NORTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

(Distribution and Retail Supply of Electricity Licensee)

TSNPDCL

Business Plan for 5th & 6th Control Periods

(FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34)

4th July, 2023

BEFORE THE HONOURABLE TELANGANASTATE ELECTRICITY REGULATORY COMMISSION

At its Office at 5th Floor, Singareni Bhavan, Red Hills, Hyderabad - 500 004

FILING NO._____/2023
CASE NO. _____/2023

In the matter of:

Filing of Business Plan for the 5th and 6th Control Periods (FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34) in accordance with the Clause 38 of "Telangana State Electricity Regulatory Commission (Distribution Licence) Regulation No. 4 of 2016".

In the matter of:

NORTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

… Applicant

The Applicant respectfully submits as under: -

i. As per Clause 38 of Telangana State Electricity Regulatory Commission (Distribution Licence) Regulations, 2016 which are also referred as Regulation No. 4 of 2016, a Distribution licensee is required to submit Business Plan for such a period as the Hon'ble Commission may direct and shall update such plan annually.

ii. As per the Clause 38 of Regulation No. 4 of 2016, the Business Plan shall contain the following:

- Year Wise Load Growth
- Year Wise Distribution Loss Reduction proposal along with Specific Action Plan
- Metering Plan for Metering Interface Points
- Treatment of Previous Losses
- Cost Reduction Plan
- Other important financial analysis or parameters

iii. Earlier, the licensee on 10.10.2022 had filed Business Plan for 5th year of the 4th Control Period being FY 2023-24 before the Hon'ble Commission for its approval along with an application for condonation of delay. However, the Hon'ble Commission vide its Order dated 21.11.2022 in O.P. (SR) No. 104 of 2022 & I.A. (SR) No. 105 of 2022 had rejected the filing stating certain observations related to timelines. The relevant extracts of the Order dated 21.11.2022 are as follows:

"9. The Commission having noticed the submissions recorded above and in view of the fact that the matter has been examined on its regulatory side. The Commission is of the view that in any case, the distribution licensee is required to file the Resource Plan which consists of both Distribution Plan (Business Plan) and Power Procurement Plan for a period of ensuing two (2) control periods in a few months time. Therefore, examining this petition at this point of time is futile exercise. Accordingly, the petition is refused to be entertained and thus it is rejected.

Consequently, the interlocutory application does not survive and accordingly the same also stands rejected."

iv. From the above Order, it can be inferred that the licensee is required to file the Business Plan for two control periods which at this juncture being 5th and 6th Control Periods (FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34).

v. The licensee on 31.03.2023 has filed the Resource Plan Petition for the 5th and 6th Control Periods as per the applicable Regulations and Guidelines.

vi. The licensee herewith submits the Business Plan for the 5th & 6th Control Periods for the review and approval of the Hon'ble Commission.

vii. This filing has been discussed and approved by TSNPDCL and Sri V.Mohan Rao Chief General Manager (IPC & RAC) of TSNPDCL has been authorized to execute and file the said document on behalf of TSNPDCL. Accordingly, the current filing documents are signed and verified by, and backed by the affidavit of Sri V.Mohan Rao, Chief General Manager (IPC & RAC) of TSNPDCL.

viii. In the aforesaid facts and circumstances, the Applicant requests that the Hon'ble Commission may be pleased to:

a. Take the accompanying application of TSNPDCL on record and treat it as complete;

b. Approve the Business Plan for the 5th Control Period (FY 2024-25 to FY 2028-29) and 6th Control Period (FY 2029-30 & FY 2033-34);

c. Grant suitable opportunity to TSNPDCL within a reasonable time frame to file additional material information that may be subsequently required;

d. Pass such order as the Hon'ble Commission may deem fit and proper in the facts and circumstances of the case.

Petitioner

Chief General Manager
IPC & RAC, TSNPDCL
WARANGAL

Place: Hanumakonda

Dated: 04.07.2023

BEFORE THE HONOURABLE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION

At its Office at 5th Floor, Singareni Bhavan, Red Hills, Hyderabad- 500004

FILING NO._____/2023
CASE NO. _____/2023

In the matter of:

Filing of Business Plan for the 5th and 6th Control Periods (FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34) in accordance with the Clause 38 of "Telangana State Electricity Regulatory Commission (Distribution Licence) Regulation No.4 of 2016".

In the matter of:

NORTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

... Applicant

AFFIDAVIT OF APPLICANT VERIFYING THE ACCOMPANYING PETITION

I, Sri V.Mohan Rao, S/o V.Maisaiah aged 59 years, Occupation: Chief General Manager (IPC & RAC), TSNPDCL, Hanumakonda, R/o Hanumakonda do solemnly affirm and say as follows:

1) I am Chief General Manager (IPC & RAC)/TSNPDCL, I am competent and duly authorized by TSNPDCL to affirm, swear, execute and file this affidavit in the present proceedings.

2) I have read and understood the contents of the accompanying application drafted pursuant to my instructions. The statements made in the paragraphs of accompanying application now shown to me are true to my knowledge derived from the official records made available to me and are based on information and advice received which I believe to be true and correct.

DEPONENT
Chief General Manager
IPC & RAC, TSNPDCL
WARANGAL

VERIFICATION

The above-named Deponent solemnly affirm at Hanumakonda on this 4th day of July, 2023 that the contents of the above Affidavit are true to my knowledge no part of it is false and nothing material has been concealed there from.

DEPONENT
Chief General Manager
IPC & RAC, TSNPDCL
WARANGAL

Solemnly affirmed and signed before me.

General Manager
IPC & RAC, TSNPDCL
WARANGAL

Contents

1. Introduction

As per Clause 38 of Telangana State Electricity Regulatory Commission (Distribution Licence) Regulations, 2016 which are also referred as Regulation No. 4 of 2016, a distribution licensee is required to submit Business Plan for such a period as the Hon'ble Commission may direct and shall update such plan annually.

The relevant quote of the Clause 38 is as follows:

"38.1 Subject to other regulations notified by the Commission, the Distribution Licensee shall submit a Business Plan within three (3) months of the Distribution Licence coming in force for such period as the Commission may direct and shall update such plan annually. The Business Plan shall, inter-alia, contain (i) year wise load growth, (ii) year wise Distribution loss reduction proposal along with specific action plan, (iii) metering plan for metering interface points, (iv) treatment of previous losses, (v) cost reduction plan, and (vi) other important financial analysis or parameters,

***Provided that the existing licensees shall submit such Business Plans within three (3) months from date of notification of this Regulation**.*

38.2 The Distribution Licensee shall submit full details to the Commission, by the end of first quarter of each financial year, regarding the progress made in implementing the Business Plan of the previous financial year with the comparison of actual implementation vis-a-vis the Plan as approved by the Commission."

The licensee on 10.10.2022 had filed Business Plan for 5th year of the 4th Control Period being FY 2023-24 before the Hon'ble Commission for its approval along with an application for condonation of delay for non submission of the Business Plan till such period. However, the Hon'ble Commission vide its Order dated 21.11.2022 in O.P. (SR) No. 104 of 2022 & I.A. (SR) No. 105 of 2022 had rejected the filing made by the licensee stating certain observations related to timelines. The relevant extracts of the Order dated 21.11.2022 are as follows:

"7. The 'Load Forecast and Resource Plan Guidelines, 2006' issued by the erstwhile Commission, which has been adopted by TSERC (Adoption) Regulation No.1 of 2014 stipulates that –

"3.5 Distribution Planning

3.5.1 Each holder of a Distribution and Retail Supply Licence shall plan for a period of two Control Periods and develop its Distribution System in accordance with provisions of Section 42 of the Electricity Act 2003 and paragraph 19 of its Distribution and Retail Supply Licence so as to ensure that, subject to the availability of adequate generating and transmission capacity, the system is capable of providing consumers within its area of supply with an adequate, safe and economical supply of electricity, having regard to quality, continuity and reliability of service.

3.5.2 Each Licensee shall formulate a plan for its Distribution System in accordance with the Load Forecast for the plan period (a "Distribution Plan"). The Distribution Plan shall adopt planning criteria consistent with, and be designed to meet, the Distribution System Planning and Security Standards adopted pursuant to paragraph 18 of its Distribution and Retail Supply License.

The Distribution Licensees shall submit detailed distribution plans for the Control Period under consideration for tariff review listing out proposed schemes, and an indicative overall investment plan for the subsequent Control Period. The Distribution Plan shall clearly demonstrate segregation into:

▪ *System Expansion Plan: This list scheme whose primary objective is to undertake network reinforcement or expansion to cater to load growth and electrification;*

▪ *System Improvement Plan: This will have schemes whose primary objective is Loss reduction or Improvement in quality of supply or Automation of operations;*

▪ *Generation Evacuation: This will list the schemes required to evacuate generated power.*

3.5.3 The planning study shall take account of any demand on the Licensee's existing or planned distribution capacity arising from projected wheeling transactions, that is, the transport of power through the Licensee's distribution system for delivery to customers.

3.5.4 The Licensee shall also work out alternate scenarios with different levels of investment and demonstrate the impact on efficiency, quality of service and tariff for the consumers. It shall demonstrate the affordability of these investments by developing Business Plans for the same for the duration of the plan Period.

The alternate scenarios would include, but not be limited to calculating the investment levels required.

▪ *to maintain quality of service standards as existing at the time of submitting the Resource Plans; and*

▪ *to meet the quality of service standards set by the Commission.*

8. It is clear that as per the 'Load Forecast and Resource Plan Guidelines, 2006' the distribution licensee shall plan for a period of two (2) control periods and develop its distribution system and also develop the Business Plan/Distribution Plan for the duration of the Plan Period i.e., two (2) control periods and shall also submit full details to the Commission, by the end of first quarter of each financial year, regarding the progress made in implementing the Business Plan of the previous financial year with the comparison of actual implementation vis-à-vis the Plan as approved by the Commission as per Clause 38 of TSERC (Distribution Licence) Regulation No.4 of 2016.

9. The Commission having noticed the submissions recorded above and in view of the fact that the matter has been examined on its regulatory side. The Commission is of the view that in any case, the distribution licensee is required to file the Resource Plan which consists of both Distribution Plan (Business Plan) and Power Procurement Plan for a period of ensuing two (2) control periods in a few months time. Therefore, examining this petition at this point of time is futile exercise. Accordingly, the petition is refused to be entertained and thus it is rejected. Consequently, the interlocutory application does not survive and accordingly the same also stands rejected."

From the above Order, it can be inferred that the licensee is required to file the Business Plan for two Control Periods, which, at this juncture being 5th and 6th Control Periods (FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34).

The licensee on 31.03.2023 has filed the Resource Plan Petition for the 5th and 6th Control Periods as per the applicable Regulations and Guidelines.

The licensee herewith submits the Business Plan for the 5th & 6th Control Periods for the review and approval of the Hon'ble Commission.

2. Business Plan

2.1 Year-wise Load Growth

The licensee, in the Resource Plan filing for 5th and 6th Control Periods has submitted the year wise Load Growth (MU) by considering modified trend method wherein the historical trends in usage have been modified based on a case-to-case basis based on the assessment of the licensee. Following is the summary of the sales for 5th and 6th Control Period:

Category wise Sales forecast for 5th & 6th control period for each Circle is developed primarily based on analysis of historical data and applying appropriate growth rates based on CAGR (mostly adopting 5yrs or 1yr CAGR & moderated growth rate in case of abnormal CAGRs). The Circle wise Sales Forecast is consolidated to arrive at Sales Forecast of TSNPDCL.

The category wise Sales projections thus obtained for 5th &6th control period along with effective CAGR are as follows:

Table 1 Sales Projection for FY 2023-24 and 5th Control Period -TSNPDCL

Description	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	Effective CAGR of 5th Control Period
Total LT Category	**13740**	**14460**	**15222**	**16028**	**16879**	**17779**	**5.29%**
LT-I Domestic	4243	4491	4753	5032	5328	5642	5.86%
LT-II Non-domestic/Commercial	915	972	1033	1098	1168	1243	6.33%
LT-III Industrial	245	251	257	263	269	275	2.33%
LT-IV Cottage Industries	9	10	10	11	11	12	6.24%
LT-V Agriculture	7890	8285	8699	9134	9591	10070	5.00%
LT-VI Street Lighting & PWS	370	380	389	399	409	420	2.53%
LT-VII General Purpose	58	61	64	67	70	74	5.03%
LT-VIII Temporary Supply	8	9	9	9	10	10	5.00%
LT-IX EVs	1	4	8	15	23	32	91.82%
Total HT Category	**6803**	**7257**	**7763**	**8316**	**8922**	**9586**	**7.10%**
HT-I Industry Segregated & Ferro Alloys	2151	2280	2447	2632	2840	3071	7.39%
HT-II Others (Commercial)	190	201	213	225	238	252	5.73%
HT-III Airports, Bus Stations and Railway Stations	8	8	8	8	9	9	2.35%
HT-IV(A) Govt. Lift Irrigation Schemes	2209	2426	2666	2929	3219	3537	9.88%
HT-IV(B) CPWS	532	544	558	571	585	599	2.40%
HT-V(A) Railway Traction	553	588	614	641	670	700	4.85%
HT-VI Townships and Residential Colonies	141	144	147	150	153	156	2.00%
HT-VII Temporary Supply	32	33	34	35	36	37	2.71%
HT-VIII RESCOs	987	1031	1076	1124	1173	1225	4.41%
HT-IX EVs	0	0	0	0	0	0	-
Total (LT+HT)	**20543**	**21717**	**22985**	**24344**	**25801**	**27365**	**5.90%**

Table 2 Sales Projection for 6th Control Period -TSNPDCL

Description	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34	Effective CAGR of 6th Control Period
Total LT Category	**18618**	**19501**	**20430**	**21408**	**22438**	**4.77%**
LT-I Domestic	5976	6331	6709	7111	7539	5.97%
LT-II Non-domestic/Commercial	1323	1408	1499	1597	1702	6.49%
LT-III Industrial	282	288	295	302	309	2.37%
LT-IV Cottage Industries	13	14	15	16	18	7.69%
LT-V Agriculture	10473	10892	11328	11781	12252	4.00%
LT-VI Street Lighting & PWS	430	441	453	464	476	2.57%
LT-VII General Purpose	78	82	86	90	95	5.07%
LT-VIII Temporary Supply	11	11	12	13	13	5.00%
LT-IX EVs	33	33	33	33	34	0.91%
Total HT Category	**10316**	**11119**	**12003**	**12980**	**14059**	**7.96%**
HT-I Industry Segregated & Ferro Alloys	3332	3625	3955	4329	4752	9.12%
HT-II Others (Commercial)	266	282	299	317	336	5.97%
HT-III Airports, Bus Stations and Railway Stations	9	9	9	10	10	2.38%
HT-IV(A) Govt. Lift Irrigation Schemes	3887	4273	4696	5162	5674	9.91%
HT-IV(B) CPWS	613	628	643	659	675	2.44%
HT-V(A) Railway Traction	732	765	800	837	876	4.59%
HT-VI Townships and Residential Colonies	159	163	166	169	172	2.00%
HT-VII Temporary	38	39	40	41	42	2.83%
HT-VIII RESCOs	1279	1335	1394	1456	1520	4.41%
HT—IX EVs	0	0	0	0	0	-
Total (LT+HT)	**28934**	**30620**	**32434**	**34388**	**36497**	**5.93%**

2.1.1 Load Forecast (MW)

In the Resource Plan for 5th and 6th Control Period submitted by the licensee has used Time-series method for projection of load in MW. The Time-series method use time as independent variable to produce demand. Historic data is taken into account to establish the pattern of hourly demand. The pattern is then used to project the future hourly demand. Since time series methods are more accurate over a short period of time, the forecast is limited to the 5th Control Period.

For the projection of demand for the H2 FY 2022-23, FY 2023-24, 5th Control Period, hourly demands from 1st April 2016 till 28th Feb 2023 were studied to derive the trend of demand for 24 hours. Hourly demand for remaining FY 2022-23 till FY 2028-29 are projected based on established trend. Seasonality factor has been derived from the variation in demand for each date, for a specific hour, in different months. Based on this input, an output has been calculated using the following equation:

Y (Projected Hourly Demand) = Z * (m X + C)

Where:

Z: Seasonality Factor

m: Slope of the hourly plotted demand

X: nth Day from the starting date (i.e. 1st April 2016),

C: Intercept of the hourly plotted demand

The above projected hourly demand (Y) is treated as Base Demand. Demand attributed to additional loads have been added to the Base Demand to arrive at demand inclusive of additional loads viz. Railway Traction, Kakatiya Textile Park etc. The peak demand projected for the future years is as follows.

Description	FY 23-24	FY24-25	FY 25-26	FY26-27	FY 27-28	FY28-29
Peak Demand (MW)	7761	6585	6999	7414	9885	8239

The projected Contracted Demand- in MVA for 5th Control Period is as follows:

Particular	FY 2024-25		FY 2025-26		FY 2026-27		FY 2027-28		FY 2028-29	
	MU	MVA	MU	MVA	MU	MVA	MU	MVA	MU	MVA
Sales and Contracted Demand	21717	11394	22985	11815	24344	12278	25801	12786	27365	13347

2.2 Year-wise Distribution Loss Reduction proposal along with Specific Action Plan

2.2.1 Distribution Loss Reduction Proposal:

The year wise approved and actual losses for the period from FY 2016-17 to FY 2021-22 are as follows:

Voltage level	FY 2016-17		FY 2017-18		FY 2018-19		FY 2019-20		FY 2020-21		FY 2021-22	
	App.	Act.	App.	Act.	App.	Act.	App.	Act.	App.	Act.	App.	Act.
LT (%)	5.50	6.56	5.25	5.34	5.00	5.01	4.95	5.59	4.90	5.33	4.85	5.43
11kV (%)	4.23	4.50	4.20	4.24	4.15	3.92	3.89	3.88	3.86	3.88	3.83	3.88
33kV (%)	4.00	4.31	4.00	4.12	4.00	3.58	3.56	3.06	3.54	3.01	3.52	3.01

The licensee observes that by considering the actual Agriculture sales, the loss at LT Voltage level is higher than the loss approved by the Hon'ble Commission. The incremental losses have resulted in additional procurement of energy for FY2021-22 for which the licensee has not gained any additional revenue. Considering the same, in the Resource Plan filing for 5th and 6th Control Periods, the licensee requested to consider the distribution loss reduction proposal by considering the actual losses of FY2021-22 (except 33 kV –for 33 kV level the losses approved by Hon'ble TSERC is considered as base in FY 2021-22) to arrive at the loss trajectory for the next two Control Periods.

The licensee is striving to reduce the losses by the implementation of loss reduction measures like strengthening of the network infrastructure, addition of network elements and vigorously undertaking the Energy Audit visit to keep a close tab on the losses. Hence, the licensee humbly requests the Hon'ble Commission to approve the voltage wise loss trajectory for the 5th and 6th Control Periods as given in the below table:

Table 3 : Distribution Loss Trajectory for 5th Control Period

Description	FY 2021-22 (Actual)	FY 2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
LT Loss (%)	5.43%	5.40%	5.38%	5.37%	5.36%	5.35%	5.34%	5.33%
11kV Loss (%)	3.88%	3.87%	3.86%	3.853%	3.846%	3.839%	3.832%	3.825%
33kV Loss (%)	3.01%	3.50%	3.48%	3.474%	3.468%	3.462%	3.456%	3.45%

Table 4 : Distribution Loss Trajectory for 6th Control Period

Description	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
LT Loss (%)	5.32%	5.31%	5.30%	5.29%	5.28%
11kV Loss (%)	3.818%	3.811%	3.804%	3.797%	3.79%
33kV Loss (%)	3.444%	3.438%	3.432%	3.426%	3.42%

The estimation of total distribution losses in the distribution system for the 5th control period is as follows:

Table 5 : Estimated distribution loss for FY 2023-24 and 5th Control Period – TSNPDCL

Description	FY2021-22 (Actual)	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
Distribution Losses including EHT (%)	9.15%	9.48%	9.39%	9.36%	9.30%	9.25%	9.19%	9.13%
Distribution Losses Excluding EHT (%)	10.81%	11.26%	11.17%	11.11%	11.09%	11.07%	11.05%	11.03%

Table 6 : Estimated distribution losses in the distribution system for the 6th Control Period

Description	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
Distribution Losses including EHT (%)	9.06%	8.99%	8.91%	8.83%	8.75%
Distribution Losses Excluding EHT (%)	11.00%	10.96%	10.93%	10.89%	10.85%

2.2.2 Action Plan for Distribution Loss Reduction:

In order to bring down Distribution losses to a sustainable level, Discoms plan to carry out the following initiatives:

- Bifurcation of over loaded 11kV and 33 kV feeders
- Bifurcation of existing mixed rural feeders into exclusive agricultural feeders, to know the exact agriculture sales & distribution losses and also to regulate the agriculture supply as per the directions of Govt. of Telangana, if instructed.
- 11kV AB cables are proposed wherever there is difficulty in maintaining minimum clearance from overhead lines in cities and towns (nearer to buildings or between the conductors in the circuit or tree growth areas)
- LT AB cable is proposed in theft prone areas in TSNPDCL to reduce commercial losses. High loss divisions have been selected for LT AB cable installation
- IT/OT initiatives - LT & HT Billing and Customer Care, Customer Relationship Management, Energy Audit, BW/MIS, GIS and Network analysis, Centralised Customer care, web self service, Network Management System & Enterprise Management System

- Loss reduction by reliability improvement -Proposal for providing of 33KV & 11KV covered conductor in tree prone area, Proposal for reinforcement of existing 33KV & 11 kV line with HTLS conductor, where there is no provision for constructing new line
- Implementation of SCADA projects, and DMS to improve reliability and also to improve sales
- Additional Power transformers in existing 33/11 kV substations, where the existing power transformers are overloaded
- Providing of additional DTRs and enhancement of capacity of DTRs .
- Replacement and Refurbishment of 33 kV, 11 KV& LV worn out breakers.
- Renovation of DTR earthing
- Replacement of defective & providing new AB switches
- GIS of Existing Network
- KVAH Billing to all LT consumers whose monthly consumption is more than 500 units.
- Erection of capacitors to Agriculture motors.

Further, in the Retail Supply Tariff Order(s), Hon'ble Commission directed the licensee to provide an action plan for reduction of AT & C losses in areas where the AT&C losses are more than 15%.

The following circles are having AT & C Losses above 15% for the FY 2021-22:

S.No	Name of the Circle	AT&C Losses
1	Peddapally	27.28%
2	Karimnagar	26.75%
3	Jayashanakar(Bhupalaplly)	17.97%
4	Bhadradri(Kothagudem)	16.72%
5	Mahabubabad	16.32%
6	Komaram Bheem(Asifabad)	15.56%

On further analysis of the data it is further noticed that main reason for AT&C Losses above 15% in all above circles are due to non collection of CC charges from Government services. AT&C losses of all circles are less than 15% in all above circles except Komaram Bheem (Asifabad) is 16.75% without Government services.

The action plan for reduction of AT&C losses in the circles with AT&C more than 15% is as below:

- Augmentation of Power Transformer Capacity, New Substations and Capacitor banks
- Bifurcation of over loaded feeders
- Prepaid Meters to all Government Services.
- To collect pending Government arrears
- TOD billing in select LT categories - High Value LT Domestic, Commercial and LT Industry

- Periodical inspection of services to reduce the Commercial Losses.

Further,in the licensee area, 869 Nos. 11 kV, 2 MVAR and 516 Nos. 11 kV, 1 MVAR Capacitor banks are erected at 33/11KV Substations for reduction of losses and improvement of power factor. 449 Nos. 600 kVAR line capacitor banks are erected on overloaded 11 kV feeders. Further, tender process for procurement of 87 Nos. 11 kV ,2 MVAR and 20 Nos. 11 kV,1 MVAR Capacitor Banks has been completed and erection will be taken up shortly.

2.3 Metering plan for Metering Interface Points

2.3.1 Metering for interface points

The licensee has achieved 100% metering of feeders. However, as per the requirements of Regulation No. 3 of 2021 (being TSERC (Deviation Settlement Mechanism and related matters) Regulation, 2021) i.e., to implement Intrastate Deviation Settlement Mechanism (DSM), it is necessary to install new ABT meters with features of Time synchronization and compatibility to Automatic Meter Reading for fetching metered data from boundary (Transco-Discom) points.

The licensee has 265 Nos. PTR HV/LV boundaries connected to 116 No.132/33 KV Substations.

Currently TSSLDC/TSTRANSCO has undertaken the task of installation of new meters and is expected to complete by 31.12.2023

2.3.2 Consumer Metering

In GO MS No.1, Dt:03.01.2016, Energy (Budget) Department, Govt. of Telangana, it was decided that all Govt. Departments should have prepaid meters at their own cost w.e.f 1st April,2016.

As per the above GO, TSNPDCL purchased 18812 prepaid meters for installation of meters to Govt. services and 15035 meters are fixed as on Dt:10.05.2023.

As per Gazette notification Dt:17.08.2021, it is mandated that all the meters (other than Agriculture Consumers) are to be replaced with Prepaid Smart Meters by the Year’ 2025 in a phased manner for which GoI Grant is 15% of the Cost of the meter (Limited to Rs.900/- per meter).

Accordingly a draft DPR for Smart Prepaid Metering for Consumers (excluding Agriculture Consumers) and System Metering under RDSS has been prepared and is to be approved by Distribution Reforms Committee (DRC) and also by the Telangana State Cabinet for final approval by MoP, GoI.

The Distribution Reforms Committee (DRC) & District Electricity Committee (DEC) submitted proposals to Energy Department, GoTS for which approval is under process. The licensee shall take up the implementation of Smart Metering as soon as it receives the funding.

2.3.3 Agricultural DTR Metering

As per the Hon'ble Commission's directive in RST Order for FY 2023-24, the licensee is directed to achieve 100% Agricultural DTR metering within a period of twelve (12) months. In this regard, the licensee submits that it is a policy matter and requires huge investment for installation of 2,32,526 meters for AGL DTRs an amount of Rs.378.55 Crs. is required and for maintenance of these meters an amount of Rs.136.16 Crs. on yearly basis is required.

2.4 Treatment of previous losses

In order to bring down the distribution losses incurred following measures are being carried out:

High-Cost measures:

Bifurcation of over loaded 33 KV, 11KV & LT feeders and erection of new 33/11 KV Sub Stations to reduce line losses.

Low-Cost measures:

- Reducing length of 11 KV and LT lines by erecting interlinking lines and bifurcating feeders.
- Shifting of DTRs to load centre.
- Sealing of meters and shifting of meters from inside to outside the consumer premises.
- Replacement of deteriorated wires and services to avoid any cause of leaking and loss of power.
- Preventing Leakages at Insulators: Cracking of insulator and flashover across insulators often cause outages and result in loss of power.

No Cost measures:

- Load balancing of DTRs.
- The existing capacitor banks in the substations are being checked on daily basis to maintain the power factor in 33 KV feeders.
- Eliminating the chances of unaccounted energy by replacing the faulty /sluggish consumer energy meters.
- Physical verification of all Nil consumption, UDC, and OSL services on regular basis to curb theft of energy.
- Proper calculation of Multiplication Factors of all meters. Changing of C.T. ratio/PT ratio results in reducing the recording of energy.
- Conducting special drives on high loss feeders with DPE and Operation teams in regular basis.

- Energy audit is brought online and losses of all EHT, 33KV feeders, 11KV feeders are being calculated on monthly basis. Energy audit of all EHT services is being done through online. Similarly, Energy audit is being done Jurisdiction wise for effective monitoring.
- Identification of high loss feeders for attending exceptional, booking of theft cases, replacement of old Mechanical meters, segregation of overloaded 11KV feeders etc.,
- With the above, the T&D losses of the company are being reduced and the details of the losses are as follows:

S. No	Financial Year	% (Loss)
1	2017-18	11.01
2	2018-19	9.90
3	2019-20	9.04
4	2020-21	9.02
5	2021-22	8.76
6	2022-23(up to Sep 22)	8.79

- During the PAT Cycle-II for the period from FY 2016-17 to FY 2018-19, the loss percentage including EHT during target year i.e.FY 2018-19 is 9.90% against the target of 10%. The energy savings achieved is 12.80 MU i.e.1100.972 Toe (Tons of oil equivalent). Out of the which, 164 Nos. Escerts are traded upto 30th June, 2023.

The assessed units on back billing due to meter defects and booking of the theft of energy cases are 16.631 MUs in FY 2020-21, 23.768 Mus in FY 2021-22 and 36.35 MUs in FY 2022-23. These units are in division wise format.

2.5 Cost Reduction Plan

2.5.1 Need for more accuracy in demand projections

A smart software tool for the demand forecasting can be used, which can efficiently estimate the demand at various intervals of a day. It would help in a long-term forecast which will lead to better planning of upcoming capacity additions, address the seasonal demand variations and also reduce the need for payment of higher per-unit fixed charges during surplus situation. Timely inputs from the Meteorological and Irrigation Dept. may be taken in order to bring in more accuracy.

A web-based tool is under development for Day Ahead and Intra Day Demand forecast for optimization of power purchase cost. The tool is currently managed by TSTRANSCO.

2.5.2 Better Management of seasonal Load

In the view of the upcoming (and existing) - agriculture and LIS loads that are seasonal in nature, efficient management of the demand is required to avoid higher payment of fixed charges during the off-season periods, by leveraging existing IT infrastructure.

The banking mechanism can be one of the solutions that may be explored, in finding other states with complementary demand pattern, allowing the state to bilaterally trade power during the peak and off-peak seasons of respective states.

2.5.3 Other Cost reduction measures

- Review of the Existing Loans and Interest rates
- Reduction in Working Capital Interest costs via timely realisation of outstanding receivables

2.6 Other important financial analysis or parameters.

2.6.1 Snapshot of investments

The licensee, in the Resource Plan for 5th and 6th Control Periods has submitted capital investments for 5th and 6th Control Periods as follows:

Total Capex of TSNPDCL for 5th Control Period in Rs. Cr.						
Particular	**FY 2024-25**	**FY 2025-26**	**FY 2026-27**	**FY 2027-28**	**FY 2028-29**	**Total 5th CP**
Base Capex	955.36	1095.22	1272.71	1422.67	1714.15	6460.12
Other Capex	439.48	522.61	621.16	730.91	763.72	3077.88
Total Capex for TSNPDCL	**1394.84**	**1617.83**	**1893.87**	**2153.59**	**2477.88**	**9538.00**

Total Capex of TSNPDCL for 6th Control Period in Rs. Cr.						
Particular	**FY 2029-30**	**FY 2030-31**	**FY 2031-32**	**FY 2032-33**	**FY 2033-34**	**Total 6th CP**
Base Capex	1479.48	1610.75	1721.55	1906.90	2058.85	8777.54
Other Capex	463.58	554.21	662.76	787.51	818.32	3286.38
Total Capex for TSNPDCL	**1943.06**	**2164.95**	**2384.31**	**2694.41**	**2877.18**	**12063.91**

2.6.2 Capital Expenditure and Capitalization

The Capital Expenditure and Capitalization proposed for the 5th Control Period is shown in the Table below. The below information is limited for 5th Control Period itself considering the indicative figures for 6th Control Period and uncertainty of economic parameters for future period.

Figures in Rs. Crore

Description	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Opening Balance of Capital Work in Progress (CWIP)	503.38	552.08	610.29	714.56	794.07	883.07	976.40
Capital Expenditure during the year	513.58	630.32	1394.84	1617.83	1893.87	2153.59	2477.88
Expenses Capitalized	50.71	54.36	106.70	110.05	111.29	110.07	110.39
Interest During Construction	32.26	43.50	103.08	117.18	120.69	128.12	129.82
Transfer to fixed assets	547.85	669.97	1500.35	1765.56	2036.84	2298.45	2629.81
Closing CWIP	552.08	610.29	714.56	794.07	883.07	976.40	1064.68

2.6.3 Financing of Investments proposed for 5th Control Period

The financing of investments proposed for the 5th Control Period is shown in the Table below. The below information is limited for 5th Control Period itself considering the indicative figures for 6th Control Period and uncertainty of economic parameters for future period.

Figures in Rs. Crore

Description	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Capital Expenditure during the year	513.58	630.32	1394.84	1617.83	1893.87	2153.59	2477.88
Grants	390.14	401.46	426.98	555.64	676.94	750.93	810.67
Capital Expenditure other than Grants to be incurred for respective year	123.44	228.86	967.86	1062.19	1216.93	1402.66	1667.21

2.6.4 Consumer Contribution and Grants

The Consumer contribution and Grants for the 5th Control Period is shown in the Table below. The below information is limited for 5th Control Period itself considering the indicative figures for 6th Control Period and uncertainty of economic parameters for future period.

Figures in Rs. Crore

Description	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Opening Balance	2189.95	2477.64	2758.05	3074.35	3516.3	4077.56	4711.15
Additions during the year	390.14	401.46	426.98	555.64	676.94	750.93	810.67
Deductions during the year	102.45	121.05	110.68	113.69	115.68	117.34	119.62
Closing Balance	2477.64	2758.05	3074.35	3516.3	4077.56	4711.15	5402.2

Petitioner
Chief General Manager
IPC & RAC, TSNPDCL
WARANGAL

Place: Hanumakonda

Dated: 04.07.2023