परियोजना के आस-पास रह रहे अन्य लोगों की रोजगारोपयोगिता में वृद्धि होने की आशा है।

8 अतिरिक्त प्रावधान

इस नीति में परियोजना प्रभावित परिवारों के लिए निम्नलिखित अतिरिक्त प्रावधान परिकल्पित हैं:

- मेधावी छात्रों के लिए छात्रवृत्ति
- चिकित्सा सुविधाओं का विस्तार

- विवाह अनुदान
- जीवन-निर्वाह अनुदान
- सहकारियों एवं स्वयंसेवी समूहों के लिए आय सृजन योजनाओं को बढ़ावा देना
- बीज, कीटनाशक एवं उर्वरक सब्सिडी तथा सिंचाई सहायता

उपर्युक्त अतिरिक्त प्रावधानों के अलावा वर्तमान में लागू पुनर्वास एवं पुनःस्थापन राष्ट्रीय नीति के प्रावधान सामान्यतः प्रभावी बने रहेंगे।

MINISTRY OF POWER

RESOLUTION

New Delhi, the 28th January, 2016

TARIFF POLICY

No. 23/2/2005-R&R (Vol-IX).—1.0 INTRODUCTION

1.1 In compliance with section 3 of the Electricity Act 2003, the Central Government notified the Tariff Policy on 6th January, 2006. Further amendments to the Tariff Policy were notified on 31st March, 2008, 20th January, 2011 and 8th July, 2011. In exercise of powers conferred under section 3(3) of Electricity Act, 2003, the Central Government hereby notifies the revised Tariff Policy to be effective from the date of publication of this resolution in the Gazette of India.

Notwithstanding anything done or any action taken or purported to have been done or taken under the provisions of the Tariff Policy notified on 6th January, 2006 and amendments made thereunder, shall, in so far as it is not inconsistent with this Policy, be deemed to have been done or taken under provisions of this revised policy.

1.2 The National Electricity Policy has set the goal of adding new generation capacity and enhancing per capita availability of electricity per year and to not only eliminate energy and peaking shortages but to also have a spinning reserve as specified by the Central Electricity Authority. Development of the power sector has also to meet the challenge of providing access for affordable electricity to all households in next five years.

1.3 It is therefore essential to attract adequate investments in the power sector by providing appropriate return on investment as budgetary resources of the Central and State Governments are incapable of providing the requisite funds. It is equally necessary to ensure availability of electricity to different categories of consumers at reasonable rates for achieving the objectives of rapid economic development of the country and improvement in the living standards of the people.

1.4 Balancing the requirement of attracting adequate investments to the sector and that of ensuring reasonability of user charges for the consumers is the critical challenge for the regulatory process. Accelerated development of the power sector and its ability to attract necessary investments calls for, inter alia, consistent regulatory approach across the country. Consistency in approach becomes all the more necessary considering the large number of States and the diversities involved.

2.0 LEGAL POSITION

2.1 Section 3 (1) of the Electricity Act, 2003 empowers the Central Government to formulate the tariff policy. Section 3(3) of the Act enables the Central Government to review or revise the tariff policy from time to time.

2.2 Central Electricity Regulatory Commission (CERC) and State Electricity Regulatory Commissions (SERCs) shall be guided by the tariff policy in discharging their functions including framing the regulations.

2.3 Regulatory Commissions shall be guided by the principles and methodologies specified by the Central Commission for determination of tariff applicable to generating companies and transmission licensees.

2.4 The Forum of Regulators has been constituted by the Central Government under the provisions of the Act which would, inter alia, facilitate consistency in approach specially in the area of distribution.

3.0 EVOLUTION OF THE POLICY

The tariff policy has been evolved in consultation with the State Governments, the Central Electricity Authority (CEA), the Central Electricity Regulatory Commission and various stakeholders.

4.0 OBJECTIVES OF THE POLICY

The objectives of this tariff policy are to:

(a) Ensure availability of electricity to consumers at reasonable and competitive rates;

(b) Ensure financial viability of the sector and attract investments;

(c) Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimise perceptions of regulatory risks;

(d) Promote competition, efficiency in operations and improvement in quality of supply;

(e) Promote generation of electricity from Renewable sources;

(f) Promote Hydroelectric Power generation including Pumped Storage Projects (PSP) to provide adequate peaking reserves, reliable grid operation and integration of variable renewable energy sources;

(g) Evolve a dynamic and robust electricity infrastructure for better consumer services;

(h) Facilitate supply of adequate and uninterrupted power to all categories of consumers;

(i) Ensure creation of adequate capacity including reserves in generation, transmission and distribution in advance, for reliability of supply of electricity to consumers.

5.0 GENERAL APPROACH TO TARIFF

5.1 Introducing competition in different segments of the electricity industry is one of the key features of the Electricity Act, 2003. Competition will lead to significant benefits to consumers through reduction in capital costs and also efficiency of operations. It will also facilitate the price to be determined competitively. The Central Government has already issued detailed guidelines for tariff based bidding process for procurement of electricity by distribution licensees.

5.2 All future requirement of power should continue to be procured competitively by distribution licensees except in cases of expansion of existing projects or where there is a company owned or controlled by the State Government as an identified developer and where regulators will need to resort to tariff determination based on norms provided that expansion of generating capacity by private developers for this purpose would be restricted to one time addition of not more than 100% of the existing capacity.

Provided further that the Appropriate Commission, as defined in the Electricity Act, 2003, shall ensure that in case of expansion of such projects, the benefit of sharing of infrastructure of existing project and efficiency of new technology is passed on to consumers through tariff.

Provided also that the State Government can notify a policy to encourage investment in the State by allowing setting up of generating plants, including from renewable energy sources out of which a maximum of 35% of the installed capacity can be procured by the Distribution Licensees of that State for which the tariff may be determined under Section 62 of the Electricity Act, 2003.

Provided that notwithstanding the provision contained in para 5.11(j) of the policy, the tariff for such 35% of the installed capacity shall be determined by SERC.

However, the 15% of power outside long term PPAs allowed under para 5.7.1 of National Electricity Policy shall not be included in 35% allowed to be procured by Distribution Licensees of the State.

5.3 The tariff of all new generation and transmission projects of company owned or controlled by the Central Government shall continue to be determined on the basis of competitive bidding as per the Tariff Policy notified on 6thJanuary, 2006 unless otherwise specified by the Central Government on case to case basis.

Further, intra-state transmission projects shall be developed by State Government through competitive bidding process for projects costing above a threshold limit which shall be decided by the SERCs.

5.4 The Central Electricity Regulatory Commission in consultation with Central Electricity Authority and other stakeholders shall frame within six months, regulations for determination of tariff for generation of electricity from projects using coal washery rejects. These regulations shall also be followed by State Electricity Regulatory Commissions.

Provided that procurement of power from coal washery rejects based projects developed by Central/State PSUs, Joint Venture between Government Company and Company other than Government Company in which shareholding of company other than Government Company either directly or through any of its subsidiary company or associate company shall not be more than 26% of the paid up share capital, can be done under Section 62 of the Act.

5.5 The developer of a hydroelectric project, including Pumped Storage Plant (PSP), would have the option of getting the tariff determined by the Appropriate Commission for the power to be sold through long term Power Purchase

Agreements (PPAs) on the basis of performance based cost of service regulations if the following conditions are fulfilled:

(a) The Appropriate Commission is satisfied that the project site has been allotted to the developer by the concerned State Government after following a transparent two stage process. The first stage should be for prequalification on the basis of criteria of financial strength, past experience of developing infrastructure projects of similar size, past track record of developing projects on time and within estimated costs, turnover and ability to meet performance guarantee etc. In the second stage, bids are to be called on the basis of only one single quantifiable parameter, such as, additional free power in excess of percentage of free power, as notified by the Central Government, equity participation offered to the State Government, or any other parameter to be notified by the Central Government from time to time.

(b) Concurrence of CEA (if required under Section 8 of the Act), financial closure, award of work and long term Power Purchase Agreement (PPA) (of the duration of 35 years or more) of the capacity specified in (c) below with distribution licensees are completed by 15.08.2022.

(c) Long term PPA is firmed up for 60% or more of the total saleable design energy, balance being allowed for merchant sale.

Provided that distribution licensees can extend the duration of long term PPA beyond 35 years for a further period of 15 years at the existing terms and conditions subject to the approval of Appropriate Commission.

Provided further that nothing contained in this clause shall apply to Pumped Storage Plants (PSP).

(d) The time period for commissioning of all the units of the project shall be fixed at four years from the date of approval of the commissioning schedule by the Appropriate Commission. However, the Appropriate Commission may, after recording reasons in writing, fix longer time period for hydro electric projects (reservoir as well as run-of- river projects) of more than 100 MW capacity. Agreed timelines to achieve the fixed commissioning schedule alongwith penalty for delay shall be decided by the Appropriate Commission in consultation with the Central Electricity Authority. The Appropriate Commission shall allow pass through the Interest During Construction (IDC) and Financing Cost (FC) only upto the period of delay not attributable to the developer, as approved by the CEA.

(e) Award of contracts for supply of equipment and construction of the project, either through a turnkey or through well defined packages, are done on the basis of international competitive bidding.

5.6 Notwithstanding anything contained in Para 5.5 above, the developers of hydro electric projects of more than 100 MW design capacity for which sites have been awarded earlier by following a transparent process and on the basis of pre-determined set of criteria would have the option of getting the tariff determined by the Appropriate Commission for the power to be sold through long term PPA on the basis of cost plus under Section 62 of the Act.

5.7 In case of projects covered under Para 5.5 and 5.6, the Appropriate Commission shall determine tariff ensuring the following:

(i) Any expenditure incurred or committed to be incurred by the project developer for getting project site allotted (except free power as notified) would neither be included in the project cost, nor any such expenditure shall be passed through in tariff.

(ii) The project cost shall include the cost of the approved R&R plan of the Project which shall be in conformity with the following:

(a) the National Rehabilitation & Resettlement Policy currently in force;

(b) the R&R package as enclosed at appendix.

(iii) Annual fixed charges shall be taken pro-rata to the saleable design energy tied up on the basis of long term PPAs with respect to total saleable design energy. The total saleable design energy shall be arrived at by deducting the following from the design energy at the bus bar:

a) Free power as notified by the Central Government from time to time for the host State and the riparian State and percentage for contribution towards Local Area Development Fund as constituted by the State Government. This free power may be suitably staggered as decided by the State Government.

b) Energy corresponding to 100 units of electricity to be provided free of cost every month to every Project Affected Family notified by the State Government to be offered through the concerned distribution licensee in the designated resettlement area/projects area for a period of ten years from the date of commissioning.

5.8 The Appropriate Commission shall provide for suitable regulatory framework for incentivizing the developers of Hydro Electric Projects (HEPs) for using long-term financial instruments in order to reduce the tariff burden in the initial years.

5.9 The real benefits of competition would be available only with the emergence of appropriate market conditions. Shortages of power supply will need to be overcome. Multiple players will enhance the quality of service through competition. All efforts will need to be made to bring power industry to this situation as early as possible in the overall interests of consumers. Transmission and distribution, i.e. the wires business is internationally recognized as having the characteristics of a natural monopoly where there are inherent difficulties in going beyond regulated returns on the basis of scrutiny of costs.

5.10 Consumer interest is best served in ensuring viability and sustainability of the entire value chain viz., generation, transmission and distribution of electricity, while at the same time facilitating power supply at reasonable rate to consumers. The financial turnaround/restructuring plans are approved by the Appropriate Government from time to time to achieve this objective. The Appropriate Government as well as the Appropriate Commission while implementing such plans shall ensure viability of the generation, transmission and distribution in terms of recovery of all prudent costs.

5.11Tariff policy lays down the following framework for performance based cost of service regulation in respect of aspects common to generation, transmission as well as distribution. These shall not apply to competitively bid projects as referred to in para 6.1 and para 7.1 (6). Sector specific aspects are dealt with in subsequent sections.

a) Return on Investment

Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. Return should attract investments at par with, if not in preference to, other sectors so that the electricity sector is able to create adequate capacity. The rate of return should be such that it allows generation of reasonable surplus for growth of the sector.

The Central Commission would notify, from time to time, the rate of return on equity for generation and transmission projects keeping in view the assessment of overall risk and the prevalent cost of capital which shall be followed by the SERCs also. The rate of return notified by CERC for transmission may be adopted by the SERCs for distribution with appropriate modification taking into view the risks involved. For uniform approach in this matter, it would be desirable to arrive at a consensus through the Forum of Regulators.

While allowing the total capital cost of the project, the Appropriate Commission would ensure that these are reasonable and to achieve this objective, requisite benchmarks on capital costs should be evolved by the Regulatory Commissions. The Central Commission may adopt either Return on Equity or Return on Capital approach whichever is considered better in the interest of the consumers.

The State Commission may consider 'distribution and supply margin' as basis for allowing returns in distribution business at an appropriate time. The State Commission may also consider price cap regulation based on comprehensive study. The Forum of Regulators should evolve a comprehensive approach in this regard. The considerations while preparing such an approach would, inter-alia, include issues such as reduction in Aggregate Technical and Commercial losses, improving the standards of performance and reduction in cost of supply.

b) Equity Norms

For financing of future capital cost of projects, a Debt: Equity ratio of 70:30 should be adopted. Promoters would be free to have higher quantum of equity investments. The equity in excess of this norm should be treated as loans advanced at the weighted average rate of interest and for a weighted average tenor of the long term debt component of the project after ascertaining the reasonableness of the interest rates and taking into account the effect of debt restructuring done, if any. In case of equity below the normative level, the actual equity would be used for determination of Return on Equity in tariff computations.

c) Depreciation

The Central Commission may notify the rates of depreciation in respect of generation and transmission assets**.** The depreciation rates so notified would also be applicable for distribution assets with appropriate modification as may be evolved by the Forum of Regulators.

Provided that the Appropriate Commission shall specify, for the purpose of tariff determination, a upper ceiling of the rate of depreciation to be applicable during the useful life of the project and the developer shall have the option of indicating, while seeking approval for tariff, lower rate of depreciation subject to the aforesaid ceiling.

The rates of depreciation so notified would be applicable for the purpose of tariffs as well as accounting.

There should be no need for any advance against depreciation.

Benefit of reduced tariff after the assets have been fully depreciated should remain available to the consumers.

Notwithstanding the above, power from those plants of a generating company, where either whose PPAs have expired or plants have completed their useful life, may be bundled with power from renewable generating plants to be set up through the process of bidding or for which the equipment for setting up such plant is procured through competitive bidding. In such cases, power from such plants can be reallocated to beneficiaries purchasing power from renewable energy generating plants on the principles to be decided by Appropriate Government. The Obligated Entities which finally buy such power shall account towards their renewable purchase obligation to the extent of power bought from renewable energy generating plants.

The scheduling and despatch of such conventional and renewable generating plants shall be done separately.

d) Cost of Debt

Structuring of debt, including its tenure, with a view to reducing the tariff should be encouraged. Savings in costs on account of subsequent restructuring of debt should be suitably incentivised by the Regulatory Commissions keeping in view the interests of the consumers.

e) Cost of Management of Foreign Exchange Risk

Foreign exchange variation risk shall not be a pass through. However, appropriate costs of hedging and swapping to take care of foreign exchange variations should be allowed for debt obtained in foreign currencies. This provision would be relevant only for the projects where tariff has not been determined on the basis of competitive bids.

f) Operating Norms

Suitable performance norms of operations together with incentives and disincentives would need to be evolved along with appropriate arrangement for sharing the gains of efficient operations with the consumers. Except for the cases referred to in para 5.11(h)(2), the operating parameters in tariffs should be at "normative levels" only and not at "lower of normative and actuals". This is essential to encourage better operating performance. The norms should be efficient, relatable to past performance, capable of achievement and progressively reflecting increased efficiencies and may also take into consideration the latest technological advancements, fuel, vintage of equipments, nature of operations, level of service to be provided to consumers etc. Continued and proven inefficiency must be controlled and penalized.

The Central Commission would, in consultation with the Central Electricity Authority, notify operating norms from time to time for generation and transmission. The SERC would adopt these norms. In cases where operations have been much below the norms for many previous years, the SERCs may fix relaxed norms suitably and draw a transition path over the time for achieving the norms notified by the Central Commission, or phase them out in accordance with the norms specified by the Authority in this regard.

Operating norms for distribution networks would be notified by the concerned SERCs. For uniformity, the Forum of Regulators should evolve model guidelines taking into consideration the state specific distinctive features.

g) Renovation and Modernization

Renovation and modernization of generation plants (including repowering of wind generating plants) need to be encouraged for higher efficiency levels even though they may have not completed their useful life. This shall not include periodic overhauls. A Multi-Year Tariff (MYT) framework may be prescribed which should also cover capital investments necessary for renovation and modernization and an incentive framework to share the benefits of efficiency improvement between the utilities and the beneficiaries with reference to revised and specific performance norms to be fixed by the Appropriate Commission. Appropriate capital costs required for predetermined efficiency gains and/or for sustenance of high level performance would need to be assessed by the Appropriate Commission.

h) Multi Year Tariff

1) Section 61 of the Act states that the Appropriate Commission for determining the terms and conditions for the determination of tariff shall be guided, inter-alia, by Multi-Year Tariff (MYT) principles. The framework should feature a five-year control period. The initial control period may, however, be of 3 year duration for transmission and distribution if deemed necessary by the Regulatory Commission on account of data uncertainties and other practical considerations. In cases of lack of reliable data, the Appropriate Commission may state assumptions in MYT for first control period and a fresh control period may be started as and when more reliable data becomes available.

2) In cases where operations have been much below the norms for many previous years, the initial starting point in determining the revenue requirement and the improvement trajectories should be recognized at

"relaxed" levels and not the "desired" levels. Suitable benchmarking studies may be conducted to establish the "desired" performance standards. Separate studies may be required for each utility to assess the capital expenditure necessary to meet the minimum service standards.

3) Once the revenue requirements are established at the beginning of the control period, the Regulatory Commission should focus on regulation of outputs and not the input cost elements. At the end of the control period, a comprehensive review of performance may be undertaken.

4) Uncontrollable costs should be recovered speedily to ensure that future consumers are not burdened with past costs. Uncontrollable costs would include (but not limited to) fuel costs, costs on account of inflation, taxes and cess, variations in power purchase unit costs including on account of adverse natural events.

5) Clear guidelines and regulations on information disclosure may be developed by the Regulatory Commissions. Section 62 (2) of the Act empowers the Appropriate Commission to require licensees to furnish separate details, as may be specified in respect of generation, transmission and distribution for determination of tariff.

(i) Benefits under Clean Development Mechanism (CDM)

Tariff fixation for all electricity projects (generation, transmission and distribution) that result in lower Green House Gas (GHG) emissions than the relevant base line should take into account the benefits obtained from the Clean Development Mechanism (CDM) into consideration, in a manner so as to provide adequate incentive to the project developers.

(j) Composite Scheme

Sub-section (b) of Section 79(1) of the Act provides that Central Commission shall regulate the tariff of generating company, if such generating company enters into or otherwise have a composite scheme for generation and sale of electricity in more than one State.

Explanation: The composite scheme as specified under section 79(1) of the Act shall mean a scheme by a generating company for generation and sale of electricity in more than one State, having signed long-term or medium-term PPA prior to the date of commercial operation of the project (the COD of the last unit of the project will be deemed to be the date of commercial operation of the project) for sale of atleast 10% of the capacity of the project to a distribution licensee outside the State in which such project is located.

5.12 While it is recognized that the State Governments have the right to impose duties, taxes, cess on sale or consumption of electricity, these could potentially distort competition and optimal use of resources especially if such levies are used selectively and on a non-uniform basis.

In some cases, the duties etc. on consumption of electricity is linked to sources of generation (like captive generation) and the level of duties levied is much higher as compared to that being levied on the same category of consumers who draw power from grid. Such a distinction is invidious and inappropriate. The sole purpose of freely allowing captive generation is to enable industries to access reliable, quality and cost effective power. Particularly, the provisions relating to captive power plants which can be set up by group of consumers has been brought in recognition of the fact that efficient expansion of small and medium industries across the country will lead to faster economic growth and creation of larger employment opportunities.

For realizing the goal of making available electricity to consumers at reasonable and competitive prices, it is necessary that such duties are kept at reasonable level.

5.13 The Act provides for introduction of open access for consumers of one megawatt and above in a time bound manner. The Regulatory Commissions shall introduce open access for different categories of consumers as per the provisions of the Act.

6.0 GENERATION

Accelerated growth of the generation capacity sector is essential to meet the estimated growth in demand. Adequacy of generation is also essential for efficient functioning of power markets. At the same time, it is to be ensured that new capacity addition should deliver electricity at most efficient rates to protect the interests of consumers. This policy stipulates the following for meeting these objectives.

6.1 Procurement of power

As stipulated in para 5.1, power procurement for future requirements should be through a transparent competitive bidding mechanism using the guidelines issued by the Central Government from time to time. These guidelines provide for procurement of electricity separately for base load requirements and for peak load requirements. This would facilitate setting up of generation capacities specifically for meeting such requirements.

However, some of the competitively bid projects as per the guidelines dated 19th January, 2005 have experienced difficulties in getting the required quantity of coal from Coal India Limited (CIL). In case of reduced quantity of

domestic coal supplied by CIL, vis-à-vis the assured quantity or quantity indicated in Letter of Assurance/FSA the cost of imported/market based e-auction coal procured for making up the shortfall, shall be considered for being made a pass through by Appropriate Commission on a case to case basis, as per advisory issued by Ministry of Power vide OM No. FU-12/2011-IPC (Vol-III) dated 31.7.2013.

6.2 Tariff structuring and associated issues

(1) A two-part tariff structure should be adopted for all long-term and medium-term contracts to facilitate Merit Order dispatch. According to National Electricity Policy, the Availability Based Tariff (ABT) is also to be introduced at State level. This framework would be extended to generating stations (including grid connected captive plants of capacities as determined by the SERC). The Appropriate Commission shall introduce differential rates of fixed charges for peak and off peak hours for better management of load within a period of two years.

Power stations are required to be available and ready to dispatch at all times. Notwithstanding any provision contained in the Power Purchase Agreement (PPA), in order to ensure better utilization of un-requisitioned generating capacity of generating stations, based on regulated tariff under Section 62 of the Electricity Act 2003, the procurer shall communicate, at least twenty four hours before 00.00 hours of the day when the power and quantum thereof is not requisitioned by it enabling the generating stations to sell the same in the market in consonance with laid down policy of Central Government in this regard. The developer and the procurers signing the PPA would share the gains realized from sale, if any, of such un-requisitioned power in market in the ratio of 50:50, if not already provided in the PPA. Such gain will be calculated as the difference between selling price of such power and fuel charge. It should, however, be ensured that such merchant sale does not result in adverse impact on the original beneficiary(ies) including in the form of higher average energy charge vis-à-vis the energy charge payable without the merchant sale. For the projects under section 63 of the Act, the methodology for such sale may be decided by the Appropriate Commission on mutually agreed terms between procurer and generator or unless already specified in the PPA.

(2) Power Purchase Agreement should ensure adequate and bankable payment security arrangements to the Generating companies. In case of persisting default on payment of agreed tariff as per PPA in spite of the available payment security mechanisms like letter of credit, escrow of cash flows etc. the generating companies may sell such power to other buyers.

(3) In case of coal based generating stations, the cost of project will also include reasonable cost of setting up coal washeries, coal beneficiation system and dry ash handling & disposal system.

(4) After the award of bids, if there is any change in domestic duties, levies, cess and taxes imposed by Central Government, State Governments/Union Territories or by any Government instrumentality leading to corresponding changes in the cost, the same may be treated as "Change in Law" and may unless provided otherwise in the PPA, be allowed as pass through subject to approval of Appropriate Commission.

(5) The thermal power plant(s) including the existing plants located within 50 km radius of sewage treatment plant of Municipality/local bodies/similar organization shall in the order of their closeness to the sewage treatment plant, mandatorily use treated sewage water produced by these bodies and the associated cost on this account be allowed as a pass through in the tariff. Such thermal plants may also ensure back-up source of water to meet their requirement in the event of shortage of supply by the sewage treatment plant. The associated cost on this account shall be factored into the fixed cost so as not to disturb the merit order of such thermal plant. The shutdown of the sewage treatment plant will be taken in consultation with the developer of the power plant.

6.3 Harnessing captive generation

Captive generation is an important means to making competitive power available. Appropriate Commission should create an enabling environment that encourages captive power plants to be connected to the grid.

Such captive plants could supply surplus power through grid subject to the same regulation as applicable to generating companies. Firm supplies may be bought from captive plants by distribution licensees using the guidelines issued by the Central Government under section 63 of the Act taking into account second proviso of para 5.2 of this Policy.

The prices should be differentiated for peak and off-peak supply and the tariff should include variable cost of generation at actual levels and reasonable compensation for capacity charges.

Wheeling charges and other terms and conditions for implementation should be determined in advance by the respective State Commission, duly ensuring that the charges are reasonable and fair.

Grid connected captive plants could also supply power to non-captive users connected to the grid through available transmission facilities based on negotiated tariffs. Such sale of electricity would be subject to relevant regulations for open access including compliance of relevant provisions of rule 3 of the Electricity Rules, 2005.

6.4 Renewable sources of energy generation including Co-generation from renewable energy sources:

(1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE.

Provided that cogeneration from sources other than renewable sources shall not be excluded from the applicability of RPOs.

(i) Within the percentage so made applicable, to start with, the SERCs shall also reserve a minimum percentage for purchase of solar energy from the date of notification of this policy which shall be such that it reaches 8% of total consumption of energy, excluding Hydro Power, by March 2022 or as notified by the Central Government from time to time.

(ii) Distribution Licensee(s) shall compulsorily procure 100% power produced from all the Waste-to-Energy plants in the State, in the ratio of their procurement of power from all sources including their own, at the tariff determined by the Appropriate Commission under Section 62 of the Act**.**

(iii) It is desirable that purchase of energy from renewable sources of energy takes place more or less in the same proportion in different States. To achieve this objective in the current scenario of large availability of such resources only in certain parts of the country, an appropriate mechanism such as Renewable Energy Certificate (REC) would need to be promoted. Through such a mechanism, the renewable energy based generation companies can sell the electricity to local distribution licensee at the rates for conventional power and can recover the balance cost by selling certificates to other distribution companies and obligated entities enabling the latter to meet their renewable power purchase obligations. The REC mechanism should also have a solar specific REC.

(iv) Appropriate Commission may also provide for a suitable regulatory framework for encouraging such other emerging renewable energy technologies by prescribing separate technology based REC multiplier (i.e. granting higher or lower number of RECs to such emerging technologies for the same level of generation). Similarly, considering the change in prices of renewable energy technologies with passage of time, the Appropriate Commission may prescribe vintage based REC multiplier (i.e. granting higher or lower number of RECs for the same level of generation based on year of commissioning of plant).

(2) States shall endeavor to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.

However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003. While determining the tariff from such sources, the Appropriate Commission shall take into account the solar radiation and wind intensity which may differ from area to area to ensure that the benefits are passed on to the consumers.

(3) The Central Commission should lay down guidelines for pricing intermittent power, especially from renewable energy sources, where such procurement is not through competitive bidding. The tariff stipulated by CERC shall act as a ceiling for that category.

(4) In order to incentivize the Distribution Companies to procure power from renewable sources of energy, the Central Government may notify, from time to time, an appropriate bid-based tariff framework for renewable energy, allowing the tariff to be increased progressively in a back-loaded or any other manner in the public interest during the period of PPA, over the life cycle of such a generating plant. Correspondingly, the procurer of such bid-based renewable energy shall comply with the obligations for payment of tariff so determined.

(5) In order to promote renewable energy sources, any generating company proposing to establish a coal/lignite based thermal generating station after a specified date shall be required to establish such renewable energy generating capacity or procure and supply renewable energy equivalent to such capacity, as may be prescribed by the Central Government from time to time after due consultation with stakeholders. The renewable energy produced by each generator may be bundled with its thermal generation for the purpose of sale. In case an obligated entity procures this renewable power, then the SERCs will consider the obligated entity to have met the Renewable Purchase Obligation (RPO) to the extent of power bought from such renewable energy generating stations.

Provided further that in case any existing coal and lignite based thermal power generating station, with the concurrence of power procurers under the existing Power Purchase Agreements, chooses to set up additional renewable energy generating capacity, the power from such plant shall be allowed to be bundled and tariff of such renewable energy shall be allowed to be pass through by the Appropriate Commission. The Obligated

Entities who finally buy such power shall account towards their renewable purchase obligations.

Provided also that scheduling and despatch of such conventional and renewable generating plants shall be done separately.

(6) In order to further encourage renewable sources of energy, no inter-State transmission charges and losses may be levied till such period as may be notified by the Central Government on transmission of the electricity generated from solar and wind sources of energy through the inter-state transmission system for sale.

(7) Appropriate Commission may provide regulatory framework to facilitate generation and sale of electricity from renewable energy sources particularly from roof-top solar system by any entity including local authority, Panchayat Institution, user institution, cooperative society, Non-Governmental Organization, franchisee or by Renewable Energy Service Company. The Appropriate Government may also provide complementary policy support for this purpose.

Explanation: "Renewable Energy Service Company" means an energy service company which provides renewable energy to the consumers in the form of electricity.

7.0 TRANSMISSION

The transmission system in the country consists of the regional networks, the inter-regional connections that carry electricity across the five regions and the State networks. Development of the State networks has not been uniform and capacity in such networks needs to be augmented. These networks will play an important role in intra-State power flows and also in the regional and national flows. The tariff policy, in so far as transmission is concerned, seeks to achieve the following objectives:

1. Ensuring optimal development of the transmission network ahead of generation with adequate margin for reliability and to promote efficient utilization of generation and transmission assets in the country;

2. Attracting the required investments in the transmission sector and providing adequate returns.

7.1 Transmission pricing

(1) A suitable transmission tariff framework for all inter-State transmission, including transmission of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission, has been implemented with the objective of promoting effective utilization of all assets across the country and accelerated development of new transmission capacities that are required.

(2) The National Electricity Policy mandates that the national tariff framework implemented should be sensitive to distance, direction and related to quantum of power flow. This has been developed by CERC taking into consideration the advice of the CEA. Sharing of transmission charges shall be done in accordance with such tariff mechanism as amended from time to time.

(3) Transmission charges, under this framework, can be determined on MW per circuit kilometer basis, zonal postage stamp basis, or some other pragmatic variant, the ultimate objective being to get the transmission system users to share the total transmission cost in proportion to their respective utilization of the transmission system. The 'utilization' factor should duly capture the advantage of reliability reaped by all. The spread between minimum and maximum transmission rates should be such as not to inhibit planned development/augmentation of the transmission system but should discourage non-optimal transmission investment.

(4) In view of the approach laid down by the NEP, prior agreement with the beneficiaries would not be a pre-condition for network expansion. CTU/STU should undertake network expansion after identifying the requirements in consonance with the National Electricity Plan and in consultation with stakeholders and taking up the execution after due regulatory approvals. For smooth operation of the grid, efforts should be made to develop transmission system ahead of generation.

(5) The Central Commission has specified norms for capital and operating costs and laid down Standards of Performance for inter-State transmission licensees. Tariff determination and adherence to Standards of Performance shall be carried out in accordance with these norms, as amended from time to time.

(6) Investment by transmission developer including CTU/STUs would be invited through competitive bids in accordance with the guidelines issued by the Central Government from time to time.

(7) While all future inter-state transmission projects shall, ordinarily, be developed through competitive bidding process, the Central Government may give exemption from competitive bidding for (a) specific category of projects of strategic importance, technical upgradation etc. or (b) works required to be done to cater to an urgent situation on a case to case basis.

(8) CERC has specified Regulation on framework for the inter-State transmission. A similar approach should be implemented by SERCs for the intra-State transmission, duly considering factors like voltage, distance, direction and quantum of flow.

(9) Metering compatible with the requirements of the proposed transmission tariff framework should be established on priority basis. The metering should be compatible with ABT requirements, which would also facilitate implementation of Time of Day (ToD) tariffs.

7.2 Transmission loss allocation

(1) Transactions are being charged on the basis of average losses arrived at after appropriately considering the distance and directional sensitivity, as applicable to relevant voltage level, on the transmission system. Based on the methodology laid down by the CERC in this regard for inter-state transmission, the SERCs may evolve a similar framework for intra-state transmission.

The loss framework should ensure that the loss compensation is reasonable and linked to applicable technical loss benchmarks. The benchmarks may be determined by the Appropriate Commission after considering advice of CEA.

(2) It would be desirable to move to a system of loss compensation based on incremental losses as present deficiencies in transmission capacities are overcome through network expansion. The Appropriate Commission may require necessary studies to be conducted to establish the allowable level of system loss for the network configuration and the capital expenditure required to augment the transmission system and reduce system losses. Since additional flows above a level of line loading lead to significantly higher losses, CTU/STU should ensure upgrading of transmission systems to avoid the situations of overloading. The Appropriate Commission should permit adequate capital investments in new assets for upgrading the transmission system.

7.3 Other issues in transmission

(1) Financial incentives and disincentives should be implemented for the CTU and the STU around the Key Performance Indicators (KPI) for these organisations. Such KPIs would include efficient network construction, system availability and loss reduction.

(2) All available information should be shared with intending users by the CTU/STU and the load dispatch centers, particularly information on available transmission capacity and load flow studies.

(3) In extraordinary circumstances including threat to security to the State, public order or natural calamity, if the Central Government allocates power out of the unallocated share of the Central Generating Stations or otherwise, such allocation of power will have priority over short-term, medium-term and long-term access in this order.

7.4 Ancillary Services

(1) The Central Commission may introduce the norms and framework for ancillary services, including the method of sharing the charges, necessary to support the power system or grid operation for maintaining power quality, reliability and security of the grid.

(2) The Central Commission shall also consult the Central Electricity Authority, SERCs/JERCs, CTUs/STUs and NLDC/RLDC/SLDCs while specifying the norms for ancillary services.

(3) The State Commission shall also adopt the norms and framework for ancillary services as specified by the Central Commission.

8.0 DISTRIBUTION

Supply of reliable and quality power of specified standards in an efficient manner and at reasonable rates is one of the main objectives of the National Electricity Policy. The State Commission should determine and notify the standards of performance of licensees with respect to quality, continuity and reliability of service for all consumers. It is desirable that the Forum of Regulators determines the basic framework on service standards. A suitable transition framework could be provided for the licensees to reach the desired levels of service as quickly as possible. Penalties may be imposed on licensees in accordance with section 57 of the Act for failure to meet the standards.

Making the distribution segment of the industry efficient and solvent is the key to success of power sector reforms and provision of services of specified standards. Therefore, the Regulatory Commissions need to strike the right balance between the requirements of the commercial viability of distribution licensees and consumer interests. Loss making utilities need to be transformed into profitable ventures which can raise necessary resources from the capital markets to provide services of international standards to enable India to achieve its full growth potential. Efficiency in operations should be encouraged. Gains of efficient operations with reference to normative parameters should be appropriately shared between consumers and licensees.

Appropriate Commission should mandate Distribution Licensee to undertake load forecasting every year and to publish and submit to the Commission their short, medium and long-term power procurement plans to meet the load.

The State Regulatory Commission will devise a specific trajectory so that 24 hours supply of adequate and uninterrupted power can be ensured to all categories of consumers by 2021-22 or earlier depending upon the prevailing situation in the State.

Micro-grids supplying renewable energy are being set up in such areas where the grid has not reached or where adequate power is not available in the grid. Investment involved in setting up of such microgrids is substantial. One of the risks of investment is grid reaching the area before the completion of the project life and thereby making power from micro grids costly and unviable. In order to mitigate such risk and incentivize investment in microgrids, there is a need to put in place an appropriate regulatory framework to mandate compulsory purchase of power into the grid from such micro grids at a tariff to be determined under section 62 of the Act considering depreciated cost of investments and keeping in view industry benchmark and with a cap if necessary, as approved by the Appropriate Commission. The Appropriate Commission shall notify necessary regulations in this regard within six months.

8.1 Implementation of Multi-Year Tariff (MYT) framework

1) MYT framework would minimise risks for utilities and consumers, promote efficiency and appropriate reduction of system losses and attract investments. It would also bring greater predictability to consumer tariffs on the whole by restricting tariff adjustments to known indicators of power purchase prices and inflation indices. The framework should be applied for both public and private utilities.

2) The State Commissions should introduce mechanisms for sharing of excess profits and losses with the consumers as part of the overall MYT framework. In the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility. This is necessary to accelerate performance improvement and reduction in losses and will be in the long term interest of consumers by way of lower tariffs.

3) As indicated in para 5.11(h), the MYT framework implemented in the initial control period should have adequate flexibility to accommodate changes in the baselines consequent to metering being completed.

4) Licensees may have the flexibility of charging lower tariffs than approved by the State Commission if competitive conditions require so without having a claim on additional revenue requirement on this account in accordance with Section 62 of the Act.

5) At the beginning of the control period when the "actual" costs form the basis for future projections, there may be a large uncovered gap between required tariffs and the tariffs that are presently applicable. This gap should be fully met through tariff charges and through alternative means that could inter-alia include financial restructuring and transition financing.

6) Incumbent licensees should have the option of filing for separate revenue requirements and tariffs for an area where the State Commission has issued multiple distribution licenses, pursuant to the provisions of Section 14 of the Act read with para 5.4.7 of the National Electricity Policy.

7) Appropriate Commissions should initiate tariff determination and regulatory scrutiny on a suo moto basis in case the licensee does not initiate filings in time. It is desirable that requisite tariff changes come into effect from the date of commencement of each financial year and any gap on account of delay in filing should be on account of licensee.

8.2 Framework for revenue requirements and costs

8.2.1 The following aspects would need to be considered in determining tariffs:

(1) All power purchase costs need to be considered legitimate unless it is established that the merit order principle has been violated or power has been purchased at unreasonable rates. The reduction of Aggregate Technical & Commercial (AT&C) losses needs to be brought about but not by denying revenues required for power purchase for 24 hours supply and necessary and reasonable O&M and investment for system upgradation. Consumers, particularly those who are ready to pay a tariff which reflects efficient costs have the right to get uninterrupted 24 hours supply of quality power. Actual level of retail sales should be grossed up by normative level of T&D losses as indicated in MYT trajectory for allowing power purchase cost subject to justifiable power purchase mix variation (for example, more energy may be purchased from thermal generation in the event of poor rainfall) and fuel surcharge adjustment as per regulations of the SERC.

(2) AT&C loss reduction should be incentivised by linking returns in a MYT framework to an achievable trajectory. Greater transparency and nurturing of consumer groups would be efficacious. For government owned utilities improving governance to achieve AT&C loss reduction is a more difficult and complex challenge for the SERCs. Prescription of a MYT dispensation with different levels of consumer tariffs in succeeding years linked to different AT&C loss levels aimed at covering full costs could generate the requisite political will for effective action to reduce theft as the alternative would be stiffer tariff increases. Third party verification of energy audit results for different areas/localities could be used to impose area/locality specific surcharge for greater AT&C loss levels and this in turn could generate local consensus for effective action for better governance. The SERCs may also encourage suitable local area based incentive and disincentive scheme for the staff of the utilities linked to reduction in losses.

The SERC shall undertake independent assessment of baseline data for various parameters for every distribution circle of the licensee.

The SERC shall also institute a system of independent scrutiny of financial and technical data submitted by the licensees.

As the metering is completed up to appropriate level in the distribution network, it should be possible to segregate technical losses. Accordingly technical loss reduction under MYT framework should then be treated as distinct from commercial loss reduction which requires a different approach.

(3) Section 65 of the Act provides that no direction of the State Government regarding grant of subsidy to consumers in the tariff determined by the State Commission shall be operative if the payment on account of subsidy as decided by the State Commission is not made to the utilities and the tariff fixed by the State Commission shall be applicable from the date of issue of orders by the Commission in this regard. The State Commissions should ensure compliance of this provision of law to ensure financial viability of the utilities. To ensure implementation of the provision of the law, the State Commission should determine the tariff initially, without considering the subsidy commitment by the State Government and subsidised tariff shall be arrived at thereafter considering the subsidy by the State Government for the respective categories of consumers.

(4) Working capital should be allowed duly recognising the transition issues faced by the utilities such as progressive improvement in recovery of bills. Bad debts should be recognised as per policies developed and subject to the approval of the State Commission.

(5) Pass through of past losses or profits should be allowed to the extent caused by uncontrollable factors. During the transition period controllable factors should be to the account of utilities and consumers in proportions determined under the MYT framework.

(6) The contingency reserves should be drawn upon with prior approval of the State Commission only in the event of contingency conditions specified through regulations by the State Commission. The existing practice of providing for development reserves and tariff and dividend control reserves should be discontinued.

(7) Section 61 of the Act mandates that the Appropriate Commission, while determining tariff, shall not only ensure safeguarding of consumer's interests but also the recovery of the cost of electricity in a reasonable manner. Section 62 of the Act further provides for periodic tariff adjustment during a year to take care of the variation in fuel price, as may be specified.

Therefore, the Appropriate Commission shall specify an appropriate price adjustment formula for recovery of the costs, arising on account of the variation in the price of fuel, power purchase etc. on monthly/quarterly basis for recovery of all prudent costs of the generating company and the licensee.

8.2.2 The facility of a regulatory asset has been adopted by some Regulatory Commissions in the past to limit tariff impact in a particular year. This should be done only as a very rare exception in case of natural calamity or force majeure conditions and subject to the following:

a. Under business as usual conditions, no creation of Regulatory Assets shall be allowed;

b. Recovery of outstanding Regulatory Assets along with carrying cost of Regulatory Assets should be time bound and within a period not exceeding seven years. The State Commission may specify the trajectory for the same.

8.3 Tariff design: Linkage of tariffs to cost of service

It has been widely recognised that rational and economic pricing of electricity can be one of the major tools for energy conservation and sustainable use of ground water resources.

In terms of the Section 61(g) of the Act, the Appropriate Commission shall be guided by the objective that the tariff progressively reflects the efficient and prudent cost of supply of electricity.

The State Governments can give subsidy to the extent they consider appropriate as per the provisions of section 65 of the Act. Direct subsidy is a better way to support the poorer categories of consumers than the mechanism of cross-subsidizing the tariff across the board. Subsidies should be targeted effectively and in transparent manner. As a substitute of cross subsidies, the State Government has the option of raising resources through mechanism of electricity duty and giving direct subsidies to only needy consumers. This is a better way of targeting subsidies effectively.

Accordingly, the following principles would be adopted:

1. Consumers below poverty line who consume below a specified level, as prescribed in the National Electricity Policy may receive a special support through cross subsidy. Tariffs for such designated group of consumers will be at least 50% of the average cost of supply.

2. For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the Appropriate Commission would notify a roadmap such that tariffs are brought within ±20% of the average cost of supply. The road map would also have intermediate milestones, based on the approach of a gradual

reduction in cross subsidy.

3. While fixing tariff for agricultural use, the imperatives of the need of using ground water resources in a sustainable manner would also need to be kept in mind in addition to the average cost of supply. Tariff for agricultural use may be set at different levels for different parts of a state depending on the condition of the ground water table to prevent excessive depletion of ground water. Section 62 (3) of the Act provides that geographical position of any area could be one of the criteria for tariff differentiation. A higher level of subsidy could be considered to support poorer farmers of the region where adverse ground water table condition requires larger quantity of electricity for irrigation purposes subject to suitable restrictions to ensure maintenance of ground water levels and sustainable ground water usage.

4. Extent of subsidy for different categories of consumers can be decided by the State Government keeping in view various relevant aspects. But provision of free electricity is not desirable as it encourages wasteful consumption of electricity. Besides in most cases, lowering of water table in turn creating avoidable problem of water shortage for irrigation and drinking water for later generations. It is also likely to lead to rapid rise in demand of electricity putting severe strain on the distribution network thus adversely affecting the quality of supply of power. Therefore, it is necessary that reasonable level of user charges is levied. The subsidized rates of electricity should be permitted only up to a pre-identified level of consumption beyond which tariffs reflecting efficient cost of service should be charged from consumers. If the State Government wants to reimburse even part of this cost of electricity to poor category of consumers the amount can be paid in cash or any other suitable way. Use of prepaid meters can also facilitate this transfer of subsidy to such consumers.

5. Metering of supply to agricultural/rural consumers can be achieved in a consumer friendly way and in effective manner by management of local distribution in rural areas through commercial arrangement with franchisees with involvement of panchayat institutions, user associations, cooperative societies etc. Use of smart meters may be encouraged as a cost effective option for metering in cases of "limited use consumers" who are eligible for subsidized electricity.

8.4 Definition of tariff components and their applicability

1. Two-part tariffs featuring separate fixed and variable charges and time differentiated tariff shall be introduced on priority for large consumers (say, consumers with demand exceeding 1 MW) within one year and subsequently for all consumers within a period of five years or such period as may be specified. This would also help in flattening the peak and implementing various energy conservation measures.

2. The National Electricity Policy states that existing PPAs with the generating companies would need to be suitably assigned to the successor distribution companies. The State Governments may make such assignments taking care of different load profiles of the distribution companies so that retail tariffs are uniform in the State for different categories of consumers. Thereafter, the retail tariffs would reflect the relative efficiency of distribution companies in procuring power at competitive costs, controlling theft and reducing other distribution losses.

3. The Appropriate Commission may provide incentives to encourage metering and billing based on metered tariffs, particularly for consumer categories that are presently unmetered to a large extent. The metered tariffs and the incentives should be given wide publicity. Smart meters have the advantages of remote metering and billing, implementation of peak and off-peak tariff and demand side management through demand response. These would become essential in future for load-generation balancing due to increasing penetration of intermittent type of generation like wind and solar power.

Appropriate Commission shall, therefore, mandate smart meters for:

(a) Consumers with monthly consumption of 500 units and more at the earliest but not later than 31.12.2017;

(b) Consumers with monthly consumption above 200 units by 31.12.2019.

Further, two way smart meters shall be provided to all prosumers, who also sell back electricity to the grid as and when they require.

In order to enable energy audit in the distribution system, all distribution companies shall ensure smart meters in their electricity system throughout the chain from transformers at 132kV level right down to distribution transformer level at 11kV and further down to each consumer. Further, in order to reduce theft of power, the distribution companies should have enabling feature like distribution SCADA with distribution management system and energy audit functions. SERCs shall mandate these to be in place within two years.

4. The SERCs may also suitably regulate connection charges to be recovered by the distribution licensee to ensure that second distribution licensee does not resort to cherry picking by demanding unreasonable connection charges. The connection charges of the second licensee should not be more than those payable to the incumbent licensee.

8.5 Cross-subsidy surcharge and additional surcharge for open access

8.5.1 National Electricity Policy lays down that the amount of cross-subsidy surcharge and the additional surcharge to be levied from consumers who are permitted open access should not be so onerous that it eliminates competition which is intended to be fostered in generation and supply of power directly to the consumers through open access.

A consumer who is permitted open access will have to make payment to the generator, the transmission licensee whose transmission systems are used, distribution utility for the wheeling charges and, in addition, the cross subsidy surcharge. The computation of cross subsidy surcharge, therefore, needs to be done in a manner that while it compensates the distribution licensee, it does not constrain introduction of competition through open access. A consumer would avail of open access only if the payment of all the charges leads to a benefit to him. While the interest of distribution licensee needs to be protected it would be essential that this provision of the Act, which requires the open access to be introduced in a time-bound manner, is used to bring about competition in the larger interest of consumers.

SERCs may calculate the cost of supply of electricity by the distribution licensee to consumers of the applicable class as aggregate of (a) per unit weighted average cost of power purchase including meeting the Renewable Purchase Obligation; (b) transmission and distribution losses applicable to the relevant voltage level and commercial losses allowed by the SERC; (c) transmission, distribution and wheeling charges up to the relevant voltage level; and (d) per unit cost of carrying regulatory assets, if applicable.

Surcharge formula:

$S = T - [C/(1-L/100) + D + R]$

Where

S is the surcharge

T is the tariff payable by the relevant category of consumers, including reflecting the Renewable Purchase Obligation

C is the per unit weighted average cost of power purchase by the Licensee, including meeting the Renewable Purchase Obligation

D is the aggregate of transmission, distribution and wheeling charge applicable to the relevant voltage level

L is the aggregate of transmission, distribution and commercial losses, expressed as a percentage applicable to the relevant voltage level

R is the per unit cost of carrying regulatory assets.

Above formula may not work for all distribution licensees, particularly for those having power deficit, the State Regulatory Commissions, while keeping the overall objectives of the Electricity Act in view, may review and vary the same taking into consideration the different circumstances prevailing in the area of distribution licensee.

Provided that the surcharge shall not exceed 20% of the tariff applicable to the category of the consumers seeking open access.

Provided further that the Appropriate Commission, in consultation with the Appropriate Government, shall exempt levy of cross subsidy charge on the Railways, as defined in Indian Railways Act, 1989 being a deemed licensee, on electricity purchased for its own consumption.

8.5.2 No surcharge would be required to be paid in terms of sub-section (2) of Section 42 of the Act on the electricity being sold by the generating companies with consent of the competent government under Section 43(A)(1)(c) of the Electricity Act, 1948 (now repealed) and on the electricity being supplied by the distribution licensee on the authorisation by the State Government under Section 27 of the Indian Electricity Act, 1910 (now repealed), till the current validity of such consent or authorisation.

8.5.3 The surcharge may be collected either by the distribution licensee, the transmission licensee, the STU or the CTU, depending on whose facilities are used by the consumer for availing electricity supplies. In all cases the amounts collected from a particular consumer should be given to the distribution licensee in whose area the

consumer is located. In case of two licensees supplying in the same area, the licensee from whom the consumer was availing supply shall be paid the amounts collected.

8.5.4 The additional surcharge for obligation to supply as per section 42(4) of the Act should become applicable only if it is conclusively demonstrated that the obligation of a licensee, in terms of existing power purchase commitments, has been and continues to be stranded, or there is an unavoidable obligation and incidence to bear fixed costs consequent to such a contract. The fixed costs related to network assets would be recovered through wheeling charges.

8.5.5 Wheeling charges should be determined on the basis of same principles as laid down for intra-state transmission charges and in addition would include average loss compensation of the relevant voltage level.

8.5.6 In case of outages of generator supplying to a consumer on open access, standby arrangements should be provided by the licensee on the payment of tariff for temporary connection to that consumer category as specified by the Appropriate Commission. Provided that such charges shall not be more than 125 percent of the normal tariff of that category.

9.0 Trading Margin

The Act provides that the Appropriate Commission may fix the trading margin, if considered necessary. Though there is a need to promote trading in electricity for making the markets competitive, the Appropriate Commission should monitor the trading transactions continuously and ensure that the electricity traders do not indulge in profiteering in situation of power shortages. Fixing of trading margin should be resorted to for achieving this objective.

JYOTI ARORA, Jt. Secy

APPENDIX

SALIENT FEATURES OF THE APPROVED R&R PROVISIONS FOR HYDRO POWER PROJECTS

1. SCOPE OF COVERAGE

The following provisions shall be applicable even if one family is affected by the development of a Hydro Power Project.

2. DEFINITION OF PROJECT AFFECTED FAMILIES (PAFs)

A Project Affected Family (PAF) shall mean a family whose place of residence or other property or source of livelihood has been affected by the development of a hydro project and who have been residing in the affected zone for two years preceding the date of declaration of notification under Section-11 of the LARR Act. The affected family would also include squatters.

3. DEFINITION OF AGRICULTURAL LABOURER

A person normally residing in the affected zone for two years preceding the date of declaration of the affected zone and earns his/her livelihood principally by manual labour on agricultural land.

4. DEFINITION OF NON-AGRICULTURAL LABOURER

A person normally residing in the affected zone for two years preceding the date of declaration of the affected zone and who does not hold any land in the affected zone but earns his/her livelihood principally by manual labour or as rural artisan or a service provider to the community.

5. DEFINITION OF SQUATTERS

A family occupying Government land in the affected zone without a legal title, at least for 5 years prior to the date of declaration of notification under Section-11 of LARR Act.

6. REHABILITATION/RESETTLEMENT COLONIES

This policy aims to provide built up houses to Project Affected Families (PAFs) who get displaced due to the development of hydro projects to the extent possible. However, wherever opted for, liberal House Construction Allowance would be given in lieu.

7. TRAINING AND CAPACITY BUILDING

This policy also emphasizes the need to provide training to the Project Affected Families as well as to the local population for a sustained livelihood. Special training programmes from ITIs aimed at providing the required skills

to the local population would be undertaken by the Project developers at least six months prior to commencement of construction. This is expected to boost the employability of the PAFs and other people residing in the vicinity of the project.

8. ADDITIONAL PROVISIONS

This policy envisages additional provisions for Project Affected Families such as:

- o scholarships for meritorious students,
- o extension of medical facilities,
- o marriage grants,
- o subsistence grants,
- o support for income generation schemes for cooperative and self-help groups,
- o seed, pesticides and fertilizer subsidies, and irrigation support.

Besides the additional provisions mentioned above, the normally applicable provisions of the National Policy on Rehabilitation and resettlement, currently in force, would be applicable.

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State	Discom Name	Discom	Homes		Mobility		Indus		TNG		MSC	
			Billed Units (Apr'22 to Nov'22)	Billed Amount (Apr'22 to Nov'22)	Billed Units (Apr'22 to Nov'22)	Billed Amount (Apr'22 to Nov'22)	Billed Units (Apr'22 to Nov'22)	Billed Amount (Apr'22 to Nov'22)	Billed Units (Jun'22 to Nov'22)	Billed Amount (Jun'22 to Nov'22)	Billed Units (Jun'22 to Nov'22)	Billed Amount (Jun'22 to Nov'22)
TS	Telangana State Southern Power Distribution Company Limited	TSSPDCL	3922291	42724514	525965	5785610	2746290	30248984	405073	3475994	14943181	145657958
TS	Telangana State Northern Power Distribution Company Limited	TSNPDCL	-	-	82168	901513	68317198	758311897	524585	4445584	-	-
TS	Rural Electric Co-Operative Society Limited	RECSL	-	-	-	-	141699604	1583087954	-	-	-	-
	Total payout in TS		**3922291**	**42724514**	**608133**	**6687123**	**212763092**	**2371648835**	**929658**	**7921578**	**14943181**	**145657958**

State	Discom Name	Discom	Homes		Mobility		Indus		TNG		MSC	
			Billed Units (Apr'21 to Mar'22)	Billed Amount (Apr'21 to Mar'22)	Billed Units (Apr'21 to Mar'22)	Billed Amount (Apr'21 to Mar'22)	Billed Units (Apr'21 to Mar'22)	Billed Amount (Apr'21 to Mar'22)	Billed Units (Apr'21 to Mar'22)	Billed Amount (Apr'21 to Mar'22)	Billed Units (Apr'21 to Mar'22)	Billed Amount (Apr'21 to Mar'22)
TS	Telangana State Southern Power Distribution Company Limited	TSSPDCL	6200948	61368607	940161.6	9401616	209492592	2094925920	745675	7531320	27526853	235338016
TS	Telangana State Northern Power Distribution Company Limited	TSNPDCL	-	-	146495.9	1464959	101235616	1012356160	953673	9632098	1916080	16134840
TS	Rural Electric Co-Operative Society Limited	RECSL	-	-	-	-	-	-	-	-	-	-
	Total payout in TS		**6200948**	**61368607**	**1086657**	**10866575**	**310728208**	**3107282080**	**1699348.416**	**17163419**	**29442933**	**251472856**

BEFORE THE HON'BLE TELANGANA STATE

ELECTRICITY REGULATORY COMMISSION,

SINGERENI BHAVAN

O.P. No. 81 of 2022

Southern Power Distribution Company of Telangana Limited

…Petitioner

And

M/s Bharti Airtel Ltd.

…Respondent

OBJECTIONS,

FILED ON: 30.01.2023

FILED BY

SAI SANJAY SURANENI
AVANIJA INUGANTI
D PRUDHVI TEJA

ADOCATE

COUNSEL FOR THE RESPONDENT