

- 1.1.5 The guidelines for load forecasts, resource plans, and power procurement notified on December, 2006 specifies that these guidelines to be abided by the Distribution Licensees as provided in their licenses. The relevant provisions are reproduced below:

“These guidelines are to be followed by the APTRANSCO and Distribution Licensees as provided in their respective licenses issued by the AP Electricity Regulatory Commission,

(a) while forecasting the demand for power within their area of supply pursuant to paragraph 17.12 of the Transmission and Bulk Supply License issued to APTRANSCO and paragraph 19.2 of the Distribution and Retail Supply License issued to DISCOMS; and

(b) while formulating resource plans and schemes to meet their obligations under paragraph 17.1 of the Transmission and Bulk Supply License issued to APTRANSCO and paragraphs 19.2, 19.3 and 19.4 of the Distribution and Retail Supply License issued to DISCOMS.”

- 1.1.6 In consideration to the above Regulation, the Petitioners filings have been undertaken into consideration for approval of Resource Plan and Business Plan for 5th Control Period for FY 2024-25 to FY 2028-29 and 6th Control Period for FY 2029-30 to FY 2033-34.

1.2 Admission of the Petition and Regulatory Process

- 1.2.1 The Petitions for approval of Resource Plan and Business Plan for 5th Control Period for FY 2024-25 to FY 2028-29 and 6th Control Period for FY 2029-30 to FY 2033-34, have been respectively submitted by the TSSPDCL on 1.04.2023 & 24.06.2023 and by TSNPDCL on 1.04.2023 & 05.07.2023. The Commission found the filings in order as required under the Conduct of Business Regulation, 2015 (Regulation No. 2 of 2015) and the same were taken on record by assigning O. P. No. 07 & 18 of 2023 for TSSPDCL and O.P. No 08 &19 of 2023 for TSNPDCL. Thereafter, the Commission vide letter dated 07.06.2023 sought additional information from the Petitioner.

- 1.2.2 The Commission upon scrutiny of the filings of the Petitioner identified certain data gaps/ additional information requirement and vide letter dated 05.10.2023 directed the Petitioners to furnish the additional information. As directed by the Commission, the Petitioner furnished the additional information and placed the

same on its website.

1.3 Public Notice

- 1.3.1 The Petitioner, in conformity with the directions of the Commission, issued Public Notice for inviting comments and suggestions of the stakeholders on the filing of the Resource Plan for 5th Control Period and 6th Control Period in two (2) English, two (2) Telugu, and one (1) Urdu daily newspapers on 18.05.2023. The Petitioner has made the filings (along with its supporting material) available for the public on payment of printing cost only. Also, the filings (along with supporting material) have been hosted by the Petitioners and the Commission as well, on their respective websites. Comments/objections/suggestions of the stakeholders on the Resource Plan filings of both the licensees have been invited on and before 15.06.2023. The Commission has extended the last date of submitting the objections/suggestions/comments on the Resource Plan filings of the Petitioners to 28.06.2023.
- 1.3.2 Subsequently, the Commission on account of the Business Plan filings submitted by the Petitioner and the request of the stakeholders to extend the last date of submission of comments on the Resource Plan filings has clubbed the issues of both the matters together and issued the Public Notice on 28.07.2023 and invited the comments / objections / suggestions from the stakeholders on and before 18.08.2023. The Public Notice for Resource Plan Petition and Business Plan Petition of both the TSDiscoms is enclosed at **Annexure-I & II** respectively.

1.4 Response to the Public Notice

- 1.4.1 In response to the Public Notice, three (3) stakeholders have submitted their Objections/Comments on the filings of the Resource Plan and Business Plan of the Petitioners for 5th Control Period and 6th Control Period. The list of stakeholders submitting written objections/suggestions is given at **Annexure-III**.
- 1.4.2 The Petitioner was directed to furnish replies to objections/suggestions of stakeholders in writing, with a copy to the Commission. The objections/suggestions of stakeholders and replies of Petitioner corresponding to the same were posted on the website of both Petitioner as well as the Commission.

1.5 Public Hearing

- 1.5.1 The Commission conducted the Public Hearing on 01.09.2023 in attendance of the Petitioner, the Respondents and the other interested stakeholders. As the objectors' queries and comments were not prepared by the Petitioner beforehand and written response submission were not submitted to stakeholders, the Commission rescheduled the hearing date to 18.10.2023 so that additional time can be given to the Petitioner to respond the queries raised previously or any other additional submission added in between by stakeholder and on directions of the Commission for filing a written submission regarding the same.
- 1.5.2 Since the public hearing was inconclusive, the Commission has decided to conduct next hearing on 22.09.2023. But the hearing was postponed to 18.10.2023. The list of stakeholders who participated in public hearing held at Commission on 18.10.2023 is enclosed at **Annexure-IV**.

1.6 Data-gaps and Petitioners' Responses

- 1.6.1 During scrutiny the Resource Plan and Business Plan filings of the Petitioner, were found to be deficient in certain aspects and therefore, additional information was sought. The Petitioner submitted the additional information sought by the Commission, and the same was considered along with the original filings submitted by the Petitioner.

1.7 Approach of the Order

- 1.7.1 Regulation No. 4 of 2005 and Regulation No. 4 of 2016 read with the Regulation No. 1 of 2014 and Guidelines on the Load Forecast, Resource Plan and Power Procurement provides filing of Resource Plan and Business Plan for approval of the Commission for a period of ten years or for a duration of two entire Control Periods. The Petitioners accordingly have filed the Petitions before the Commission for approval of Resource Plan and Business Plan for 5th Control Period for FY 2024-25 to FY 2028-29 and 6th Control Period for FY 2029-30 to FY 2033-34. The Commission as per the aforesaid Regulations has undertaken the approval of Resource Plan and Business Plan Petitions for 5th Control Period and 6th Control Period.

Chapter 2

Summary of Filings

2.1 TSDISCOM's Submission

- 2.1.1 The Petitioners in their filings have submitted the Petition for approval of Resource Plan and Business Plan for 5th Control Period for FY 2024-25 to FY 2028-29 and 6th Control Period for FY 2029-30 to FY 2033-34.
- 2.1.2 In Resource Plan, the Petitioners have submitted the sales forecast, Distribution licensee's loss trajectory, Transmission loss trajectory, Load forecast, Power Procurement Plan and Energy Balance and Capital Expenditure for network proposed and others.
- 2.1.3 In Business Plan, the Petitioners have submitted the projections for year-wise load growth, year-wise distribution loss reduction proposal with specific action plan, metering plan for metering interface points, treatment of previous losses, cost reduction plan and other financial analysis of TSDiscoms for 5th Control Period and 6th Control Period.

2.2 Resource Plan and Business Plan for 5th Control Period for FY 2024-25 to FY 2028-29 and 6th Control Period for FY 2029-30 to FY 2033-34

- 2.2.1 TSDISCOMs have submitted the following projections of performance parameters in the Resource Plan and Business Plan for 5th Control Period and 6th Control Period:

a) Sales Forecast:

- 2.2.2 The TSDISCOMs in their filings for 5th Control Period and 6th Control Periods have submitted the year-wise Load Growth (MU) by considering modified trend method wherein the historical trends in usage have been modified based on a case-to-case basis based on the assessment of the TSDISCOMs. Category-wise Sales forecast for 5th Control Period and 6th Control Period for each Circle is developed primarily based on analysis of historical data and applying appropriate growth rates based on CAGR (mostly adopting 5-year or 1-year CAGR and moderated growth rate in case of abnormal CAGRs).

2.2.3 The category-wise projected sales provided along with the effective CAGR is tabulated below:

Table 2-1: Category-wise Projected Sales for 5th Control Period for TSNPDCL (MU)

Category	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
LT I: Domestic	4,243	4,491	4,753	5,032	5,328	5,642
LT II: Non-Domestic/Commercial	915	972	1,033	1,098	1,168	1,243
LT III: Industry	245	251	257	263	269	275
LT IV: Cottage Industries	9	10	10	11	11	12
LT V: Agriculture	7,890	8,285	8,699	9,134	9,591	10,070
LT VI: Street Lighting & PWS	370	380	389	399	409	420
LT VII: General	58	61	64	67	70	74
LT VIII: Temporary Supply	8	9	9	9	10	10
LT IX: EVs	1	4	8	15	23	32
Total LT	13,740	14,460	15,222	16,028	16,879	17,779
HT I: General, Ferro Alloys & HMWS	2,151	2,280	2,447	2,632	2,840	3,071
HT II: Others	190	201	213	225	238	252
HT III: Airport, Bus Stations and Railway Stations	8	8	8	8	9	9
HT IV: LIS	2,209	2,426	2,666	2,929	3,219	3,537
HT IV (b): CPWS	532	544	558	571	585	599
HT V: Railway Traction	553	588	614	641	670	700
HT VI: Township and residential colonies	141	144	147	150	153	156
HT VII: RESCOs	32	33	34	35	36	37
HT VIII: Temporary	987	1,031	1,076	1,124	1,173	1,225
HT IX: EVs	-	-	-	-	-	-
Total HT	6,803	7,257	7,763	8,316	8,922	9,586
Total (LT+HT)	20,543	21,717	22,985	24,344	25,801	27,365

Table 2-2 : Category-wise Projected Sales for 6th Control Period for TSNPDCL (MU)

Category	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
LT I: Domestic	5,976	6,331	6,709	7,111	7,539
LT II: Non-Domestic/Commercial	1,323	1,408	1,499	1,597	1,702
LT III: Industry	282	288	295	302	309
LT IV: Cottage Industries	13	14	15	16	18
LT V: Agriculture	10,473	10,892	11,328	11,781	12,252
LT VI: Street Lighting & PWS	430	441	453	464	476
LT VII: General	78	82	86	90	95
LT VIII: Temporary Supply	11	11	12	13	13
LT IX: EVs	33	33	33	33	34
Total LT	18,618	19,501	20,430	21,408	22,438
HT I: General, Ferro Alloys & HMWS	3,332	3,625	3,955	4,329	4,752
HT II: Others	266	282	299	317	336
HT III: Airport, Bus Stations and Railway Stations	9	9	9	10	10
HT IV: LIS	3,887	4,273	4,696	5,162	5,674
HT IV (b): CPWS	613	628	643	659	675
HT V: Railway Traction	732	765	800	837	876
HT VI: Township and residential colonies	159	163	166	169	172
HT VII: RESCOs	38	39	40	41	42
HT VIII: Temporary	1,279	1,335	1,394	1,456	1,520
HT IX: EVs	-	-	-	-	-

Category	FY	FY	FY	FY	FY
	2029-30	2030-31	2031-32	2032-33	2033-34
Total HT	10,316	11,119	12,003	12,980	14,059
Total (LT+HT)	28,934	30,620	32,434	34,388	36,497

Table 2-3 Category-wise Projected Sales for 5th Control Period for TSSPDCL (MU)

Category	FY	FY	FY	FY	FY	FY
	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
LT I: Domestic	10,608	11,149	11,721	12,327	12,970	13,651
LT II: Non-Domestic/Commercial	3,157	3,347	3,549	3,766	3,997	4,244
LT III: Industry	986	1,022	1,060	1,099	1,140	1,183
LT IV: Cottage Industries	10	10	11	11	12	12
LT V: Agriculture	12,657	13,290	13,955	14,652	15,385	16,154
LT VI: Street Lighting & PWS	482	493	504	514	526	537
LT VII: General	88	93	98	103	108	114
LT VIII: Temporary Supply	107	117	127	139	152	165
LT IX: EVs	1	1	1	2	2	2
Total LT	28,096	29,522	31,026	32,614	34,291	36,062
HT I: General, Ferro Alloys & HMWS	14,483	15,318	16,213	17,171	18,199	19,301
HT II: Others	3,035	3,286	3,517	3,767	4,036	4,330
HT III: Airport, Bus Stations and Railway Stations	63	107	125	142	150	158
HT IV: LIS & CPWS	2,774	3,020	3,290	3,585	3,908	4,262
HT V: Railway Traction	439	766	842	862	1,043	1,147
HT VI: Township and residential colonies	319	347	378	411	448	489
HT VII: RESCOs	0	0	0	0	0	0
HT VIII: Temporary	185	195	206	217	229	242
HT IX: EVs	8	15	17	18	20	21
Total HT	21,304	23,053	24,587	26,174	28,034	29,950
Total (LT+HT)	49,401	52,575	55,612	58,787	62,325	66,012

Table 2-4 : Category-wise Projected Sales for 6th Control Period for TSSPDCL (MU)

Category	FY	FY	FY	FY	FY
	2029-30	2030-31	2031-32	2032-33	2033-34
LT I: Domestic	14,373	15,139	15,952	16,814	17,731
LT II: Non-Domestic/Commercial	4,507	4,789	5,090	5,412	5,757
LT III: Industry	1,227	1,274	1,322	1,372	1,424
LT IV: Cottage Industries	13	13	14	14	15
LT V: Agriculture	16,962	17,810	18,700	19,635	20,617
LT VI: Street Lighting & PWS	549	560	573	585	598
LT VII: General	120	127	134	141	149
LT VIII: Temporary Supply	181	197	215	235	257
LT IX: EVs	2	2	2	2	2
Total LT	37,933	39,911	42,001	44,212	46,550
HT I: General, Ferro Alloys & HMWS	20,484	21,754	23,117	24,582	26,157
HT II: Others	4,645	4,987	5,357	5,758	6,193
HT III: Airport, Bus Stations and Railway Stations	168	176	186	221	233
HT IV: LIS	4,649	5,074	5,539	6,050	6,609
HT V: Railway Traction	1,261	1,386	1,524	1,661	1,843
HT VI: Township and residential colonies	533	581	635	693	757
HT VIII: Temporary	255	270	285	302	320
HT IX: EVs	23	24	26	27	29

Category	FY	FY	FY	FY	FY
	2029-30	2030-31	2031-32	2032-33	2033-34
Total HT	32,019	34,252	36,668	39,293	42,139
Total (LT+HT)	69,952	74,163	78,670	83,505	88,689

b) Peak Demand:

2.2.4 TSDISCOMs, for the projection of the demand for H2, FY 2022-23 and FY 2023-24 and 5th Control Period has derived the trend on hourly basis from 4th Control Period. Hourly demand trend is established from the inputs of seasonality factor derived from the variation in demand for each date for specific hour in different months. Based on the input, the output has been calculated using the following equation:

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

Where:

Z: Seasonality factor

m: Slope of the hourly plotted demand

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

C: Intercept of the hourly plotted demand.

2.2.5 Based on the demand attributed to additional loads, peak demand projected for future years are as follows:

Table 2-5: Peak Demand of TSNPDCL for 5th Control Period (MW)

Description	FY	FY	FY	FY	FY	FY
	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Peak Demand (MW)	7,761	6,585	6,999	7,414	9,885	8,239

Table 2-6: Peak Demand of TSNPDCL for 6th Control Period (MW)

Description	FY	FY	FY	FY	FY
	2029-30	2030-31	2031-32	2032-33	2033-34
Peak Demand (MW)	8,652	9,066	11,914	9,893	10,307

Table 2-7: Peak Demand of TSSPDCL for 5th Control Period (MW)

Description	FY	FY	FY	FY	FY	FY
	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Peak Demand (MW)	8,812	9,514	9,970	10,416	10,874	11,330

Table 2-8: Peak Demand of TSSPDCL for 6th Control Period (MW)

Description	FY	FY	FY	FY	FY
	2029-30	2030-31	2031-32	2032-33	2033-34
Peak Demand (MW)	11,782	12,232	12,679	13,159	13,606

Table 2-9: Coincidental Peak Demand of TSNPDCL for 5th Control Period (MW)

Category	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Low Tension Supply					
Domestic -Category I	615	651	690	730	773
Non-Domestic Category II	113	120	128	136	144
Industrial -Category III	29	29	30	31	31
Cottage Industries - Category IV	1	1	1	1	1
Irrigation and Agriculture - Category V	1342	1409	1480	1554	1631
Public Lighting & PWD - Category VI	35	35	36	37	38
Others - Category VII & VIII	6	7	7	7	8
Total Low-Tension Supply	2141	2253	2371	2496	2627
High Tension Supply					
Industrial -Category I(11kV)	139	153	169	188	209
Industrial -Category I(33kV)	50	51	52	52	53
Industrial -Category I(132kV)	66	69	73	76	80
Other Category II (11kV)	20	21	23	24	25
Other Category II (33kV)	1	1	1	1	1
Other Category II (132kV)	1	1	1	1	1
Rly Stns. Bus Stns & Airport Cat III (11kV)	1	1	1	1	1
Irrigation, Agriculture & CPWS - Category IV (11kV)	23	23	24	25	25
Irrigation, Agriculture & CPWS - Category IV (33kV)	47	48	49	50	51
Irrigation, Agriculture & CPWS - Category IV (132kV)	274	301	331	364	400
Railway Traction Category V(132kV)	77	86	90	94	98
Colony Consumption -Category VI (11kV)	2	2	2	2	2
Colony Consumption -Category VI (33kV)	4	5	5	5	5
Colony Consumption -Category VI (132kV)	12	13	13	13	13
Spare (Temporary) Category VII (11kV)	3	3	3	3	4
Spare (Temporary) Category VII (33kV)	0.3	0.3	0.3	0.3	0.3
Spare (Temporary) Category VII (132kV)	0.1	0.1	0.1	0.1	0.1
RESCO 11kV	150	157	164	171	178
Total High-Tension Supply	869	933	998	1068	1145
Total Peak	3009	3186	3369	3564	3773

Table 2-10: Non-Coincidental Peak demand of TSNPDCL for 5th Control Period (MW)

Category	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Low Tension Supply					
Domestic -Category I	615	651	690	730	773
Non-Domestic Category II	149	158	168	179	190
Industrial -Category III	33	33	34	35	36
Cottage Industries - Category IV	2	2	2	2	2
Irrigation and Agriculture - Category V	1373	1442	1514	1589	1669
Public Lighting & PWD - Category VI	86	89	91	93	95
Others - Category VII & VIII	16	17	17	18	19
Total Low-Tension Supply	2274	2393	2519	2651	2792
High Tension Supply					
Industrial -Category I(11kV)	151	167	184	204	227
Industrial -Category I(33kV)	103	104	106	108	110
Industrial -Category I(132kV)	99	104	110	115	121
Other Category II (11kV)	28	29	31	33	35
Other Category II (33kV)	1	1	1	1	1
Other Category II (132kV)	1	1	1	1	1

Category	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Rly Stns. Bus Stns & Airport Cat III (11kV)	1	1	1	1	1
Irrigation, Agriculture & CPWS - Category IV (11kV)	23	24	25	25	26
Irrigation, Agriculture & CPWS - Category IV (33kV)	47	48	49	50	51
Irrigation, Agriculture & CPWS - Category IV (132kV)	328	361	397	436	479
Railway Traction Category V(132kV)	77	87	90	94	99
Colony Consumption -Category VI (11kV)	2	2	2	2	2
Colony Consumption -Category VI (33kV)	4	5	5	5	5
Colony Consumption -Category VI (132kV)	12	13	13	13	13
Spare (Temporary) Category VII (11kV)	4	4	4	4	5
Spare (Temporary) Category VII (33kV)	0.3	0.3	0.3	0.3	0.3
Spare (Temporary) Category VII (132kV)	0.1	0.1	0.1	0.1	0.1
RESCO 11kV	150	157	164	171	178
Total High-Tension Supply	979	1053	1127	1209	1297
Total Peak	3254	3446	3646	3860	4089

Table 2-11: Coincidental Peak Demand of TSSPDCL for 5th Control Period (MW)

Category	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 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
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

Table 2-12: Non-Coincidental Peak demand of TSSPDCL for 5th Control Period (MW)

Category	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 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
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

c) Distribution Loss Trajectory:

2.2.6 TSDISCOMs have considered the actual agricultural sales, and the loss at LT voltage level higher than the loss approved by the Commission. The incremental losses have resulted in additional procurement of energy for FY 2021-22 for which the TSDISCOMs have not gained any additional revenue. Loss Trajectory projected by the TSDISCOMs for 5th Control Period and 6th Control Period is tabulated below:

Table 2-13: Loss Trajectory submitted by TSNPDCL for 5th Control Period

Description	FY 2021-22 (Actual)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
LT Loss (%)	5.43%	5.40%	5.38%	5.37%	5.36%	5.35%	5.34%	5.33%
11kV Loss (%)	3.88%	3.87%	3.86%	3.85%	3.85%	3.84%	3.83%	3.83%
33kV Loss (%)	3.01%	3.50%	3.48%	3.47%	3.47%	3.46%	3.47%	3.45%

Table 2-14: Loss Trajectory submitted by TSNPDCL for 6th Control Period

Description	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
LT Loss (%)	5.32%	5.31%	5.30%	5.29%	5.28%
11kV Loss (%)	3.82%	3.81%	3.80%	3.80%	3.79%
33kV Loss (%)	3.44%	3.44%	3.43%	3.43%	3.42%

Table 2-15 : Loss Trajectory submitted by TSSPDCL for 5th Control Period

Description	FY 2021-22 (Actual)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
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%

Table 2-16 : Loss Trajectory submitted by TSSPDCL for 6th Control Period

Description	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
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%

2.2.7 The estimated total distribution losses in distribution system for 5th Control Period for TSDISCOMs is as follow:

Table 2-17 :Estimated Distribution Loss for FY 2021-24 and 5th Control Period by TSNPDCL

Particular	FY 2021-22 (Actual)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Distribution loss including EHT (%)	9.15%	9.48%	9.39%	9.36%	9.30%	9.25%	9.19%	9.13%
Distribution loss without EHT (%)	10.81%	11.26%	11.17%	11.11%	11.09%	11.07%	11.05%	11.03%

Table 2-18 : Estimated Distribution Loss for FY 2021-24 & 5th Control Period by TSSPDCL

Particular	FY 2021-22 (Actual)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Distribution loss including EHT (%)	9.14%	9.26%	9.17%	9.06%	9.00%	8.95%	8.88%	8.82%
Distribution loss without EHT (%)	10.47%	10.67%	10.58%	10.53%	10.49%	10.45%	10.41%	10.36%

Table 2-19 : Estimated Distribution Loss for 6th Control Period by TSNPDCL

Particular	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
Distribution loss including EHT (%)	9.06%	8.99%	8.91%	8.93%	8.75%
Distribution loss without EHT (%)	11.00%	10.96%	10.93%	10.89%	10.85%

Table 2-20 : Estimated Distribution Loss for 6th Control Period by TSSPDCL

Particular	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
Distribution loss including EHT (%)	8.76%	8.70%	8.64%	8.57%	8.50%
Distribution loss without EHT (%)	10.32%	10.28%	10.23%	10.19%	10.14%

d) Transmission Loss Trajectory:

2.2.8 Loss Trajectory for 5th Control Period and 6th Control Period is tabulated below:

Table 2-21: Loss Trajectory submitted by TSDISCOMs for 5th Control Period

Description	Actual	Approved			Proposed			
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Transmission Loss	2.47%	2.57%	2.50%	2.48%	2.46%	2.44%	2.42%	2.40%

Table 2-22: Loss Trajectory submitted by TSDISCOMs for 6th Control Period

Description	6 th Control Period				
	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
Transmission Loss	2.39%	2.37%	2.35%	2.34%	2.33%

e) PGCIL Loss Trajectory:

2.2.9 PGCIL losses are applicable on the power procurement from Central Generating Stations in projections for 5th Control Period and 6th Control Period as tabulated below:

Table 2-23 : Trajectory for PGCIL losses for 5th Control Period (%)

Description	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Transmission Loss	3.56%	3.54%	3.52%	3.50%	3.48%

Table 2-24 : Trajectory for PGCIL losses for 6th Control Period (%)

Description	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
Transmission Loss	3.47%	3.45%	3.44%	3.42%	3.41%

f) Load Forecast:

2.2.10 Sales forecast is considered for projection of energy requirement for 5th Control Period and 6th Control Period. Sales projection is grossed up to 33 kV and 132 kV level losses to arrive at the trajectory of energy balance. Same has been tabulated below:

Table 2-25 : Energy Requirement submitted by TSNPDCL for 5th Control Period

Particular	FY	FY	FY	FY	FY
	2024-25	2025-26	2026-27	2027-28	2028-29
LT Sales (MU)	14460	15222	16028	16879	17779
11 kV Sales (MU)	2686	2877	3088	3321	3580
33 kV Sales (MU)	782	795	809	823	837
132 kV Sales (MU)	3789	4090	4419	4778	5169
Total Sales (MU)	21717	22985	24344	25801	27365
AT&C Losses (%) including EHT Sales	9.36%	9.30%	9.25%	9.19%	9.13%
TS TRANSCO Transmission loss (%)	2.48%	2.46	2.44%	2.42%	2.40%
Total Energy Requirement at State Periphery (excl. Inter-State Transmission losses) (MU)	24567	25981	27496	29118	30856
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 External Transmission losses (MU)	339	334	324	317	273
Total Power Purchase Requirement at State Periphery (MU)	24906	26316	27820	29434	31129
AT&C Losses (%) excl. EHT Sales	11.11%	11.09%	11.07%	11.05%	11.03%
Cumulative Transmission Losses	3.81%	3.70%	3.58%	3.47%	3.26%
Total T&D Losses (%)	12.81%	12.66%	12.49%	12.34%	12.09%

Table 2-26: Energy Requirement submitted by TSNPDCL for 6th Control Period

Particular	FY	FY	FY	FY	FY
	2029-30	2030-31	2031-32	2032-33	2033-34
LT Sales (MU)	18618	19501	20430	21408	22438
11 kV Sales (MU)	3868	4190	4551	4956	5412
33 kV Sales (MU)	852	868	883	900	916
132 kV Sales (MU)	5595	6061	6569	7124	7731
Total Sales (MU)	28934	30620	32434	34388	36497
AT&C Losses (%) including EHT Sales	9.06%	8.99%	8.91%	8.83%	8.75%
TS TRANSCO Transmission loss (%)	2.385%	2.37%	2.355%	2.34%	2.325%
Total Energy Requirement at State Periphery (excl. Inter-State Transmission losses) (MU)	32595	34460	36465	38624	40950
PGCIL Losses (%)	3.465%	3.45%	3.435%	3.42%	3.405%
CSPTCL Losses (%)	3.00%	-	-	-	-
Total External Transmission losses (MU)	148	134	134	134	132
Total Power Purchase Requirement at State Periphery (MU)	32743	34595	36599	38758	41082
AT&C Losses (%) excl. EHT Sales	11.00%	10.96%	10.93%	10.89%	10.85%
Cumulative Transmission Losses	2.83%	2.75%	2.71%	2.68%	2.64%
Total T&D Losses (%)	11.63%	11.49%	11.38%	11.27%	11.16%

Table 2-27 : Energy Requirement submitted by TSSPDCL for 5th Control Period

Particular	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
LT Sales (MU)	29521.74	31025.81	32613.70	34290.56	36061.56
11 kV Sales (MU)	7196.74	7601.02	8031.53	8490.85	8980.42
33 kV Sales (MU)	7758.60	8304.49	8891.62	9523.29	10203.11
132 kV Sales (MU)	8098.10	8681.01	9250.51	10020.32	10766.46
Total Sales (MU)	57812.23	61113.40	64567.29	68399.67	72397.85
AT&C Losses (%) including EHT Sales	9.06%	9.00%	8.95%	8.88%	8.82%
TS TRANSCO Transmission loss (%)	2.48%	2.46	2.44%	2.42%	2.40%
Total Energy Requirement at State Periphery (excl. Inter-State Transmission losses) (MU)	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 External Transmission losses (MU)	808	797	772	755	650
Total Power Purchase Requirement at State Periphery MU)	60090	63452	66955	70851	74828
AT&C Losses (%) excl. EHT Sales	10.53%	10.49%	10.45%	10.41%	10.36%
Cumulative Transmission Losses	3.79%	3.69%	3.57%	3.46%	3.25%
Total T&D Losses (%)	12.51%	12.36%	12.20%	12.03%	11.78%

Table 2-28: Energy Requirement submitted by TSSPDCL for 6th Control Period

Particular	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
LT Sales (MU)	36061.74	37933.08	39910.76	44211.89	46549.87
11 kV Sales (MU)	9503.38	10062.39	10660.36	11300.48	11986.22
33 kV Sales (MU)	10934.98	11723.14	12572.20	13487.15	14473.44
132 kV Sales (MU)	11580.40	12466.53	13435.93	14505.29	15679.66
Total Sales (MU)	76668.42	81229.03	86106.08	91332.83	96932.17
AT&C Losses (%) including EHT Sales	8.76%	8.70%	8.64%	8.57%	8.50%
TS TRANSCO Transmission loss (%)	2.385%	2.37%	2.355%	2.34%	2.325%
Total Energy Requirement at State Periphery (excl. Inter-State Transmission losses) (MU)	78542	83201	88183	93521	99239
PGCIL Losses (%)	3.465%	3.45%	3.435%	3.42%	3.405%
CSPTCL Losses (%)	3.00%	-	-	-	-
Total External Transmission losses (MU)	354	321	319	320	315
Total Power Purchase Requirement at State Periphery MU)	78895	83521	88502	93841	99555
AT&C Losses (%) excl. EHT Sales	10.32%	10.28%	10.23%	10.19%	10.14%
Cumulative Transmission Losses	2.82%	2.74%	2.70%	2.67%	2.63%
Total T&D Losses (%)	11.34%	11.21%	11.10%	11.10%	10.91%

Note: CSERC in its 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 has defined the approved Losses as 3%. Hence the TSDiscoms 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 PPA is expiring in FY 2029-30).

2.2.11 TSDiscoms in their Resource Plan have submitted the Sales forecast, Load forecast, Power Procurement Plan and Distribution Plan. The summary of Energy Requirement, Energy Availability and Energy Balance for 5th Control Period and 6th Control Period is tabulated below:

Table 2-29 : Energy Requirement submitted by TSDiscoms for 5th Control Period (MU)

Sl. No	Source	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1.	TSNPDCL	24,906	26,316	27,820	29,434	31,129
2.	TSSPDCL	60,090	63,452	66,955	70,851	74,828
	Telangana State	84,997	89,768	94,774	1,00,285	1,05,957

Table 2-30 : Energy Requirement submitted by TSDiscoms for 6th Control Period (MU)

Sl. No	Source	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
1.	TSNPDCL	32,743	34,595	36,599	38,758	41,082
2.	TSSPDCL	78,895	83,521	88,502	93,841	99,555
	Telangana State	1,11,638	1,18,116	1,25,101	1,32,599	1,40,637

Table 2-31: Energy Availability submitted by TSDiscoms for 5th Control Period (MU)

Sl. No	Source	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 Station	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

Table 2-32 : Energy Availability submitted by TSDiscoms for 6th Control Period (MU)

Sl. No	Source	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34
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 Station	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

2.2.12 Based on the Energy Requirement and Energy Availability projections mentioned in above sections, Energy Balance in the State for each year of 5th Control Period and 6th Control Period is as follows: