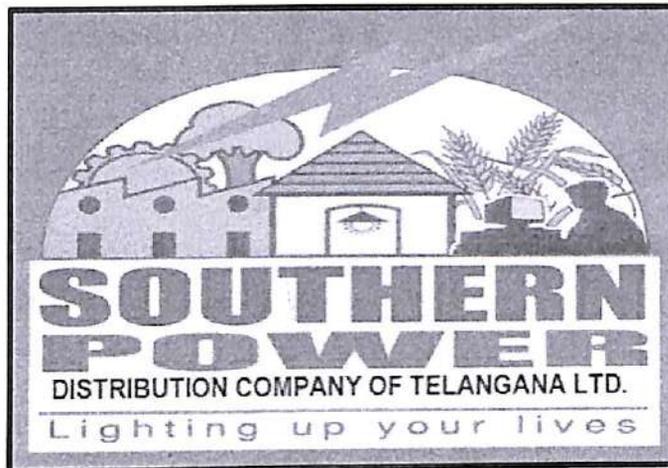


**SOUTHERN POWER DISTRIBUTION COMPANY OF
TELANGANA LIMITED**

(Distribution and Retail Supply of Electricity Licensee)



**Filing of Resource Plan for
5th & 6th
Control Periods**

**(FY2024-25 to FY2028-29
&
FY 2029-30 to FY 2033-34)**

1st April, 2023

**BEFORE THE HONOURABLE TELANGANA STATE 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 Resource Plan for the 5th & 6th Control Periods (FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34) in accordance with the Clause 9 of "Andhra Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Wheeling and Retail Sale of Electricity) Regulation, 4 of 2005" as adopted by Telangana State Electricity Regulatory Commission vide Telangana state Electricity Regulatory Commission (Adoption) Regulation, 2014.

In the matter of:

SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED ...
Applicant

6-1-50, Corporate Office, Mint Compound, Hyderabad 500063, Telangana, India.

Phone No. (040) 2343 1018; Fax No. (040) 2343 1082; website: www.tssouthernpower.com

The Applicant respectfully submits as under: -

- i. In accordance with clause 9 of the "Andhra Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Wheeling and Retail Sale of Electricity) Regulation 4 of 2005" as adopted by Telangana State Electricity Regulatory Commission vide Telangana state Electricity Regulatory Commission (Adoption) Regulation, 2014 the Resource Plan shall contain the following:

- Sales Forecast
- Load Forecast
- Power Procurement Plan and
- Distribution Plan

"The Distribution Licensee shall file for Commission's approval a Resource Plan on 1st April of the year preceding the first year of Control Period. The Resource Plan shall inter alia, contain the Sales Forecast, Load Forecast, Power Procurement Plan

and a Distribution Plan (Capital Investment Plan) consistent with the requirements of the Commission's Guidelines on Load Forecast and Resource Plan (Distribution Plan and Power Procurement Plan) as amended from time to time."

- ii. The Hon'ble Commission shall approve the Resource Plan as per the Guidelines on Load Forecast, Resource Plan (Distribution Plan and Power Procurement Plan) and the Distribution Licensee shall adopt them in the Multi-Year and Annual filings for the respective Control period.
- iii. The Guidelines for Load Forecast, Resource Plan (Distribution Plan and Power Procurement Plan) state that the licensee shall submit a Resource Plan for a period of two control periods i.e., Load Forecast, Power Procurement from the year of commencement beginning from 1st April and ending on the following 31st March including a detailed plan for the Control Period under consideration for tariff review purpose and an indicative plan for the subsequent Control Period. The Fifth control period starts from 1st April 2024 and ends on 31st March 2029 while the Sixth control period starts from 1st April 2029 and ends on 31st March 2034.

The licensee herewith submits the Resource Plan for 5th & 6th Control Period (FY 2024-25 to FY 2028-29 & & FY2029-30 to FY2033-34) for the review and approval of the Hon'ble Commission.

Sales Forecast:

The licensee has used modified trend method is used for projecting the sales wherein the historical trends have been modified based on a case to case basis based on the assessment of the licensee. For arriving at the projections for H2 of FY 2022-23 and from the period from FY 2023-24, CAGR for earlier 5 years period has been computed for each category in each circle for considering the appropriate growth rate.

- In FY 2022-23, the licensee increased the number of circles to 21 from the existing 20 circles with the new circle being named Narayanpet which is formed from existing Mahabubnagar circle.
- The 5yr, 4yr, 3yr, 2yr & 1yr CAGR of the sales growth for the period FY2016-17 to FY2021-22 and FY 2017-18 to FY 2022-23 were computed for each consumer category in each circle. The HT and LT sales for FY2021-22 (October, 2021 to March, 2022) are used as a base for H2 FY 2022-23 and the estimated sales for FY 2022-23 are used as a base for the projections from FY 2023-24.

- The Circle wise Sales Forecast is consolidated to arrive at Sales Forecast of TSSPDCL.
- Additional sales volume anticipated due to Electric vehicles, Railway Traction Sub-Stations and Airports is added to the circle wise sales forecast. The additional loads are considered based on the requirement given by the South -Central Railways (SCR), Hyderabad Metro Rail Limited (HMR), GMR Hyderabad International Airport (GMR) and the information available with the Discom.

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

Category wise Projected Sales in MU for 5 th Control Period						
Category	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
LT I: Domestic	10607.96	11149	11721	12327	12970	13651
LT II: Non-Domestic/Commercial	3156.82	3347	3549	3766	3997	4244
LT III: Industry	985.96	1022	1060	1099	1140	1183
LT IV: Cottage Industries	9.89	10	11	11	12	12
LT V: Agriculture	12657.20	13290	13955	14652	15385	16154
LT VI: Street Lighting & PWS	482.46	493	504	514	526	537
LT VII: General	88.13	93	98	103	108	114
LT VII: Temporary Supply	107.24	117	127	139	152	165
LT-IX EVs	0.63	1.28	1.45	1.59	1.74	1.85
Total LT	28096	29522	31026	32614	34291	36062
HT I: General, Ferro Alloys & HMWS	14483	15318	16213	17171	18199	19301
HT II: Others	3035	3286	3517	3767	4036	4330
HT III: Airports, Bus Stations and Railway Stations	63	107	125	142	150	158
HT IV Government LIS & CPWS	2774	3020	3290	3585	3908	4262
HT V: Railway Traction and HMR	439	766	842	862	1043	1147
HT VI: Townships & Residential Colonies	319	347	378	411	448	489
HT VIII: Temporary	185	195	206	217	229	242
HT-IX EVs	8	15	17	18	20	21
Total HT	21304	23053	24587	26174	28034	29950
Total (LT + HT)	49401	52575	55612	58787	62325	66012

Category wise Projected Sales in MU for 6 th Control Period					
Category	2029-30	2030-31	2031-32	2032-33	2033-34
LT I: Domestic	14373	15139	15952	16814	17731
LT II: Non-Domestic/Commercial	4507	4789	5090	5412	5757
LT III: Industry	1227	1274	1322	1372	1424

LT IV: Cottage Industries	13	13	14	14	15
LT V: Agriculture	16962	17810	18700	19635	20617
LT VI: Street Lighting & PWS	549	560	573	585	598
LT VII: General	120	127	134	141	149
LT VII: Temporary Supply	181	197	215	235	257
LT-IX EVs	1.96	2.08	2.21	2.34	2.49
Total LT	37933	39911	42001	44212	46550
HT I: General, Ferro Alloys & HMWS	20484	21754	23117	24582	26157
HT II: Others	4645	4987	5357	5758	6193
HT III: Airports, Bus Stations and Railway Stations	168	176	186	221	233
HT IV Government LIS & CPWS	4649	5074	5539	6050	6609
HT V: Railway Traction and HMR	1261	1386	1524	1661	1843
HT VI: Townships & Residential Colonies	533	581	635	693	757
HT VIII: Temporary	255	270	285	302	320
HT-IX EVs	23	24	26	27	29
Total HT	32019	34252	36668	39293	42139
Total (LT + HT)	69952	74163	78669.8	83505	88689

Loss Trajectory :

- The loss trajectory for the 5th and 6th control periods is proposed as below :

Description	FY2021-22 (Actual)	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
LT Loss (%)	5.77%	5.72%	5.67%	5.66%	5.65%	5.64%	5.63%	5.62%
11kV Loss (%)	4.25%	4.22%	4.19%	4.18%	4.17%	4.17%	4.16%	4.15%
33kV Loss (%)	3.20%	3.62%	3.60%	3.59%	3.59%	3.58%	3.57%	3.56%

The below table contains an indicative loss trajectory for the 6th Control period. The licensee would like to emphasize that the loss trajectory for the 6th Control period would depend on the actual achievement of the loss levels by the end of the 5th Control period.

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:

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%
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The estimation of total distribution losses in the distribution system for the 6th control period is as follows:

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%

Transmission Loss Trajectory:

The TS TRANSCO loss trajectory for the 5th and 6th control periods are proposed as below:

Description	Actual	Approved						
	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
Transmission Loss	2.47%	2.57%	2.50%	2.48%	2.46%	2.44%	2.42%	2.40%

Description	6 th Control Period				
	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
Transmission Loss	2.39%	2.37%	2.35%	2.34%	2.33%

PGCIL Loss trajectory:

The PGCIL losses are applicable on the power procurement from Central Generating Stations in the projections for 5th & 6th Control Periods.

The trajectory for the PGCIL losses (%) is as below:

	5 th Control Period				
	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
PGCIL Losses (%)	3.56%	3.54%	3.52%	3.50%	3.48%

	6 th Control Period				
	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
PGCIL Losses (%)	3.47%	3.45%	3.44%	3.42%	3.41%

CSPTCL Loss trajectory:

In the CSERC Order for determination of ARR and Tariff for CSPTCL (Chhattisgarh State Power Transmission Company Ltd., for the Control Period from FY 2022-23 to FY 2024-25, the Hon'ble CSERC has approved the CSPTCL losses as 3%.

Hence the Discoms have assumed the same to be applicable for all the years of 5th Control Period and for FY 2029-30 of 6th Control Period (as the PPA is expiring in FY 2029-30).

Description	5 th Control Period				
	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
CSPTCL Losses (%)	3.00%	3.00%	3.00%	3.00%	3.00%

Description	6 th Control Period				
	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
CSPTCL Losses (%)	3.00%	-	-	-	-

Load Forecast :

- The sales forecast output has been considered for projecting the energy requirement for the next two control periods.
- The sales projected are grossed up to 33kv losses as per the projected loss trajectory to arrive the energy requirement for the next two control periods.
- The energy requirement was further grossed up by 132kV losses to arrive the energy requirement of the licensee.
- The energy requirement for next two control periods is as below :

Particular	Energy Requirement in MU for 5 th & 6 th Control Period									
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
LT sales	29521.74	31025.81	32613.70	34290.56	36061.74	37933.08	39910.76	42001.35	44211.89	46549.87
11 kV sales	7196.74	7601.02	8031.53	8490.85	8980.42	9503.38	10062.39	10660.36	11300.48	11986.22
33 kV sales	7758.60	8304.49	8891.62	9523.29	10203.11	10934.98	11723.14	12572.20	13487.15	14473.44
132 kV sales	8098.10	8681.01	9250.51	10020.32	10766.46	11580.40	12466.53	13435.93	14505.29	15679.66
Total Energy Requirement	57812.23	61113.40	64567.29	68399.67	72397.85	76668.42	81229.03	86106.08	91332.83	96932.17
Total Sales	52575	55612	58787	62325	66012	69952	74163	78669.8	83505	88689
Aggregate Distribution Loss (%) incl EHT sales	9.06%	9.00%	8.95%	8.88%	8.82%	8.76%	8.70%	8.64%	8.57%	8.50%
TS TRANSCO Transmission Loss (%)	2.48%	2.46%	2.44%	2.42%	2.40%	2.39%	2.37%	2.35%	2.34%	2.33%
Total Energy Requirement at State Periphery (excl Interstate Transmission losses)	59282	62655	66182	70096	74178	78542	83201	88183	93521	99239
PGCIL Losses(%)	3.56%	3.54%	3.52%	3.50%	3.48%	3.47%	3.45%	3.44%	3.42%	3.41%
CSPTCL Losses (%)	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	-	-	-	-
Total External Transmission losses	808	797	772	755	650	354	321	319	320	315

Total Power Purchase Requirement at State Periphery	60,090	63,452	66,955	70,851	74,828	78,895	83,521	88,502	93,841	99,555
Aggregate Distribution Loss (%) excl EHT sales	10.53%	10.49%	10.45%	10.41%	10.36%	10.32%	10.28%	10.23%	10.19%	10.14%
Cumulative Transmission Losses (%)	3.79%	3.69%	3.57%	3.46%	3.25%	2.82%	2.74%	2.70%	2.67%	2.63%
Total T&D losses (%)	12.51%	12.36%	12.20%	12.03%	11.78%	11.34%	11.21%	11.10%	11.01%	10.91%

Power Procurement Plan

Energy Requirement :

The total energy requirement for Telangana State is arrived by adding the energy requirements of both the Discoms (TSSPDCL & TSNPDCL).

The energy requirement for 5th Control Period (FY 2024-25 to FY 2028-29) is tabulated below –

Energy Requirement (MU)	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
TSSPDCL	60,090	63,452	66,955	70,851	74,828
TSNPDCL	24,906	26,316	27,820	29,434	31,129
TELANGANA STATE	84,997	89,768	94,774	1,00,285	1,05,957

The energy requirement for 6th Control Period (FY 2029-30 to FY 2033-34) is tabulated below –

Energy Requirement (MU)	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
TSSPDCL	78,895	83,521	88,502	93,841	99,555
TSNPDCL	32,743	34,595	36,599	38,758	41,082
TELANGANA STATE	1,11,638	1,18,116	1,25,101	1,32,599	1,40,637

Summary of Energy Availability:

S No	Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	TS Genco – Thermal	52,970	58,955	58,933	59,032	58,940
2	TS Genco – Hydel	2,999	3,029	3,172	3,301	3,443

3	Central Generating Stations	28,550	28,232	27,913	27,293	23,085
4	NCES	18,577	18,574	18,449	18,320	18,295
5	Sembcorp Energy (IPPs)	2,360	2,360	2,360	2,367	2,360
6	CSPDCL (Chhattisgarh)	7,055	7,055	7,055	7,074	7,055
7	Singareni	9,244	9,244	9,244	9,270	8,911
	Total	1,21,754	1,27,451	1,27,126	1,26,658	1,22,090

S No	Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30
1	TS Genco – Thermal	58,844	58,530	58,624	58,521	58,537
2	TS Genco – Hydel	3,562	3,542	3,539	3,381	3,396
3	Central Generating Stations	22,891	23,033	23,014	22,969	22,993
4	NCES	18,179	18,179	18,126	18,126	18,126
5	Sembcorp Energy (IPPs)	2,360	2,360	2,367	2,360	2,360
6	CSPDCL (Chhattisgarh)	677	-	-	-	-
7	Singareni	8,911	8,911	8,938	9,244	9,244
	Total	1,15,424	1,14,555	1,14,608	1,14,601	1,14,657

Energy Balance:

Based on the Energy Requirement and Energy Availability projections mentioned in the above sections, the Energy Balance in the state for each year of the 5th & 6th Control Periods are as follows:

Particular	Energy Balance in MUs for 5 th Control Period				
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Energy Availability	1,21,754	1,27,451	1,27,126	1,26,658	1,22,090
Energy Requirement	84,997	89,768	94,774	1,00,285	1,05,957
Surplus/ (Deficit)	36,758	37,683	32,352	26,374	16,133

Particular	Energy Balance in MUs for 6 th Control Period				
	FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30
Energy Availability	1,15,424	1,14,555	1,14,608	1,14,601	1,14,657
Energy Requirement	1,11,638	1,18,116	1,25,101	1,32,599	1,40,637
Surplus/ (Deficit)	3,786	(3,561)	(10,493)	(17,997)	(25,981)

Power Procurement Plan (Short-term & Long-term):

Short-term plan for 5th Control Period:

- With the requirement growing year-on-year and considering the expected additional loads due to Lift Irrigation Schemes and Industrial and Commercial

categories, TS Discoms have entered into PPAs with TS Genco, CGS and NCES (Solar) generators.

- For 5th Control Period, the Discoms are in energy surplus scenario. The reason for it is due to addition of new capacity.
- Discoms have taken care of good energy mix by entering into PPAs with both Thermal and RE generating stations for 5th Control Period.

Long-term plan for 6th Control Period:

During the 6th Control Period, the Discoms have an energy deficit scenario. Discoms expect to meet the energy deficit by means of following measures.

- Based on the real-time conditions in future, if the new capacity in plants like Singareni and Telangana STPP are installed, then Discoms would explore entering PPAs with them as and when required.
- Discoms would ensure the cost effectiveness and would explore option of extending PPAs with CGS generators if required
- Discoms would explore the option of entering into PPAs with Renewable Energy generators as the variable costs from these are expected to reduce in future.
- In addition to these, Discoms would try to bridge smaller energy deficit gaps by utilizing the Short-term Market purchases

Capital Investment Plan :

- I. The historical subdivision wise actual sales LT + 11kV (inclusive of Open Access sales) are considered for last 6 years (FY 2016-17 to FY 2021-22) and CAGRs have been computed.
- II. The CAGR considered for each sub-division has been capped at maximum of 1% to moderate the numbers of network required.
- III. The following assumptions are made for network projections:

New Substation Addition:

- A new sub-station is added if the loading on the existing substation is greater than threshold set and no new PTRs can be added.
- **Urban:** A new sub-station is required if the sub-station capacity exceeds 16 MVA
- **Sub - Urban:** A new sub-station is required if the sub-station capacity exceeds 16 MVA
- **Rural:** A new sub-station is required if the sub-station capacity exceeds 10 MVA
- The new substation added will be of capacity 16 MVA (2*8 MVA) in Urban and Semi-Urban areas and 10 MVA (2*5MVA) in rural areas.

New PTR Addition and Upgradation of PTR:

- If the peak loading on PTRs' in substation is greater than the threshold set (% loading of its capacity) and if the substation can accommodate a new PTR
- An old PTR of 5 MVA capacity in an urban & sub-urban substation is upgraded to 8MVA in case it gets loaded beyond threshold limit.

- An old PTR of 3.15 MVA capacity in a rural substation is upgraded to 5 MVA in case it gets loaded beyond threshold limit.

New Feeder Addition :

- A new feeder would be required incase peak feeder current exceeds more than 150 A
- The peak currents in the feeders are distributed equally among the ones over loaded and then the new feeders are proposed as per the requirement.
- The number of feeders in a substation is limited to 6 in case of Urban and Semi-Urban areas and 4 in case of rural areas.

DTR Projections :

- LT sales (Excluding agri and Only Agri) adjusted for LT losses and thereafter sales per kVA (kWh/kVA) computed for 2022-23 for each circle based on the existing DTR Capacity (kVA) (Agri & Non Agri)
- Sales per kVA (circle wise) ratio has been used to project circle wise & year wise DTR Capacity (kVA) for the 5th & 6th control period.
- In the case of Non-Agricultural category, the sales/KVA ratio for each of the circle (kWh/kVA) has been moderated by 10% to arrive at the average numbers of DTR installation based on historical trend.
- In the case of Agricultural category, the sales/KVA ratio for each of the circle (kWh/kVA) has been moderated between 10% to 16% to arrive at the average numbers of DTR installation based on historical trend.
- Circle wise DTR No's are arrived based on the existing % configuration (capacity) but restricting DTR capacities to ≥ 100 kVA (100 KVA, 160 KVA, 315 KVA & 500 KVA) for Non -Agri. DTRs and 25 kVA.63 KVA & 100 KVA for Agri DTRs

The Network projection results i.e., no. of substations No. of PTRs, No. of feeders and No. of DTRs getting added during the 5th & 6th control period are detailed below:

TSSPDCL	Unit	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	5th Control period (FY24-25)
Substation Additions	Nos	66	80	87	88	90	93	438
PTR Additions	Nos	12	13	14	15	17	19	78
PTR Augmentation		67	67	68	69	71	72	347
Feeder Additions	Nos	2	10	14	22	29	14	88
DTR Unit Additions	Nos	29773	31586	33233	34966	36796	38724	175305

TSSPDCL	Unit	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	6 th Control period (FY30-34)
Substation Additions	Nos	93	97	99	100	102	491
PTR Additions	Nos	28	30	32	37	38	165
PTR Augmentation	Nos	83	83	91	95	100	452
Feeder Additions	Nos	15	21	34	46	21	137

DTR Unit Additions	Nos	34504	32958	37765	36215	44837	186279
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Base Capital Expenditure:

The Base Capex plan arrived for the network projections proposed for 5th & 6th control periods is as follows:

SNo.	Network Element	Base Capex in Rs. Cr. (5 th CP)					
		FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	Total
1	Sub-Station Unit Additions	521.34	582.73	615.79	655.69	731.93	3107.49
2	PTR Additions	9.71	10.84	12.06	14.11	17.07	63.78
3	PTR Augmentation	51.53	53.89	56.35	59.88	65.48	287.13
4	Feeder Additions	3.19	4.67	7.67	10.92	5.59	32.04
5	DTR Additions	969.23	1067.87	1176.51	1296.62	1429.10	5939.35
Total		1553.93	1719.43	1868.38	2037.84	2250.53	9430.11

SNo.	Network Element	Base Capex in Rs. Cr. (6 th CP)					
		FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY33-34	Total
1	Sub-Station Unit Additions	768.98	834.92	847.80	892.24	941.77	4285.71
2	PTR Additions	25.57	28.53	30.33	36.40	39.05	159.88
3	PTR Augmentation	82.16	85.92	94.96	102.82	113.28	479.14
4	Feeder Additions	6.27	9.39	15.05	21.66	10.26	62.62
5	DTR Additions	1374.21	1402.46	1655.01	1695.54	2128.82	8256.04
Total		2257.19	2361.21	2643.14	2748.66	3233.19	13243.39

Other Capital Expenditure:

The details of Other Capital Expenditure that the licensee is expected to incur for the 5th & 6th control period is as follows:

in Rs. Cr.

SNo	Investment Area	FY24-25	FY25-26	FY 26-27	FY27-28	FY 28-29	Total 5 th CP
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a	AT & C Loss Reduction	35.83	35.45	34.09	33.77	22.44	161.58
	Meter Replacement (Installation of High-Quality meters)	23.5	22.5	20.5	19.5	7.45	93.45
	Replacement of existing 35 sq.mm. conductor with 55 sq.mm. conductor and 20sqmm with 34sqmm	12.33	12.95	13.59	14.27	14.99	68.13
b	Reliability Improvement & Contingency Schemes	337.18	436.98	458.82	481.77	505.85	2220.60
	Auto-reclosures	0.00	25.30	26.57	27.90	29.29	109.06
	Sectionalisers	0.00	28.11	29.52	31.00	32.55	121.17
	3-way RMUs (SCADA compatible)	0.00	21.09	22.14	23.25	24.41	90.88
	Fault Passage Indicators (SCADA compatible)	0.00	8.43	8.86	9.30	9.76	36.35
	Reconductoring of lines	1.21	1.27	1.33	1.40	1.47	6.69
	Replacing OH line with UG cables	7.86	8.25	8.66	9.09	9.55	43.41
	Provision of alternate supply at 33KV level	31.24	32.80	34.44	36.16	37.97	172.61
	Addition of 33KV lines	27.27	28.64	30.07	31.57	33.15	150.70
	Bays -33 kV	3.96	4.16	4.37	4.59	4.82	21.91
	Provision of alternate supply at 11KV level	116.25	122.06	128.16	134.57	141.30	642.35
	Addition of 11KV line	115.96	121.76	127.84	134.24	140.95	640.74
	Bays -11 kV	0.29	0.30	0.32	0.34	0.35	1.60
	Provision of alternate supply LT voltage	180.63	189.66	199.14	209.10	219.55	998.08
	Addition of LT line	180.63	189.66	199.14	209.10	219.55	998.08
c	Renovation & Modernization	15.00	16.28	17.71	19.31	21.09	89.39
	R & M of existing assets	12.71	13.88	15.19	16.66	18.30	76.73
	R & M of SS	7.35	7.71	8.10	8.51	8.93	40.60
	R & M of civil infrastructure (Office buildings/ furniture)	5.36	6.16	7.09	8.15	9.37	36.13
	Proposed Retirement of existing assets	2.29	2.41	2.53	2.65	2.78	12.66
	33/11KV SS						0.00
	33KV line						0.00
	11KV line						0.00
	DTR	2.29	2.41	2.53	2.65	2.78	12.66
	LT line						0.00
d	New Consumer Capex	198.18	214.09	230.29	246.81	263.65	1153.02
	Network additions for release of new service connections	80	90	100	110	120	500.00
	-33KV line for new consumer (Including LI schemes)	80	90	100	110	120	500.00
	- Service Wire						0.00
	Consumer Meters	118.18	124.09	130.29	136.81	143.65	653.02
	- LT meters	62.98	66.13	69.44	72.91	76.55	348.00
	- HT metering set (Meter cost including CT/PT)	55.20	57.96	60.86	63.90	67.10	305.01
	Other Schemes (Pls Specify)						0.00
e	Civil Infrastructure Development	3.32	3.25	3.91	1.92	2.37	14.77
	Construction of Office buildings	3.09	2.99	3.62	1.59	2.01	13.29

	Furniture	0.17	0.19	0.21	0.23	0.25	1.05
	AC's	0.07	0.08	0.09	0.10	0.11	0.44
	Administrative Support (Computers)						0.00
f	Technology Upgradation	37.85	28.02	18.46	21.43	11.84	117.60
	Automation of Substations	5.00	5.25	5.51	5.79	6.08	27.63
	GIS mapping	0.04	0.04	0.04	0.04	0.05	0.21
	WAN	25.20	2.00	2.00	2.50	2.50	34.20
	AMR solutions	0.61	0.73	0.91	1.10	1.22	4.57
	SCADA Control center (new)	6.00	0.00	0.00	0.00	0.00	6.00
	ERP/IT applications	1.00	20.00	10.00	12.00	2.00	45.00
g	Land Cost for SS	58.38	83.35	114.37	128.55	141.73	526.38
h	Road Cutting Cost (Cables for SS)	3.66	3.84	4.84	5.93	6.54	24.80
i	AGL Feeder Segregation	225.00	250.00	300.00	350.00	360.00	1485.00
	Total	914.40	1071.26	1182.51	1289.48	1335.50	5793.15

S.No	Investment Area	2029-30	2030-31	2031-32	2032-33	2033-34	Total 6 th CP
a	AT & C Loss Reduction	15.74	16.52	17.35	18.22	19.13	86.96
	Meter Replacement (Installation of High-Quality meters)	0	0	0	0	0	0.00
	Replacement of existing 35 sq.mm. conductor with 55 sq.mm. conductor and 20sqmm with 34sqmm	15.74	16.52	17.35	18.22	19.13	86.96
b	Reliability Improvement & Contingency Schemes	531.15	557.70	585.59	614.87	645.61	2934.92
	Auto-reclosures	30.76	32.29	33.91	35.60	37.38	169.94
	Sectionalisers	34.17	35.88	37.68	39.56	41.54	188.82
	3-way RMUs (SCADA compatible)	25.63	26.91	28.26	29.67	31.15	141.62
	Fault Passage Indicators (SCADA compatible)	10.25	10.76	11.30	11.87	12.46	56.65
	Reconductoring of lines	1.54	1.62	1.70	1.79	1.88	8.53
	Replacing OH line with UG cables	10.03	10.53	11.05	11.61	12.19	55.40
	Provision of alternate supply at 33KV level	39.87	41.86	43.95	46.15	48.46	220.29
	Addition of 33KV lines	34.81	36.55	38.38	40.29	42.31	192.34
	Bays -33 kV	5.06	5.31	5.58	5.86	6.15	27.96
	Provision of alternate supply at 11KV level	148.37	155.78	163.57	171.75	180.34	819.82
	Addition of 11KV line	148.00	155.40	163.17	171.32	179.89	817.77
	Bays -11 kV	0.37	0.39	0.41	0.43	0.45	2.05
	Provision of alternate supply LT voltage	230.53	242.06	254.16	266.87	280.21	1273.83
	Addition of LT line	230.53	242.06	254.16	266.87	280.21	1273.83
c	Renovation & Modernization	22.61	24.26	26.04	27.96	30.05	130.91
	R & M of existing assets	19.69	21.19	22.81	24.58	26.49	114.76
	R & M of SS	9.38	9.85	10.34	10.85	11.40	51.81
	R & M of civil infrastructure (Office buildings/ furniture)	10.31	11.34	12.48	13.72	15.10	62.94

	Proposed Retirement of existing assets	2.92	3.07	3.22	3.38	3.55	16.15
	33/11KV SS	0	0	0	0	0	0.00
	33KV line	0	0	0	0	0	0.00
	11KV line	0	0	0	0	0	0.00
	DTR	2.92	3.07	3.22	3.38	3.55	16.15
	LT line	0	0	0	0	0	0.00
d	New Consumer Capex	280.83	298.37	316.29	334.61	353.34	1583.44
	Network additions for release of new service connections	130	140	150	160	170	750.00
	-33KV line for new consumer (Including LI schemes)	130	140	150	160	170	750.00
	- Service Wire						0.00
	Consumer Meters	150.83	158.37	166.29	174.61	183.34	833.44
	- LT meters	80.38	84.40	88.62	93.05	97.70	444.15
	- HT metering set (Meter cost including CT/PT)	70.45	73.97	77.67	81.56	85.63	389.28
	Other Schemes (Pls Specify)	0.00	0.00	0.00	0.00	0.00	0.00
e	Civil Infrastructure Development	3.38	2.44	1.96	2.01	3.46	13.25
	Construction of Office buildings	2.99	2.01	1.49	1.49	2.88	10.85
	Furniture	0.28	0.31	0.34	0.37	0.41	1.70
	AC's	0.12	0.13	0.14	0.16	0.17	0.71
	Administrative Support (Computers)	0	0	0	0	0	0.00
f	Technology Upgradation	12.23	39.56	36.39	26.75	27.12	142.05
	Automation of Substations	6.38	6.70	7.04	7.39	7.76	35.26
	GIS mapping	0.05	0.05	0.05	0.06	0.06	0.26
	WAN	3.00	30.00	4.00	4.00	4.00	45.00
	AMR solutions	0.31	0.31	0.31	0.31	0.31	1.53
	SCADA Control center (new)						0.00
	ERP/IT applications	2.50	2.50	25.00	15.00	15.00	60.00
g	Land Cost for SS	85.23	93.97	103.60	114.22	125.92	522.93
h	Road Cutting Cost (Cables for SS)	4.67	5.15	5.67	6.26	6.90	28.64
	Total	955.84	1037.97	1092.89	1144.88	1211.52	5443.10

TSSPDCL Capital Expenditure Summary (total):

The summarized capex for the licensee for 5th & 6th control period is proposed as below:

(in Rs. Cr.)

Particular	2024-25	2025-26	2026-27	2027-28	2028-29	Total 5 th Control Period (FY24-29)
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

(in Rs. Cr.)

Particular	2029-30	2030-31	2031-32	2032-33	2033-34	Total 6 th Control Period (FY 30-34)
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

This filing has been discussed and approved by TSSPDCL and Sri Chilukamari Chakrapani of TSSPDCL has been authorised 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, the Chief General Manager (RAC) of TSSPDCL.

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

- Take the Resource Plan application of TSSPDCL on record and treat it as complete;
- Approve the Resource Plan for 5th & 6th Control Periods;
- Grant suitable opportunity to TSSPDCL within a reasonable time frame to file additional material information that may be subsequently available;
- Pass such order as the Hon'ble Commission may deem fit and proper in the facts and circumstances of the case.

SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

.....Applicant

Through


CHIEF GENERAL MANAGER

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

Place: Hyderabad

Dated: 01.04.2023

 
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**BEFORE THE HONOURABLE TELANGANA STATE ELECTRICITY REGULATORY
COMMISSION**

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

CASE NO. _____/2023

In the matter of:

Filing of Resource Plan for the 5th & 6th Control Periods (FY 2024-25 to FY 2028-29 & FY 2029-30 to FY 2033-34) in accordance with the Clause 9 of "Andhra Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Wheeling and Retail Sale of Electricity) Regulation, 4 of 2005" as adopted by Telangana State Electricity Regulatory Commission vide Telangana state Electricity Regulatory Commission (Adoption) Regulation, 2014.

In the matter of:

SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITEDApplicant
6-1-50, Corporate Office, Mint Compound, Hyderabad 500063, Telangana, India.
Phone No. (040) 2343 1018; Fax No. (040) 2343 1082; website: www.tssouthernpower.com

The Applicant respectfully submits as under:

Affidavit of Applicant verifying the accompanying petition.

I, Sri Chilukamari Chakrapani, son of 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 the Chief General Manager (RAC) of Southern Power Distribution Company of Telangana Limited (TSSPDCL).
- 2 I am competent and duly authorized by TSSPDCL to affirm, swear, execute and file this affidavit in the present proceedings.

- 3 As such, I submit that I have been duly authorized by TSSPDCL to submit the application of TSSPDCL for Resource Plan filing for 5th Control Period as per Terms and Conditions of Tariff for Wheeling and Retail Sale of Electricity (Regulation 4 of 2005), to the Hon'ble Commission.
- 4 I submit that I have read and understood the contents of the appended application of TSSPDCL. The facts stated in the application are true to the best of my knowledge, which are derived from the official records made available and certain facts stated are based on information and advice which, I believe to be true and correct.

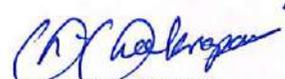
VERIFICATION:

I, the above-named Deponent solemnly affirm at Hyderabad on this **1st day of April 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




DEPONENT

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





V. Anil Kumar
Solemnly affirmed and signed before me.

V. ANIL KUMAR
COMPANY SECRETARY
TSSPDCL, Corporate Office & Registered Office
6-1-50, Mint Compound,
HYDERABAD-500 063. T.S.

SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

(Distribution and Retail Supply of Electricity Licensee)



Filing of Resource Plan for 5th & 6th Control Periods

**(FY 2024-25 to FY 2028-29
&
FY 2029-30 to FY 2033-24)**

1st April, 2023

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1. Introduction

The Filing of Resource Plan for 5th & 6th Control Periods i.e., FY2024-25 to FY28-29 & FY2029-30 to FY2033-34 in accordance with the Telangana State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Wheeling and Retail Sale of Electricity), Regulation 4 of 2005 for the Hon'ble Commission's approval shall contain the following:

- Sales Forecast
- Load Forecast
- Power Procurement Plan and
- Distribution Plan

The Hon'ble Commission shall approve the Resource Plan as per the Guidelines on Load Forecast, Distribution Plan and Power Procurement Plan and the Distribution Licensee shall adopt them in the Multi-Year and Annual filings (MYT) for the respective Control period.

The Guidelines for Load Forecast, Resource Plan (Distribution Plan and Power Procurement Plan) state that the licensee shall submit a Resource Plan for a period of two control periods i.e. Load Forecast, Power Procurement from the year of commencement beginning from 1st April and ending on the following 31st March including a detailed plan for the Control Period under consideration for tariff review purpose and an indicative plan for the subsequent Control Period.

The Fifth control period starts from 1st April, 2024 and ends on 31st March, 2029 while the Sixth control period starts from 1st April, 2029 and ends on 31st March, 2034. The licensee herewith submits a detailed Resource Plan for the next two control periods for the review and approval of the Hon'ble Commission.

The Resource Plan as submitted by the Licensee consists of the following sections

- Sales Forecast
- Loss Trajectory
- Load Forecast
- Power Procurement Plan
- Distribution Plan

2. Sales Forecast

The factors affecting the actual consumption are numerous and often beyond the control of the licensees (Govt. Policies, individual consumer's conditions, weather conditions, variations in demand-supply conditions of the consumer's product, etc.). Therefore, an accurate point-estimate of the consumption (sales by licensees) is not possible. Under such situation, the attempt is to look into various factors and estimate the interrelationships and explore various methodologies and analyze the range of results to arrive at a reasonably accurate forecast within a range and use a single point-estimate within the range for the limited purpose of estimating future costs/ revenues.

The methodologies to be used for sales forecast depend on various factors like the segment of consumers for which the forecast is being made, the time horizon of the forecast (short-term or long-term), availability of past data for relevant parameters, the desired nature and the level of details of the forecasts.

In order to capture the inherent characteristics of various categories and at different voltage levels, the licensee has prepared the sales forecast on past trends by using CAGR (Compounded Annual Growth Rate).

2.1. Approaches to Sales Forecasting

In order to develop appropriate methodology for sales forecasting, it is important to look into the approaches used for the purpose of sales forecasting.

2.1.1. Trend Method

This method is a non-causal model of demand forecasting which assumes that the underlying factors, which drive the demand for electricity, are expected to follow the same trend as in the past. These trends shall continue in the future except in certain categories.

The category wise & voltage wise sales forecast for all categories has been projected for the two control periods FY 2024-25 to FY 2028-29 and FY 2029-30 to FY 2033-34 by considering the following data:

Base Sales Data: Category-wise and voltage wise actual sales for FY 2016-17 to H1 of FY 2022-23 have been considered as the base sales data for the projection of sales for 5th and 6th Control Periods. Since the Regulation 4 of 2005 specifies to file the Resource Plan by 1st April of the year proceeding the first year of Control Period, i.e., by 1st April of 2023, the licensee has considered the category wise and voltage wise actual sales for FY 2016-17 to H1 of FY 2022-23.

Growth rates: For arriving at the projections for H2 of FY 2022-23 and from the period from FY 2023-24, CAGR for earlier 5 years period has been computed for each category in each circle for considering the appropriate growth rate.

The licensee has used a 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.

2.1.2. Econometric analysis

Econometric analysis is based on the identification of correlations between the demand for electricity and the explanatory variables. This method estimates the causal relationships between the energy consumption and the factors influencing consumption. This approach allows the explicit evaluation of the separate impacts of change factors, such as energy prices, real income, population, economic activity and other independent variables. However, under this approach, the implicit assumption is that relationships established in historical time series data and/ or cross-sectional data will persist in the future.

Out of various explanatory variables considered, State GDP and per capita income have statistically significant correlation with energy consumption. Based on the projections of the macro variables, Energy consumption levels can be estimated for next 5 years. Projecting State GDP and per capita income is complicated as they are further dependent on various economic, demographic, regulatory factors. In the absence of reliable source capturing the trend of macro variables, this approach was not carried out to project sales.

In view of this constraint, the modified trend method is felt to be more suitable for projection of sales and system expansion for the control period.

2.2. Sales Forecast for the Control Period

- In FY2017-18, the Licensee has re-organized the jurisdiction of existing Operation Circles/ Divisions/Sub-Divisions/Sections and subsequently formed total 20 Nos. circles covering all the Districts encompassed by TSSPDCL.
- In FY 2022-23, the licensee increased the number of circles from the existing 20 circles to 21 circles with the new circle being named Narayanpet which is formed from existing Mahabubnagar circle. The LT sales for the Narayanpet for FY H2 FY 2022-23 are estimated considering the growth rates considered for Mahabubnagar. However, for HT sales, the growth rates are considered based on the historical trends of the HT connections falling under the newly formed Narayanpet division.
- Further, it is to submit there are no load reliefs imposed since 14th November, 2014 and considering the same there is no necessity of considering the LR quantum separately for projections.
- The 5yr, 4yr, 3yr, 2yr & 1yr CAGR of the sales growth for the period FY2016-17 to FY2021-22 and FY 2017-18 to FY 2022-23 were computed for each consumer category in each circle. The HT and LT sales for FY2021-22 (October, 2021 to March, 2022) are used as a base for H2 FY 2022-23 and the estimated sales for FY 2022-23 are used as a base for the projections from FY 2023-24.
- The rate of growth of sales are significantly higher or lower in certain categories for FY 2022-23 over FY 2021-22. Higher growth rates in sales may be attributed to higher growth rates of H1 FY 2022-23 over H1 FY 2021-22 which may be on account of COVID 19 Pandemic and the lower or negative growth rates may be attributed to lower actual sales in H1 FY 2022-23.
- Category wise Sales forecast for each Circle is developed primarily based on analysis of historical data and applying appropriate growth rates based on CAGR. The Circle wise Sales Forecast then arrived is consolidated to arrive at Sales Forecast of TSSPDCL.
- Additional sales volume anticipated due to Electric vehicles, Railway Traction Sub-Stations and Airports is added to the circle wise sales forecast. The additional loads are considered based on the requirement given by the South-Central Railways (SCR), Hyderabad Metro Rail Limited (HMR), GMR Hyderabad International Airport (GMR) and the information available with the Discom.

2.3. Category wise sales projection

2.3.1. LT-I Domestic

Considering the past trend in the domestic sales in each Circle, the Licensee has adopted 5 yr CAGR & 1 yr CAGR for most of the circles and has arrived at appropriate growth rates at Discom level for the 5th Control Period. The YoY growth rates and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
YoY Growth	7.01%	5.06%	5.10%	5.13%	5.17%	5.21%	5.25%
Sales in MU	10097	10608	11149	11721	12327	12970	13651

Further, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	5.29%	5.33%	5.37%	5.41%	5.45%
Sales in MU	14373	15139	15952	16814	17731

2.3.2. LT-II Non-Domestic

Considering the past circle wise sales trend in this category, the licensee has adopted 5 yr CAGR and 4 yr CAGR for most of the circles. Further, in some of the circles moderated growth rate are considered considering the abnormal CAGRs. The growth rate and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	19.45%	5.98%	6.02%	6.06%	6.10%	6.13%	6.17%
Sales in MU	2979	3157	3347	3549	3766	3997	4244

Further, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	6.21%	6.25%	6.29%	6.33%	6.37%

Sales in MU	4507	4789	5090	5412	5757
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2.3.3. LT-III Industrial

Considering the past circle wise sales trend in this category, the Licensee has adopted 5 yr, 3 yr and 1 yr CAGR for majority of the circles. Further, in some of the circles moderated growth rate are considered considering the abnormal CAGRs and arrived at an overall sales growth at Discom level for the 5th control period. The growth rate and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	5.60%	3.67%	3.68%	3.70%	3.71%	3.72%	3.74%
Sales in MU	951	986	1022	1060	1099	1140	1183

Further, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	3.75%	3.77%	3.78%	3.79%	3.81%
Sales in MU	1227	1274	1322	1372	1424

2.3.4. LT-IV Cottage Industries

Considering the past circle wise sales trend in this category, the Licensee has adopted 5 yr, and 1 yr CAGR for majority of the circles. Moderated growth rates are adopted for few circles having abnormal CAGRs whereas appropriate CAGR is adopted for the remaining circles. Hence the growth rates arrived at Discom level for the 5th Control Period and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	4.55%	3.86%	3.91%	3.97%	4.03%	4.09%	4.15%
Sales in MU	9.52	9.89	10.27	10.68	11.11	11.57	12.05

Further, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	4.21%	4.28%	4.34%	4.41%	4.48%
Sales in MU	12.55	13.09	13.66	14.26	14.90

2.3.5. LT-V Agriculture

The licensee has projected the Agricultural Sales for H2 FY 2022-23 and FY 2023-24 and 5th Control Period at 5%. Further, the licensee expects the growth rate of 5% in agricultural category keeping in view the irrigation lands still to be cultivated which needs pumping water. The sales growth arrived at Discom level and corresponding sales projections for the 5th Control Period are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	-0.82%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Sales in MU	12054	12657	13290	13955	14652	15385	16154

Further, the projections of sales for the subsequent 6th Control Period are also made by considering 5% growth rate as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	5.00%	5.00%	5.00%	5.00%	5.00%
Sales in MU	16962	17810	18700	19635	20617

2.3.6. LT-VI Street Lighting & PWS

From the historical sales information, a reduction of sales is observed in this category in most of the circles, which may be due to increase in usage of LEDs for street lighting. Hence, a nominal growth rate of 2% is adopted for most of the circles, whereas 5 yr, 2 yr & 1yr CAGR are adopted for the remaining circles.

The sales growth arrived at Discom level and corresponding sales projections for the 5th Control Period are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	0.59%	2.16%	2.16%	2.16%	2.16%	2.16%	2.17%
Sales in MU	472	482	493	504	514	526	537

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	2.17%	2.17%	2.17%	2.17%	2.17%
Sales in MU	549	560	573	585	598

2.3.7. LT-VII General Purpose

Considering the past trend of sales in this category in each Circle, the Licensee has adopted 5yrs CAGR for most of the circles and moderated growth rate in the circles where the recorded CAGRs are abnormally high/low for sales projections. The sales growth arrived at Discom level for the 5th Control Period and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	34.24%	5.25%	5.28%	5.30%	5.33%	5.35%	5.38%
Sales in MU	84	88	93	98	103	108	114

Further, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	5.40%	5.43%	5.46%	5.49%	5.51%
Sales in MU	120	127	134	141	149

2.3.8. LT-VIII Temporary Supply

From the historical trends, it is observed that there has been much higher growth rates recorded under this category, however, due to uncertainty of sales trend in this category, a nominal growth rate of 10% is adopted for majority the circles and around 5% for rest of the circles for projecting the sales in 5th Control Period. Hence, the sales growth arrived at Discom level and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	19.15%	8.94%	8.98%	9.02%	9.06%	9.09%	9.13%
Sales in MU	98	107	117	127	139	152	165

Further, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	9.16%	9.19%	9.22%	9.25%	9.28%
Sales in MU	181	197	215	235	257

2.3.9. LT IX EV Charging Stations

With the increased emphasis on environmental sustainability, electric vehicles are expected to play a key role in transportation. Even though, the current sales are on lower side, the corresponding growth rates are higher considering the lower base, and this is likely to evolve over a longer time horizon and may reach sizeable proportion during later part of the next control period. The sales growth arrived at Discom level and corresponding sales projections are as follows:

Description	Estimates	Projections					
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Current Year	Next Year	5th Control Period				
Growth	134.49%	106.86%	103.06%	13.13%	9.58%	9.61%	5.95%
Sales in MU	0.31	0.63	1.28	1.45	1.59	1.74	1.85

Further, the projections of sales for the subsequent 6th Control Period are as follows:

Description	Projected Sales in MU				
	2029-30	2030-31	2031-32	2032-33	2033-34
Growth	6.00%	6.06%	6.11%	6.17%	6.22%
Sales in MU	1.96	2.08	2.21	2.34	2.49

2.3.10. HT-I Industrial and Ferro Alloys

At 11 kV voltage level, considering the past trend of sales in each circle, the licensee has adopted 5 yr and 4 yr CAGR for most of the circles, a moderated growth or nominal growth rate is considered for circles where significant higher or lower growth is recorded.

At 33 kV and 132 kV voltage level, higher growth of sales are observed in some circles and sales in such circles are projected considering moderated growth rates ranging from 2% to 10%. For rest of circles, appropriate growth rates as per the trends are considered for projection.

The sales growth arrived at Discom level and corresponding sales projections for the 5th Control Period are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	8.12%	5.01%	5.05%	5.10%	5.15%	5.19%	5.24%
	33kV	15.38%	6.80%	6.82%	6.84%	6.85%	6.87%	6.89%
	132kV	36.54%	7.06%	7.16%	7.25%	7.35%	7.44%	7.53%
	Total	16.92%	6.25%	6.31%	6.36%	6.41%	6.46%	6.52%
Sales in MU	11kV	4134	4341	4560	4793	5039	5301	5579
	33kV	5285	5642	6024	6433	6871	7341	7844
	132kV	3059	3263	3485	3725	3985	4268	4575
	Total	12478	13246	14069	14951	15896	16910	17998

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	11kV	5.29%	5.34%	5.39%	5.45%	5.50%
	33kV	6.91%	6.93%	6.94%	6.96%	6.98%
	132kV	7.61%	7.70%	7.78%	7.86%	7.94%
	Total	6.57%	6.62%	6.68%	6.73%	6.78%

Sales in MU	11kV	5874	6188	6522	6877	7255
	33kV	8382	8960	9579	10243	10954
	132kV	4909	5272	5667	6096	6564
	Total	19166	20420	21767	23216	24773

2.3.11. HT-II Others

Considering the past trend of sales in each circle, the licensee has adopted 5 yr CAGR for few circles and moderated growth rate for circles where higher or lower growth is recorded. The anticipated consumption as submitted by Hyderabad Metro Rail Limited against Commercial loads for the period from FY 2024-25 to FY 2028-19 is included in 132 kV voltage level sales. The summary of additional sales as submitted by HMRL is as follows:

Particular	2024-25	2025-26	2026-27	2027-28	2028-29
HT II- 132 kV Voltage level - Additional Sales (MU) submitted by HMRL	37	38	38	38	40

The sales growth arrived at Discom level after adding additional loads and corresponding sales projections for the 5th Control Period are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	23.02%	6.30%	6.35%	6.39%	6.44%	6.49%	6.54%
	33kV	30.12%	8.27%	8.33%	8.39%	8.44%	8.49%	8.55%
	132kV	11.34%	5.84%	81.77%	4.59%	3.51%	3.61%	5.76%
	Total	25.23%	6.99%	8.25%	7.06%	7.09%	7.16%	7.27%
Sales in MU	11kV	1786	1898	2019	2148	2286	2435	2594
	33kV	1005	1089	1179	1278	1386	1504	1632
	132kV	45	48	87	91	95	98	104
	Total	2837	3035	3286	3517	3767	4036	4330

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period and also by considering the additional loads submitted by HMRL as follows:

Particular	2029-30	2030-31	2031-32	2032-33	2033-34
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HT II- 132 kV Voltage level - Additional Sales (MU) submitted by HMRL	40	40	40	40	40
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Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	11kV	6.60%	6.65%	6.71%	6.78%	6.84%
	33kV	8.60%	8.65%	8.70%	8.75%	8.79%
	132kV	3.75%	3.86%	3.97%	4.08%	4.60%
	Total	7.28%	7.35%	7.42%	7.49%	7.57%
Sales in MU	11kV	2765	2949	3147	3360	3590
	33kV	1773	1926	2093	2276	2477
	132kV	108	112	116	121	126
	Total	4645	4987	5357	5758	6193

2.3.12. HT-III Airports, Bus stations & Railway stations

At 11 kV voltage level, considering the past trend of sales in each circle, the licensee has adopted a moderated growth or nominal growth rate is considered for circles where significant higher or lower growth is recorded. Whereas, at 132 kV voltage sales are recorded only in Rajendranagar circle for which the sales projections were projected by the GMR from FY 2024-25 till FY 2033-34 and for FY 2023-24 the sales were projected at a moderated growth rate has been considered on account of no proper trend in the historical CAGRs. The summary of additional sales as submitted by HMRL is as follows:

Particular	2024-25	2025-26	2026-27	2027-28	2028-29
HT III- 132 kV Voltage level - Additional Sales (MU) submitted by GMR	103	120	137	145	153

The sales growth arrived at Discom level and corresponding sales projections for the 5th control period are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	17.41%	3.81%	4.23%	4.69%	5.19%	5.72%	6.28%
	33kV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	132kV	14.32%	8.00%	75.97%	16.50%	14.17%	5.84%	5.52%

	Total	14.53%	7.71%	71.25%	16.03%	13.84%	5.84%	5.54%
Sales in MU	11kV	4	4	4	5	5	5	5
	33kV	0	0	0	0	0	0	0
	132kV	54	59	103	120	137	145	153
	Total	58	63	107	125	142	150	158

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period and also by considering the additional loads submitted by GMR as follows:

Particular	2029-30	2030-31	2031-32	2032-33	2033-34
HT II- 132 kV Voltage level - Additional Sales (MU) submitted by HMRL	162	170	179	214	225

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
6th Control Period						
Growth	11kV	6.87%	7.50%	8.15%	8.82%	9.50%
	33kV	0.00%	0.00%	0.00%	0.00%	0.00%
	132kV	5.88%	4.94%	5.29%	19.55%	5.14%
	Total	5.92%	5.03%	5.39%	19.17%	5.28%
Sales in MU	11kV	6	6	7	7	8
	33kV	0	0	0	0	0
	132kV	162	170	179	214	225
	Total	168	176	186	221	233

2.3.13. HT-IV Lift Irrigation Schemes & CPWS

HT VA: Lift Irrigation

For 11 kV and 33 kV Voltage levels, considering the past trend of sales in this category in each Circle, the Licensee has adopted a moderated growth rate in the circles where the recorded CAGRs are abnormally high/low for sales projections.

For 132 kV Voltage level i.e., the energy supplied for Lift Irrigation Schemes, it is observed that the historical growth trend in this category has many variations due to variations in the operation of Lift Irrigation pumps based on rainfall, water levels in reservoirs, etc. In the H1 FY 2022-23, there has been a reduction in the sales considering heavy rains in monsoon period. Considering the above, it is

to be noted that it is difficult to predict the energy growth in this category. In view of the above, the licensee projected the sales in this category by adopting growth rate of 10%. The sales growth arrived at Discom level and corresponding sales projections for the 5th Control Period for this category is as follows:

Description	Voltage Level	Estimates		Projections				
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	-0.05%	2.98%	3.00%	3.02%	3.04%	3.06%	3.08%
	33kV	-1.38%	2.59%	2.61%	2.62%	2.63%	2.65%	2.66%
	132kV	-2.43%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
	Total	-2.37%	9.79%	9.80%	9.81%	9.82%	9.84%	9.85%
Sales in MU	11kV	42	43	44	46	47	48	50
	33kV	15	16	16	16	17	17	18
	132kV	1832	2015	2217	2439	2682	2951	3246
	Total	1889	2074	2277	2500	2746	3016	3313

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period. The growth adopted and the sales projections for the 6th Control Period for this category is as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	11kV	3.09%	3.11%	3.13%	3.15%	3.17%
	33kV	2.68%	2.69%	2.71%	2.72%	2.74%
	132kV	10.00%	10.00%	10.00%	10.00%	10.00%
	Total	9.86%	9.87%	9.87%	9.88%	9.89%
Sales in MU	11kV	51	53	55	56	58
	33kV	18	19	19	20	20
	132kV	3570	3927	4320	4752	5227
	Total	3640	3999	4394	4828	5306

HT-IV (B): CPWS

Considering the past trend of sales in this category in each Circle, the Licensee has adopted appropriate growth rates viz. 3 yr, 2 yr and YoY, however, in majority of the circles the licensee

considered moderated growth rate in the circles where the recorded CAGRs are abnormally high/low for sales projections.

Accordingly, the sales growth arrived in HT IV Category at Discom level and corresponding sales projections for the 5th Control Period for this category is as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	6.03%	6.72%	6.78%	6.84%	6.90%	6.96%	7.02%
	33kV	10.19%	6.91%	6.99%	7.08%	7.16%	7.25%	7.34%
	132kV	12.61%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	Total	10.25%	6.09%	6.15%	6.20%	6.25%	6.31%	6.37%
Sales in MU	11kV	138	147	157	168	180	192	206
	33kV	253	271	290	310	332	356	382
	132kV	269	282	296	311	327	343	360
	Total	660	700	743	789	839	892	948

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period. The growth adopted and the sales projections for the 6th Control Period for this category is as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	11kV	7.07%	7.13%	7.19%	7.24%	7.30%
	33kV	7.43%	7.52%	7.62%	7.71%	7.81%
	132kV	5.00%	5.00%	5.00%	5.00%	5.00%
	Total	6.43%	6.49%	6.56%	6.62%	6.69%
Sales in MU	11kV	220	236	253	271	291
	33kV	411	442	475	512	552
	132kV	378	397	417	438	460
	Total	1009	1075	1145	1221	1303

2.3.14. HT-V Railway Traction

The licensee sought the information of additional loads from both the South-Central Railways and HMR for consideration in the resource plan. Both the South-Central Railways and HMR have responded to the information request and submitted the yearly wise loads for the period from FY 2024-25 to FY 2033-34 including the additional loads and existing loads. Accordingly, the additional

loads as submitted are considered for the period from FY 2024-25 to FY 2033-34. For FY 2022-23 and FY 2023-24, the projections are done by considering the appropriate growth rates based on past historical trends.

Accordingly, the sales growth arrived in this category at Discom level after considering the additional loads and corresponding sales projections for the 5th Control Period are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	HT-VA	16.08%	2.60%	92.42%*	9.96%	1.59%	22.42%*	9.96%
	HT-VB	23.48%	2.57%	-1.98%	9.91%	9.02%	10.33%	9.37%
	Total	39.56%	5.16%	90.45%	19.87%	10.61%	32.75%	19.33%
Sales in MU	HT-VA	347	356	684	752	764	936	1029
	HT-VB	81	83	81	89	98	108	118
	Total	428	439	766	842	862	1043	1147

* Higher growth due to consideration of additional loads as submitted by both SCR and HMR

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period. The growth adopted and the sales projections for the 6th Control Period are as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	HT-VA	9.97%	9.97%	9.97%	9.97%	9.97%
	HT-VB	10.27%	9.31%	9.93%	0.06%	20.57%
	Total	20.23%	19.28%	19.90%	10.03%	30.54%
Sales in MU	HT-VA	1132	1244	1368	1505	1655
	HT-VB	130	142	156	156	188
	Total	1261	1386	1524	1661	1843

* Higher growth due to consideration of additional loads as submitted by both SCR and HMR

2.3.15. HT-VI Colony Consumption

Considering the past trend of sales in this category in each circle, 5yr, 3yr and YoY CAGRs are adopted in major circles for sales projections followed by adopting moderated growth rates ranging from 2% to 10% for rest of the circles in case the CAGRs are not following a trend or significantly higher or lower.

The sales growth arrived at Discom level and corresponding sales projections for the 5th Control Period are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	17.37%	8.15%	8.22%	8.28%	8.35%	8.41%	8.47%
	33kV	21.42%	9.67%	9.69%	9.70%	9.71%	9.73%	9.74%
	Total	19.00%	8.78%	8.83%	8.88%	8.92%	8.97%	9.01%
Sales in MU	11kV	172	186	201	218	236	256	278
	33kV	121	133	145	160	175	192	211
	Total	293	319	347	378	411	448	489

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period. The growth adopted and the sales projections for the 6th Control Period are as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	11kV	8.52%	8.58%	8.63%	8.68%	8.73%
	33kV	9.75%	9.76%	9.78%	9.79%	9.80%
	Total	9.05%	9.09%	9.13%	9.17%	9.20%
Sales in MU	11kV	302	328	356	387	420
	33kV	231	254	279	306	336
	Total	533	581	635	693	757

2.3.16. HT- VII Temporary Supply

Due to uncertainty of sales trend in this category, moderated growth rates ranging from 2% to 10% is adopted for majority of circles where recorded CAGRs are much higher and appropriate growth rates are considered for rest of the circles. Hence, the sales growth arrived at Discom level for the 5th Control Period and corresponding sales projections are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Growth	11kV	19.67%	5.98%	6.02%	6.06%	6.10%	6.14%	6.19%
	33kV	-0.51%	3.25%	3.27%	3.29%	3.32%	3.34%	3.36%
	132kV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	Total	14.25%	5.34%	5.39%	5.44%	5.49%	5.54%	5.59%
Sales in MU	11kV	135	143	151	160	170	181	192
	33kV	41	42	44	45	47	48	50
	132kV	0	0	0	0	0	0	0
	Total	176	185	195	206	217	229	242

Subsequently, the projections of sales for the subsequent 6th Control Period are made by adopting similar growth rates considered for 5th Control Period. The growth adopted and the sales projections for the 6th Control Period are as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34
		6th Control Period				
Growth	11kV	6.23%	6.27%	6.32%	6.37%	6.41%
	33kV	3.38%	3.40%	3.42%	3.45%	3.47%
	Total	5.64%	5.69%	5.75%	5.80%	5.86%
Sales in MU	11kV	204	217	230	245	261
	33kV	52	53	55	57	59
	Total	255	270	285	302	320

2.3.17. HT- IX EV Charging Stations

With the increased emphasis on environmental sustainability, electric vehicles are expected to play a key role in transportation. Even though, the current sales are on lower side, the corresponding growth rates are higher considering the lower base, and this is likely to evolve over a longer time horizon and may reach sizeable proportion during later part of the next control period. Significant HT sales in this category are only being recorded from FY 2022-23. The sales growth arrived at Discom level and corresponding sales projections are as follows:

Description	Voltage Level	Estimates	Projections					
		2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
		Current Year	Next Year	5th Control Period				
Sales in MU	11kV	2	8	15	17	18	20	21
	Total	2	8	15	17	18	20	21

Further, the projections of sales for the subsequent 6th Control Period are as follows:

Description	Voltage Level	Projections (MU)				
		2029-30	2030-31	2031-32	2032-33	2033-34

		6th Control Period				
Sales in MU	11kV	23	24	26	27	29
	Total	23	24	26	27	29

3. Loss Trajectory

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. The licensee requests the Hon'ble Commission to consider 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) as computed above to arrive at the loss trajectory for the next two control periods, i.e., from FY2024-25 to FY2028-29 & FY2029-30 to FY2033-34.

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 control period as given in the below table.

Description	FY2021-22 (Actual)	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
LT Loss (%)	5.77%	5.72%	5.67%	5.66%	5.65%	5.64%	5.63%	5.62%
11kV Loss (%)	4.25%	4.22%	4.19%	4.18%	4.17%	4.17%	4.16%	4.15%
33kV Loss (%)	3.20%	3.62%	3.60%	3.59%	3.59%	3.58%	3.57%	3.56%

The below table contains an indicative loss trajectory for the 6th Control period. The licensee would like to emphasize that the loss trajectory for the 6th Control period would depend on the actual achievement of the loss levels by the end of the 5th Control period.

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:

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%
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The estimation of total distribution losses in the distribution system for the 6th control period is as follows:

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%

Transmission Loss Trajectory:

The actual TS TRANSCO Transmission losses are available upto FY 2021-22. Based on the actual losses and approved Losses for FY2022-23 & FY 2023-24 from TS Transco MYT of 4th Control Period, the loss trajectory for the 5th and 6th control periods are proposed as below:

Description	Actual	Approved		5 th Control Period				
	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
Transmission Loss	2.47%	2.57%	2.50%	2.48%	2.46%	2.44%	2.42%	2.40%

Description	6 th Control Period				
	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
Transmission Loss	2.39%	2.37%	2.35%	2.34%	2.33%

The Transmission losses external to state periphery consists of two components PGCIL Losses CSPTCL (Chhattisgarh) Losses.

PGCIL Loss trajectory:

The PGCIL losses are applicable on the power procurement from Central Generating Stations in the projections for 5th & 6th Control Periods. The average of the actual external losses from April 2022 to December 2022 were considered to be as the PGCIL losses for FY 2024-25. Thereafter, for each year of 5th Control Period (FY 2024-25 to FY 2028-29), 0.02% reduction is assumed in line with the assumed reduction for TS Transco losses. For each year of 6th Control Period (FY 2029-30 to FY 2033-34), 0.015% reduction is assumed in line with the assumed reduction for TS Transco losses.

The trajectory for the PGCIL losses (%) is as below:

Description	5 th Control Period				
	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
PGCIL Losses (%)	3.56%	3.54%	3.52%	3.50%	3.48%

Description	6 th Control Period				
	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
PGCIL Losses (%)	3.47%	3.45%	3.44%	3.42%	3.41%

CSPDCL Loss trajectory:

As per the CSPDCL Tariff Order 2017-18 issued by Chhattisgarh State Electricity Regulatory Commission (CSERC) on 31.03.2017, 1000 MW capacity of Marwa TPP was entirely made available for supply to the state of Telangana. In the CSERC Order for determination of ARR and Tariff for CSPTCL (Chhattisgarh State Power Transmission Company Ltd., for the Control Period from FY 2022-23 to FY 2024-25, the Hon'ble CSERC has approved the CSPTCL losses as 3%.

Hence the Discoms have assumed the same to be applicable for all the years of 5th & 6th Control Periods.

Description	5 th Control Period				
	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
CSPTCL Losses (%)	3.00%	3.00%	3.00%	3.00%	3.00%

Description	6 th Control Period				
	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
CSPTCL Losses (%)	3.00%	-	-	-	-

4. Energy Requirement Forecast

The sales forecast output has been considered for projecting the energy requirements for the next two control periods. The sales forecast output was adjusted for the LT losses, 11 kV losses and 33 kV losses as per the loss trajectory to arrive at the energy requirement of the licensee. This energy

requirement was further grossed up by Transmission losses (TS TRANSCO, PGCIL & CSPTCL losses) to arrive at the total energy requirement of the Licensee at the State periphery. The Power procurement plan would be tied up with the energy requirement and checked for any surplus or deficit. The power procurement plan would adequately source power from other sources in periods where the energy/ peak deficit occurrence is envisaged.

The **Energy requirement for TSSPDCL** arrived for the next two control periods as per the above method is tabulated below:

Description	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29
LT Sales in MU	29522	31026	32614	34291	36062
LT Loss (%)	5.66%	5.65%	5.64%	5.63%	5.62%
LT Energy Requirement in MU	31293	32884	34563	36336	38209
HT sales (11kV) in MU	7197	7601	8032	8491	8980
11kV Loss (%)	4.18%	4.17%	4.17%	4.16%	4.15%
Energy Requirement (11kV) in MU	40170	42248	44446	46772	49233
HT sales (33kV) in MU	7759	8304	8892	9523	10203
33kV Loss (%)	3.59%	3.59%	3.58%	3.57%	3.56%
Energy Requirement (excluding EHT) in MU	49714	52432	55317	58379	61631
EHT sales in MU	8098	8681	9251	10020	10766
Energy Requirement (including EHT) in MU	57812	61113	64567	68400	72398
Transmission Loss (%)	2.48%	2.46%	2.44%	2.42%	2.40%
Total Energy Requirement in MU (Excluding inter-state transmission losses)	59282	62655	66182	70096	74178
PGCIL losses (%)	3.56%	3.54%	3.52%	3.50%	3.48%
CSPTCL losses (%)	3.00%	3.00%	3.00%	3.00%	3.00%
Total Energy Requirement at state periphery in MU	60,090	63,452	66,955	70,851	74,828

Description	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
LT Sales in MU	37933	39911	42001	44212	46550
LT Loss (%)	5.61%	5.60%	5.59%	5.58%	5.58%
LT Energy Requirement in MU	40188	42279	44490	46827	49298
HT sales (11kV) in MU	9503	10062	10660	11300	11986

Description	FY2029-30	FY2030-31	FY2031-32	FY2032-33	FY2033-34
11kV Loss (%)	4.14%	4.14%	4.13%	4.12%	4.11%
Energy Requirement (11kV) in MU	51839	54599	57524	60625	63913
HT sales (33kV) in MU	10935	11723	12572	13487	14473
33kV Loss (%)	3.56%	3.55%	3.54%	3.53%	3.53%
Energy Requirement (excluding EHT) in MU	65088	68762	72670	76828	81253
EHT sales in MU	11580	12467	13436	14505	15680
Energy Requirement (including EHT) in MU	76668	81229	86106	91333	96932
Transmission Loss (%)	2.39%	2.37%	2.35%	2.34%	2.33%
Total Energy Requirement in MU (excluding inter-state transmission losses)	78542	83201	88183	93521	99239
PGCIL losses (%)	3.47%	3.45%	3.44%	3.42%	3.41%
CSPTCL losses (%)	3.00%	-	-	-	-
Total Energy Requirement at state periphery in MU	78,895	83,521	88,502	93,841	99,555

The detailed plan of the licensee to meet this energy requirement from various energy sources will be covered in detail in the Power Procurement Plan section.

5. Load Forecast

5.1. Time series analysis (State level):

Time-series methods 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 is 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

6. Forecast Data as per the ERC guidelines

6.1.Fifth Control Period (FY2024-25 to FY2028-29)

6.1.1. Category wise consumers

Forecast of energy in MWh, demand in MW and number of consumers for each class of consumers (other than Scheduled consumers) category-wise, voltage-wise, supplied by the distribution licensee. (*Details are enclosed vide Annexure-1*)

6.1.2. Scheduled Consumers through Open Access

Forecast of energy in MWh, demand in MW and number of consumers (category-wise, voltage-wise) supplied by the distribution licensee to the scheduled consumers or licensees or traders within the State of Telangana and outside the State through open access

Voltage	2023-24			2024-25			2025-26			2026-27			2027-28			2028-29		
	No.of consumers	Demand in MW	Sales in MU	No.of consumers	Demand in MW	Sales in MU	No.of consumers	Demand in MW	Sales in MU	No.of consumers	Demand in MW	Sales in MU	No.of consumers	Demand in MW	Sales in MU	No.of consumers	Demand in MW	Sales in MU

11 KV	20	16	4	20	16	5	21	17	5	21	17	5	21	17	5	22	18	5
33 KV	67	270	370	68	276	378	69	281	385	71	287	393	72	293	401	74	298	409
132 KV	20	453	233	20	462	237	21	471	242	21	480	247	21	490	252	22	500	257
Tot	106	739	607	108	754	619	111	769	632	113	784	644	114	800	657	117	816	670

6.1.3. Other Suppliers using Network

Forecast of energy in MWh, demand in MW and number of consumers for each class of consumers (category-wise, voltage-wise) supplied by a person other than the distribution licensee of his area of supply through open access

No such consumers / suppliers are existing in TSSPDCL and are not expected during the said period.

6.1.4. Captive Generating Plants

Forecast of energy in MWh and demand in MW for each class of consumers (category-wise, voltage-wise) utilized from captive generating plants of an aggregate capacity of 1MW and above

Voltage in kV	2023-24		2024-25		2025-26		2026-27		2027-28		2028-29	
	No,of consumers	Generation capacity in MVA										
33	25	130.02	25	132.62	26	135.28	26	137.98	27	140.74	28	143.56
132	6	372.80	6	380.26	6	387.87	7	395.62	7	403.54	7	411.61
TOTAL	31	502.83	31	512.88	32	523.14	33	533.60	34	544.28	35	555.16

6.1.5. At present, all the existing open access consumers are the scheduled consumers of the Discom. Since they are having contracted demand with the Discom, there is no necessity to provide standby support to the existing open access consumers. Hence, the licensee is not projecting any requirement of capacity for the standby support in the 5th Control Period Load Profiles

6.1.6. Load profiles for consumer categories for representative days including the load factors, non-coincident and coincident peak demand for each category of consumers and the entire TS Power system.

The Discom peak demands, both coincident and non-coincident are estimated using basic load shape synthesis model. Load shapes of different categories of consumers are constructed based on the Load Shapes data collected from the field. The coincident demand is the estimated contribution of each category to the system peak demand and the non-coincident demand has been estimated from system load shapes derived and represents the peak demand of each customer category, irrespective of the time of day. The load factor and coincidence factor included in the Model for each category are assumed based on a review of the characteristics of the loads and load mix in TSSPDCL

Category	Projected Sales in MU							Class Load Factor
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	
Low Tension	26746	28096	29522	31026	32614	34291	36062	89%
Domestic	10097	10608	11149	11721	12327	12970	13651	88%
Commercial	2979	3157	3347	3549	3766	3997	4244	81%
Industry	951	986	1022	1060	1099	1140	1183	80%
Cottage Industry	10	10	10	11	11	12	12	80%
Agriculture	12054	12657	13290	13955	14652	15385	16154	82%
Street Lighting & PWS	472	482	493	504	514	526	537	86%
Others	182	196	211	227	243	262	282	56%
High Tension (11kV)	6452	6812	7197	7601	8032	8491	8980	80%
Industry	4174	4383	4605	4840	5089	5353	5634	81%
Others	1786	1898	2019	2148	2286	2435	2594	85%
Rly Stns, Bus Stns& Airports	4	4	4	5	5	5	5	77%
Irrigation, Agl& CPWS	180	190	202	214	227	241	256	84%
Townships & Res. Colonies	172	186	201	218	236	256	278	78%
Temporary	135	143	151	160	170	181	192	85%
EVs	2.36	7.62	14.65	16.70	18.37	20.21	21.41	-
High Tension (33kV)	6779	7251	7759	8304	8892	9523	10203	81%

Category	Projected Sales in MU							Class Load Factor
	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	
Industry	5285	5642	6024	6433	6871	7341	7844	78%
Others	1005	1089	1179	1278	1386	1504	1632	91%
Irrigation, Agl& CPWS	268	286	305	326	349	374	400	-
Townships & Res. Colonies	121	133	145	160	175	192	211	55%
Temporary	41	42	44	45	47	48	50	70%
High Tension (132kV)	6814	7241	8098	8681	9251	10020	10766	88%
Industry	4186	4398	4629	4878	5148	5440	5757	90%
Others	45	48	87	91	95	98	104	75%
Rly Stns, Bus Stns& Airports	54	59	103	120	137	145	153	89%
Irrigation, Agl& CPWS	2101	2298	2513	2750	3009	3294	3606	82%
Railway Traction	347	356	684	752	764	936	1029	70%
HMR	81	83	81	89	98	108	118	77%
Total	46791	49401	52575	55612	58787	62325	66012	88%

TSSPDCL – Coincident Demand (MW)

Category	2024-25	2025-26	2026-27	2027-28	2028-29
Low Tension Supply					
Domestic - Category I	1260	1325	1394	1466	1543
Non-domestic - Category II	417	442	469	498	529
Industrial - Category III	140	145	150	156	162
Cottage Industries - Category IV	1	1	1	1	1
Irrigation and Agriculture - Category V	1799	1944	2042	2144	2251
Public Lighting & PWS - Category VI	59	60	61	63	64
General Purpose - Category VII	16	17	18	20	21
Temporary - Category VIII	0.1	0.2	0.2	0.2	0.2
Total Low Tension Supply	3692	3935	4136	4348	4572
High Tension Supply					
Industrial Cat- I (11KV)	642	674	709	746	785
Industrial Cat- I (33KV)	888	948	1012	1081	1155
Industrial Cat-I (220/132KV)	574	605	639	675	714
Others Cat- II (11KV)	235	250	266	283	302
Others Cat- II (33KV)	148	160	173	188	204
Others Cat-II (220/132KV)	13	14	14	15	16
Rly Stns, Bus Stns& Airports Cat-III (11KV)	0.5	0.6	0.6	0.6	0.7
Rly Stns, Bus Stns& Airports Cat-III (132KV)	12	14	16	16	17

Category	2024-25	2025-26	2026-27	2027-28	2028-29
Irrigation, Agriculture & CPWS - Cat-IV (11KV)	24	26	27	29	31
Irrigation, Agriculture & CPWS - Cat-IV (33KV)	27	29	31	34	36
Irrigation, Agriculture & CPWS - Cat-IV (132KV)	334	366	400	438	480
Railway Traction Cat-V (132KV)	98	107	109	133	147
HMR Cat-VB (132KV)	10	11	12	13	14
Colony Consumption – Cat-VI (11KV)	23	25	27	29	32
Colony Consumption – Cat-VI (33KV)	23	25	28	31	34
Temporary – Cat-VII (11KV)	19	20	22	23	24
Temporary – Cat-VII (33KV)	5	5	5	6	6
Total High Tension Supply	3075	3280	3491	3740	3996
Total Peak in MW	6767	7215	7627	8088	8568

TSSPDCL – Non-coincident Demand (MW)

Category	2024-25	2025-26	2026-27	2027-28	2028-29
Low Tension Supply					
Domestic - Category I	1454	1529	1608	1691	1780
Non-domestic - Category II	470	498	529	561	596
Industrial - Category III	146	152	157	163	169
Cottage Industries - Category IV	1	2	2	2	2
Irrigation and Agriculture - Category V	1799	1944	2042	2144	2251
Public Lighting & PWS - Category VI	66	67	68	70	71
General Purpose - Category VII	43	46	49	53	57
Temporary - Category VIII	0.1	0.2	0.2	0.2	0.2
Total Low Tension Supply	3979	4237	4455	4684	4926
High Tension Supply					
Industrial Cat- I (11KV)	652	685	721	758	798
Industrial Cat- I (33KV)	882	942	1006	1074	1148
Industrial Cat-I (220/132KV)	559	590	623	660	700
Others Cat- II (11KV)	272	289	308	328	349
Others Cat- II (33KV)	148	160	174	188	204
Others Cat-II (220/132KV)	13	14	14	15	16
Rly Stns, Bus Stns& Airports Cat-III (11KV)	0.6	0.7	0.7	0.7	0.8
Rly Stns, Bus Stns& Airports Cat-III (132KV)	13	15	18	19	20
Irrigation, Agriculture & CPWS - Cat-IV (11KV)	27	29	31	33	35

Category	2024-25	2025-26	2026-27	2027-28	2028-29
Irrigation, Agriculture & CPWS - Cat-IV (33KV)	64	68	73	78	84
Irrigation, Agriculture & CPWS - Cat-IV (132KV)	351	384	420	460	503
Railway Traction Cat-V (132KV)	112	123	125	153	169
HMR Cat-VB (132KV)	12	13	15	16	18
Colony Consumption – Cat-VI (11KV)	29	32	34	37	40
Colony Consumption – Cat-VI (33KV)	24	26	28	31	34
Temporary – Cat-VII (11KV)	19	20	22	23	24
Temporary – Cat-VII (33KV)	5	5	5	6	6
Total High Tension Supply	3219	3434	3655	3919	4188
Total Peak in MW	7198	7672	8110	8603	9114

6.1.7. Impact of Government policies

6.1.7.1. Impact of Solar Roof-top:

The licensee has taken proactive steps in creating a simple and consumer friendly process for release of roof-top solar connection. The installed capacity of Solar Roof top in the licensee area as on date is about 267.45 MW. Since all the solar roof-top are connections under net-metering, this is likely to have dual impact on the licensee which are stated below –

- a) Reduction in the consumption of power by the consumer from the licensee
- b) As a consequence of the above, consumers are likely to go in lower tariff slab which would impact the discom revenue.

The licensee has factored in the above as part of the sales forecast. However detailed modelling on the revenue impact , category-wise would be carried out by the licensee at the time of ARR and Tariff filing.

6.1.8. Alternative approaches

GDP and Per-capita income are significantly linked to the electricity consumption in any economy. However, there are significant challenges in forecast of the above parameters as they are function of varied socio-economic inputs. Availability of such forecasts at a state level is a challenge. In view of lack of availability of past data over a longer time-period and forward looking view from reliable sources, the licensee has primarily relied on modified trend method for projections of sales for the ensuing control period.

6.1.9. Sensitivity Analysis

Demonstrating criticality of the assumptions through a sensitivity analysis

6.1.9.1. Base forecast

The Licensee has projected the category wise sales based on the modified trend approach. The sales forecast for the control period has been developed primarily based on analysis of historic data for the period FY 2016-17 to FY 2022-23 H1. Further, the licensee has considered the additional loads estimated by various consumers for the future period. The growth rates adopted by the licensee is assuming the business as usual scenario.

6.1.9.2.High forecast

Since the formation of the State, Telangana's economy is increasing at a higher rate than the previous years. The State GDP projected for the FY 2023-24 (as per the budgetary estimated for FY 2023-24) is roughly estimated to grow at around 6.7% over FY 2022-23. Further, for the past 7-8 years it is observed that the growth rate of GSDP at constant prices (2011-12) of Telangana State is higher than that of India (*Source: Telangana Socio Economic Outlook 2023*). Considering the same, if the State GDP achieves a higher growth rate than estimates in the future periods also, the corresponding sales forecast for the Discom shall be higher. Considering the same, a High forecast is prepared by adopting positive & higher growth rates at Discom level. The additional loads as considered in the base forecast are retained without any change.

6.1.9.3.Low forecast

If the State GDP achieves lower growth rate than the estimates, the corresponding sales forecast for the Discom shall be affected and the same is estimated by adopting lesser growth than that considered for base forecast at Discom level for most of the categories and moderated/manual growth rates for few categories where base sales are projected on lower side. The additional loads as considered in the base forecast are also estimated to be impacted and lower sales were considered than the projections received from the respective consumers.

Details of both high and low forecasts are enclosed vide Annexure-2

6.1.10. Inputs for Major Loads

Inputs from consultation with major consumers (large HT industrial consumers, other Licensees, Rescos, Railway Traction etc.,) that could affect Load Forecast

- Based on the information received from the South Central Railway on upcoming Railway Traction Sub-Stations, the sales projections were made for HT-V (A) category.
- Based on the information received from the Hyderabad Metro Rail Limited on upcoming HMR loads, the sales projections were made for HT-V (B) & HT-II categories.
- Based on the information received from the GMR on upcoming loads, the sales projections were made for HT-III category.

6.2.Subsequent Control Period (6th Control period)

A simple forecast for the subsequent Control Period (from FY 2029-30 to FY 2033-34) as specified by the Commission from time to time

6.2.1. Category wise consumers

Forecast of energy in MWh, demand in MW for each class of consumers (category-wise) supplied by the distribution licensee

Details are enclosed vide Annexure-3

6.2.2. Other Suppliers using Network

Forecast of energy in MWh, demand in MW for each class of consumers (category-wise) supplied by a person other than the distribution licensee of his area of supply through open access

No such consumers / suppliers are existing in TSSPDCL and are not expected during the said period.

6.2.3. Captive Generating Plants

Forecast of energy in MWh, demand in MW for each class of consumers (category-wise, voltage-wise) utilized from captive generating plants of aggregate capacity of 1MW and above

Voltage in kV	2029-30	2030-31	2031-32	2032-33	2033-34
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	No,of consumers	Generation capacity in MVA	No,of consumers	Generation capacity in MVA	No of consumers	Generation capacity in MVA	No,of consumers	Generation capacity in MVA	No,of consumers	Generation capacity in MVA
33	28	146.43	29	149.35	29	152.34	30	155.39	30	158.50
132	7	419.84	7	428.23	7	436.80	7	445.54	8	454.45
TOTAL	35	566.26	36	577.59	36	589.14	37	600.92	38	612.94

6.2.4. Standby support

At present, all the existing open access consumers are the scheduled consumers of the Discom. Since they are having contracted demand with the Discom, there is no necessity to provide standby support to the existing open access consumers. Hence, the licensee is not projecting any requirement of capacity for the standby support in the 6th control period.

6.2.5. Losses

Total distribution losses in the distribution system and transmission losses in the intra-state transmission system.

The estimation of total distribution losses in the distribution system for the 6th Control Period is as follows:

Description	2029-30	2030-31	2031-32	2032-33	2033-34
Distribution Losses (incl EHT sales)	8.76%	8.70%	8.64%	8.57%	8.50%
Distribution Losses (excl EHT sales)	10.32%	10.28%	10.23%	10.19%	10.14%

The estimation of TS Transco transmission losses for the 6th Control Period is as follows:

Description	2029-30	2030-31	2031-32	2032-33	2033-34
TS Transco Transmission Loss	2.39%	2.37%	2.35%	2.34%	2.33%

6.2.6. Assumptions of Sales & Load Forecast

Clear description and explanations for reasonable assumptions are given in above sections for Sales forecast.

6.3.Historic Information

- (i) Historical consumer category-wise, slab-wise, voltage-wise data of energy in MWh, demand in MW, number of consumers for the last 5 years

Details are enclosed vide Annexure - 4.

- (ii) Historic data on Captive Generation is enclosed as ***Annexure 5.***
- (iii) Historic data on technical and commercial losses in the distribution system and transmission losses in the intra-state transmission system.

Description	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	% Loss					
AT&C losses	11.38%	11.36%	10.34%	9.43%	9.36%	9.14%
Total Distribution Losses	12.45%	12.45%	11.55%	10.79%	10.67%	10.47%
Transmission Losses	3.37%	3.25%	2.85%	2.65%	2.57%	2.47%

- (iv) Energy utilization, peak load, power factor data and annual load factors for the previous 5 years

Description	2017-18	2018-19	2019-20	2020-21	2021-22
Energy Sales (MU)	35,602	40,331	39,906	38,273	43,085
Peak Demand (MW)	6576	6961	7284	8474	8792
Annual Load Factor (%)	62%	66%	63%	52%	56%

7. Power Procurement Plan

7.1. Energy Requirement

The energy requirement for 5th and 6th Control Periods (FY 2024-25 to FY 2028-29 and FY 2029-30 to FY 2033-34) is arrived by grossing up the projected sales with the projected losses (Distribution losses trajectory for each voltage level and projected Transmission losses) for each year as detailed in section 4 (Energy Requirement forecast). To arrive the total energy requirement at state periphery, the transmission losses external to state (PGCIL & CSPTCL) are added to the energy requirement (excluding external transmission losses) as detailed in section 4.

The total energy requirement for Telangana State is arrived by adding the energy requirements of both the Discoms (TSSPDCL & TSNPDCL).

The energy requirement for 5th Control Period (FY 2024-25 to FY 2028-29) is tabulated below –

Energy Requirement (MU)	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
TSSPDCL	60,090	63,452	66,955	70,851	74,828
TSNPDCL	24,906	26,316	27,820	29,434	31,129
TELANGANA STATE	84,997	89,768	94,774	1,00,285	1,05,957

The energy requirement for 6th Control Period (FY 2029-30 to FY 2033-34) is tabulated below –

Energy Requirement (MU)	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
TSSPDCL	78,895	83,521	88,502	93,841	99,555
TSNPDCL	32,743	34,595	36,599	38,758	41,082
TELANGANA STATE	1,11,638	1,18,116	1,25,101	1,32,599	1,40,637

7.2. Energy Availability

7.2.1. Addition of Generating Capacity

The details of the expected generating capacity additions during 5th & 6th Control Period, along with their expected COD timelines, are mentioned below:

S.No.	Generating Station	Capacity (MW) allotted to TS state	Expected COD
1	Yadradri (YTPS)	4000 (800x5)	<ul style="list-style-type: none"> Unit-1, Dec' 2023, Unit-2, Mar' 2024, Unit-3, May' 2024, Unit-4, July' 2024, Unit-5, Sept' 2024.
2	Telangana STPP	1360	<ul style="list-style-type: none"> Unit-I Apr-23 Unit-II Jun-23
3	SECI 400 MW (Solar)	130	<ul style="list-style-type: none"> 270 MW is already Commissioned Balance 130 MW - Apr'23
4	SECI 1000 MW (Solar)	1000	<ul style="list-style-type: none"> 1000 MW - Oct'23
5	NTPC CPSU 1692 MW (Solar)	260	<ul style="list-style-type: none"> 1432 MW is already Commissioned Balance: <ul style="list-style-type: none"> 100 MW - Mar'23 10 MW - Apr'23 150 MW - Mar'24
6	NTPC CPSU 1045 MW (Solar)	1045	<ul style="list-style-type: none"> 735 MW - Nov'23 310 MW - Apr'24
7	NHPC CPSU 500 MW (Solar)	500	<ul style="list-style-type: none"> 500 MW - Apr'24

Based on the above considerations, the station-wise available capacities for 5th & 6th Control Periods are tabulated in below sections.

7.2.2. Installed capacity from various sources

Available power plants supplying power to the Discoms along with key information are mentioned in subsequent sub-sections:

TS GENCO

The table below shows the installed capacities and the PPA periods/ PPA expiry date of the Thermal and Hydel generating stations of TS Genco considered for 5th & 6th Control Periods including the share in the interstate projects. The DISCOMs purchase the entire generation of TS Genco under the terms of the PPAs with the generator.

TS GENCO – Thermal

S No	Generating Source	Telangana Share (MW)	Auxiliary consumption (%)	PLF (%)	PPA Period/ PPA Expiry Date
1	KTPS-V	500 (2x250)	9%	90%	31.03.2024

2	KTPS-VI	500 (1x500)	8%	85%	22.10.2036 (25 years from the date of COD)
3	RTS-B	62.5 (1x62.5)	10%	85%	31.03.2024
4	Kakatiya (KTPP) – I	500 (1x500)	8%	90%	13.09.2035 (25 years from the date of COD)
5	Kakatiya (KTPP) – II	600 (1x600)	7%	90%	23.03.2041 (25 years from the date of COD)
6	KTPS-VII	800 (1x800)	5%	80%	25.12.2043 (25 years from the date of COD)
7	Badradri (BTPS Units 1 to 4)	1080 (4x270)	9%	85%	09.01.2047 (25 Years from the date of CoD)
8	Yadadri (YTPS Units 1 to 5)	4000 (5x800)	8%	85%	25 years (From Last Unit of Anticipated COD)

TS GENCO – Hydel

SN o	Generating Source	Telangana Share (MW)	Auxiliary consumption (%)	PLF (%)	PPA Period/ PPA Expiry Date
1	Srirsailam left Bank HES (SLBHES)	900	1%	22%	31.03.2029
2	Nagarjun Sagar Power House (NSPH)	815.6	1%	22%	31.03.2029
3	Nagarjun Sagar Left Canal Power House (NSLCPH)	60	1%	22%	31.03.2029
4	Pochampadu HPS-I	27	1%	22%	31.03.2029
5	Pochampadu HPS-II (Sriramsagar)	9	1%	22%	29.09.2045 (35 years from the date of COD)
6	Singur HES	15	1%	22%	31.03.2029
7	Nizamsagar HES	10	1%	22%	31.03.2029
8	Palair (Mini Hydel)	2	1%	22%	31.03.2029
9	Peddapalli (Mini Hydel)	9.16	1%	22%	31.03.2029
10	Priyadarshini Jurala HES (50% share to Karnataka)	117 (Total capacity 234)	1%	22%	03.08.2046 (35 years from the date of COD)
11	Lower Jurala HES	240	1%	22%	30.09.2051 (35 years from the date of COD)
12	Pulichintala	120	1%	22%	07.09.2053 (35 years from the date of COD)

Central Generating Stations (CGS):

The Licensee has Power Purchase Agreements with various Central Generating Stations to purchase power from i) Thermal power plants like NTPC RSTPS I&II, NTPC RSTPS-III, NTPC Talcher

Stage-II, NTPC Simhadri Stage-I and Stage-II, NTPC Kudigi, Vallur Thermal Power Plant (NTECL - Vallur), Neyveli Lignite Corporation Ltd (“NLC”) TPS-II Stage-I and Stage-II, NNTPP, NLC Expn I & II, NLC Tamilnadu Power Limited (Tuticorin), Telangana STPP Phase I and ii) Nuclear power plants like Madras Atomic Power Station (“MAPS”), Kaiga Atomic Power Station (“KAPS”) and NPC Kudankulam. The share of the Telangana State in the total capacity of the stations and the PPA period/ PPA expiry date are provided below for 5th & 6th Control Periods.

S No	Generating Source	Telangana Share (MW)	Auxiliary consumption (%)	PLF (%)	PPA Period/ PPA Expiry Date
1	NTPC (SR) - I & II	353	7%	85%	27.9.2018
2	NTPC (SR) - III	89	6%	85%	31.01.2026
3	NTPC Talcher II	217	6%	90%	05.04.2023
4	NLC Stage-I	5	10%	90%	20.02.2030
5	NLC Stage-II	7	10%	90%	20.02.2030
6	NPC-MAPS	22	11%	45%	23.12.2026
7	NPC-Kaiga Unit-I&II	68	11%	90%	23.12.2026
8	NPC-Kaiga Unit-III & IV	72	11%	90%	23.12.2026
9	NTPC Simhadri Stage-I	539	6%	90%	28.02.2028
10	NTPC Simhadri Stage-II	257	6%	90%	29.09.2037
11	NTECL Vallur Thermal Power Plant	106	6%	90%	25.02.2040
12	NLC Tamilnadu (Tuticorn) Unit-I & Unit II	148	6%	90%	28.08.2040
13	Kudigi Unit-I, II & III	281	6%	90%	14.09.2043
14	New Neyvelli Thermal Power plant	62	6%	90%	09.02.2046
15	KKNPP (Kudankulam Nuclear Power Plant) Unit-I & II	54	8%	60%	PPA yet to be entered
16	Telangana Super Thermal Power Project (NTPC), Phase-I	1360	7%	85%	25 Years/2048

Others

- The Telangana Discoms had signed the PPA with M/s. Singareni Collieries Company Ltd on 18.01.2016 in respect of 2x600MW Thermal Power Project, Stage-I, for the procurement of 100% power from Singareni Thermal Power Plant.
- As per the CSPDCL Tariff Order 2017-18 issued by Chhattisgarh State Electricity Regulatory Commission (CSERC) on 31.03.2017, 1000 MW capacity of Marwa TPP was entirely made available for supply to the state of Telangana.

- The Telangana Discoms have signed a Power Purchase Agreement with M/s. Sembcorp Energy India Limited (SEIL) erstwhile Thermal Power Tech Corporation India Limited (TPCIL) for a contracted capacity of 500 MW (Unit-I) under long term basis through Case-I bidding route for a period of 25 years. Consequent to bifurcation of the state, TS Discoms has a share of 53.89% i.e., 269.45 MW. SEIL (Unit-I) has been supplying this power from 20.04.2015.
- Also, the TS Discoms have followed the competitive bidding mechanism and have signed a Power Purchase Agreement with M/s. Sembcorp Energy India Limited (SEIL) erstwhile Thermal Power Tech Corporation India Limited (TPCIL) for a contracted capacity of 570 MW (Unit-II) under long term DBFOO basis for a period of 8 years. SEIL (Unit-II) has been supplying this power from 30.03.2016.

The source-wise generating capacity (Telangana Share) and the PPA period/ PPA Expiry date are shown in the table below:

S No	Generating Source	Telangana Share (MW)	Auxiliary consumption (%)	PLF (%)	PPA Period/ PPA Expiry Date
1	Sembcorp Energy Unit I	269.45	6%	95%	Apr - 2040 (25 Years)
2	Sembcorp Energy Unit II	500	6%	95%	Mar - 2024 (08 Years)
3	Singareni Thermal Power Project Stage -I	1200	6%	90%	Dec - 2041 (25 Years)
4	Chhattisgarh Power (CSPDCL)	1000	5%	82%	May - 2029 (12 Years)

Non-Conventional Energy Sources (NCES):

The installed capacities of NCES sources (including the new capacity additions as discussed in previous section) are as below:

S No	Generating Source	Telangana Share (MW)	Auxiliary consumption (%)	PLF (%)
1	NCE - Bio-Mass	6	9%	80%
2	NCE - Bagasse	67	8%	55%
3	NCE - Municipal Waste to Energy	63	11%	80%
4	NCE - Industrial Waste based power project	19	9%	80%
5	NCE - Wind Power	128	1%	25%
6	NCE - Mini Hydel	3	1%	45%
7	NCE - Solar	2844	0.1%	25%
8	NTPC CPSU	2737	0.1%	25%
9	NHPC CPSU	500	0.1%	25%
10	SECI	1400	0.1%	25%
11	NTPC Bundled Scheme under JNNSM Ph-1	46	0.1%	25%

12	NTPC Bundled Scheme under JNNSM Ph-II (400 MW)	400	0.1%	25%
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7.2.3. Energy Availability (MU) forecast

Based on the installed capacity share and considering the Plant Load Factor/ Plant Availability Factor and Auxiliary consumption of the plant, the year-wise energy availability from each station is projected.

The source-wise details of the energy availability in MUs are tabulated below:

TS GENCO – Thermal

S No	Generating Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	KTPS-V	3512	3512	3509	3521	3512
2	KTPS-VI	3504	3519	3504	3525	3504
3	RTS-B	413	412	412	413	412
4	Kakatiya (KTPP) – I	3519	3504	3514	3514	3519
5	Kakatiya (KTPP) – II	4205	4223	4205	4235	4205
6	KTPS-VII	5962	5957	5962	5973	5960
7	Badradri (BTPS Units 1 to 4)	8045	8045	8044	8067	8045
8	Yadadri (YTPS Units 1 to 5)	23811	29784	29784	29784	29784
	Total	52970	58955	58933	59032	58940

S No	Generating Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	KTPS-V	3509	3512	3521	3509	3512
2	KTPS-VI	3519	3504	3529	3504	3514
3	RTS-B	309	0	0	0	0
4	Kakatiya (KTPP) – I	3504	3519	3514	3514	3504
5	Kakatiya (KTPP) – II	4216	4205	4235	4205	4223
6	KTPS-VII	5957	5962	5973	5962	5957
7	Badradri (BTPS Units 1 to 4)	8045	8045	8068	8044	8044
8	Yadadri (YTPS Units 1 to 5)	29784	29784	29784	29784	29784
	Total	58844	58530	58624	58521	58537

TS GENCO – Hydrel

SNo	Generating Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	NSPH (Nagarjun Sagar)	961	956	1044	1130	1225
2	NSLCPH (Nagarjun Sagar Left Canal)	64	65	64	64	66
3	Pulichintala	256	287	322	359	398
4	Pochampad	74	74	74	74	74
5	Nizam sagar	17	17	17	17	17

6	Palair	3	3	3	3	3
7	Mini Hydel (Peddapalli)	2	3	2	2	2
8	Singur	14	14	14	14	14
9	SLBHES (Srisailam)	1124	1124	1124	1124	1124
10	Priyadarshini Jurala	242	244	265	271	277
11	Lower Jurala	243	243	243	243	243
	Total	2999	3029	3172	3301	3443

SNo	Generating Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	NSPH (Nagarjun Sagar)	1315	1296	1300	1151	1167
2	NSLCPH (Nagarjun Sagar Left Canal)	80	77	74	66	67
3	Pulichintala	402	406	410	414	418
4	Pochampad	74	74	74	74	74
5	Nizam sagar	17	17	17	17	17
6	Palair	3	3	3	3	3
7	Mini Hydel (Peddapalli)	2	3	2	2	2
8	Singur	14	14	14	14	14
9	SLBHES (Srisailam)	1124	1124	1124	1124	1124
10	Priyadarshini Jurala	289	286	278	273	267
11	Lower Jurala	243	243	243	243	243
	Total	3562	3542	3539	3381	3396

Central Generating Stations (CGS)

SNo	Generating Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	NTPC (SR) - I & II	2666	2687	2618	2683	2669
2	NTPC (SR) Stage III	715	621	0	0	0
3	Talcher Stage 2	0	0	0	0	0
4	NTPC Simhadri Stage I	4163	4090	4090	4151	0
5	NTPC Simhadri Stage II	1984	1949	1949	1978	1984
6	NTPC Kudigi - I, II & III	2196	2095	2169	2095	2196
7	NLC Stage-I	35	35	35	35	35
8	NLC Stage-II	46	46	46	46	46
9	NNTPP (New Neyveli)	461	461	461	462	461
10	NLC Expansion 1	41	41	41	41	41
11	NLC Expansion 2	30	30	30	30	30
12	NPC-MAPS	56	56	42	0	0
13	NPC-Kaiga unit I & II	427	427	320	0	0
14	NPC-Kaiga unit III & IV	463	463	347	0	0
15	NPC- Kudankulam	28	28	28	28	28
16	Kudankulam (KKNPP) Unit-II	335	335	335	335	335
17	Vallur Thermal Power Plant (NTECL - Vallur)	698	698	698	698	698
18	NLC Tamilnadu Power Ltd (Tuticorin)	1098	1098	1098	1101	1098
19	NSM Bundled Ph II	1390	1390	1390	1394	1390
20	Telangana STPP (phase I)	11718	11682	12216	12216	12074
	Total	28550	28232	27913	27293	23085

SNo	Generating Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	NTPC (SR) - I & II	2668	2618	2686	2669	2669
2	NTPC (SR) Stage III	0	0	0	0	0
3	Talcher Stage 2	0	0	0	0	0
4	NTPC Simhadri Stage I	0	0	0	0	0
5	NTPC Simhadri Stage II	1949	1949	1949	1949	1949
6	NTPC Kudigi - I, II & III	2095	2169	2074	2196	2074
7	NLC Stage-I	32	0	0	0	0
8	NLC Stage-II	28	0	0	0	0
9	NNTPP (New Neyveli)	461	461	462	461	462
10	NLC Expansion 1	41	41	41	41	41
11	NLC Expansion 2	30	30	30	30	30
12	NPC-MAPS	0	0	0	0	0
13	NPC-Kaiga unit I & II	0	0	0	0	0
14	NPC-Kaiga unit III & IV	0	0	0	0	0
15	NPC- Kudankulam	28	28	28	28	28
16	Kudankulam (KKNPP) Unit-II	335	335	335	335	335
17	Vallur Thermal Power Plant (NTECL - Vallur)	698	698	698	698	698
18	NLC Tamilnadu Power Ltd (Tuticorin)	1098	1098	1101	1098	1101
19	NSM Bundled Ph II	1390	1390	1394	1390	1390
20	Telangana STPP (phase I)	12038	12216	12216	12074	12216
	Total	22891	23033	23014	22969	22993

Non-Conventional Energy Sources (NCES):

SNo	Generating Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	NCE - Biomass	42	42	42	0	0
2	NCE - Bagasse	321	321	196	117	117
3	NCE - Municipal Waste to Energy	438	438	438	438	438
4	NCE - Industrial Waste based power project	130	130	130	130	105
5	NCE - Wind Power	281	281	281	281	281
6	NCE - Mini Hydel	10	8	8	0	0
7	NCE - Solar	6224	6224	6224	6224	6224
8	NTPC CPSU	5994	5994	5994	5994	5994
9	NHPC CPSU	1095	1095	1095	1095	1095
10	SECI	3066	3066	3066	3066	3066
11	NTPC Bundled Scheme under JNNSM Ph-1	100	100	100	100	100
12	NTPC Bundled Scheme under JNNSM Ph-II (400 MW)	876	876	876	876	876
	Total	18577	18574	18449	18320	18295

SNo	Generating Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	NCE - Biomass	0	0	0	0	0
2	NCE - Bagasse	0	0	0	0	0

3	NCE - Municipal Waste to Energy	438	438	438	438	438
4	NCE - Industrial Waste based power project	105	105	53	53	53
5	NCE - Wind Power	281	281	281	281	281
6	NCE - Mini Hydel	0	0	0	0	0
7	NCE - Solar	6224	6224	6224	6224	6224
8	NTPC CPSU	5994	5994	5994	5994	5994
9	NHPC CPSU	1095	1095	1095	1095	1095
10	SECI	3066	3066	3066	3066	3066
11	NTPC Bundled Scheme under JNNSM Ph-1	100	100	100	100	100
12	NTPC Bundled Scheme under JNNSM Ph-II (400 MW)	876	876	876	876	876
	Total	18179	18179	18126	18126	18126

Others:

S No	Generating Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	Sembcorp Unit I	2360	2360	2360	2367	2360
2	Sembcorp Unit II	0	0	0	0	0
3	Singareni CCL	9244	9244	9244	9270	8911
4	CSPDCL	7055	7055	7055	7074	7055
	Total	18659	18659	18659	18712	18327

S No	Generating Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1	Sembcorp Unit I	2360	2360	2367	2360	2360
2	Sembcorp Unit II	0	0	0	0	0
3	Singareni CCL	8911	8911	8938	9244	9244
4	CSPDCL	677	0	0	0	0
	Total	11948	11272	11305	11604	11604

Summary of Energy Availability:

S No	Source	Energy Availability in MUs for 5 th Control Period				
		FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	TS Genco – Thermal	52,970	58,955	58,933	59,032	58,940
2	TS Genco – Hydel	2,999	3,029	3,172	3,301	3,443
3	Central Generating Stations	28,550	28,232	27,913	27,293	23,085
4	NCES	18,577	18,574	18,449	18,320	18,295
5	Sembcorp Energy (IPPs)	2,360	2,360	2,360	2,367	2,360
6	CSPDCL (Chhattisgarh)	7,055	7,055	7,055	7,074	7,055
7	Singareni	9,244	9,244	9,244	9,270	8,911
	Total	1,21,754	1,27,451	1,27,126	1,26,658	1,22,090

S No	Source	Energy Availability in MUs for 6 th Control Period				
		FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30
1	TS Genco – Thermal	58,844	58,530	58,624	58,521	58,537
2	TS Genco – Hydel	3,562	3,542	3,539	3,381	3,396
3	Central Generating Stations	22,891	23,033	23,014	22,969	22,993
4	NCES	18,179	18,179	18,126	18,126	18,126
5	Sembcorp Energy (IPPs)	2,360	2,360	2,367	2,360	2,360
6	CSPDCL (Chhattisgarh)	677	-	-	-	-
7	Singareni	8,911	8,911	8,938	9,244	9,244
	Total	1,15,424	1,14,555	1,14,608	1,14,601	1,14,657

7.3. Energy Balance

Based on the Energy Requirement and Energy Availability projections mentioned in the above sections, the Energy Balance in the state for each year of the 5th & 6th Control Periods are as follows:

Particular	Energy Balance in MUs for 5 th Control Period				
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Energy Availability	1,21,754	1,27,451	1,27,126	1,26,658	1,22,090
Energy Requirement	84,997	89,768	94,774	1,00,285	1,05,957
Surplus/ (Deficit)	36,758	37,683	32,352	26,374	16,133

Particular	Energy Balance in MUs for 6 th Control Period				
	FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30	FY 2029-30
Energy Availability	1,15,424	1,14,555	1,14,608	1,14,601	1,14,657
Energy Requirement	1,11,638	1,18,116	1,25,101	1,32,599	1,40,637
Surplus/ (Deficit)	3,786	(3,561)	(10,493)	(17,997)	(25,981)

7.4. Power Procurement Plan (Short-term & Long-term):

Short-term plan for 5th Control Period:

- With the requirement growing year-on-year and capacity not matching the requirement, Discoms have been forced to depend on short-term market purchases during FY 2021-22 and FY 2022-23.
- During the FY 2021-22, TSSPDCL have purchased 4786 MUs for Rs. 2175 Cr and TSNPDCL have purchased 1998 MUs for Rs. 908 Cr through Trading at average unit rate of Rs. 4.54/kWh (the same has been given by Discoms during ARR filing for FY 2023-24). But for FY 2022-23, the average unit rate has increased to be at Rs. 7.07/kWh (based on the actual cost of H1 and estimated cost for H2 of FY 2022-23). In some months, the market rates have crossed Rs. 12/kWh as well.

- Moreover, the requirement is expected to grow due to Lift Irrigation Schemes and load additions in Industrial and Commercial categories.
- Hence, TS Discoms have entered into PPAs with TS Genco, CGS and NCES (Solar) generators to provide 24x7 quality and reliable power supply to all the categories of consumers.
- For 5th Control Period, the Discoms are in energy surplus scenario. The reason for it is due to addition of new capacity from TS Genco Station (YTPS), CGS station (Telangana STPP) and NCES stations (SECI & CPSU schemes). The detailed description of addition of new generating capacity is mentioned in above sections (section 7.2)
- Discoms have taken care of good energy mix by entering into PPAs with both Thermal and RE generating stations for 5th Control Period
- For 5th Control Period also, on a real-time basis, if the market conditions are favorable, TS Discoms shall engage in the sale of surplus power, as done in the recent years

Long-term plan for 6th Control Period:

During the 6th Control Period, the Discoms have an energy deficit scenario. Discoms expect to meet the energy deficit by means of following measures.

Based on the real-time conditions in future, if the below mentioned plants are installed, then Discoms would explore entering PPAs with them as and when required.

1. Singareni Phase II

- Discoms are planning to enter into PPA with Singareni CCL unit 3 (800 MW) capacity and this unit is expected to be Commissioned during FY 2026-27
- There is a scope for installation of 1600 MW additional capacity for Singareni CCL (Units 4 & 5).

2. Telangana STPP

- Currently Discoms are allotted 85% share from TSTPP (1600 MW) plant. The negotiations are going on to allot the remaining 15% share as well to TS Discoms only.
- There is a scope for installation of 2400 MW (3x800 MW each) additional capacity for Telangana STPP.

3. Central Generating Stations

- The availability from CGS stations for 1019 MW (incl Simhadri 539 MW) is reduced during 6th Control Period due to expiry of PPAs. The station-wise PPA details are provided in above sections (section 7.2)
- Discoms would ensure the cost effectiveness and would explore option of extending PPAs if required.

4. Non-Conventional Energy Sources (NCES)

- The variable costs from NCES (Solar) have reduced significantly in the last few years. There are two modes for procuring Solar power Distributed mode (generating plants are placed close to sub-stations to reduce losses) and Centralized mode (generating plants are concentrated in a single region like SECI, CPSU, etc.)
- Currently Discoms are procuring Solar power in both modes and would explore these options in future based on cost-competitiveness.

In addition to these, Discoms would try to bridge smaller energy deficit gaps by utilizing the **Short-term Market** purchases.

8. Network Plan

As per Guidelines for Resource Plan (Dec 2006), Licensee shall submit a detailed Distribution Plan for the next Control Period. This Distribution Plan is prepared considering the network elements required for System Expansion Plan.

System expansion is planned to cater to the load growth and network strengthening. The following methodology has been adopted for the estimation of the new network elements required to cater to the load growth:

8.1.Methodology

8.1.1. Data

The following data has been gathered for all the sub-divisions in a DISCOM:

Sales Projection

Sub-division wise LT, 11kV and total HT actual sales including open access for past 6 years (FY 2016-17 to FY 2021-22) has been considered. Projection of sub-division wise LT and 11 kV sales for the 5th & 6th control period has been carried out on the basis of the actual sales of the last six years and CAGRs have been computed (5 year). 5-year CAGR has been considered in most of the cases, modified in case of exceptions. The CAGR considered for each sub-division has been capped at maximum of 1% to moderate the numbers of network required. Further, year on year growth rate for thus projected combined LT and 11kV sales was computed to project the loading of network elements (33/11 KV sub-station, PTR, and 11 kV Feeders) for the 5th & 6th control period.

Sub-division Classification

Sub-divisions are classified as GHMC, Urban, Semi-urban and rural based on the current location and current load pattern. This classification helps the Licensee to compute the load density in the respective area. Addition of S/s or PTR will be proposed based on the load growth and Load density in that area.

Network Loading Data

The details of all Sub Stations in the Licensee area were gathered along with the location area classification, details of constituent network elements and their respective peak loading values.

Power Transformer Details

The power transformer (PTR) capacities installed in each substation were gathered along with the peak loading details of PTRs. The data used for analysis is the existing values of FY 2022-23 and is as received from the field to ensure that the model captures and reflects the real situation as in the fields. The peak loading details as received from the field was validated to remove any exceptions.

Feeder Details

The details captured for analysis are the total number of feeders installed in a substation and the peak currents flowing through the same. This data was captured from the field during the year 2022-23. The peak current data in feeders of a sub-station have been validated to remove exceptions, if any.

Distribution Transformer Details

Capacity wise total number of DTRs in each circle was captured. The DTRs are classified as Agricultural and Non-agricultural. Information is collected after taking this classification under consideration.

8.1.2. Network Element Details

8.1.2.1.Substation Unit

Each Substation is projected by considering substation as a unit comprising of all the associated equipment. Each substation unit consists of below mentioned equipment

- 33 kV line of 6 KMs
- 132/33 kV tapping bay
- 33 kV VCB
- Power Transformers
- Feeders

8.1.2.2.Power Transformer Unit

A Power transformer is projected by considering it as a unit consisting of below mentioned equipment

- Power Transformer

- HV Breaker
- LV Breaker
- 33 KV AB switch.

When a Power Transformer is upgraded, the old transformer is reused at other substation based on requirement. For Example, A 8 MVA transformer, which is upgraded to 12.5 MVA in GHMC can be reused in Urban/ Semi urban regions.

8.1.2.3. Feeder Unit

Each feeder is defined as a unit constituting of Feeder breaker and metering set (including CT/PT), bay extension, 11 kV line of 5 KMs, poles.

8.1.2.4. DTR Unit

A DTR unit consists of DTR, AB switches, DTR structure, 0.1 km of LT line, 0.1 km of 11 kV line.

8.1.3. Modelling for Network Additions (Substations; PTRs and Feeders)

The PTR and feeder loadings in every substation (in a sub-division) have been assumed to grow at the same rate as the year-on-year sales growth of sum of LT and HT 11 kV sales of that particular sub-division. The substation capacity limit has been capped at 25 MVA for GHMC substations, 16 MVA for Urban substations, 16 MVA for semi-urban substations, and 10 MVA for rural substations. These limits have been set with an objective to reduce line losses and for improving the voltage profile.

For example, if a S/s having a 16 MVA PTR capacity, 70% of peak load, semi urban area, 10% growth rate. This requires additional PTR capacity to cater to the load growth in that area. However, with the threshold limit, a new S/s will be proposed closer to the load centre to reduce line losses and for improving voltage profile.

8.1.3.1. Substation

A new substation will be proposed as per the following conditions:

New substations will be proposed subject to fulfilment of all the following conditions:

- If none of the PTRs are upgradable (An upgradable PTR is 8 MVA capacity in GHMC SS, 5 MVA capacity in Urban and Semi-Urban SS and 3.15 MVA in a Rural SS)
- If an additional PTR is required and the substation cannot accommodate any further PTRs based on the criteria mentioned above
- Average loading on PTRs in substation is greater than the threshold set (% loading of its capacity) for new substation addition

A certain loading of the PTRs in the present substation is transferred to the new substation. The PTR capacity to be installed in the new substation is 5 MVA in rural, 8 MVA in case of urban & semi-urban and 12.5 MVA in GHMC areas. The load transfer from a present substation to a new substation has been factored in such a way that in most situations the average loading on PTRs in the present substation after the load transfer doesn't exceed the Threshold Capacity in any of the years in the control period.

The number of feeders proposed for a new substation are 6 for GHMC, Urban, Semi-urban region and 4 for rural region.

8.1.3.2.Power Transformer

A new PTR will be proposed if all the following conditions are satisfied:

- If the peak loading of any of the PTRs installed exceeds the threshold set (% loading of its capacity) and if the substation can accommodate a new PTR i.e., GHMC -25 MVA, Urban-16 MVA, SU – 16 MVA, Rural -10 MVA
- If none of the PTRs are upgradable (An upgradable PTR is 8 MVA capacity in GHMC, 5 MVA capacity in Urban & Semi-Urban SS and 3.15 MVA in a Rural SS)
- The PTR capacity proposed is either 5 MVA or 8 MVA or 12.5 MVA, depending on remaining substation capacity and requirement. 12.5 MVA PTR are proposed only in GHMC region

The existing PTR will be upgraded if all the following conditions are satisfied:

- If the peak loading of any of the PTRs installed exceeds the threshold set (% loading of its capacity)

- If the PTRs are upgradable (An upgradable PTR is 8 MVA capacity in GHMC, 5 MVA capacity in Urban & Semi-Urban SS and 3.15 MVA in a Rural SS)

The final loading on the PTRs after a new PTR is proposed is such that the distribution of peak loads on all PTRs is the same. This shall ensure that all the PTRs are loaded equally unlike the scenario of peak loading on one of them being very high.

A similar carry forward approach has been adopted for the PTR additions as done for substations.

8.1.3.3. Feeders

The total number of feeders in a substation has been capped to 6 for urban, semi-urban and 4 for rural.

New feeders will be proposed under the following conditions:

- Redistribution of feeder currents is done for each sub-station, irrespective of the feeder loading
- If after the redistribution, peak feeder current exceeds more than threshold limits and an additional feeder can be accommodated in the substation
- The above applies only if no new substation addition is being proposed
- The peak currents in the feeders are distributed equally among the ones overloaded and the new feeders proposed

Additional feeders have also been considered apart from the projections in view of expected requirements based on field input.

When a new S/s on account of overloaded feeders is proposed, same PTR loading for old S/s is maintained. Total transferable current for a sub-division is calculated by classifying S/s in groups of GHMC, Urban, Semi-Urban and Rural. The number of S/s is proposed depends upon the number of feeders required as per threshold feeder current for that year and the SS classification. It is assumed that each new S/s thus proposed, in GHMC would have capacity of 12.5 MVA (1 PTR of 12.5 MVA), Urban and Semi-Urban areas would have a capacity of 8 MVA (1 PTR of 8 MVA) whereas a Rural S/S would have a capacity of 5 MVA (1 PTR of 5 MVA).

A similar carry forward approach has been adopted for the feeder currents as done above for substations and PTRs.

8.1.3.4. Distribution Transformers

Distribution transformers are categorized as agricultural and non- agricultural. Information of these transformers, circle and capacity wise was collected for FY 2022-23.

- LT sales (excluding agriculture and only agriculture) is adjusted for LT losses and thereafter sales per kVA (kWh/kVA) computed for 2022-23 for each circle based on the existing DTR Capacity (kVA) (Agricultural & Non-Agricultural).
- Sales per kVA (circle wise) ratio has been used to project circle wise & year wise DTR Capacity (kVA) for the 5th & 6th control period.
- In the case of Non-Agricultural category, the sales/KVA ratio for each of the circle (kWh/kVA) has been moderated by 10% to arrive at the average numbers of DTR installation based on historical trend.
- In the case of Agricultural category, the sales/KVA ratio for each of the circle (kWh/kVA) has been moderated between 10% to 16% to arrive at the average numbers of DTR installation based on historical trend.

8.1.4. Circle wise DTR Nos are arrived based on the existing % configuration (capacity) but restricting DTR capacities to ≥ 100 kVA (100 KVA, 160 KVA, 315 KVA & 500 KVA) for Non -Agri DTRs and 25 kVA, 63 KVA & 100 KVA for Agri DTRs

8.1.5. Threshold Peak Loading of Network Elements

With the current loading of the network elements, very large number of new S/s, PTRs, feeders and DTRs are being proposed in both the control periods. Licensee adopted differential threshold limits to moderate the network projections and further ensure a relatively uniform network additions each year during the control period. Summary of the threshold peak loading are shown below.

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Substation Threshold (%)						

GHMC/Urban SS threshold	90%	90%	90%	90%	90%	90%
SU SS threshold	90%	90%	90%	90%	90%	90%
Rural SS threshold	95%	95%	95%	95%	95%	95%
PTR Threshold (%)						
GHMC/Urban PTR threshold	70%	70%	70%	70%	70%	70%
SU PTR threshold	69%	69%	69%	69%	69%	69%
Rural PTR threshold	86%	86%	86%	86%	85%	85%
Feeder Threshold (Amp)						
GHMC/Urban/Semi-urban	150	150	150	150	150	150
Rural	150	150	150	150	150	150

Description	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
Substation Threshold (%)					
GHMC/Urban SS threshold	90%	90%	90%	90%	90%
SU SS threshold	90%	90%	90%	90%	90%
Rural SS threshold	95%	95%	95%	95%	95%
PTR Threshold (%)					
GHMC/Urban PTR threshold	69%	69%	69%	69%	69%
SU PTR threshold	69%	69%	69%	69%	69%
Rural PTR threshold	81%	81%	81%	80%	80%
Feeder Threshold (Amp)					
GHMC/Urban/Semi-urban	150	150	150	150	150
Rural	150	150	150	150	150

Different classification areas (Rural, Semi-Urban, Urban and GHMC areas): The loading of network elements in urban and rural areas display different characteristics as per the peak loading data. It has been observed that the load growth is higher in GHMC and urban areas and Substations are reaching the peak loading values very fast as compared to semi-urban and rural areas. Therefore, a relatively lower threshold has been adopted for GHMC/urban/semi urban areas as compared with rural areas to align the network additions of GHMC/urban/semi urban and rural areas with each other.

8.2. Network Additions Summary

In this section, the details of the network additions are provided for the 5th & 6th control period. In the network additions, the substation additions, PTR capacity additions, Feeder additions, and DTR additions have been captured.

TSSPDCL	Unit	Base Year	Total for 5 th Control Period					5 th Control period (FY 24-25 to FY 28-29)
		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	
Substation Additions	Nos	66	80	87	88	90	93	438
PTR Additions	Nos	12	13	14	15	17	19	78
PTR Augmentation	Nos	67	67	68	69	71	72	347
Feeder Additions	Nos	2	10	14	22	29	14	88
DTR Unit Additions	Nos	29773	31586	33233	34966	36796	38724	175305

Network Projections Results (5 th CP)	Base Year	Total for 5 th Control Period					Total FY 24-25 to 28-29
	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	
New SS Additions							
GHMC no's	2	2	2	2	2	2	10
Urban no's	0	0	0	0	0	0	0
Semi Urban no's	0	0	0	0	0	0	0
Rural no's	1	1	1	1	1	1	5
Total number of SS	3	3	3	3	3	3	15
Total Capacity Added (MVA)	55	55	55	60	60	30	260
No.of Feeders	16	16	16	16	16	16	80
SS addition due to overloaded feeders							
GHMC no's	6	6	6	6	6	6	30
Urban no's	17	21	23	24	24	25	118
Semi Urban no's	23	28	31	32	32	34	157
Rural no's	17	21	23	24	24	25	118
Total Number of SS	63	77	84	85	87	90	423
Total Capacity Added (MVA)	480	579	629	636	650	671	3165
No of Feeders	344	419	457	463	473	490	2302
Total MVA	535	634	684	696	710	701	3425
Total number of SS							
GHMC no's	8	8	8	8	8	8	40
Urban no's	17	21	23	24	24	25	118
Semi Urban no's	23	28	31	32	32	34	157
Rural no's	18	22	24	25	25	26	123
Total Number of SS	66	80	87	88	90	93	438
Total Capacity Added (MVA)	535	634	684	696	710	701	3425
No of Feeders	360	435	473	479	489	506	2382
Total number of PTRS in new SS							
PTR No (12.5 MVA)	4	4	4	4	4	2	18
PTR No(8 MVA)	0	0	0	0	0	0	0
PTR No(5 MVA)	1	1	1	2	2	1	7
Total Number of PTRs in new SS	5	5	5	6	6	3	25

Network Projections Results (5 th CP)	Base Year	Total for 5 th Control Period					Total FY 24-25 to 28-29
	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	
Total Capacity Added (MVA)	55	55	55	60	60	30	260
Total number of PTRs in SS due to over loaded feeders							
PTR No (12.5 MVA)	6	6	6	6	6	6	30
PTR No(8 MVA)	40	50	55	55	57	59	275
PTR No(5 MVA)	17	21	23	24	24	25	118
Total number of PTR	63	77	84	85	87	90	423
Total Capacity Added (MVA)	480	579	629	636	650	671	3165
New PTR Additions in existing SS number							
PTR No (12.5 MVA)	1	1	1	1	1	1	5
PTR No(8 MVA)	2	2	2	2	2	2	10
PTR No(5 MVA)	9	10	11	12	14	16	63
Total PTR numbers added	12	13	14	15	17	19	78
Total Capacity Added (MVA)	74	79	84	89	99	109	458
PTR Augmentation number							
PTR Augmented in GHMC	46	46	46	46	47	47	232
PTR Augmented in Urban and Semi-Urban SS	15	15	15	15	15	15	75
PTR Augmented in Rural SS	6	6	7	8	9	10	40
Total PTRs Augmented	67	67	68	69	71	72	347
PTR capacity Augmented in MVA	256	256	257	259	266	268	1306
Total PTR capacity added (MVA)	329	334	341	348	364	376	1763
Feeder Additions in Existing SS's	2	10	14	22	29	14	88
Total Capacity Addition (New SS + Existing SS) MVA	864	968	1025	1044	1074	1077	5188
Total no of feeders added including SS due to overloaded feeders	362	445	487	500	519	519	2470
Total number of PTRs added	80	95	103	106	110	112	526
Total Capacity of PTRs added (MVA)	608	713	767	784	809	810	3883
DTR Additions							
25 KVA	20075	21257	22318	23431	24600	25827	117433
63 KVA	1453	1539	1616	1696	1781	1870	8502
100 KVA	7007	7469	7900	8358	8845	9363	41935
160 KVA	820	876	928	983	1043	1106	4936
315 KVA	309	329	348	368	389	412	1846
500 KVA	109	116	123	130	138	146	653
Total DTRs	29773	31586	33233	34966	36796	38724	175305

TSSPDCL	Unit	Total for 6 th Control Period					6 th Control period (FY 29-30 to 33-34)
		FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	
Substation Additions	Nos	93	97	99	100	102	491
PTR Additions	Nos	28	30	32	37	38	165
PTR Augmentation	Nos	83	83	91	95	100	452
Feeder Additions	Nos	15	21	34	46	21	137
DTR Unit Additions	Nos	34504	32958	37765	36215	44837	186279

Network Projections Results (6 th CP)	Total for 6 th Control Period					Total (FY 29-30 to 33-34)
	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	
New SS Additions						
GHMC no's	2	2	2	2	2	10
Urban no's	0	0	0	0	0	0
Semi Urban no's	0	0	0	0	0	0
Rural no's	1	1	3	4	6	15
Total number of SS	3	3	5	6	8	25
Total Capacity Added (MVA)	55	55	75	80	73	338
No.of Feeders	16	16	24	28	36	120
SS addition due to overloaded feeders						
GHMC no's	6	6	6	6	6	30
Urban no's	25	29	29	29	29	142
Semi Urban no's	34	34	34	34	34	168
Rural no's	25	25	25	25	25	126
Total Number of SS	90	94	94	94	94	466
Total Capacity Added (MVA)	671	703	703	703	703	3485
No of Feeders	490	514	514	514	514	2544
Total MVA	726	758	778	783	776	3823
Total number of SS						
GHMC no's	8	8	8	8	8	40
Urban no's	25	29	29	29	29	142
Semi Urban no's	34	34	34	34	34	168
Rural no's	26	26	28	29	31	141
Total Number of SS	93	97	99	100	102	491
Total Capacity Added (MVA)	726	758	778	783	776	3823
No of Feeders	506	530	538	542	550	2664
Total number of PTRS in new SS						
PTR No (12.5 MVA)	4	4	4	4	3	19
PTR No(8 MVA)	0	0	0	0	0	0
PTR No(5 MVA)	1	1	5	6	7	20

Network Projections Results (6 th CP)	Total for 6 th Control Period					Total (FY 29-30 to 33-34)
	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	
Total Number of PTRs in new SS	5	5	9	10	10	39
Total Capacity Added (MVA)	55	55	75	80	73	338
Total number of PTRs in SS due to over loaded feeders						
PTR No (12.5 MVA)	6	6	6	6	6	30
PTR No(8 MVA)	59	63	63	63	63	310
PTR No(5 MVA)	25	25	25	25	25	126
Total number of PTR	90	94	94	94	94	466
Total Capacity Added (MVA)	671	703	703	703	703	3485
New PTR Additions in existing SS number						
PTR No (12.5 MVA)	1	1	1	1	1	5
PTR No(8 MVA)	2	2	2	2	2	10
PTR No(5 MVA)	25	27	29	34	35	150
Total PTR numbers added	28	30	32	37	38	165
Total Capacity Added (MVA)	154	164	2	199	204	721
PTR Augmentation number						
PTR Augmented in GHMC	59	59	67	68	72	325
PTR Augmented in Urban and Semi-Urban SS	15	15	15	15	15	75
PTR Augmented in Rural SS	9	9	9	12	13	52
Total PTRs Augmented	83	83	91	95	100	452
PTR capacity Augmented in MVA	320	320	354	364	383	1740
Total PTR capacity added	473	483	356	563	586	2461
Feeder Additions in Existing SS's	15	21	34	46	21	137
Total Capacity Addition (New SS + Existing SS) MVA	1200	1242	1135	1346	1362	6284
Total no of feeders added including SS due to overloaded feeders	520	551	571	588	571	2801
Total number of PTRs added	123	129	135	141	142	670
Total Capacity of PTRs added (MVA)	880	922	780	982	979	4544
DTR Additions						
25 KVA	21981	20303	23813	22072	28650	116819
63 KVA	1591	1470	1724	1598	2074	8457
100 KVA	9168	9314	10243	10437	11875	51037
160 KVA	1174	1246	1323	1406	1494	6643

Network Projections Results (6 th CP)	Total for 6 th Control Period					Total (FY 29-30 to 33-34)
	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	
315 KVA	436	462	489	518	549	2454
500 KVA	154	163	173	184	195	869
Total DTRs	34504	32958	37765	36215	44837	186279

9. Investment Plan

The Network cost details for the proposed network projections for 5th Control Period (FY2024-25 to FY 2028-29) & 6th Control period (FY 2029-30 to FY 2033-34) i.e., to convert the network additions to Base Capex is estimated by considering the following approach.

- Substation Unit Cost (Rs. / substation): For calculating the cost of a substation added the following have been considered to be a part of a substation unit:
 - a. 33 kV line of 6 Kms (main feeder and stand by feeder)
 - b. 132/33 kV tapping bay
 - c. 33 kV VCB
 - d. 11 kV line of 5 Kms (rural – 4 feeders, GHMC/urban/semi-urban – 6 feeders)
- PTR Unit Cost (Rs. / MVA): For calculating the cost of installing a PTR in a substation the following have been considered:
 - a. PTR of relevant capacity i.e., 5/8/12.5 MVA (for rural, Semi-urban/urban/ GHMC respectively)
 - b. 33 kV AB Switch
 - c. Associated Equipment and labour cost
- PTR Enhancement Unit Cost (Rs. / MVA): For calculating the cost of enhancing a PTR in a substation the following have been considered:
 - PTR of relevant capacity
 - Depreciation of old PTR
 - Associated Equipment and labour cost

- Feeder Unit Cost (Rs. / feeder): For calculating the cost of a installing a feeder in a substation following have been considered:
 - a. Feeder breaker and metering set (including CT/PT)
 - b. Bay extension
 - c. 11 kV line
 - d. Poles
 - e. Associated Equipment and labour cost.

- DTR Unit Cost (Rs. / kVA): For calculating the cost of a installing a DTR the following have been considered:
 - a. Relevant DTR cost
 - b. AB switches
 - c. DTR structure
 - d. 0.1 km of LT line
 - e. 0.1 km of 11 kV line
 - f. Associated Equipment and labour cost.

Capital Cost Escalation Factor:

Relevant categories of WPI, CPI for Capital Goods segment have been considered in the ratio of 60:40 for calculating an overall escalation rate. The five-year average of this factor has been computed to be 4.57% and the same has been considered on the unit costs of 2022-23 to arrive at the unit costs for every year of the 5th control period & 6th Control Period.

The cost data for FY 2022-23 is considered for projections of network cost for base year i.e., FY2023-24. A Price Escalation of **4.57%** is considered for YoY cost projections by considering 60% of WPI and 40% of CPI variation over past five years.

The network element unit cost arrived based on the cost data is the value pertaining to FY 2022-23. Considering the possible increase in material and labour costs, the network unit cost has been escalated by the above-mentioned percentage of price escalation year-on-year. The number of network additions each year has been multiplied by the relevant network unit cost for that year to arrive at the total cost of installing the new network elements in that year.

Base Capital Expenditure:

The Base Capex plan arrived for the network projections proposed for 5th & 6th control period is as follows:

SN.	Network Element	Base Capex in Rs. Cr. (5 th CP)					
		FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	Total
1	Sub-Station Unit Additions	521.34	582.73	615.79	655.69	731.93	3107.49
2	PTR Additions	9.71	10.84	12.06	14.11	17.07	63.78
3	PTR Augmentation	50.44	53.32	56.35	60.50	66.84	287.45
4	Feeder Additions	3.19	4.67	7.67	10.92	5.59	32.04
5	DTR Additions	969.23	1067.87	1176.51	1296.62	1429.10	5939.35
Total		1553.93	1719.43	1868.38	2037.84	2250.53	9430.11

SN.	Network Element	Base Capex in Rs. Cr. (6 th CP)					
		FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY33-34	Total
1	Sub-Station Unit Additions	768.98	834.92	847.80	892.24	941.77	4285.71
2	PTR Additions	25.57	28.53	30.33	36.40	39.05	159.88
3	PTR Augmentation	82.16	85.92	94.96	102.82	113.28	479.14
4	Feeder Additions	6.27	9.39	15.05	21.66	10.26	62.62
5	DTR Additions	1374.21	1402.46	1655.01	1695.54	2128.82	8256.04
Total		2257.19	2361.21	2643.14	2748.66	3233.19	13243.39

Other Capital Expenditure:

The details of Other Capital Expenditure that the licensee is expected to incur for the 5th & 6th control period is as follows:

Sl. No.	Investment Area	Total Other Capex for 5 th Control Period					
		in Rs. Cr.					
		FY24-25	FY25-26	FY 26-27	FY27-28	FY 28-29	Total 5 th CP
a	AT & C Loss Reduction	35.83	35.45	34.09	33.77	22.44	161.58
	Meter Replacement (Installation of High-Quality meters)	23.5	22.5	20.5	19.5	7.45	93.45

Sl. No.	Investment Area	Total Other Capex for 5 th Control Period					
		in Rs. Cr.					
		FY24-25	FY25-26	FY 26-27	FY27-28	FY 28-29	Total 5 th CP
	Replacement of existing 35 sq.mm. conductor with 55 sq.mm. conductor and 20sqmm with 34sqmm	12.33	12.95	13.59	14.27	14.99	68.13
b	Reliability Improvement & Contingency Schemes	337.18	436.98	458.82	481.77	505.85	2220.60
	Auto-reclosures	0.00	25.30	26.57	27.90	29.29	109.06
	Sectionalisers	0.00	28.11	29.52	31.00	32.55	121.17
	3-way RMUs (SCADA compatible)	0.00	21.09	22.14	23.25	24.41	90.88
	Fault Passage Indicators (SCADA compatible)	0.00	8.43	8.86	9.30	9.76	36.35
	Reconductoring of lines	1.21	1.27	1.33	1.40	1.47	6.69
	Replacing OH line with UG cables	7.86	8.25	8.66	9.09	9.55	43.41
	Provision of alternate supply at 33KV level	31.24	32.80	34.44	36.16	37.97	172.61
	Addition of 33KV lines	27.27	28.64	30.07	31.57	33.15	150.70
	Bays -33 kV	3.96	4.16	4.37	4.59	4.82	21.91
	Provision of alternate supply at 11KV level	116.25	122.06	128.16	134.57	141.30	642.35
	Addition of 11KV line	115.96	121.76	127.84	134.24	140.95	640.74
	Bays -11 kV	0.29	0.30	0.32	0.34	0.35	1.60
	Provision of alternate supply LT voltage	180.63	189.66	199.14	209.10	219.55	998.08
	Addition of LT line	180.63	189.66	199.14	209.10	219.55	998.08
c	Renovation & Modernization	15.00	16.28	17.71	19.31	21.09	89.39
	R & M of existing assets	12.71	13.88	15.19	16.66	18.30	76.73
	R & M of SS	7.35	7.71	8.10	8.51	8.93	40.60
	R & M of civil infrastructure (Office buildings/ furniture)	5.36	6.16	7.09	8.15	9.37	36.13
	Proposed Retirement of existing assets	2.29	2.41	2.53	2.65	2.78	12.66
	33/11KV SS						0.00
	33KV line						0.00
	11KV line						0.00
	DTR	2.29	2.41	2.53	2.65	2.78	12.66
	LT line						0.00
d	New Consumer Capex	198.18	214.09	230.29	246.81	263.65	1153.02
	Network additions for release of new service connections	80	90	100	110	120	500.00
	-33KV line for new consumer (Including LI schemes)	80	90	100	110	120	500.00
	- Service Wire						0.00
	Consumer Meters	118.18	124.09	130.29	136.81	143.65	653.02
	- LT meters	62.98	66.13	69.44	72.91	76.55	348.00

Sl. No.	Investment Area	Total Other Capex for 5 th Control Period					
		in Rs. Cr.					
		FY24-25	FY25-26	FY 26-27	FY27-28	FY 28-29	Total 5 th CP
	- HT metering set (Meter cost including CT/PT)	55.20	57.96	60.86	63.90	67.10	305.01
	Other Schemes (Pls Specify)						0.00
e	Civil Infrastructure Development	3.32	3.25	3.91	1.92	2.37	14.77
	Construction of Office buildings	3.09	2.99	3.62	1.59	2.01	13.29
	Furniture	0.17	0.19	0.21	0.23	0.25	1.05
	AC's	0.07	0.08	0.09	0.10	0.11	0.44
	Administrative Support (Computers)						0.00
f	Technology Upgradation	37.85	28.02	18.46	21.43	11.84	117.60
	Automation of Substations	5.00	5.25	5.51	5.79	6.08	27.63
	GIS mapping	0.04	0.04	0.04	0.04	0.05	0.21
	WAN	25.20	2.00	2.00	2.50	2.50	34.20
	AMR solutions	0.61	0.73	0.91	1.10	1.22	4.57
	SCADA Control center (new)	6.00	0.00	0.00	0.00	0.00	6.00
	ERP/IT applications	1.00	20.00	10.00	12.00	2.00	45.00
g	Land Cost for SS	58.38	83.35	114.37	128.55	141.73	526.38
h	Road Cutting Cost (Cables for SS)	3.66	3.84	4.84	5.93	6.54	24.80
i	AGL Feeder Segregation	225.00	250.00	300.00	350.00	360.00	1485.00
	Total	914.40	1071.26	1182.51	1289.48	1335.50	5793.15

Sl. No.	Investment Area	Total Other Capex for 6 th Control Period					
		in Rs. Cr.					
		2029-30	2030-31	2031-32	2032-33	2033-34	Total 6 th CP
a	AT & C Loss Reduction	15.74	16.52	17.35	18.22	19.13	86.96
	Meter Replacement (Installation of High-Quality meters)	0	0	0	0	0	0.00
	Replacement of existing 35 sq.mm. conductor with 55 sq.mm. conductor and 20sqmm with 34sqmm	15.74	16.52	17.35	18.22	19.13	86.96
b	Reliability Improvement & Contingency Schemes	531.15	557.70	585.59	614.87	645.61	2934.92
	Auto-reclosures	30.76	32.29	33.91	35.60	37.38	169.94
	Sectionalisers	34.17	35.88	37.68	39.56	41.54	188.82
	3-way RMUs (SCADA compatible)	25.63	26.91	28.26	29.67	31.15	141.62
	Fault Passage Indicators (SCADA compatible)	10.25	10.76	11.30	11.87	12.46	56.65
	Reconductoring of lines	1.54	1.62	1.70	1.79	1.88	8.53
	Replacing OH line with UG cables	10.03	10.53	11.05	11.61	12.19	55.40
	Provision of alternate supply at 33KV level	39.87	41.86	43.95	46.15	48.46	220.29
	Addition of 33KV lines	34.81	36.55	38.38	40.29	42.31	192.34
	Bays -33 kV	5.06	5.31	5.58	5.86	6.15	27.96
	Provision of alternate supply at	148.37	155.78	163.57	171.75	180.34	819.82

Sl. No.	Investment Area	Total Other Capex for 6 th Control Period					
		in Rs. Cr.					
		2029-30	2030-31	2031-32	2032-33	2033-34	Total 6 th CP
	11KV level						
	Addition of 11KV line	148.00	155.40	163.17	171.32	179.89	817.77
	Bays -11 kV	0.37	0.39	0.41	0.43	0.45	2.05
	Provision of alternate supply LT voltage	230.53	242.06	254.16	266.87	280.21	1273.83
	Addition of LT line	230.53	242.06	254.16	266.87	280.21	1273.83
c	Renovation & Modernization	22.61	24.26	26.04	27.96	30.05	130.91
	R & M of existing assets	19.69	21.19	22.81	24.58	26.49	114.76
	R & M of SS	9.38	9.85	10.34	10.85	11.40	51.81
	R & M of civil infrastructure (Office buildings/ furniture)	10.31	11.34	12.48	13.72	15.10	62.94
	Proposed Retirement of existing assets	2.92	3.07	3.22	3.38	3.55	16.15
	33/11KV SS	0	0	0	0	0	0.00
	33KV line	0	0	0	0	0	0.00
	11KV line	0	0	0	0	0	0.00
	DTR	2.92	3.07	3.22	3.38	3.55	16.15
	LT line	0	0	0	0	0	0.00
d	New Consumer Capex	280.83	298.37	316.29	334.61	353.34	1583.44
	Network additions for release of new service connections	130	140	150	160	170	750.00
	-33KV line for new consumer (Including LI schemes)	130	140	150	160	170	750.00
	- Service Wire						0.00
	Consumer Meters	150.83	158.37	166.29	174.61	183.34	833.44
	- LT meters	80.38	84.40	88.62	93.05	97.70	444.15
	- HT metering set (Meter cost including CT/PT)	70.45	73.97	77.67	81.56	85.63	389.28
	Other Schemes (Pls Specify)	0.00	0.00	0.00	0.00	0.00	0.00
e	Civil Infrastructure Development	3.38	2.44	1.96	2.01	3.46	13.25
	Construction of Office buildings	2.99	2.01	1.49	1.49	2.88	10.85
	Furniture	0.28	0.31	0.34	0.37	0.41	1.70
	AC's	0.12	0.13	0.14	0.16	0.17	0.71
	Administrative Support (Computers)	0	0	0	0	0	0.00
f	Technology Upgradation	12.23	39.56	36.39	26.75	27.12	142.05
	Automation of Substations	6.38	6.70	7.04	7.39	7.76	35.26
	GIS mapping	0.05	0.05	0.05	0.06	0.06	0.26
	WAN	3.00	30.00	4.00	4.00	4.00	45.00
	AMR solutions	0.31	0.31	0.31	0.31	0.31	1.53
	SCADA Control center (new)						0.00
	ERP/IT applications	2.50	2.50	25.00	15.00	15.00	60.00
g	Land Cost for SS	85.23	93.97	103.60	114.22	125.92	522.93
h	Road Cutting Cost (Cables for SS)	4.67	5.15	5.67	6.26	6.90	28.64
i	AGL Feeder Segregation	0	0	0	0	0	0
	Total	955.84	1037.97	1092.89	1144.88	1211.52	5443.10

TSSPDCL Capital Expenditure Summary (total):

The summarized capex for the licensee for 5th & 6th control period is proposed as below:

Total Capex of TSSPDCL for 5th Control Period in Rs. Cr.						
Particular	2024-25	2025-26	2026-27	2027-28	2028-29	Total 5th Control Period (FY 2024-25 to 2028-29)
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 6th Control Period in Rs. Cr.						
Particular	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	Total 6th Control Period (FY 2029-30 to 2033-34)
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

Annexure - I: Sales Forecast

5th Control Period

Consumer Categories	2023-24				2024-25				2025-26			
	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)
LT Category	10564584	28096.29	15849.98	8401725	11097210	29521.74	17120.60	8751648	11097226	31025.81	17120.84	8751648
Category I - Domestic	7853893	10608	11766.18	0	8251060	11149	12732.97	0	8251060	11720.93	12732.97	0
Category II - Non-domestic/Commercial	1137495	3157	3731.95	0	1208590	3347	4019.23	0	1208590	3549.48	4019.23	0
Category III - Industrial	46793	986	0.00	1415241	47935	1022	0.00	1463807	47935	1060.07	0.00	1463807
Category IV - Cottage Industries & Dhobighats	4763	9.89	0.00	18872.02	4953	10.27	0.00	19839.40	4953	10.68	0.00	19839.40
Category V - Agriculture	1371383	12657	0.00	6808281	1429454	13290	0.00	7102597	1429454	13954.56	0.00	7102597
Category VI - St. Lighting & PWS	113335	482	178.35	159331	116922	493	184.54	165405	116922	503.52	184.54	165405
Category VII - General Purpose	24943	88.13	72.66	0.00	25570	92.78	76.59	0.00	25570	97.70	76.59	0.00
Category VIII-Temporary Supply	11840	107.24	98.65	0.00	12554	116.88	104.78	0.00	12554	127.42	104.78	0.00
Category IX-EV s	140	1	2.20	0	172	1	2.49	0	188	1.45	2.73	0
HIGH TENSION	11873	21304.47	7389.39	0	12467	23053.44	7536.36	0	12956	24586.52	7691.21	0
HT Category at 11 kV	11169	6812.20	3020.98	0	11763	7196.74	3167.47	0	12252	7601.02	3321.83	0
HT-I Indl Segregated	5923	4340.42	1770.40	0.00	6226	4559.81	1862.73	0.00	6412	4792.38	1960.76	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT - I B Ferro-alloys	0	0.41	0.00	0.00	0	0.41	0.00	0.00	0	0.41	0.00	0.00
HMWSSB	0	42.17	0.00	0.00	0	44.44	0.00	0.00	0	46.88	0.00	0.00
HT-II - Others Commercial	4335	1898.37	970.63	0.00	4583	2018.87	1011.58	0.00	4840	2147.94	1054.67	0.00
HT-III Airports, Bus Stations and Railway Stations	11	4.13	1.89	0.00	11	4.30	1.93	0.00	11	4.51	1.96	0.00
HT -IV A Govt Lift Irrigation Schemes	269	42.90	105.55	0.00	280	44.18	109.51	0.00	280	45.52	113.68	0.00
HT -IV B CPWS	0	147.35	0.00	0.00	0	157.34	0.00	0.00	0	168.10	0.00	0.00
HT-VI Townships and Residential Colonies	195	186.19	79.83	0.00	204	201.49	83.75	0.00	212	218.18	87.89	0.00
HT-VII Temporary Supply	428	142.65	87.13	0.00	449	151.24	91.22	0.00	486	160.40	95.50	0.00
RESCOs	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT IX- EV s	8	7.62	5.55	0.00	9	14.65	6.75	0.00	11	16.70	7.37	0.00
HT Category at 33 kV	622	7250.88	1849.09	0	622	7758.60	1849.09	0	622	8304.49	1849.09	0
HT-I Indl Segregated	404	5586.84	1270.96	0.00	404	5967.80	1270.96	0.00	404	6375.77	1270.96	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT - I B Ferro-alloys	0	55.30	0.00	0.00	0	56.41	0.00	0.00	0	57.54	0.00	0.00
HMWSSB	0	59.02	0.00	0.00	0	60.44	0.00	0.00	0	61.89	0.00	0.00
HT-II - Others Commercial	154	1088.58	409.62	0.00	154	1179.25	409.62	0.00	154	1278.13	409.62	0.00
HT-III Airports, Bus Stations and Railway Stations	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT -IV A Govt Lift Irrigation Schemes	34	15.57	92.10	0.00	34	15.98	92.10	0.00	34	16.39	92.10	0.00

Consumer Categories	2023-24				2024-25				2025-26			
	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)
HT -IV B CPWS	0	270.60	0.00	0.00	0	289.52	0.00	0.00	0	310.02	0.00	0.00
HT-VI Townships and Residential Colonies	21	132.61	57.43	0.00	21	145.45	57.43	0.00	21	159.56	57.43	0.00
HT-VII Temporary Supply	8	42.36	18.99	0.00	8	43.75	18.99	0.00	8	45.19	18.99	0.00
RESCOs	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT Category at 132 kV	82	7241.38	2519.32	0	82	8098.10	2519.80	0	82	8681.01	2520.29	0
HT-I Industry Segregated	44	3028.95	798.22	0.00	44	3245.72	798.45	0.00	44	3481.10	798.68	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT-I (B) Ferro-Alloys	0	234.14	0.00	0.00	0	238.82	0.00	0.00	0	243.60	0.00	0.00
HMWSSB	0	1135.31	0.00	0.00	0	1144.09	0.00	0.00	0	1153.09	0.00	0.00
HT-II Others (Commercial)	4	48.09	18.36	0.00	4	87.42	18.61	0.00	4	91.42	18.87	0.00
HT-III Airports, Bus Stations and Railway Stations	1	58.53	11.22	0.00	1	103.00	11.22	0.00	1	120.00	11.22	0.00
HT-IV(A) Govt. Lift Irrigation Schemes	20	2015.36	1560.84	0.00	20	2216.90	1560.84	0.00	20	2438.59	1560.84	0.00
HT-IV(B) CPWS	0	282.31	0.00	0.00	0	296.42	0.00	0.00	0	311.24	0.00	0.00
HT-V Railway Traction	13	355.64	130.69	0.00	13	684.33	130.69	0.00	13	752.48	130.69	0.00
HT-V(B) HMR	0	83.06	0.00	0.00	0	81.42	0.00	0.00	0	89.49	0.00	0.00
HT-VI Townships and Residential Colonies	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT-VIII Temporary Supply	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
TOTAL(LT + HT)	10576457	49400.75	23239.37	8401725	11109677	52575.18	24656.96	8751648	11110183	55612.33	24812.05	8751648

Consumer Categories	2026-27				2027-28				2028-29			
	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)
LT Category	11660726	32613.70	18507.16	9117046	12257114	34290.56	20020.71	9498642	12888524	36061.74	21673.96	9897199.58
Category I - Domestic	8670629	12327.22	13787.73	0	9113969	12969.65	14938.99	0	9582533	13650.62	16196.15	0.00
Category II - Non-domestic/Commercial	1285310	3765.82	4333.43	0	1368152	3996.81	4677.37	0	1457655	4243.52	5054.17	0.00
Category III - Industrial	49112	1099.41	0.00	1514139	50327	1140.35	0.00	1566305	51580	1182.98	0.00	1620374.87
Category IV - Cottage Industries & Dhobighats	5155	11.11	0.00	20889.56	5367	11.57	0.00	22032.85	5592	12.05	0.00	23281.21
Category V - Agriculture	1490134	14652.29	0.00	7410268	1553546	15384.90	0.00	7731928	1619819	16154.15	0.00	8068242.36
Category VI - St. Lighting & PWS	120651	514.40	191.00	171749	124528	525.53	197.72	178377	128559	536.91	204.74	185301.13
Category VII - General Purpose	26217	102.90	80.76	0.00	26885	108.41	85.19	0.00	27576	114.24	89.90	0.00
Category VIII-Temporary Supply	13313	138.96	111.32	0.00	14120	151.59	118.30	0.00	14979	165.43	125.76	0.00
Category IX-EV s	204	1.59	2.92	0	220	1.74	3.12	0	231	1.85	3.24	0.00
HIGH TENSION	13614	26173.65	7854.95	0	14316	28034.46	8031.07	0	15059	29949.98	8214.66	0.00
HT Category at 11 kV	12910	8031.53	3485.07	0	13612	8490.85	3660.68	0	14355	8980.42	3843.75	0.00
HT-I Indl Segregated	6743	5039.03	2064.90	0.00	7094	5300.76	2175.62	0.00	7466	5578.64	2293.41	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT - I B Ferro-alloys	0	0.41	0.00	0.00	0	0.41	0.00	0.00	0	0.41	0.00	0.00
HMWSSB	0	49.49	0.00	0.00	0	52.31	0.00	0.00	0	55.33	0.00	0.00
HT-II - Others Commercial	5120	2286.30	1100.02	0.00	5419	2434.71	1147.78	0.00	5738	2594.01	1198.10	0.00
HT-III Airports, Bus Stations and Railway Stations	12	4.74	2.01	0.00	12	5.01	2.05	0.00	12	5.33	2.09	0.00
HT -IV A Govt Lift Irrigation Schemes	291	46.90	118.06	0.00	303	48.34	122.66	0.00	315	49.82	127.49	0.00
HT -IV B CPWS	0	179.70	0.00	0.00	0	192.21	0.00	0.00	0	205.69	0.00	0.00
HT-VI Townships and Residential Colonies	222	236.39	92.24	0.00	232	256.27	96.83	0.00	243	277.97	101.67	0.00
HT-VII Temporary Supply	511	170.18	99.99	0.00	538	180.64	104.71	0.00	566	191.81	109.66	0.00
RESCOs	0	0.00	0.00	0.00	3	0.00	2.60	0.00	3	0.00	2.60	0.00
HT IX- EV s	11	18.37	7.85	0.00	12	20.21	8.44	0.00	13	21.41	8.73	0.00
HT Category at 33 kV	622	8891.62	1849.09	0	622	9523.29	1849.09	0	622	10203.11	1849.09	0.00
HT-I Indl Segregated	404	6812.73	1270.96	0.00	404	7280.86	1270.96	0.00	404	7782.45	1270.96	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT - I B Ferro-alloys	0	58.69	0.00	0.00	0	59.86	0.00	0.00	0	61.06	0.00	0.00
HMWSSB	0	63.38	0.00	0.00	0	64.90	0.00	0.00	0	66.47	0.00	0.00
HT-II - Others Commercial	154	1386.00	409.62	0.00	154	1503.73	409.62	0.00	154	1632.24	409.62	0.00
HT-III Airports, Bus Stations and Railway Stations	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT -IV A Govt Lift Irrigation Schemes	34	16.83	92.10	0.00	34	17.27	92.10	0.00	34	17.73	92.10	0.00

Consumer Categories	2026-27				2027-28				2028-29			
	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)	Consumers (Nos.)	Energy Sales (MU)	Connected Load/ Contract Demand (MW)	Connected Load/ Contract Demand (HP)
HT -IV B CPWS	0	332.23	0.00	0.00	0	356.32	0.00	0.00	0	382.48	0.00	0.00
HT-VI Townships and Residential Colonies	21	175.07	57.43	0.00	21	192.09	57.43	0.00	21	210.80	57.43	0.00
HT-VII Temporary Supply	8	46.69	18.99	0.00	8	48.25	18.99	0.00	8	49.87	18.99	0.00
RESCOs	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT Category at 132 kV	82	9250.51	2520.79	0	82	10020.32	2521.30	0	82	10766.46	2521.82	0.00
HT-I Industry Segregated	44	3736.81	798.92	0.00	44	4014.73	799.16	0.00	44	4316.90	799.41	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT-I (B) Ferro-Alloys	0	248.47	0.00	0.00	0	253.44	0.00	0.00	0	258.51	0.00	0.00
HMWSSB	0	1162.34	0.00	0.00	0	1171.82	0.00	0.00	0	1181.54	0.00	0.00
HT-II Others (Commercial)	4	94.63	19.13	0.00	4	98.04	19.40	0.00	4	103.69	19.67	0.00
HT-III Airports, Bus Stations and Railway Stations	1	137.00	11.22	0.00	1	145.00	11.22	0.00	1	153.00	11.22	0.00
HT-IV(A) Govt. Lift Irrigation Schemes	20	2682.44	1560.84	0.00	20	2950.69	1560.84	0.00	20	3245.76	1560.84	0.00
HT-IV(B) CPWS	0	326.80	0.00	0.00	0	343.14	0.00	0.00	0	360.30	0.00	0.00
HT-V Railway Traction	13	764.45	130.69	0.00	13	935.82	130.69	0.00	13	1029.03	130.69	0.00
HT-V(B) HMR	0	97.57	0.00	0.00	0	107.64	0.00	0.00	0	117.73	0.00	0.00
HT-VI Townships and Residential Colonies	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT-VIII Temporary Supply	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
TOTAL(LT + HT)	11674340	58787.35	26362.11	9117046	12271431	62325.02	28051.78	9498642	12903583	66011.72	29888.62	9897199.58

ANNEXURE - 2

Consumer Categories	Sales in MU's												Sales in MU's											
	HIGH FORECAST												LOW FORECAST											
	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34		
LT Category	28293	29937	31686	33545	35524	37630	39872	42260	44895	47518	50410	27865	29039	30268	31556	32906	34321	35644	37025	38466	39970	41541		
Category I - Domestic	10731	11408	12132	12906	13735	14622	15572	16588	17678	18845	20097	10445	10809	11188	11583	11996	12428	12878	13349	13841	14355	14893		
Category II - Non-domestic/Commercial	3207	3453	3720	4009	4321	4659	5025	5421	5851	6316	6820	3109	3247	3392	3544	3705	3875	4054	4243	4442	4653	4875		
Category III - Industrial	1001	1053	1109	1168	1229	1295	1364	1437	1514	1595	1681	974	997	1021	1046	1071	1097	1124	1152	1180	1209	1239		
Category IV - Cottage Industries & Dhobighats	10	11	12	13	13	14	15	16	17	18	19	10	10	10	10	11	11	11	11	12	12	12		
Category V - Agriculture	12657	13290	13955	14652	15385	16154	16962	17810	18700	19635	20617	12657	13290	13955	14652	15385	16154	16960	17472	18171	18899	19654		
Category VI - St. Lighting & FWS	487	502	518	534	551	568	586	604	624	643	663	477	482	488	493	498	503	509	514	520	526	531		
Category VII - General Purpose	90	96	102	110	117	126	135	144	155	166	178	87	90	93	96	99	103	107	111	115	119	123		
Category VIII-Temporary Supply	110	123	137	153	171	191	213	239	267	299	334	105	113	121	129	139	149	159	171	183	197	211		
Category IX-EV s	1	1	1	2	2	2	2	2	2	2	3	1	1	1	2	2	2	2	2	2	2	2		
HIGH TENSION	21604	23689	25618	27661	30047	32565	35324	38346	41663	45314	49329	20987	22236	23367	24523	25876	27250	28721	30294	31982	33779	35756		
HT Category at 11 kV	6925	7438	7986	8579	9220	9914	10666	11481	12365	13325	14367	6706	6975	7251	7541	7846	8166	8503	8858	9231	9625	10040		
HT-I Incl Segregated	4420	4729	5062	5420	5807	6225	6676	7164	7690	8260	8877	4276	4424	4580	4743	4913	5091	5278	5473	5678	5893	6119		
Lights & Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Colony consumption	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Seasonal Industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT - I B Ferro-Alloys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HMWSSB	42	45	48	51	54	58	62	67	71	77	83	41	43	44	46	47	49	51	53	55	57	60		
HT-II - Others Commercial	1924	2073	2235	2411	2602	2808	3033	3277	3543	3832	4146	1867	1953	2044	2139	2240	2347	2459	2576	2704	2837	2978		
HT-III Airports, Bus Stations and Railway Stations	4	4	5	5	5	5	6	6	7	7	8	4	4	4	4	4	5	5	5	5	5	5		
HT-IV A Govt Lift Irrigation Schemes	43	45	47	48	50	52	54	57	59	61	64	42	43	44	45	45	46	47	48	49	49	50		
HT-IV B CPWS	149	162	175	189	205	223	241	262	284	309	336	145	153	162	170	180	190	201	212	224	237	251		
HT-VI Townships and Residential Colonies	189	207	227	250	275	303	333	368	406	449	496	183	194	206	218	232	247	263	280	299	318	340		
HT-VIII Temporary Supply	146	158	171	185	201	218	236	256	278	302	328	140	146	151	158	164	171	178	186	193	202	211		
RESCOs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT IX- EV s	8	15	17	18	20	21	23	24	26	27	29	7	14	16	18	19	20	21	22	24	25	26		
HT Category at 33 kV	7311	7892	8525	9216	9970	10794	11694	12677	13751	14926	16212	7093	7425	7776	8148	8541	8958	9399	9867	10363	10888	11446		
HT-I Incl Segregated	5632	6067	6539	7051	7606	8209	8864	9575	10348	11187	12100	5462	5705	5960	6228	6510	6807	7119	7448	7794	8158	8542		
Lights & Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Colony consumption	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Seasonal Industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT - I B Ferro-Alloys	55	58	58	59	60	61	62	64	65	66	67	54	54	54	54	54	54	54	54	54	54	54		
HMWSSB	61	64	67	70	73	77	81	85	89	94	98	60	60	61	62	64	65	66	67	69	70	71		
HT-II - Others Commercial	1094	1192	1302	1425	1562	1714	1884	2074	2286	2522	2787	1064	1128	1196	1270	1350	1435	1528	1628	1735	1851	1976		
HT-III Airports, Bus Stations and Railway Stations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT-IV A Govt Lift Irrigation Schemes	16	16	17	18	18	19	20	20	21	22	23	15	16	16	16	16	17	17	17	17	17	18		
HT-IV B CPWS	275	300	326	355	387	422	460	502	548	598	653	266	280	294	310	327	345	365	386	409	433	459		
HT-VI Townships and Residential Colonies	135	151	168	188	210	234	261	292	326	364	407	130	140	151	163	175	189	203	219	236	255	275		
HT-VIII Temporary Supply	43	46	49	51	54	58	61	64	68	72	77	42	43	43	44	45	46	47	47	48	49	50		
RESCOs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT Category at 132 kV	7368	8360	9106	9866	10856	11857	12964	14189	15547	17063	18750	7187	7837	8340	8834	9489	10126	10818	11569	12388	13284	14270		
HT-I Industry Segregated	3097	3392	3717	4076	4472	4910	5394	5929	6520	7175	7899	2990	3161	3345	3542	3753	3980	4223	4483	4763	5064	5387		
Lights & Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Colony consumption	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Seasonal Industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT-I (B) Ferro-Alloys	234	239	244	248	253	259	264	269	274	280	285	230	230	230	230	230	230	230	230	230	230	230		
HMWSSB	1143	1160	1178	1197	1217	1238	1259	1282	1306	1331	1358	1133	1140	1147	1154	1162	1169	1176	1184	1192	1200	1208		
HT-II Others (Commercial)	49	90	95	100	106	114	120	127	134	143	152	48	86	90	92	95	99	102	105	108	112	116		
HT-III Airports, Bus Stations and Railway Stations	54	103	120	137	145	153	162	170	179	184	192	54	82	96	110	116	122	130	136	143	151	160		
HT-IV(A) Govt. Lift Irrigation Schemes	2052	2298	2574	2883	3229	3616	4050	4536	5081	5690	6373	2015	2217	2439	2682	2951	3246	3570	3927	4320	4752	5227		
HT-IV(B) CPWS	290	313	337	364	392	423	457	493	532	574	619	280	291	302	315	327	340	354	368	383	398	414		
HT-V Railway Traction	364	684	752	763	934	1027	1129	1242	1365	1501	1651	355	548	602	612	748	823	904	994	1093	1202	1322		
HT-VB HMR	85	81	89	97	107	117	129	141	155	155	187	83	81	89	97	107	117	129	141	155	155	187		
HT-VI Townships and Residential Colonies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HT-VIII Temporary Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TOTAL(LT + HT)	49897	53626	57303	61206	65570	70194	75196	80606	86468	92832	99739	48852	51275	53635	56078	58762	61572	64365	67319	70447	73767	77297		

Annexure-3: Sales Forecast for perspective plan (6th Control Period)

Consumer Categories	2029-30				2030-31				2031-32				2032-33				2033-34			
	Consumers (Nos.)	Energy Sales (MU)	Load/Contract Demand (MW)	Load/Contract Demand (%)	Consumers (Nos.)	Energy Sales (MU)	Load/Contract Demand (MW)	Load/Contract Demand (%)	Consumers (Nos.)	Energy Sales (MU)	Load/Contract Demand (MW)	Load/Contract Demand (%)	Consumers (Nos.)	Energy Sales (MU)	Load/Contract Demand (MW)	Load/Contract Demand (%)	Consumers (Nos.)	Energy Sales (MU)	Load/Contract Demand (MW)	Load/Contract Demand (%)
LT Category	13557253	37933.08	23481	10313518	14265754	39910.76	25457	10748439	15016658	42001.35	27619	11202846	15812782	44211.89	29965	11677667	16657148	46549.87	32577	12173881
Category I - Domestic	10077874	14372.72	17570	0	10601640	15139	19071	0	11155589	15952	20712	0	11741595	16814.35	22507	0	12361650	17730.63	24472	0
Category II - Non-domestic/Commercial	1554412	4507.10	5467	0	1659068	4789	5921	0	1772331	5090	6418	0	1894972	5412.07	6965	0	2027838	5756.65	7567	0
Category III - Industrial	52872	1227.36	0	1676423	54206	1274	0	1734524	5582	1322	0	1794758	57003	1371.84	0	1857207	58470	1424.05	0	1921956
Category IV - Cottage Industries & Dhobighats	5830	12.55	0.00	24648.40	6082	13.09	0.00	26150.30	6348	13.66	0.00	27805.30	6630	14.26	0.00	29634.71	6930	14.90	0.00	31663.21
Category V - Agriculture	1689090	16961.86	0	8419910	1761501	17810	0	8787665	1837203	18700	0	9172276	1916352	19635.47	0	9574552	1999114	20617.24	0	9995342
Category VI - St. Lighting & PWS	132752	548.54	212	192537	137115	560	220	200100	141655	573	228	208007	146380	585.04	236	216274	151299	597.76	245	224919
Category VII - General Purpose	28289	120.41	94.91	0.00	29027	126.95	100.23	0.00	29789	133.88	105.90	0.00	30577	141.23	111.93	0.00	31392	149.01	118.36	0.00
Category VIII-Temporary Supply	15891	180.58	133.72	0.00	16862	197.18	142.23	0.00	17895	215.36	151.31	0.00	18994	235.29	161.03	0.00	20163	257.13	171.41	0.00
Category IX-EV s	242	1.96	3	0	254	2	3	0	266	2	4	0	279	2.34	4	0	292	2.49	4	0
HIGH TENSION	15849	32018.76	8409.38	0	16689	34252.07	9616.03	0	17583	36668.49	8835.51	0	18536	39292.92	9068.78	0	19551	42138.32	9316.87	0
HT Category at 11 kV	15144	9503.38	4037.93	0	15985	10662.39	4244.05	0	16879	10660.36	4462.97	0	17832	11300.48	4695.67	0	18847	11986.22	4943.19	0
HT-I Indl Segregated	7860	5873.85	2418.82	0.00	8278	6187.62	2552.44	0.00	8721	6521.32	2694.94	0.00	9192	6876.42	2847.01	0.00	9692	7254.52	3009.45	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT - I B Ferro-Alloys	0	0.41	0.00	0.00	0	0.41	0.00	0.00	0	0.41	0.00	0.00	0	0.41	0.00	0.00	0	0.41	0.00	0.00
HMWSSB	0	58.58	0.00	0.00	0	62.08	0.00	0.00	0	65.85	0.00	0.00	0	69.91	0.00	0.00	0	74.29	0.00	0.00
HT-II - Others Commercial	6080	2765.13	1251.15	0.00	6445	2949.11	1307.10	0.00	6836	3147.08	1366.14	0.00	7254	3360.30	1428.46	0.00	7702	3590.16	1494.29	0.00
HT-III Airports, Bus Stations and Railway Stations	12	5.69	2.14	0.00	12	6.12	2.19	0.00	12	6.62	2.23	0.00	13	7.20	2.29	0.00	13	7.88	2.34	0.00
HT-IV(A) Govt. LIR Irrigation Schemes	327	51.36	132.58	0.00	340	52.96	137.92	0.00	354	54.62	143.54	0.00	369	56.34	149.45	0.00	384	58.13	155.67	0.00
HT-IV(B) CPWS	0	220.24	0.00	0.00	0	235.95	0.00	0.00	0	252.91	0.00	0.00	0	271.23	0.00	0.00	0	291.03	0.00	0.00
HT-VI Townships and Residential Colonies	254	301.66	106.77	0.00	266	327.54	112.15	0.00	278	355.82	117.83	0.00	291	386.71	123.82	0.00	305	420.48	130.13	0.00
HT-VIII Temporary Supply	595	203.76	114.85	0.00	627	216.54	120.30	0.00	660	230.23	126.02	0.00	695	244.89	132.02	0.00	732	260.60	138.31	0.00
RESCOs	3	0.00	2.60	0.00	3	0.00	2.60	0.00	3	0.00	2.60	0.00	3	0.00	2.60	0.00	3	0.00	2.60	0.00
HT IX- EV s	13	22.69	9.03	0.00	14	24.05	9.35	0.00	14	25.51	9.68	0.00	15	27.06	10.03	0.00	15	28.72	10.40	0.00
HT Category at 33 kV	622	10934.98	1849.09	0	622	11723.14	1849.09	0	622	12572.20	1849.09	0	622	13487.15	1849.09	0	622	14473.44	1849.09	0
HT-I Indl Segregated	404	8320.01	1270.96	0.00	404	8896.23	1270.96	0.00	404	9514.01	1270.96	0.00	404	10176.49	1270.96	0.00	404	10887.04	1270.96	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT - I B Ferro-Alloys	0	62.28	0.00	0.00	0	63.53	0.00	0.00	0	64.80	0.00	0.00	0	66.09	0.00	0.00	0	67.42	0.00	0.00
HMWSSB	0	68.08	0.00	0.00	0	69.72	0.00	0.00	0	71.41	0.00	0.00	0	73.14	0.00	0.00	0	74.92	0.00	0.00
HT-II - Others Commercial	154	1772.58	409.62	0.00	154	1925.89	409.62	0.00	154	2093.37	409.62	0.00	154	2276.44	409.62	0.00	154	2476.59	409.62	0.00
HT-III Airports, Bus Stations and Railway Stations	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT-IV(A) Govt. LIR Irrigation Schemes	34	18.21	92.10	0.00	34	19.70	92.10	0.00	34	19.20	92.10	0.00	34	19.73	92.10	0.00	34	20.27	92.10	0.00
HT-IV(B) CPWS	0	410.91	0.00	0.00	0	441.83	0.00	0.00	0	475.49	0.00	0.00	0	512.17	0.00	0.00	0	552.16	0.00	0.00
HT-VI Townships and Residential Colonies	21	231.36	57.43	0.00	21	253.95	57.43	0.00	21	278.78	57.43	0.00	21	306.06	57.43	0.00	21	336.04	57.43	0.00
HT-VIII Temporary Supply	8	51.56	18.99	0.00	8	53.31	18.99	0.00	8	55.13	18.99	0.00	8	57.03	18.99	0.00	8	59.01	18.99	0.00
RESCOs	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT Category at 132 kV	82	11580.40	2522.35	0	82	12466.53	2522.90	0	82	13435.93	2523.45	0	82	14505.29	2524.01	0	82	15679.66	2524.59	0
HT-I Industry Segregated	44	4645.59	799.66	0.00	44	5003.25	799.92	0.00	44	5392.59	800.19	0.00	44	5816.58	800.45	0.00	44	6278.47	800.73	0.00
Lights & Fans	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Colony consumption	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
Seasonal Industries	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
HT-I (B) Ferro-Alloys	0	263.68	0.00	0.00	0	268.95	0.00	0.00	0	274.33	0.00	0.00	0	279.82	0.00	0.00	0	285.41	0.00	0.00
HMWSSB	0	1191.52	0.00	0.00	0	1201.75	0.00	0.00	0	1212.25	0.00	0.00	0	1223.03	0.00	0.00	0	1234.08	0.00	0.00
HT-II Others (Commercial)	4	107.57	19.95	0.00	4	111.72	20.23	0.00	4	116.15	20.52	0.00	4	120.89	20.82	0.00	4	126.45	21.12	0.00
HT-III Airports, Bus Stations and Railway Stations	1	162.00	11.22	0.00	1	170.00	11.22	0.00	1	179.00	11.22	0.00	1	214.00	11.22	0.00	1	225.00	11.22	0.00
HT-IV(A) Govt. LIR Irrigation Schemes	20	3570.33	1560.84	0.00	20	3927.37	1560.84	0.00	20	4320.10	1560.84	0.00	20	4752.11	1560.84	0.00	20	5227.33	1560.84	0.00
HT-IV(B) CPWS	0	378.32	0.00	0.00	0	397.23	0.00	0.00	0	417.09	0.00	0.00	0	437.95	0.00	0.00	0	459.85	0.00	0.00
HT-V Railway Traction	13	1131.58	130.69	0.00	13	1244.35	130.69	0.00	13	1368.40	130.69	0.00	13	15						

Annexure -5 Details of CPPs

Sl.No.	Name of the Captive Power Plant	Type of fuel	Voltage level	Installed Capacity (MW)	Power factor	Installed Capacity (MVA)	Contracted Maximum Demand with Discom in MVA	Export Capacity/Sale to Discoms (KVA/KW)
1	M/s Penna Cement Industries Ltd	Coal (77) + WHRP (7)	132KV	84	0.8	105.00	10	
2	M/s Home Industries Limited	Coal	132KV	88.5	0.8	110.63	10	
3	M/s Sitapuram Power Limited (now Zuari Cements Limited)	Coal	132KV	43	0.8	53.75	2.5	
4	M/s The India Cements Ltd	Coal (50.4 MW) + WHRP (9.625 kVA)	132KV	(50.4 MW) + (9.625 kVA)	0.8	63.01	16	
5	M/s Deccan Cements	WHRP	132KV	6.31	0.8	7.89	10.25	
6	M/s Bharath Electronics limited	Solar	132KV	16.25	0.9	18.06	0.07	
7	M/s Heritage Food Limited	Solar	33KV	2.34	0.9	2.60	0.07	
8	M/s Unshodaya Enterprises Limited	Solar	33KV	10	0.9	11.11	0.07	
9	M/s Vishaka Industries	Solar	33KV	2.5	0.9	2.78	0.07	
10	M/s Pennar industries	Solar	33KV	2.5	0.9	2.78	0.07	
11	M/s Tropical Flavour	Solar	33KV	1.2	0.9	1.33	0.07	
12	M/s BVM energy & Residency Pvt Ltd	Solar	33KV	5	0.9	5.56	0.07	
13	M/s Sarwottam Care Pvt Ltd	Solar	33KV	3	0.9	3.33	0.07	
14	M/s Infosys Ltd	Solar	33KV	6.636	0.9	7.37	0.07	
15	M/s JNTU	Solar	33KV	4	0.9	4.44	0.5	
16	M/s Bharath Dynamics Ltd	Solar	33KV	5.1	0.9	5.67	0.07	
17	M/s DRES Energy Pvt Ltd	Solar	33KV	7.1	0.9	7.89	0.07	

Annexure -5 Details of CPPs

Sl.No.	Name of the Captive Power Plant	Type of fuel	Voltage level	Installed Capacity (MW)	Power factor	Installed Capacity (MVA)	Contracted Maximum Demand with Discom in MVA	Export Capacity/Sale to Discoms (KVA/KW)
18	M/s DRES Energy Pvt Ltd	Solar	33KV	8	0.9	8.89	0.07	
19	M/s Mishra Dhatu Nigam Ltd	Solar	33KV	4	0.9	4.44	0.07	
20	M/s Bharath Dynamics Ltd	Solar	33KV	5	0.9	5.56	0.07	
21	M/s Sneha Renewable Energies	Mini Hydel		0.9	0.9	1.00	0.07	
22	M/s SNS starch	Bio Mass	33KV	4	0.9	4.44	1	
23	M/s Bravo Energies Pvt Ltd	Mini Hydel	33KV	1.2	0.9	1.33	0.07	
24	M/s Bambino Pasta Food industries Ltd	Solar	33KV	2	0.9	2.22	1.503	
25	M/s BHEL	Solar	33KV	1.5	0.9	1.67	0.07	
26	M/s Rain Cements Limited	WHRP		4.5	0.9	5.00	12.5	
27	M/s Sai Deepa Rock Drills Pvt Ltd	Solar	33KV	1.1	0.9	1.22	0.07	
28	M/s NVNR-I	Solar	33KV	15	0.9	16.67	0.07	
29	M/s NVNR-II	Solar	33KV	15	0.9	16.67	0.07	
30	M/sAxis Clinicals limited	Solar	33KV	2	1	1	0.07	

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Rate of GSC	Per month in Rs	Per year in Rs	Per year in Crores
50 % HT demand charges = 50 % X 475= Rs.237.5/kVA/ month	₹ 237,500	₹ 2,850,000	₹ 0.29
40 % HT demand charges = 40 % X 475= Rs.190/kVA/ month	₹ 190,000	₹ 2,280,000	₹ 0.23
30 % HT demand charges = 30 % X 475= Rs.142.5/kVA/ month	₹ 142,500	₹ 1,710,000	₹ 0.17
20 % HT demand charges = 20 % X 475= Rs.95/kVA/ month	₹ 95,000	₹ 1,140,000	₹ 0.11
15 % HT demand charges = 15 % X 475 = Rs.71/kVA/month	₹ 71,000	₹ 852,000	₹ 0.09

NOTE: Hon'ble TSERC during presentation on report by GCC, advised to limit the study report on the proposal submitted by Discoms to ERC along with RST proposals.