



SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

From
Chief General Manager (RAC),
TSSPDCL, Corporate Office,
6-1-50, Mint Compound,
Hyderabad – 500 063.

To
The Secretary,
TSERC,
11-4-660, 5th Floor,
Singareni Bhavan, Red Hills,
Hyderabad – 500 004.

Lr. No.CGM(RAC)/SE(RAC)/DE(RAC)/F.A 103/D.No.197/23, Dt: 23-06-2023.

Sir,

Sub: TSSPDCL – Filing of Petition for Business Plan for 5th & 6th Control Periods i.e. FY2024-25 to FY2028-29 & FY2029-30 to FY2033-34 – Reg.

* * *

As per Regulation 4 of 2005, Clause 38, the Licensee is herewith submitting the petition for Business Plan for 5th & 6th Control Periods i.e. FY2024-25 to FY2028-29 & FY2029-30 to FY2033-34 with a request to kindly place the same before the Hon'ble Commission for approval. The cheque No.290439, dt: 23.06.2023 for an amount of Rs.25000/- towards petition fee is enclosed herewith.

Encl: 1.Petition in 6 sets

2. Cheque No.290439, dt: 23.06.2023

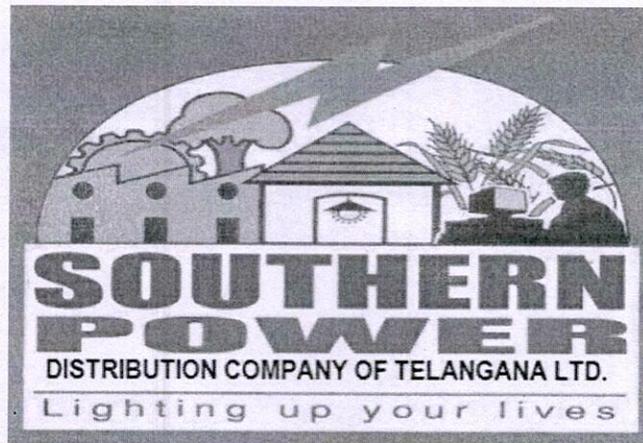
Yours faithfully,

Chief General Manager (RAC)
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Designation: CGM (RAC)
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**SOUTHERN POWER DISTRIBUTION COMPANY OF
TELANGANA LIMITED**

(Distribution and Retail Supply of Electricity Licensee)



**Business Plan for 5th & 6th Control
Periods**

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

23rd June, 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 Period (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, 2016".

In the matter of:

SOUTHERN 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) Regulation, 2016 which is 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. 102 of 2022 & I.A. (SR) No. 103 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 1.04.2023 has filed the Resource Plan Petitions 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 TSSPDCL and Sri Chilukamari Chakrapani, CGM(RAC) of TSSPDCL has been authorized to execute and file the said document on behalf of TSSPDCL. Accordingly, the current filing documents are signed and verified by, and backed by the affidavit of Sri Chilukamari Chakrapani, Chief General Manager (RAC) of TSSPDCL.
- 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 TSSPDCL 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 TSSPDCL 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

Place: Hyderabad

Dated: 23-06-2023


Petitioner

CHIEF GENERAL MANAGER
(RAC), TSSPDCL,
Corporate Office, 6-1-50,
Mint Compound, Hyd-500 063

**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 Period (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, 2016".

In the matter of:

SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

... Applicant

AFFIDAVIT OF APPLICANT VERIFYING THE ACCOMPANYING PETITION

I, Sri Chilukamari Chakrapani, S/o Sri Narasaiah, aged 55 years, Occupation: Chief General Manager (RAC), TSSPDCL, Hyderabad, R/o Hyderabad do solemnly affirm and say as follows:

- 1) I am Chief General Manager (RAC)/TSSPDCL, I am competent and duly authorized by TSSPDCL 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
(RAC), TSSPDCL,
Corporate Office, 6-1-50,
Mint Compound, Hyd-500 063**

VERIFICATION

The above-named Deponent solemnly affirm at Hyderabad on this 23rd day of June, 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
(RAC), TSSPDCL,
Corporate Office, 6-1-50,
Mint Compound, Hyd-500 063**

Solemnly affirmed and signed before me.

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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 (vii) 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 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. 102 of 2022 & I.A. (SR) No. 103 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 Licence.

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 1.04.2023 has filed the Resource Plan Petitions 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 TSSPDCL.

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 -TSSPDCL

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
LT-I Domestic	10608	11149	11721	12327	12970	13651	5.17%
LT-II Non-domestic/ Commercial	3157	3347	3549	3766	3997	4244	6.10%
LT-III Industrial	986	1022	1060	1099	1140	1183	3.71%
LT-IV Cottage Industries	10	10	11	11	12	12	4.03%
LT-V Agriculture	12657	13290	13955	14652	15385	16154	5.00%
LT-VI Street Lighting & PWS	482	493	504	514	526	537	2.16%
LT-VII General Purpose	88	93	98	103	108	114	5.33%
LT-VIII Temporary Supply	107	117	127	139	152	165	9.06%
LT-IX EVs	1	1	1	2	2	2	23.93%
Total LT	28096	29522	31026	32614	34291	36062	5.12%
HT I: General and Ferro Alloys	14,483	15,318	16,213	17,171	18,199	19,301	5.91%
HT II: Others	3,035	3,286	3,517	3,767	4,036	4,330	7.37%
HT III: Airports, Bus Stations and Railway Stations	63	107	125	142	150	158	20.37%
HT IV A: Irrigation & Agriculture	2,074	2,277	2,500	2,746	3,016	3,313	8.97%
HT IV B: CPWS	700	743	789	839	892	948	
HT V: Railway Traction and HMR	439	766	842	862	1,043	1,147	21.19%
HT VI: Townships & Residential Colonies	319	347	378	411	448	489	8.92%
HT VIII: Temporary	185	195	206	217	229	242	5.49%
HT IX EVs	8	15	17	18	20	21	22.96%
Total HT	21,304	23,053	24,587	26,174	28,034	29,950	7.05%
Total (LT + HT)	49,401	52,575	55,612	58,787	62,325	66,012	5.97%

Table 2 Sales Projection for FY 2023-24 and 6th Control Period -TSSPDCL

Description	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34	Effective CAGR of 6th Control Period
LT-I Domestic	14373	15139	15952	16814	17731	5.37%
LT-II Non-domestic/ Commercial	4507	4789	5090	5412	5757	6.29%
LT-III Industrial	1227	1274	1322	1372	1424	3.78%
LT-IV Cottage Industries	13	13	14	14	15	4.34%
LT-V Agriculture	16962	17810	18700	19635	20617	5.00%
LT-VI Street Lighting & PWS	549	560	573	585	598	2.17%
LT-VII General Purpose	120	127	134	141	149	5.46%
LT-VIII Temporary Supply	181	197	215	235	257	9.22%
LT-IX EVs	2	2	2	2	2	6.11%
Total LT	37933	39911	42001	44212	46550	5.24%
HT I: General and Ferro Alloys	20,484	21,754	23,117	24,582	26,157	5.98%
HT II: Others	4,645	4,987	5,357	5,758	6,193	7.42%
HT III: Airports, Bus Stations and Railway Stations	168	176	186	221	233	8.02%
HT IV A: Irrigation & Agriculture	3,640	3,999	4,394	4,828	5,306	9.01%
HT IV B: CPWS	1,009	1,075	1,145	1,221	1,303	
HT V: Railway Traction and HMR	1,261	1,386	1,524	1,661	1,843	10.50%
HT VI: Townships & Residential Colonies	533	581	635	693	757	9.13%
HT VIII: Temporary	255	270	285	302	320	5.75%
HT IX EVs	23	24	26	27	29	6.05%
Total HT	32,019	34,252	36,668	39,293	42,139	7.07%
Total (LT + HT)	69,952	74,163	78,670	83,505	88,689	6.08%

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 2018 till 31st October 2022 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:

$$Y \text{ (Projected Hourly Demand)} = Z * (m X + C)$$

Where:

Z: Seasonality Factor

m: Slope of the hourly plotted demand

X: nth Day from the starting date (i.e. 1st April 2018),

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. HMR, GMR and Railway traction. 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)	8,812	9,514	9,970	10,416	10,874	11,330

The projected Contracted Demand- in MU and 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								
Contracted Demand and Sales	49401	24657	52575	24812	55612	26362	58787	28052	62325	29889

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:

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 - TSSPDCL

Description	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
LT Loss (%)	5.66%	5.65%	5.64%	5.63%	5.62%
11kV Loss (%)	4.18%	4.17%	4.17%	4.16%	4.15%
33kV Loss (%)	3.59%	3.59%	3.58%	3.57%	3.56%

Table 4 Distribution loss trajectory for 6th Control Period - TSSPDCL

Description	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
LT Loss (%)	5.61%	5.60%	5.59%	5.58%	5.58%
11kV Loss (%)	4.14%	4.14%	4.13%	4.12%	4.11%
33kV Loss (%)	3.56%	3.55%	3.54%	3.53%	3.53%

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

Table 5 Estimated distribution loss for 5th Control Period - TSSPDCL

Description	FY2021-22 (Actual)	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
Distribution Losses including EHT (%)	9.14%	9.26%	9.17%	9.06%	9.00%	8.95%	8.88%	8.82%
Distribution Losses Excluding EHT (%)	10.47%	10.67%	10.58%	10.53%	10.49%	10.45%	10.41%	10.36%

Table 6 Estimated distribution loss for 6th Control Period - TSSPDCL

Description	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
Distribution Losses including EHT (%)	8.76%	8.70%	8.64%	8.57%	8.50%
Distribution Losses Excluding EHT (%)	10.32%	10.28%	10.23%	10.19%	10.14%

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 TSSPDCL 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 dense areas in HUA area, Proposal for reinforcement of existing 33KV (& 11KV) 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 in Hyderabad Urban Area and towns
- 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

Further, in the earlier 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 licensee has identified five circles with AT&C losses more than 15% and the action plan for reduction of AT&C losses in the respective circles is herewith presented below:

1. Hyderabad-South:

S. No	Reason	Action Plan
1	Theft/Direct Tapping/unauthorized usage of power supply	Every month intensive inspections are being conducted by Operation wings and DPE wing to minimize the Theft /Direct Tapping /Unauthorized usage of Power Supply to reduce the losses. During the FY 2021-22, 9971 Nos. cases were booked with an assessment amount of Rs. 10,59,15,477/- FY 2022-23 300 Nos cases were booked with an assessment amount of Rs. 97,64,715/-, The Existing LT OH Lines are replaced by 70 sq.mm LT AB Cable in phased manner so that theft of energy by direct tapping can be avoided.
2	Replacement of non IR Port meters and mechanical Meters with high quality IRDA Port meters	To Improve the billing and to minimize the losses the monthly targets are fixed to replace the Non IR Port meters with IR/IRDA port meters in this regard strict instructions are issued to officer concerned to take action accordingly. So far, 5200 Nos Meters IRDA were sanction din 2021-22 and replacement is under progress.
3	11kV overloaded feeders	Total 13 Nos 11KV overloaded feeders >150Amps are being identified in summer – 2019 and bifurcation works are being carried out by the construction wing and CBD to provide quality of supply as well as reduction of Technical losses. Out of 13 Nos. , 10 Nos completed. The balance works will be completed by the end of June 2022

4	Network strengthening and enhancement of overloaded DTRs	It is proposed to erect 90 Nos additional DTRs of various capacities and capacity will be enhanced for 131 Nos DTRs during FY 2021-22 for reducing further network losses and to improve reliability of supply. During the FY 2021-22, 127 Nos DTRs were drawn & erected till now. The addl. Circuits to be provided in 160 kVA, 250 KVA, 315 KVA and 500 KVA existing DTRs, for more than 75 Amps in each Ckt. The 280Nos estimates were sanctioned with 70 Sq mm AB Cable with quantity of 91 KM out of which 57 KM LT AB Cable the works are completed.
5	Minimizing of breakdowns and interruptions	Regular maintenance of 11KV feeders and LT Lines, DTRs and RMUs etc. are being carried out for minimizing of breakdowns and interruptions to minimize the losses & Improve the Sales
6	Erection of New Sub Stations	02 No. 33/11 KV Dabeerpura New Sub-station and 33/11KV Miralam filters will be charged to the end of June-22 and to provide reliable and quality of power supply to the consumers, and reduction of technical losses.

2. Hyderabad – Central:

Hyd Central Circle is having three operation divisions: Saifabad, Azamabad and Mehdipatnam. Out of the three Divisions Mehdipatnam Division is having highest losses (24.57%) when compared with saifabad Division (9.71%) & Azamabad Division (8.94%).

Mehdipatnam Division consists of areas like Asifnagar, Golconda, Langar House, Shaikpet, Mehdipatnam, Rethibowli etc. These areas are mostly old city areas and presently developing. The feeders are old and lengthy. Both Technical and Commercial losses are high in these areas. The proposed action plan for this area is as follows:

1. New Sub stations and new 11kv feeders are being proposed under RDS Scheme. In Mehdipatnam Division two new 33/11KV SS(1). OU colony SS and (2) Anandvihar SS with 12 nos. new feeders are proposed.
2. Bifurcation of the following 11kv over load feeders is proposed in RDS Scheme (FAPCCI, Red hills, AfzalSagar, Murad Nagar, Gollabasthi, BSNL, Fathedarwaza, Prashanth Nagar, Sri Ram nagar and GHMC. Park).
3. Every month intensive inspections with officers from DPE wing and operation wing are being conducted for 2 days. Energy Meters, suspected of tampering, are being referred to MRT wing.
4. Replacement, of energy meters with Smart Energy meters, is being proposed.

With the above actions, in due course, the energy losses both Technical Loss and commercial loss will come down.

3. Gadwal:

The AT&C losses variance month on month is basically due to non- payment of HT Services of Govt. schemes like lift irrigation (with demand from 4/21 to 02/22 of 105 cr with min 3.0 Cr in 5/21 & 22 Cr in 7/21). Mission Bhageeratha water works (monthly average demand of

1.0Cr) etc. whose demand is very high when compared with LT & private HT Services demand.

While the LT demands are being collected every month (nearly 100%) and cumulative collection for the year 21-22 is above 100%, but HT demand 100% collection is not being achieved due to non-payment of C.C. Charges by the Govt. in LI & Water schemes and dues remain at 9.4 Cr by the end of 02/22.

Due to short fall in H.T. collections only AT & C Losses are appearing on high side. Statement of HT Pvt. and Govt. demand and collection are here with enclosed. Further it is submitted that technical and commercial losses will be reduced further in towns, MHQs and villages by making special efforts like intensive inspections by vigilance/DPE teams, attending to regular meter exceptional etc.

S. No	Month/Year	Total Demand	HT (Rs. in Crores)							
			Demand			Collection			% Collection	
			Pvt	Govt.	Total	Pvt	Govt.	Total	Pvt	Govt.
1	Apr-21	18.04	0.96	5.18	6.14	0.95	14.99	15.94	98.96	244.14
2	May-21	16.56	1.06	4.57	5.63	1.06	0.08	1.14	100.00	1.42
3	Jun-21	19.17	1	7.82	8.82	0.95	0.13	1.08	95.00	1.47
4	Jul-21	29.98	1.02	23.6	24.62	1	20.79	21.79	98.04	84.44
5	Aug-21	16.09	1.19	9.29	10.49	1.19	9.91	11.1	100.00	94.47
6	Sep-21	19.07	1.15	12.52	13.67	1.16	10.14	11.3	100.87	74.18
7	Oct-21	23.2	1.14	16.26	17.4	1.22	8.94	10.16	107.02	51.38
8	Nov-21	20.71	1.14	13.95	15.09	1.05	9.98	11.03	92.11	66.14
9	Dec-21	15.55	1.11	9.17	10.28	1.12	8.54	9.66	100.90	83.07
10	Jan-22	18.2	1.2	11.96	13.16	1.22	0.04	1.26	101.67	0.30
11	Feb-22	14.15	1.18	7.79	8.97	1.16	17.09	18.25	98.31	190.52
	Total	210.72	12.15	122.11	134.27	12.08	100.63	112.71	99.42	82.41

4. Wanaparthy:

The AT&C losses variance month on month is basically due to non-payment of HT Services of Govt. schemes like lift irrigation, Mission Bhageeratha water works (with demand from 4/21 to 02/22 of 411.60 crores) etc., whose demand is very high when compared with LT & private HT Services demand.

While the LT demands are being collected every month (nearly 100%) and cumulative collection for the year 21-22 is above 100%, but HT demand 100% collection is not being achieved due to non-payment of C.C. Charges by the Govt. in LI & Water schemes and dues remain at 234.11 Cr by the end of 02/22.

Due to short fall in H.T. collections only, the AT & C Losses are appearing on high side. Statement of HT Private and Govt. demand and collection are here with enclosed. Further, it is submitted that technical and commercial losses will be reduced further in towns, MHQs and villages by making special efforts like intensive inspections by vigilance/DPE teams, attending to regular meter exceptional etc.

S. No	Month/Year	HT (Rs. in Crores)							
		Demand			Collection			% Collection	
		Pvt	Govt.	Total	Pvt	Govt.	Total	Pvt	Govt.
1	Apr-21	1.37	50.82	52.19	1.44	0.04	1.49	95	0
2	May-21	1.61	47.48	49.09	1.66	42.01	43.67	97	88
3	Jun-21	1.41	18.6	20.01	1.41	0.02	1.43	100	0
4	Jul-21	1.71	18.98	20.69	1.7	0.13	1.83	101	1
5	Aug-21	1.86	22.42	24.28	2.24	0.02	2.27	83	0
6	Sep-21	2.02	34.81	36.83	1.77	27.99	29.76	114	80
7	Oct-21	1.93	40.36	42.28	2.11	27.88	29.99	91	69
8	Nov-21	1.84	42.66	44.5	1.89	25.11	27	97	59
9	Dec-21	1.86	50.88	52.73	1.75	27.98	29.73	106	55
10	Jan-22	1.89	38.33	40.23	2.04	26.26	28.3	93	69
11	Feb-22	1.82	46.26	48.08	1.77	0.05	1.82	103	0
	Total	19.32	411.6	430.91	19.78	177.49	197.29	98	43

5. Vikarabad:

The AT&C losses variance month on month is basically due to non- payment of HT Services of Govt. services like Hospitals, Municipal Sewerage treatment plants and Mission Bhageeratha Water works (with nearly 5 Crs. Average monthly demand).

While the LT demands are being collected every month (nearly 100%) and cumulative collection for the year 21-22 is above 100%, but HT demand 100% collection is not being achieved due to non- payment of C.C. Charges by the Govt. in Water schemes and dues remain at 53.68 Cr by the end of 03/22.

Due to short fall in H.T. collections only, the AT & C Losses are appearing on high side statement of HT Pvt and Govt. services demand and collection is here with enclosed. Further it is submitted that technical and commercial losses will be reduced further in towns, MHQs and villages by making special efforts like intensive inspections by vigilance/DPE teams, attending to regular meter exceptional etc.

S. No	Month/Year	HT (Rs. in Crores)							
		Demand			Collection			% Collection	
		Pvt	Govt.	Total	Pvt	Govt.	Total	Pvt	Govt.
1	Apr-21	8.28	23.33	31.61	4.38	23.42	52.93	100.39	87.96
2	May-21	8.25	21.39	29.64	1.07	21.25	12.94	99.34	75.29
3	Jun-21	8.04	19.91	27.95	4.58	19.93	57.00	100.10	87.71
4	Jul-21	11.01	19.81	30.82	4.55	20.24	41.29	102.18	80.42
5	Aug-21	7.91	24.39	32.30	3.99	24.40	50.39	100.04	87.88
6	Sep-21	11.10	23.76	34.86	6.56	23.91	59.09	100.61	87.39
7	Oct-21	8.34	30.64	38.98	4.14	31.33	49.64	102.26	91.00
8	Nov-21	74.03	71.07	145.11	6.18	70.58	8.35	99.31	52.90
9	Dec-21	9.90	31.01	40.91	69.29	31.38	699.58	101.19	246.05
10	Jan-22	10.30	29.35	39.65	5.80	28.70	56.31	97.81	87.02
11	Feb-22	10.85	30.03	40.88	5.90	31.33	54.39	104.34	91.08
12	Mar-22	10.83	33.76	44.59	8.73	35.76	80.63	105.91	99.77
	Total	178.84	358.45	537.29	125.16	362.24	69.98	101.06	90.71

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 348 No.s PTR HV/LV boundaries connected to 148 No.s 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

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 the metering arrangements for Distribution Transformers was already proposed under RDSS in which metering to Agriculture Distribution Transformers was also covered. The proposal of TSSPDCL under RDSS was submitted to the Nodal Agency for which the concurrence of GoTS is required. In this regard, a letter was addressed to the office of Chief Minister from the Energy Department for approval. Upon approval from GoTS, the work of providing meters to agriculture Distribution Transformers will be taken up under RDSS scheme.

2.4 Treatment of previous losses

Year	% Loss
2017-18	11.36
2018-19	10.34
2019-20	9.43
2020-21	9.60
2021-22	9.00
2022-23 (Upto Sep-22)	8.53

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.

The assessed units on meter defects and the theft of energy cases are 39.24 MUs in FY 2020-21. 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 Loads

In 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 Period has submitted capital investments for 5th and 6th Control Period as follows:

Total Capex of TSSPDCL for 5 th Control Period in Rs. Cr.						
Particular	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	Total 5 th
Base Capex	1553.93	1719.43	1868.38	2037.84	2250.53	9430.11
Other Capex	914.40	1071.26	1182.51	1289.48	1335.50	5793.15
Total Capex for TSSPDCL	2468.32	2790.69	3050.89	3327.32	3586.03	15223.26

Total Capex of TSSPDCL for 6 th Control Period in Rs. Cr.						
Particular	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	Total
Base Capex	2257.19	2361.21	2643.14	2748.66	3233.19	13243.39
Other Capex	955.84	1037.97	1092.89	1144.88	1211.52	5443.10
Total Capex for TSSPDCL	3213.02	3399.18	3736.03	3893.55	4444.70	18686.49

2.6.2 Cost of debt

The licensee projects the rate of interest on loans (to be availed for creation of assets) as 10.50% for 5th Control Period.

2.6.3 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)	1087.92	1080.43	1072.79	1060.22	1046.01	1030.47	1013.54
Capital Expenditure during the year	1471.55	1500.98	2468.32	2790.69	3050.89	3327.32	3586.03
Expenses Capitalized	110.91	113.12	186.03	210.32	229.94	250.77	270.27
Interest During Construction	16.85	17.19	28.26	31.95	34.94	38.11	41.07
Transfer to fixed assets	1606.8	1638.94	2695.18	3047.18	3331.30	3633.14	3915.64
Closing CWIP	1080.43	1072.79	1060.22	1046.01	1030.47	1013.54	995.27

2.6.4 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	1471.55	1500.98	1531.00	1561.62	1592.85	1624.71	1657.20
Grants	868.47	885.83	903.55	921.62	940.05	958.86	978.03
Capital Expenditure other than Grants to be incurred for respective year	603.08	615.15	627.45	640.00	652.80	665.85	679.17
Planned Loan/ Debt Portion of Capital Expenditure	397.13	613.35	625.62	638.13	650.90	663.91	677.19
Planned Equity Portion of Capital Expenditure	205.95	1.80	1.83	1.87	1.90	1.94	1.98

2.6.5 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	4323.66	4809.91	5305.88	5811.77	6327.78	6854.10	7390.96
Additions during the year	868.47	885.83	903.55	921.62	940.05	958.86	978.03
Deductions during the year	382.22	389.86	397.66	405.61	413.73	422.00	430.44
Closing Balance	4809.91	5305.88	5811.77	6327.78	6854.10	7390.96	7938.55