



सत्यमेव जयते

Resource Adequacy Plan for Transmission System of Telangana up to the year 2034-35

Government of India
Ministry of Power
Central Electricity Authority

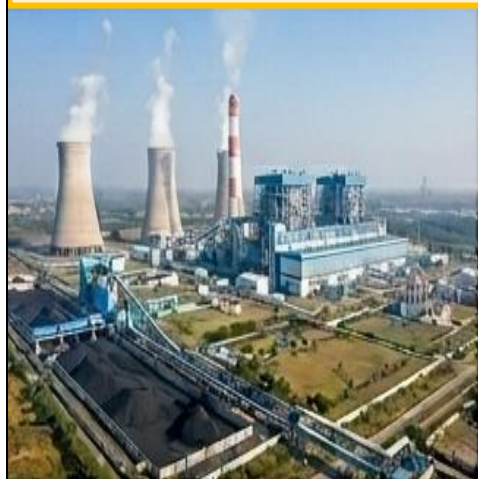


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Executive Summary

Telangana has been one of India's fastest-growing States with significant progress in various sectors, including industry, infrastructure and services. Telangana, a key economic hub in India, has made significant strides in information technology sector to fuel its rapid economic growth. Telangana is one of India's leading states in solar energy production due to its high solar radiation.

The contracted generation capacity in the state of Telangana is about 23.4 GW as on 31st March, 2026 including roof top solar. Around 10.54 GW renewable energy capacity (including large Hydro and DRE) has been installed in Telangana. Transmission system for integration of 19 GW of RE capacity has been planned to be integrated by year 2030 under GEC-III scheme. Further, 13 GW of transmission capacity is planned under ISTS network by year 2032. The installed generation capacity in the state of Telangana is planned to be increased to 45.68 GW by 2026-30 and 56.45 GW by 2034-35.

Till date, Telangana has witnessed an all-time high peak demand of 18,548 MW in March, 2026, which is about 8% higher than the peak demand of 17,162 MW in March, 2025. Normally, the State experiences peak electricity demand during the month of March and during day time. Telangana has taken various initiatives such as feeder segregation and shifting of agricultural load during day time.

As per the revised 20th Electric Power Survey (EPS) Report, peak electricity demand in Telangana is projected to increase to 24.2 GW by 2029-30 and to 31.8 GW by 2034-35. Further, huge load of data centers is also envisaged in the State in the upcoming years.

A comprehensive system study of the transmission network of Telangana, both ISTS and InSTS, has been carried out by CEA and Resource Adequacy (RA) plan of transmission network has been prepared in coordination with Transmission Corporation of Telangana Limited (TGTRANSCO), CTUIL and Grid-India. Summary of transmission system under ISTS and InSTS to be commissioned by 2029-30 is given below:

	765 kV	400 kV	220 kV	Total
Inter-State Transmission System (ISTS)				
Transformation Capacity (MVA)	15000	500	-	15500
Transmission Line (ckm)	2269	220	-	2489
Intra-State Transmission System (InSTS)				
Transformation Capacity (MVA)	-	35510	28433.5	63943.5
Transmission line (ckm)	-	2098.22	3524.32	5622.54

Summary of transmission system planned under ISTS and InSTS to be commissioned between 2030-31 and 2034-35 is given below:

	765 kV	400 kV	220 kV	Total
Inter-State Transmission System (ISTS)				
Transformation Capacity (MVA)/HVDC (MW)	-	-	-	-
Transmission Line (ckm)	150	-	-	150
Intra-State Transmission System (InSTS)				
Transformation Capacity (MVA)	-	16100	8120	24220
Transmission line (ckm)	-	1029	1365.2	2394.2

Chapter-1

Power Scenario and Existing Transmission Network in Telangana

1.1 Background

Telangana, a key economic hub in India, has made significant strides in its energy sector to fuel its rapid economic growth. A robust power sector is essential to sustain the State's increasing demand for electricity. Strengthening the transmission system in Telangana is crucial to ensure that power generated can be efficiently transmitted to meet this growing electricity demand.

The State is home to several large industries like textile, chemical, petrochemicals, engineering and cement, all of which have high electricity requirements. Telangana is a mineral-rich state, with coal reserves at Singareni Collieries Company. The transmission network in Telangana is a critical infrastructure that supports the State's power distribution, especially as it continues to expand its renewable energy capacity to be integrated to grid. Telangana has a well-established transmission system for evacuation of power from power generation centers to consumption points across the state. Transmission Corporation of Telangana Limited (TGTRANSCO) is the primary State-owned company responsible for establishment and managing the transmission infrastructure in Telangana.

Telangana is having potential for solar energy production due to its high solar radiation. Renewable energy integration has been planned in the State on a very large scale. Adequate transmission system needs to be planned for evacuation of power generated from the RE sources, particularly from remote areas like Adilabad, Jogulamba Gadwal, Wanaparthy and Nagarkurnool, where large renewable projects are being developed. Investing in transmission infrastructure today will enable the State to meet the growing demand for electricity, promote industrial development and improve the quality of life of the people.

A comprehensive system study of the transmission system of Telangana has been carried out by CEA in association with TGTRANSCO, CTUIL and Grid-India and Resource Adequacy Plan has been prepared indicating the transmission capacity required to be added in Telangana till the year 2034-35.

1.2 Present Power Scenario in Telangana

1.2.1 Generation Capacity (Intra-State)

Contracted electricity generation capacity in the State of Telangana is about 22613.79 MW (excluding roof top solar) and 23398.06 (including roof top solar) as on 31st March, 2026 as given in Table 1.1, 1.2 and depicted in Figures 1.1 and 1.2.

Table 1.1: Contracted Generation Capacity in Telangana (Excluding Roof top Solar in RES) (as on 31.03.2026)

Coal / Lignite	Gas	Hydro	Nuclear	RES	Total
12452.10	199.39	2518.07	206.46	7237.77	22613.79

**Contracted Capacity – Telangana
as on 31.03.2026**

(Excluding Rooftop Solar in RES)

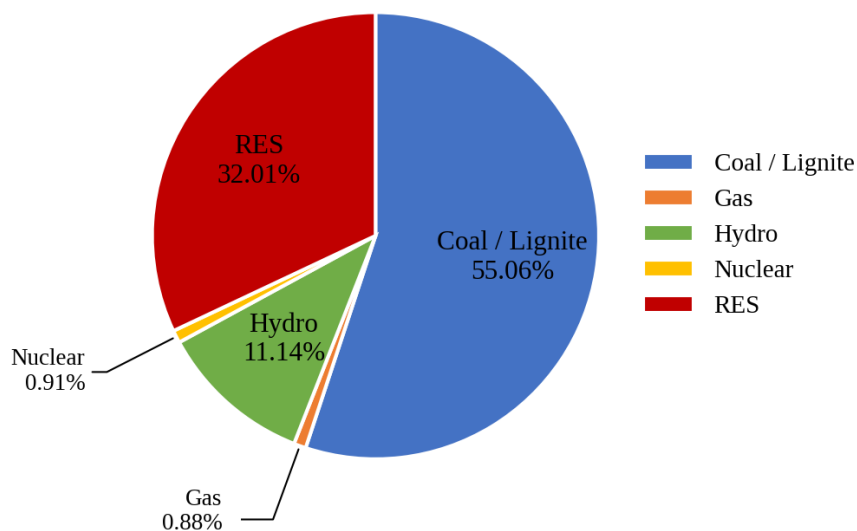


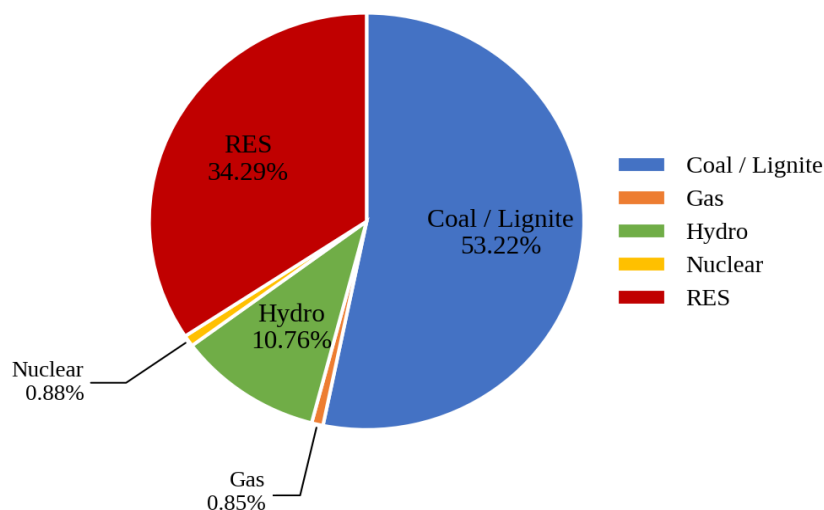
Fig 1.1: Contracted Generation Capacity in Telangana (Excluding Roof top Solar in RES) (as on 31.03.2026)

Table 1.2: Contracted Generation Capacity in Telangana (Including Roof top Solar in RES) (as on 31.03.2026)

Coal / Lignite	Gas	Hydro	Nuclear	RES	Total
12452.10	199.39	2518.07	206.46	8022.04	23398.06

Contracted Capacity – Telangana as on 31.03.2026

(Including Rooftop Solar in RES)



**Fig 1.2: Contracted Generation Capacity in Telangana (Including Roof top Solar in RES)
(as on 31.03.2026)**

1.2.2 Electricity Demand of Telangana

There are two Discoms in Telangana, Telangana State Northern Power Distribution Company Ltd. (TGNPDCL) and Telangana State Southern Power Distribution Company Ltd. (TGSPDCL). Till date, Telangana has witnessed an all-time high peak demand of 18,548 MW in March, 2026, which is about 8 % higher than the peak demand of 17,162 MW in March, 2025. The peak demand observed in each month during the last four years is given in Table 1.3 and depicted in Fig.1.2 and 1.3.

Table 1.3: Month wise peak electricity demand

Month	Peak electricity demand 2025-26 (MW)	Peak electricity demand 2024-25 (MW)	Peak electricity demand 2023-24 (MW)	Peak electricity demand 2022-23 (MW)
April	14925	13884	14499	13636
May	10803	11257	9867	10519
June	11808	11244	11417	9806
July	15443	13541	12610	12468

Month	Peak electricity demand 2025-26 (MW)	Peak electricity demand 2024-25 (MW)	Peak electricity demand 2023-24 (MW)	Peak electricity demand 2022-23 (MW)
August	16613	15573	14816	13079
September	15906	15570	15370	13191
October	12998	14003	15266	11821
November	11188	11180	11857	9953
December	14653	14375	12666	14017
January	16048	15205	13810	13906
February	17083	16601	15164	14794
March	18548	17162	15623	15497

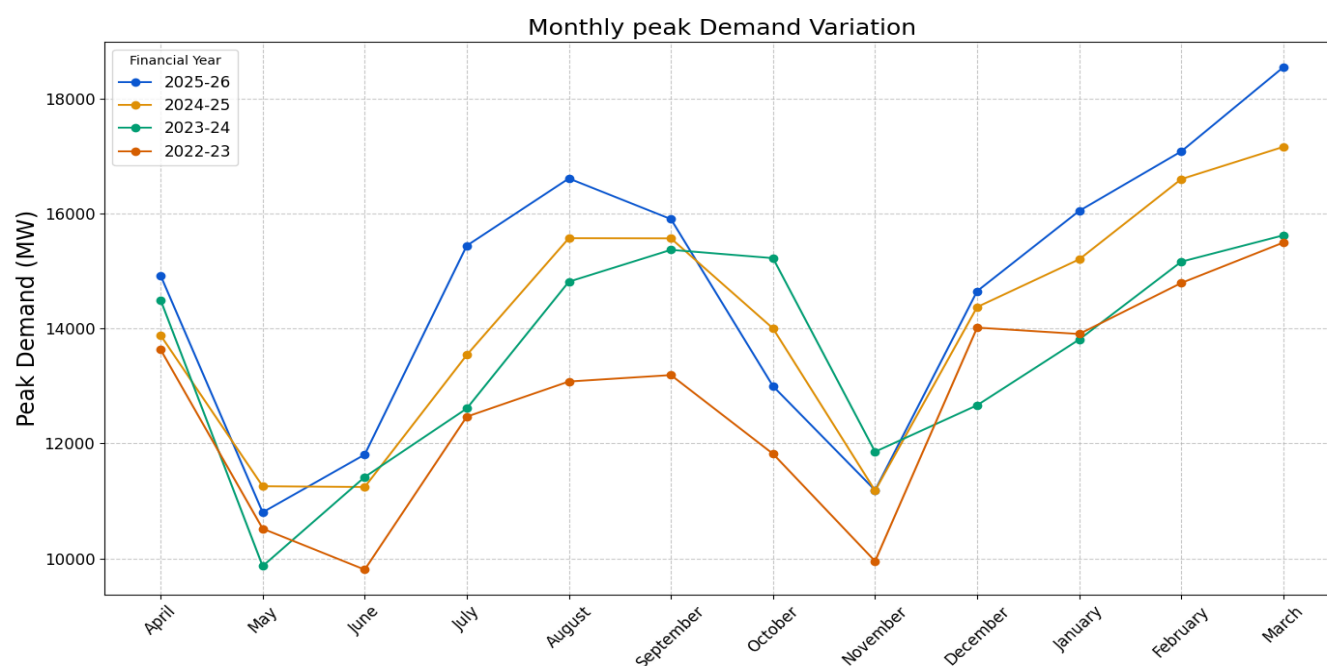


Fig. 1.3: Peak Electricity Demand Pattern of Telangana

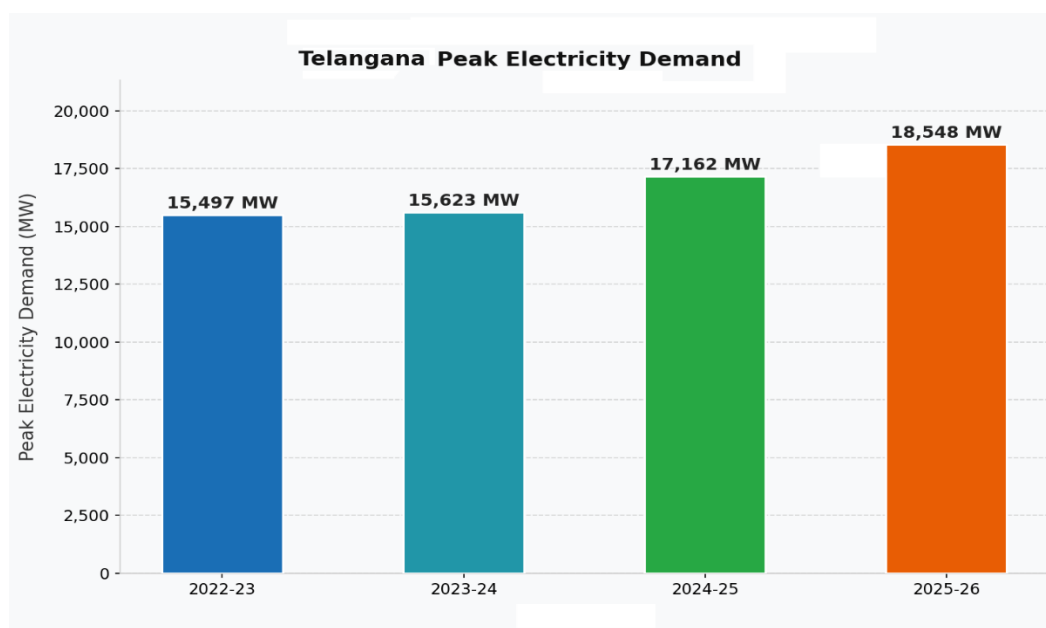


Fig. 1.4: Year wise Electricity Peak Demand

The daily peak demand of Telangana in 2025-26 is shown in Fig. 1.4.

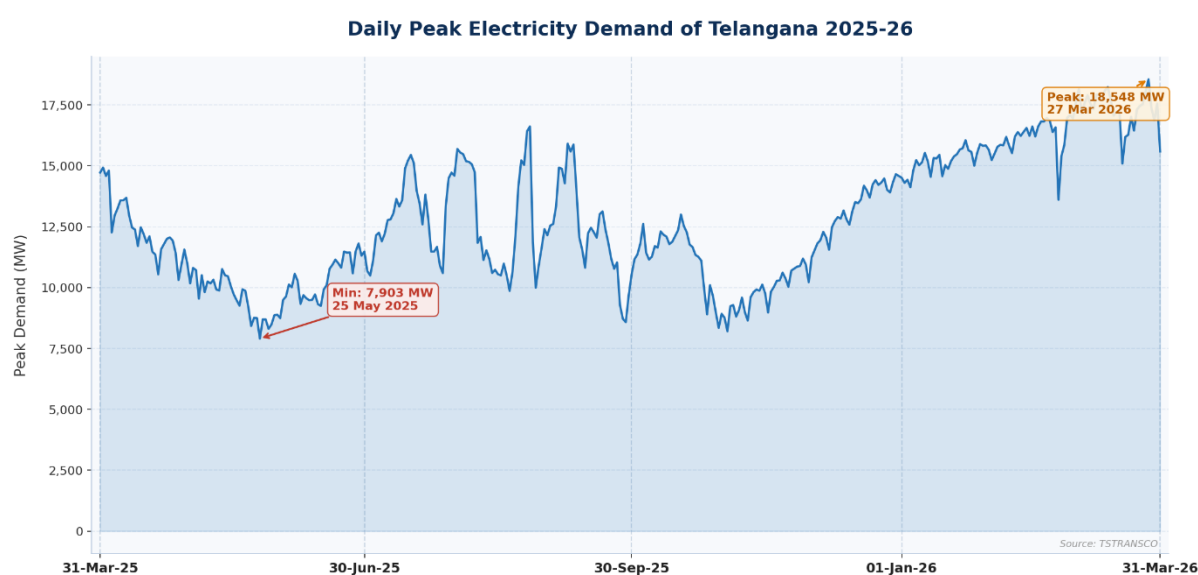


Fig 1.5: Daily peak electricity demand of Telangana in 2025-26

It can be observed that the peak electricity demand occurs in the month of March. The peak demand occurs during the day time. Telangana has taken various initiatives such as feeder segregation and shifting of agricultural load during day time.

1.3 Existing Transmission Network in Telangana (as on 31.03.2026)

Telangana has a vast transmission network that includes extensive 220 kV, 400 kV and 765 kV system in Intra-State and Inter-State Transmission.

1.3.1 Intra-State Transmission System in Telangana

Under intra-state transmission network, Telangana has transmission network that includes extensive 400 kV, 220 kV and 132 kV systems. Under intra-state transmission network, the highest voltage is 400 kV. The number of sub-stations, transformation capacity and length of transmission lines at different voltage levels in intra-state transmission network is given in Table 1.4 and 1.5 respectively.

Table 1.4: Details of Sub-stations in Telangana (as on 31st March, 2026)

S.No.	Voltage level	No. of Substations	Transformation Capacity (MVA)	
1	400 kV	29	400/220	23915
			400/13.8	1760
			400/11	2985
2	220 kV	106	220/132	24720
			220/33	752
			220/11	5836.5
			220/6.6	252
3	132 kV	258	33/132	16
			132/33	29582
			132/11	1624.5
Total			91,443	

Table 1.5: Existing Transmission Lines incl. Cables as on 31st March, 2026

S.No.	Voltage level	Length (ckm)
1	400 kV	7740
2	220 kV	10356
3	132 kV	13210
	Total	31306

List of existing Intra-state substations at 400 kV voltage level is given in Table 1.6.

Table 1.6: Existing intra-state sub-stations as on 31st March, 2026

Sl. No.	District	Name of the Sub-Station	Voltage Level	Transformation capacity (MVA)
Ranga Reddy				
1	Ranga Reddy	400 kV SS Shankarpally	400/220 kV	1445
2		400 kV SS Mamidipally	400/220 kV	1260
3		400 kV SS Maheshwaram	400/220 kV	1000
4		400 kV SS Kethireddypalli	400/220 kV	630
			220/132 kV	200
5		400 kV SS Raidurg	400/220 kV	1000
			220/132 kV	320
			132/33 kV	240
Medchal (Malkajgiri)				
6	Medchal (Malkajgiri)	400 kV SS Malkaram	400/220 kV	1260
			220/132 kV	260
Wanaparthy				
7	Wanaparthy	400 kV SS Veltoor	400/220 kV	1630
Nagar Kurnool				
8	Nagar Kurnool	400 kV SS Dindi	400/220 kV	630
9	Nagar Kurnool	400 kV SS Narlapur	400/11 kV	190
10	Nagar Kurnool	400 kV SS Yedula	400/11 kV	355
11	Nagar Kurnool	400 kV SS Vattem	400/11 kV	190
Medak				
12	Medak	400 kV SS Narsapur	400/220 kV	945
			220/132 kV	420
Siddipet				
13	Siddipet	400 kV SS Gajwel	400/220 kV	1630
			220/132 kV	480
14	Siddipet	400 kV SS Chandulapur	400/13.8 kV	640
			400/11 kV	50
15	Siddipet	400 kV SS Tukkapur	400/11 kV	450
Nalgonda				
16	Nalgonda	400 kV SS Damarcherla	400/220 kV	1000
17	Nalgonda	400 kV SS Choutuppall	400/220 kV	1000
			220/132 kV	320
Suryapet				
18	Suryapet	400 kV SS Suryapeta	400/220 kV	1130
			220/132 kV	420

Bhadradri (Kothagudem)				
19	Bhadradri (Kothagudem)	400 kV SS Asupaka	400/220 kV	630
20		400 kV SS Kamalapur LI	400/220 kV	945
21		400 kV SS Julurupadu	400/220 kV	630
Jayashankar (Bhoopalpally)				
22	Jayashankar (Bhoopalpally)	400 kV SS KTPP	400/220 kV	1000
Jangoan				
23	Jangoan	400 kV SS Jangaon	400/220 kV	1500
Karimnagar				
24	Karimnagar	400 kV SS Ramadugu LI	400/220 kV	1000
			400/13.8 kV	1120
			400/11 kV	50
Peddapally				
25	Peddapally	400 kV SS Sundilla	400/220 kV	1260
			220/11 kV	800
26	Peddapally	400 kV SS Medaram	400/11 kV	1170
Rajanna (Siricilla)				
27	Rajanna (Siricilla)	400 kV SS Tippapur	400/11 kV	530
Nizamabad				
28	Nizamabad	400 kV SS Dichpally	400/220 kV	1445
Nirmal				
29	Nirmal	400 kV SS Nirmal	400/220 kV	945

Earlier Telangana State was part of Andhra Pradesh, several transmission lines were geographically connected with Andhra Pradesh and few lines with Karnataka. The details are given in Table 1.7. List of lines attached at **Annexure-A**.

Table 1.7: Summary of intra-state transmission lines connected with other States as on 31st March, 2026

Voltage Level	No. of Lines	Total ckm of TGTRANSCO Portion
400 kV	11	581.92
220 kV	14	459.72
132 kV	13	108.46
Total	38	1150.1

Bus Reactors and Line Reactors:

Bus reactors and line reactors are installed on the buses and transmission lines at the voltage levels of 400 kV. Details of the bus reactors and line reactors in terms of numbers and MVAR capacity is included in the Table 1.7.

Table 1.8: Details of Reactors

S. No.	TGTRANSCO/ TGGENCO	Voltage level (kV)	Bus Reactors (Nos.)	Bus Reactors (MVAR)	Line Reactors (Nos.)	Line Reactor Capacity (MVAR)	Total (MVAR)
1	TGTRANSCO	400 kV	20 (3-Phase)	2455	2 (3-Phase)	126	2581
2	TGGENCO	400 kV	4 (3-Phase)	438	-	-	438

Capacitor Banks

The capacitor banks are installed on the 132 kV and 33 kV voltage level. The total capacity of capacitor banks installed in Telangana network is 1343.35 MVAR.

1.3.2 Inter-State Transmission System (ISTS) in Telangana

The details of existing Inter-State transmission network in Telangana are given in the Tables below:

Table 1.9: Existing Inter-State Transmission system (Substations)

S.No.	Voltage level	Existing Inter- State transmission system (Substations) (as on 31.03.2026)		
		No of Substations	MVA	
1	765 kV	3	765/400 kV	12000
2	400 kV	4	400/220 kV	5035
	Total	7		17035

Table 1.10: Existing Inter-State Transmission system (Transmission Lines)

S.No.	Voltage level	Existing Inter- State transmission system (Transmission Lines) (as on 31.03.2026)
		(ckm)
1	765 kV	3054
2	400 kV	3912
	Total	6966

Table 1.11: List of 765 kV Substations

Sl. No.	Name of Substation	Voltage Ratio (kV)	Transformation Capacity (MVA)
1.	NIZAMABAD	765/400	4500
2.	MAHESHWARAM_PG	765/400	4500
3.	WARANGAL(NEW)	765/400	3000
Total			12000

Table 1.12: List of 400 kV Substations

Sl. No.	Name of Substation	Voltage Ratio (kV)	Transformation Capacity (MVA)
1.	GHANAPUR	400/220	1445
2.	KHAMMAM_PG	400/220	1130
3.	WARANGAL	400/220	1130
4.	RAMAGUNDAM	400/220	1330
Total			5035

Table 1.13: Reactors in Telangana under ISTS

S. No.	Voltage level (kV)	Bus Reactors (Nos.)	Bus Reactors (MVAR)	Line Reactors (Nos.)	Line Reactor Capacity (MVAR)	Total (MVAR)
1	765 kV	15 (1-Phase)	1200	12 (1-Phase)	2880	4080
2	400 kV	4 (3-Phase)	301	7 (3-Phase)	376	677
Total			1501		3256	4757

Table 1.14: FACTS devices under ISTS

Sl. No.	Substation	Voltage (kV)	Equipment	Capacity (MVAR)	Remark
1	HYDERABAD	400	STATCOM	200/-250	3-Φ Unit

The power map of Telangana depicting all existing inter-state and intra-state substations and associated transmission lines (132 kV, 220 kV and 400 kV voltage level) is given at **Annexure-E**.

1.4 Constraints in Transmission System of Telangana:

There are many transmission lines in Telangana which are 'N-1' non-compliant in certain scenarios. There is a need to plan adequate transmission system to mitigate the existing transmission constraints. Also, several planned intra-state transmission elements are delayed, leading to the elements being 'N-1' non-compliant.

The major 'N-1' non-compliant transmission elements at present are given below:

(i) Operational constraints in InSTS:

TGNPDCL PTR AUGMENTATIONS			
Sl. No.	Name of the Substation (with Voltage Level)	Details of 'N-1' Non-Compliant Transmission Elements	Remedial Measures
1	220/132 kV Nirmal SS	220/132 kV PTR: 1×160+2×100=360 MVA installed Max load reached So far as on 31.03.2026: 329 MVA, %Loading: 91.39	Augmentation proposed for 2x160+2x100 MVA
2	220/132 kV Durshed SS	220/132 kV PTR: 3×160=480 MVA installed Max load reached so far as on 31.03.2026: 405.25 MVA, %Loading: 84.42	Augmentation proposed for 4x160MVA
3	220/132 kV Jagityal SS	220/132 kV PTR: 1×160+3×100=460 MVA installed; 2026 Max load reached so far as on 31.03.2026: 430 MVA, %Loading: 93.48	Augmentation proposed for 2x100+2x160 MVA. Additional capacity of 60MVA is proposed
4	220/132 kV Sitarampatnam SS	220/132 kV PTR: 2×100=200 MVA installed; Max load reached so far as on 31.03.2026: 171.17 MVA, %Loading: 85.58	Augmentation proposed for 3x100 MVA
5	220/132 kV Dichpally SS	220/132 kV PTR: 3×160+1×100=580 MVA installed; Max load reached so far as on 31.03.2026: 560.87 MVA, %Loading: 96.7	Augmentation proposed for 4x160 MVA. Additional capacity of 60MVA is proposed

6	220/132 kV Bheemgal SS	220/132 kV PTR: $2 \times 160 = 320$ MVA installed; Max load reached so far as on 31.03.2026: 281.24 MVA, %Loading: 87.89	Augmentation proposed for $1 \times 100 + 2 \times 160$ MVA
7	220/132 kV Mandamarri SS (Bellampalli)	220/132 kV PTR: $3 \times 100 = 300$ MVA installed; Max load reached so far as on 31.03.2026: 208.45 MVA, %Loading: 69.5	Augmentation proposed for $1 \times 100 + 2 \times 160$ MVA. Additional capacity of 120 MVA is proposed
8	220/132 kV Siricilla SS	220/132 kV PTR: $3 \times 100 = 300$ MVA installed; Max load reached so far as on 31.03.2026: 270 MVA, %Loading: 90	Augmentation proposed for $1 \times 100 + 2 \times 160$ MVA. Additional capacity of 120 MVA is proposed
9	220/132 kV Warangal SS	220/132 kV PTR: $3 \times 160 = 480$ MVA installed; Max load reached so far as on 31.03.2026: 380.9 MVA, %Loading: 79.3	New 220/132 KV SS proposed is at Nagaram with 2×160 MVA Transformation Capacity. This will reduce the loading on Warangal PTRs
10	220/132 kV Renjal SS	220/132 kV PTR: $1 \times 160 + 1 \times 100 = 260$ MVA installed; Max load reached so far as on 31.03.2026: 189.68 MVA, %Loading: 72.95	Augmentation proposed for 2×160 MVA
11	220/132 kV Peddagopathi SS	220/132 kV PTR: $2 \times 100 = 200$ MVA installed; Max load reached so far as on 31.03.2026: 178.56 MVA, %Loading: 89.28	Augmentation proposed for 2×160 MVA
12	220/132 kV Janagoan SS	220/132 kV PTR: $2 \times 160 + 1 \times 100 = 420$ MVA installed; Max load reached so far as on 31.03.2026: 398.7 MVA, %Loading: 94.9	Augmentation proposed for 3×160 MVA
13	220/132 kV Waddekothapally SS	220/132 kV PTR: $3 \times 160 = 480$ MVA installed; Max load reached so far as on 31.03.2026: 413 MVA, %Loading: 86.4	1) Feasibility issued for erection of new 220 kV SS Singarajupally with 2×160 MVA and erection of 132 kV Line from proposed SS to existing 132 kV SS Palakurthy. 2) Feasibility issued for PTR augmentation at 400 kV SS Suryapet for $3 \times 160 + 1 \times 100$ MVA. This will relieve the load on WKPally PTRs

14	220/132 kV Mahabubabad SS	220/132 kV PTR: $3 \times 100 = 300$ MVA installed; Max load reached so far as on 31.03.2026: 266 MVA, %Loading: 88.66	Additional 160MVA PTR is proposed
15	400/220 kV Dindi	ICTs (2x315 MVA)	3 rd 315 MVA ICT has been planned.
16	400/220 kV Gajwel	ICTs (2x315 + 2x500 MVA)	Load diversion to 400kV Narsapur

TG NPDCL – 220 kV Lines			
Sl. No.	Name of the Transmission Line	Details of N-1 Non-Compliant Transmission Line	Remedial Measures
	(with Voltage Level)	(Conductor, MOL & 2026 Forecasted Loading)	
1	220 kV RSS-Manthani & Nagaram-Manthani	Conductor: Zebra+Moose; MOL: 190 MW/ckt; 2026 Forecasted: 145 & 70 MW. N-1: Not Satisfied. Note: With 100 MVA KTPP commissioning RSS-Manthani loading reduces	Loading on Manthani SS may get reduced considering the following upcoming network improvements in the scheme area: i. 132kV DC line from 400/220/132kV SS KTPP to 132kV SS Chelpur. ii. 2nd circuit stringing on existing 132kV Kataram – Beersagar line and making it LILO to 220kV Medigadda duly providing 132kV features at 220kV Medigadda. iii. Upcoming 41 MW Solar power injection at 132kV level at 220/132kV SS Manthani. iv. Upcoming 22 MW Solar power injection at 132kV level at 132/33kV SS Manthani. v. Upcoming 27.5 MW Solar power injection by M/s. SCCL at 132kV level at 132/33kV SS Chennur.

2	220 kV Nagaram – Warangal D/C	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 205 MW	The existing conductor is proposed to be replaced with HTLS conductor to address the loading issue.
3	220 kV Dichpally– Bheemgal S/C & Rampur–Bheemgal	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 195 & 75 MW	Additional line from Dichpally to Bheemghal is proposed by making LILO of 220 kV Dichpally - Nandi Medaram- Bheemghal
4	220 kV Ramadugu – Durshed D/C	Conductor: Moose; MOL: 210 MW/ckt; 2026 Forecasted: 188 MW	New SS is proposal at 220/132 kV SS at Achampally(2X160MVA)
5	220 kV RSS – Durshed D/C	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 145 MW	
6	220 kV Jangoan (400 kV) – Jangoan D/C	Conductor: Moose; MOL: 210 MW/ckt; 2026 Forecasted: 155 MW	Additional line is proposed by making LILO of 220 kV Jangoan - Waddekottapally to 220KVSS Jangoan
7	220 kV Oglapur – Huzurabad S/C	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 200 MW	newly charged 220/132 kV SS Husnabad with 1 No. 100 MVA PTR and further downstream work will reduce load.
8	220 kV Ramadugu – Siricilla D/C	Conductor: Moose; MOL: 210 MW/ckt; 2026 Forecasted: 120 MW	220 kV Features and line from 400KVSS Tippapur to Siricilla is proposed

TGSPDCL- PTR Augmentations

S. No.	Name of the Substation (with Voltage Level)	Details of 'N-1' Non-Compliant Transmission Elements (Installed Capacity & % Loading 2026)	Remedial Measures
TGSPDCL – 220/132 kV PTR Augmentation			
1	400/220/132 kV Narsapur SS	220/132 kV PTR: 2×160+1×100=420 MVA installed; Max load reached so far as on 31.03.2026: 426.14 MVA, %Loading: 101.46	4X160 MVA is proposed. Additional capacity of 220MVA is proposed

2	220/132 kV Thimmajipet SS	220/132 kV PTR: $1 \times 100 = 100$ MVA installed; Max load reached so far as on 31.03.2026: 90.6 MVA, %Loading: 90.6	Additional 100MVA proposed to meet N-1 compliance
3	220/132 kV Miryalaguda SS	220/132 kV PTR: $2 \times 160 + 2 \times 100 = 520$ MVA installed; Max load reached so far as on 31.03.2026: 404.08 MVA, %Loading: 77.71	New 220/132 kV SS Penpahad with 2×160 MVA. This will give relief on Miryalaguda PTRs
4	400/220/132 kV Gajwel SS	220/132 kV PTR: $3 \times 160 = 480$ MVA installed; Max load reached so far as on 31.03.2026: 455 MVA, %Loading: 94.79	4×160 MVA is proposed. Additional capacity of 160MVA is proposed
5	400/220/132 kV Suryapet SS	220/132 kV PTR: $2 \times 160 + 1 \times 100 = 420$ MVA installed; Max load reached so far as on 31.03.2026: 376 MVA, %Loading: 89.52	1) $2 \times 160 + 2 \times 100$ MVA is proposed. 2) $3 \times 160 + 1 \times 100$ MVA is proposed in phases Additional capacity of 160MVA is proposed
6	220/132 kV Yeddumailaram SS	220/132 kV PTR: $2 \times 160 + 2 \times 100 = 520$ MVA installed; Max load reached so far as on 31.03.2026: 408 MVA, %Loading: 78.46	$3 \times 160 + 1 \times 100$ MVA is proposed. Additional capacity of 60MVA is proposed
7	220/132 kV Jurala SS	220/132 kV PTR: $2 \times 160 + 1 \times 100 = 420$ MVA installed; Max load reached so far as on 31.03.2026: 379 MVA, %Loading: 90.23	Augmentation proposed for 3×160 MVA. Additional capacity of 60MVA is proposed
8	220/132 kV Kosigi SS	220/132 kV PTR: $2 \times 100 = 200$ MVA installed; Max load reached so far as on 31.03.2026: 171.4 MVA, %Loading: 85.7	Additional 160MVA is proposed
9	220/132 kV Kalwakurthy SS	220/132 kV PTR: $1 \times 100 + 2 \times 160 = 420$ MVA installed; Max load reached so far as on 31.03.2026: 387 MVA, %Loading: 92	Augmentation proposed for 3×160 MVA. Additional capacity of 60MVA is proposed
TGSPDCL – 220 kV Lines			

Sl. No.	Name of the Transmission Line (with Voltage Level)	Details of N-1 Non-Compliant Transmission Line	Remedial Measures
		(Conductor, MOL & 2026 Forecasted Loading)	
1	220 kV Shankarpally – Yeddumaularam D/C	Conductor: Moose+Zebra; MOL: 210 & 190 MW/ckt; 2026. Forecasted: 148 & 162 MW/ckt.	Existing line conductor is proposed to be replaced with HTLS conductor
2	220 kV Veltoor – Lower Jurala – Jurala D/C	Conductor: Moose; MOL: 210 MW/ckt; 2026 Forecasted: 166 MW/ckt.	New 220KV Line from Veltoor- Jurala DC is proposed.
3	220 kV Dindi – Kalwakurthy D/C	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 155 MW/ckt.	Recommended for strengthening in the feasibility issued for erection of 220/132/33 KV Divitipally SS
4	220 kV Veltoor – Wanaparthy D/C	Conductor: Moose; MOL: 210 MW/ckt; 2026 Forecasted: 140 MW/ckt.	2nd circuit stringing from 220KVSS Regumanigadda to Brahmanakotkuru stringing work is under progress
5	220 kV Nagarjunasagar – Chalakurthy S/C	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 220 MW..	Existing line conductor is proposed to be replaced with HTLS conductor
7	220KV Suryapet- Miryalaguda DC	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 73 MW/ckt.	Newly charged of 220KV YTPS- Miryalguda line has reduced load on 220KV Suryapet- Miryalaguda DC
8	220KV Nagarjunsagar Talapalli 1,2 and 3	1 and 2 ckt conductor: Moose 3 ckt Conductor: Zebra; MOL: 190 MW/ckt	Power House to receiving station bus reconductoring planned by TGGenco.
9	220KV Kalwakurthy- Thimmajipet DC	Conductor: Zebra and Moose; MOL: 190 MW/ckt; 2026 Forecasted: 175 MW/ckt.	Suitable proposal to be received from field
10	220KV Veltoor(Mahaboobnagar)- Mahaboobnagar DC	Conductor: Moose; MOL: 210 MW/ckt; 2026 Forecasted: 134 MW/ckt.	Suitable proposal to be received from field

GHMC-PTR Augmentations

GHMC – 220/132 kV PTR Augmentation			
Sl. No.	Name of the Substation (with Voltage Level)	Details of 'N-1' Non-Compliant Transmission Elements (Installed Capacity & % Loading 2026)	Remedial Measures
1	220/132 kV Fabcity SS	220/132 kV PTR: $2 \times 100 = 200$ MVA installed; Max load reached so far as on 31.03.2026: 192.8 MVA,%Loading: 96.4	1) Augmentation proposed $2 \times 100 + 1 \times 160$. However Additional 100MVA PTR is allotted. 2) Augmentation proposed for 3×160 MVA
2	220/132 kV Raidurg SS	220/132 kV PTR: $2 \times 160 = 320$ MVA installed; Max load reached so far as on 31.03.2026: 287.6 MVA,%Loading: 89.88	Augmentation proposed for 3×160 MVA
3	220/132 kV Gachibowli SS	220/132 kV PTR: $4 \times 160 = 640$ MVA installed; Max load reached so far as on 31.03.2026: 502 MVA,%Loading: 78.4	A new substation is proposed with diversion of loads
4	220/132 kV Medchal SS	220/132 kV PTR: $3 \times 160 = 480$ MVA installed; Max load reached so far as on 31.03.2026: 367.34 MVA,%Loading: 76.5	Augmentation proposed for 4×160 MVA
5	220/132 kV Osmania SS	220/132 kV PTR: $2 \times 160 = 320$ MVA installed; Max load reached so far as on 31.03.2026: 102 MVA,%Loading: 69.68	Augmentation proposed for 3×160 MVA
6	220/132 kV Shivarampally SS	220/132 kV PTR: $3 \times 160 + 1 \times 100 = 580$ MVA installed; Max load reached so far as on 31.03.2026: 431.63 MVA,%Loading: 74.41	Augmentation proposed for 4×160 MVA
7	220/132 kV Erragadda SS	220/132 kV PTR: $3 \times 160 = 480$ MVA installed; Max load reached so far as on 31.03.2026: 280.8 MVA,%Loading: 58.5	Augmentation proposed for 4×160 MVA

8	220/132 kV Miyapur SS	220/132 kV PTR: $2 \times 160 = 320$ MVA installed; Max load reached so far as on 31.03.2026: 269 MVA, %Loading: 84.6	Augmentation proposed for 3X160 MVA
9	220/132 kV Moulali SS	220/132 kV PTR: $1 \times 100 + 2 \times 160 = 420$ MVA installed; Max load reached so far as on 31.03.2026: 152 MVA, %Loading: 52.4	3X160 MVA is proposed. Additional capacity of 60MVA is proposed
10	220/132 kV Shamshabad SS	220/132 kV PTR: $2 \times 100 = 200$ MVA installed; 2026 Max load reached so far as on 31.03.2026: 116.66 MVA, % Loading: 58.33	Augmentation proposed for 3x100
11	220/132 kV Shapurnagar SS	220/132 kV PTR: $3 \times 160 = 480$ MVA installed; 2026 EMax load reached so far as on 31.03.2026: 391.91 MVA, % Loading: 81.65	Augmentation proposed for 4X160

GHMC N-1 Non-Compliant Lines details

Sl. No.	Name of the Substation (with Voltage Level)	Details of 'N-1' Non-Compliant Transmission Elements (Installed Capacity & % Loading 2026)	Remedial Measures
1	220 kV Raidurg – Erragadda – Shapurnagar	Conductor: Moose+Cable+Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 210 & 150 MW.	Cable is proposed from 400/220kV SS Raidurg to Erragadda
2	220 kV Malkaram – Gunrock D/C	Conductor: Cable; MOL: 210 MW/ckt; 2026 Forecasted: 160 MW.	Additional line from Shapurnagar-Gunrock is proposed
3	220 kV Moulali – Osmania D/C	Conductor: Cable; MOL: 210 MW/ckt; 2026 Forecasted: 130 MW.	New UG Cable is proposed from 220kV SS Nagole to 220kv SS Osmania.
4	220 kV Raidurg – Miyapur – Shapurnagar	Conductor: Moose+Cable+Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 165 & 95 MW.	New 220KVSS is proposed at Khaitalapur(Hyd)

5	220 kV Chandrayangutta – Chanchalguda – Imlibun	Conductor: Cable; MOL: 210 MW/ckt; 2026 Forecasted: 120 & 160 MW.	220 kV Chandrayangutta - Imlibun line LILO to 220 kV SS Chanchalguda is proposed
6	220KV Ghanapur-Moulali S/C and 220KV Ghanapur-Infosys S/C	Conductor: Cable+Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 227 & 176 MW.	Bus Sectionalizer proposed at 220KVSS Moulali.
7	220 kV Bonguluru - Chandrayangutta	Conductor: Zebra; MOL: 190 MW/ckt; 2026 Forecasted: 167 MW/ckt.	Multiple sources are available for 220KVSS Chandrayangutta

(ii) Operational constraints in ISTS:

a) Operational constraints in 765/400 kV and 400/220 kV ICTs at Inter-State substations in Telangana:

S. No.	ICT	Major Constraints	Remedial Solution
1	400/220 kV Ramagundam	N-1 non-compliance of ICTs (2x315 + 2x250 + 1x200 MVA)	400/220 kV Nirmal ICT-4 and 220 kV topology changes
2	400/220 kV Warangal	N-1 non-compliance of ICTs (2x 315 + 1x500 MVA)	400/220 kV Kakatiya ICTs
3	765/400 kV Maheswaram	N-1 non-compliance of ICTs (2x 1500 MVA)	3 rd 1500 MVA ICT at 765/400kV Maheswaram S/S

b) Transmission line constraints

S. No.	Transmission line	Major Constraints	Remedial Solution
1	400 kV Veltoor - RTPS S/C	During high demand period	Reconductoring of the line with HTLS

Chapter-2

Transmission System Requirement by 2029-30

2.1 Load Flow Studies for the year 2029-30

2.1.1 Scope of Load flow studies:

System studies for the resource adequacy plan for Telangana's InSTS have been carried out using the PSSE Software. The studies that have been carried out include the following:

- (i) Steady state load flow studies
- (ii) Contingency Analysis
- (iii) Short Circuit Studies

The load flow studies have been carried out for two scenarios i.e. Solar peak electricity demand scenario and evening peak electricity demand Scenarios. The load flow studies have been carried out for the above scenarios for the two time frames: 2029-30 and 2034-35 with following considerations:

- (i) Load power factor has been considered within ± 0.95 as per the Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019.
- (ii) 'N-1' criterion has been considered as recommended in the Manual on Transmission Planning Criteria of CEA (2023).
- (iii) Transformation capacity of the substations have been considered as per the Manual on Transmission Planning Criteria of CEA (2023).
- (iv) The system voltage has been considered within the following limits as per the Manual on Transmission Planning Criteria, 2023:

220 kV	Max 245 kV, Min 198 kV
400 kV	Max 420 kV, Min 380 kV
765 kV	Max 800 kV, Min 728 kV
- (v) TGTRANSCO's transmission network has been represented at 220 kV and above voltage levels, where loads have been considered incidental on 220 kV buses.
- (vi) For the load flow studies, the transmission elements (new lines/ reconductoring of the existing lines and new substations/ ICT augmentations) already planned by TGTRANSCO to be added by 2029-30 have been considered. Similarly, the ISTS network planned to be added by 2029-30 have also been considered.

2.1.2 Likely Installed Capacity and projected peak electricity demand by 2029-30:

(a) Likely installed generation capacity considered in Telangana by 2029-30 for planning of transmission system is given as below in Table 2.1:

Table 2.1: Likely Installed Generation Capacity considered in Telangana by 2029-30

(All figures in MW)

Coal	Gas	Hydro	Nuclear	RES (with roof top)	Total	PSP	BESS
14052.09	199.39	2518.07	206.46	28706.45	45682.46	0	1900

(b) Peak electricity demand of Telangana in 2029-30 as per revised 20th EPS projections is 24,215 MW. The peak electricity demand of Telangana from 2025-26 to 2029-30 as per revised 20th EPS projections/actual observed is given in Table 2.2.

Table 2.2: Peak electricity demand of Telangana

Sl. No.	Year	Peak electricity demand (MW)
1	2025-26 (Actual)	18548
2	2026-27 (Projection)	19529
3	2027-28 (Projection)	20968
4	2028-29 (Projection)	22488
5	2029-30 (Projection)	24215

2.3 Transmission Schemes to be added under Intra-State by 2029-30:

2.3.1 The summary of transmission system planned under InSTS to be commissioned by 2029-30 are given below (Details given in **Annexure-B**):

Table 2.3: Transmformation capacity (in MVA) planned at new sub-stations by 2029-30

S. No.	Voltage level	Under Construction	Planned	Under planning	Total
1	400/220 kV	-	19000	6000	25000
2	400/11KV	-	-	3770	3770
3	220/132 kV	520	10240	1320	12080

4	220/33 kV	-	1860	-	1860
5	220/11 kV	-	-	835	835
	Total	520	31100	11925	43545

Table 2.4: Augmentation of Transformation Capacity (in MVA) at existing sub-stations by 2029-30

Sl. No.	Voltage level	Under Construction	Planned	Under planning	Total
1	400/220 kV	-	6740	-	6740
3	220/132 kV	260	11940	320	12520
4	220/33 kV	68.5	750	-	818.5
5	220/11 kV	-	-	320	320
	Total	328.5	19430	640	20398.5

Table 2.5: No. of substations planned to be added by 2029-30

Voltage level	No of Substations
400 kV Switching Station	1
400/220 kV	14
400/11 kV	5
220/132 kV	19
220/132/11 kV	2
220/33 kV	5
220/11 kV	7
Total	53

Table 2.6 New transmission lines planned to be implemented (ckm) by 2029-30

Transmission line (ckm)					
Sl. No.	Voltage level	Under Construction	Planned	Under Planning	Total
1	400 kV	278	1356	464.22	2098.22
2	220 kV	9.7	2792.48	722.14	3524.32

	Total	287.7	4148.48	1186.36	5622.54
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Table 2.7: Details of Reconductoring planned by 2029-30

Voltage level (kV)	Planned		Under Planning		Total	
	No of lines	ckm	No of lines	ckm	No of lines	ckm
400	2	207	1	85	3	292
220	6	315	1	76	7	391
Total	8	522	2	161	10	683

Table 2.8: Bus Reactors planned under intra-state by 2029-30

Voltage level (kV)	Under Construction		Planned		Under Planning		Total	
	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR
400	4	500	11	1375	7	875	22	2750

Table 2.9: Line reactors planned under intra-state by 2029-30

Voltage level (kV)	Under Construction		Planned		Under Planning		Total	
	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR
400	0	0	2	160	0	0	2	160

Major transmission schemes and substations planned under intra-state to be added by 2029-30 are given below:

S. No.	Name of the Transmission Scheme	RE Capacity (MW) Solar/ Wind	Capacity (MVA)	Line Length (ckm)
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1	Transmission System for evacuation of Power from Solar & Wind capacity in Adilabad Region	2,000	2,960	590
2	Transmission System for evacuation of Power from Solar & Wind capacity in Asifabad Region	2,000	3,100	747
3	Transmission System for evacuation of Power from Solar & Wind capacity in Nirmal Region	2,000	3,940	560
4	Transmission System for evacuation of Power from Solar & Wind capacity in Kamareddy Region	2,000	2,380	723
5	Transmission System for evacuation of Power from Solar & Wind capacity in Mahaboobnagar Region	2,000	3,080	651
6	Transmission System for evacuation of Power from Solar & Wind capacity in Nagarkurnool Region	3,000	4,280	518
7	Transmission System for evacuation of Power from Solar & Wind capacity in Wanaparthy Region	3,000	4,660	395
8	Transmission System for evacuation of Power from Solar & Wind capacity in Jogulamba Gadwal Region	3,000	3,700	655
	Total	19,000	28,100	4,839

2.3 Transmission schemes to be added under Inter-State by 2029-30:

Transmission schemes to be added under Inter-State during 2025-30 is given below (Details given in **Annexure-C**):

Table 2.10: Transformation Capacity (MVA) to be added under inter-state by 2029-30

S. No.	Voltage level	Under Construction	Planned	Total
1	765/400 kV	15,000	0	15,000
2	400/220 kV	0	500	500
	Total	15,000	500	15,500

Table 2.11: Transmission lines (ckm) to be added under inter-state by 2029-30

S. No.	Voltage level	Under Construction	Planned	Total
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1	765 kV	2,269	0	2,269
2	400 kV	220	0	220
	Total	2,489	0	2,489

Table 2.12: Bus Reactors planned under inter-state by 2029-30

Voltage level (kV)	Under Construction		Planned		Total	
	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR
765	5	1650	0	0	5	1650

Table 2.13: Line Reactors planned under inter-state by 2029-30

Voltage level (kV)	Under Construction		Planned		Total	
	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR
765	4x240+2x330	1620	0	0	5	1,620

Major transmission schemes and substations planned to be added by 2029-30 are given below:

1. Transmission System for integration of Kurnool-IV REZ - Phase-II

- Augmentation of Kurnool-IV PS by 400/220 kV, 4x500 MVA ICTs
- 220 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects
- 400 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects
- Augmentation of Kurnool-IV PS by 765/400 kV, 2x1500 MVA and 400/220 kV, 6x500 MVA ICTs
- 220 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects
- 400 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects
- Establishment of 4x1500 MVA, 765/400 kV Doma Substation with 2x330 MVA (765 kV) bus reactors with space provision for establishment of 220 kV switchyard
- LILO of Kurnool-IV – Bidar 765 kV D/C line at Doma (about 50 kms)
- Doma – Shadnagar GIS S/s (TGTRANSCO) 400 kV quad D/c line (about 50 kms)

- Doma – Kethiredipally (TGTRANSCO) 400 kV quad D/C line (about 60 kms)

2. Transmission System for integration of Krishnagiri REZ Phase-I

- Establishment of 4x1500 MVA, 765/400 kV and 5x500 MVA, 400/220kV Krishnagiri Pooling Station near Kodumur in Kurnool district
- ± 300 MVar STATCOM at Krishnagiri PS
- Krishnagiri– Doma 765 kV D/c line (about 240 km) with 240 MVar SLR (convertible) at both ends on both circuits
- Krishnagiri – Raichur New 765 kV D/c line (about 150 km) with 240 MVar SLR (convertible) at Raichur New end on both circuits
- Establishment of 3x1500 MVA, 765/400 kV Sagar substation with 2x330 MVar (765 kV) bus reactors
- Krishnagiri – Sagar 765 kV D/c line (about 240 km) with 240 MVar SLR (convertible) at both ends on both circuits

3. Transmission Scheme for Solar Energy Zone in Bidar (2500 MW), Karnataka

- Establishment of Bidar PS 3x1500 MVA, 765/400 kV and 5x500 MVA, 400/220 kV ICTs
- Bidar PS–Maheshwaram (PG) 765KV D/C line

4. Transmission system for proposed Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-I)

- Establishment of 4x1500 MVA, 765/400 kV Pendurthi (Vizag) GIS substation with 1x330 MVar (765 kV) bus reactor
- (i) ± 300 MVar STATCOM with 2x125 MVar MSC at Pendurthi (Vizag) GIS with control switching arrangement for proposed 1x330 MVar bus reactor
- (ii) Space provision for 2nd ± 300 MVar STATCOM with 2x125 MVar MSC at Pendurthi (Vizag) GIS
- Pendurthi (Vizag) – Srikakulam 765 kV D/c line with 330 MVar SLR (convertible) at Srikakulam end on both circuits
- LILO of Kalpakka – Maradam 400 kV (quad) D/c line at Pendurthi
- Establishment of 3x1500 MVA, 765/400 kV Khammam-II substation with 1x330 MVar (765 kV) bus reactor
- Khammam-II – Warangal New 765 kV D/c line
- Khammam-II – Pendurthi (Vizag) 765 kV D/c line with 330 MVar SLR (convertible) at both ends on both circuits
- Khammam-II – Khammam (existing) 400 kV (quad) D/c line

5. Transmission System for integration of Krishnagiri REZ - Phase-II

- Augmentation of 2x1500 MVA, 765/400 kV and 9x500 MVA, 400/220kV ICTs at Krishnagiri PS

- Krishnagiri – Nellore 765 kV D/c line (240 km) 1x240 MVar SLR (convertible) at both ends on both circuits
- Khammam-II – Sagar 765 kV D/c line (150 km) 1x240 MVar SLR (convertible) at Khammam-II end on both circuits

2.4 Short Circuit Studies:

As per the short circuit studies, fault level at various substations in Telangana are either near or higher than the designed limits. List of substations with higher fault level is given below:

Table 2.14: List of Intra-State substations with higher fault level

Sl. No.	Name of the Substation	Voltage level (kV)	Fault Level (Amps)
1	400KVSS Mamidipally	220	53672.2
2	400KVSS Gajwel	220	41503.9
3	400KVSS Veltoor	220	48110.2
4	400KVSS Shankarpally	220	46180.7
5	400KVSS Malkaram	220	54424.2
6	220KVSS Shapurnagar	220	43751.3
7	220KVSS Gachibowli	220	44556.5
8	220KVSS Fabcity	220	44760.7
9	400KVSS Dindi	220	41724.9
10	220KVSS Malyalapally	220	46611.6
11	220KVSS Budidampadu	220	40652.5
12	400 kV VELTOOR	400	49326.8
13	400 KV DICHPELLI	400	46802.2
14	400 GAJWEL	400	43580.8
15	400 KV MAMIDIPALLI	400	42575.8

Considering the high fault levels, it is recommended to implement remedial measures such as bus splitting and implementation of series reactors. As a long-term solution, it is recommended to replace the existing equipment with the higher rating equipment. It is also recommended that all new substations should be planned with higher short circuit capacity, i.e. 80 kA for 400 kV and 63 kA for 220 kV as per the CEA Manual on Transmission Planning Criteria, 2023. The relevant excerpt from the Manual is reproduced below:

“The maximum short-circuit level on any new substation bus should not exceed 80% of the rated short circuit capacity of the substation equipment. The 20% margin is intended to take care of the increase in short-circuit levels as the system grows. The rated breaking current capability of switchgear at different voltage levels may be taken as given below:

Voltage Level	Rated Breaking Capacity
765 kV	50 kA / 63 kA
400 kV	63 kA / 80 kA
220 kV	40 kA / 50 kA / 63 kA
132 kV	25 kA / 31.5 kA / 40 kA
66 kV	31.5 kA

Scheme for reduction of high short circuit levels at Maheshwaram:

Scheme for reduction of high short circuit levels at Maheshwaram was discussed in the joint study meeting and based on the discussion following Scheme was identified:

Scheme for reduction of high short circuit levels at Maheshwaram (TGTRANSCO) and Maheshwaram (PGCIL) substations ISTS Scope:-

Installation of 12 ohms fault limiting series reactor on Line-1 at Maheshwaram (TGTRANSCO) end of Maheshwaram (PGCIL) – Maheshwaram (TGTRANSCO) 400kV (Quad) D/c line

Installation of 12 ohms fault limiting series reactor on line-2 at Maheshwaram (PGCIL) end of Maheshwaram (PGCIL)

Maheshwaram (TGTRANSCO) 400kV (Quad) D/c line TGTRANSCO Scope:-

Bus Split arrangement at 400/220kV Maheshwaram (TGTRANSCO) substation.

Chapter-3

Transmission System Requirement by 2034-35

3.1 Load flow studies for the year 2034-35

a) Electricity demand by 2035:

Peak electricity demand of Telangana in 2034-35 as per revised 20th EPS projections is 28.7 GW and 31.8 GW as per Resource Adequacy Plan (Generation). As the Resource Adequacy Plan (Generation) has the latest updated data, accordingly, the 31.8 GW has been considered in the load flow studies.

Table 3.1: Peak electricity demand of Telangana as per revised 20th EPS projections

Sl. No.	Year	Projected peak electricity demand (MW) as per revised 20 th EPS projections	Projected peak electricity demand (MW) as per report on Resource Adequacy plan (Generation)
1.	2030-31	24882	25639
2.	2031-32	25902	27059
3.	2032-33	26955	28558
4.	2033-34	27884	30139
5.	2034-35	28708	31809

b) Generation addition under Intra-State by 2035:

Table 3.2: Generation addition under Intra-State by 2035

Coal	Gas	Hydro	Nuclear	RES (with roof top)	Total (MW)	PSP	BESS
14852.09	199.39	2518.07	206.46	38676.47	56452.48	0	2275

3.2 Transmission system planned to be added under Intra-State during 2030- 35:

The summary of transmission system planned under InSTS to be commissioned during 2030-35 are given below (Details given in **Annexure-D**):

Table 3.3: Transformation capacity planned at new substations during 2030-35

Sl. No.	Voltage level	Under planning
1	400/220 kV	6000

2	400/11KV	2970
3	220/132 kV	3080
4	220/33 kV	1460
	Total	13510

Table 3.4: Augmentation of Transformation capacity at existing substations during 2030-35

Sl. No.	Voltage level	Under planning
1	400/220 kV	7130
3	220/132 kV	3400
4	220/33 kV	200
	Total	10730

Table 3.5: No of substations planned to be added during 2030-35

Voltage level	No of Substations
400 kV Switching Station	1
400/220 kV	5
220/132 kV	6
220/33 kV	4
Total	16

Table 3.6: New transmission lines planned to be implemented (ckm) during 2030-35

Sl. No.	Voltage level	Planned	Under Planning	Total
1	400 kV	-	1029.02	1029.02
2	220 kV	116	1249.2	1365.2
	Total	116	2278.22	2394.22

3.3 Transmission system planned to be added under Inter-State during 2030-35:

Transmission system planned to be added under Inter-State during 2030-35 are given below:

Table 3.7: Transmission system planned to be added under Inter-State during 2030- 35

Name of the Scheme	Transmission System for integration of Krishnagiri REZ - Phase-II	Under Planning				2031-32
1	Augmentation of 2x1500 MVA, 765/400 kV and 9x500 MVA, 400/220kV ICTs at Krishnagiri PS	765/400		7500		
2	Krishnagiri – Nellore 765 kV D/c line (240 km) 1x240 MVA SLR (convertible) at both ends on both circuits	765				
3	Khammam-II – Sagar 765 kV D/c line (150 km) 1x240 MVA SLR (convertible) at Khammam-II end on both circuits	765				

Chapter-4

Transmission System for evacuation of Renewable Energy in Telangana

4.1 Introduction:

Telangana receives abundant sunlight throughout the year, which makes it an ideal location for solar power generation. As of March, 2026, around 8 GW Renewable Energy capacity (including roof top solar) has been installed in Telangana. Share of Renewable energy in the total power capacity in the State is around 35%. Transmission system for integration of 19 GW of RE capacity has been planned to be integrated by year 2030 under GEC-III scheme. Further, 13 GW of transmission capacity is planned under ISTS network by year 2032. District-wise planned solar and wind capacity including GEC-III is as given below:

Table 4.1: Intra-state transmission system planned

District-wise Solar and Wind Capacity (MW)-RE										
S.No.	District Name	Solar MW			Solar Total MW	Wind MW			Wind Total MW	Grand Total MW
		Commissi oned (MW)	Under Implement ation (MW)	Planned (MW)		Commis sioned (MW)	Under Impleme ntation (MW)	Plan ned (MW)		
1	Adilabad	0.00	41.80	2,000.00	2,041.80	0.00	0.00	0.00	0.00	2,041.80
2	Bhadradri Kothagudem	0.00	18.00	0.00	18.00	0.00	0.00	0.00	0.00	18.00
3	Hanumakonda	0.00	26.00	0.00	26.00	0.00	0.00	0.00	0.00	26.00
4	Hyderabad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Jagtial	55.00	24.30	0.00	79.30	0.00	0.00	0.00	0.00	79.30
6	Jangaon	124.00	89.70	0.00	213.70	0.00	0.00	0.00	0.00	213.70
7	Jayashankar Bhupalapally	0.00	21.20	0.00	21.20	0.00	0.00	0.00	0.00	21.20
8	Jogulamba Gadwal	97.00	142.20	3,000.00	3,239.20	0.00	0.00	0.00	0.00	3,239.20
9	Kamareddy	224.00	27.70	2,000.00	2,251.70	0.00	0.00	0.00	0.00	2,251.70
10	Karimnagar	5.00	66.20	0.00	71.20	0.00	0.00	0.00	0.00	71.20
11	Khammam	12.00	90.00	0.00	102.00	0.00	0.00	0.00	0.00	102.00
12	Komaram Bheem Asifabad	15.00	14.20	2,000.00	2,029.20	0.00	0.00	0.00	0.00	2,029.20
13	Mahabubabad	0.00	38.50	0.00	38.50	0.00	0.00	0.00	0.00	38.50
14	Mahabubnagar	423.00	75.10	2,000.00	2,498.10	0.00	0.00	0.00	0.00	2,498.10
15	Mancherial	98.00	21.00	0.00	119.00	0.00	0.00	0.00	0.00	119.00
16	Medak	278.69	46.10	0.00	324.79	0.00	0.00	0.00	0.00	324.79
17	Medchal Malkajgiri	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

18	Mulugu	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00
19	Nagarkurnool	206.00	108.70	3,000.00	3,314.70	0.00	0.00	0.00	0.00	3,314.70
20	Nalgonda	185.99	146.30	0.00	332.29	0.00	0.00	0.00	0.00	332.29
21	Narayanpet	82.00	52.50	0.00	134.50	0.00	0.00	0.00	0.00	134.50
22	Nirmal	119.00	17.00	2,000.00	2,136.00	0.00	0.00	0.00	0.00	2,136.00
23	Nizamabad	193.00	78.40	0.00	271.40	0.00	0.00	0.00	0.00	271.40
24	Peddapalli	50.00	14.10	0.00	64.10	0.00	0.00	0.00	0.00	64.10
25	Rajanna Sircilla	113.00	18.10	0.00	131.10	0.00	0.00	0.00	0.00	131.10
26	Rangareddy	10.00	69.80	0.00	79.80	0.00	0.00	0.00	0.00	79.80
27	Sangareddy	222.50	71.00	0.00	293.50	27.30	0.00	0.00	27.30	320.80
28	Siddipet	106.00	66.50	0.00	172.50	0.00	0.00	0.00	0.00	172.50
29	Suryapet	31.56	186.50	0.00	218.06	0.00	0.00	0.00	0.00	218.06
30	Vikarabad	173.00	41.00	0.00	214.00	100.80	0.00	0.00	100.80	314.80
31	Wanaparthi	215.00	25.50	3,000.00	3,240.50	0.00	0.00	0.00	0.00	3,240.50
32	Warangal	30.00	26.50	0.00	56.50	0.00	0.00	0.00	0.00	56.50
33	Yadadri Bhuvanagiri	201.00	118.00	0.00	319.00	0.00	0.00	0.00	0.00	319.00
GRAND TOTAL		3,269.74	1,787.90	19,000.00	24,057.64	128.10	0.00	0.00	128.10	24,185.74

4.2 Status of Intra-State transmissions schemes planned under Green Energy Corridor (GEC) scheme:

The transmission system finalised under GEC-III shall facilitate the evacuation of power from 19 GW Solar and BESS of 1.9 GW. The transmission scheme includes 4,839 ckm of transmission lines and 28,100 MVA of transformation capacity. The transmission system was deliberated in detail and finalized in the joint study meeting held among CEA, SRPC, CTUIL, SRLDC (GRID-INDIA) & TGTRANSCO. The summary is given below:

Table 4.2: Intra-state transmission system planned under GEC-III

Scheme	RE (GW)	ckm	MVA	Status
GEC-III	19	4839	28100	Planned

Table 4.3: Summary of the proposed Transmission Scheme

S. No.	Name of the Transmission Scheme	RE Capacity (MW) Solar/ Wind	Capacity (MVA)	Line Length (ckm)
1	Transmission System for evacuation of Power from Solar & Wind capacity in Adilabad Region	2,000	2,960	590

2	Transmission System for evacuation of Power from Solar & Wind capacity in Asifabad Region	2,000	3,100	747
3	Transmission System for evacuation of Power from Solar & Wind capacity in Nirmal Region	2,000	3,940	560
4	Transmission System for evacuation of Power from Solar & Wind capacity in Kamareddy Region	2,000	2,380	723
5	Transmission System for evacuation of Power from Solar & Wind capacity in Mahaboobnagar Region	2,000	3,080	651
6	Transmission System for evacuation of Power from Solar & Wind capacity in Nagarkurnool Region	3,000	4,280	518
7	Transmission System for evacuation of Power from Solar & Wind capacity in Wanaparthy Region	3,000	4,660	395
8	Transmission System for evacuation of Power from Solar & Wind capacity in Jogulamba Gadwal Region	3,000	3,700	655
	Total	19,000	28,100	4,839.00

The details of the Transmission Schemes proposed under GEC-III are given at **Annexure-B**.

4.3 Status of transmission system under ISTS for major RE Zones in Telangana

Status of upcoming ISTS network for 13 GW solar and wind potential zones in Telangana is as given below:

Table 4.2: ISTS network for 13 GW solar and wind capacity in Telangana

RE Zones	Nizamabad (GW)	Medak (GW)	Rangareddy (GW)	Karimnagar (GW)	Total (GW)
Planned (GW)	3.5	3.5	3.5	2.5	13

Chapter-5

Recommendations

1. Intra-State Transmission system to be added by 2029-30 in Telangana (220 kV and above) comprises of 5586.55 ckm of transmission lines and 63623.5 MVA of transformation capacity as detailed below:

Ckm and MVA to be added during 2025-30			
Voltage Level	400 kV	220 kV	Total
Transformation Capacity (MVA)	35510	28433.5	63943.5
Transmission lines (ckm)	2098.22	3524.32	5622.54

In addition, reconductoring of some of the transmission lines (683 ckm) with HTLS conductors is also required in the same timeframe.

2. Intra-State Transmission system planned to be added during 2030-35 comprises of 2394.22 ckm of transmission lines and 24540 MVA of transformation capacity as detailed below:

Ckm and MVA to be added during 2030-35			
	400 kV	220 kV	Total
Transformation Capacity (MVA)	16100	8120	24220
Transmission lines (ckm)	1029	1365.2	2394.2

3. As per the short circuit studies, it has been observed that the fault level at various substations is either near or higher than the designed limits. Therefore, bus splitting arrangement/ implementation of series reactors have been proposed at these substations. It is also suggested to replace the equipment with the higher rating equipment, so as to restore the bus split arrangement and enhance the reliability of power supply. Considering the high fault levels in Telangana, it is recommended that all new substations should be planned with higher short circuit capacity as per the manual on Transmission Planning Criteria.
4. TGTRANSCO should keep adequate space provision in the new substations for extension/augmentation to meet future load growth. Also, TGTRANSCO should provide appropriate space provisions for 33 kV bays in their 220/33 kV grid substations for supply of power to DISCOMs.

5. Transmission schemes which are planned/under planning for implementation till 2029-30 and 2034-35, may be taken up earlier or later as per requirement of Discom, actual load growth, integration of RE etc.
6. TGTRANSCO informed that huge Data Centre loads are coming up in around Hyderabad. The transmission system is being planned with CEA, SRPC, CTUIL and Grid-India. Accordingly, the Resource Adequacy study for transmission system in the State may be reviewed in the coming months.

Annexure-A**List of Intra-state transmission lines connected with other states:**

400 kV Intra-state Lines of TGTRANSCO connected with Other States		
S.No.	Name of the Line	Ckm of TGTRANSCO Portion
1	400 KV Srisailam – Kurnool (SC)	1.5
2	400 KV Kalpaka – Asupaka	25.5
3	400 KV VTPS – Suryapet – I	56.66
4	400 KV VTPS – Suryapet – II	56.66
5	400 KV Srisailam – Sattenapalli – I	0.4
6	400 KV Srisailam – Sattenapalli – II	0.4
7	400 KV Uravakonda – Veltoor – I	73.5
8	400 KV Uravakonda – Veltoor – II	73.5
9	400 KV Suryapeta – Kamavarapu Kota – I	86.4
10	400 KV Suryapeta – Kamavarapu Kota – II	86.4
11	400KV Khammam- Kalpaka	121
SUB-TOTAL		581.92
220 kV Intra-state Lines of TGTRANSCO connected with Other States		
1	220 KV Asupaka – Lower Sileru	15.5
2	220 KV BG Kothur – Chinthuru	30.4
3	220 KV Srisailam – Dindi – I	80
4	220 KV Srisailam – Domalapenta	0.3
5	220 KV Tallapalli – Nagarjunasagar – III	4
6	220 KV Tallapalli – Nagarjunasagar – I	2.1
7	220 KV Tallapalli – Nagarjunasagar – II	2.1
8	220 KV Nagarjunasagar Receiving Station – Srisailam (SC)	4
9	220 KV KTPS- Tiruvur	64.45
10	220 KV Tandur – Sedam S/C Line	33.6
11	220 KV Tallapalli – Chalakurthy	27.4
12	220 KV Brahmnaotkur (LIS) – Wanaparthi	78.79
13	220 KV Chillakallu – Suryapeta	50.3
14	220 KV Chillakallu – Pulichintala	66.78
TOTAL		459.72

132 kV Intra-state Lines of TGTRANSCO connected with Other States		
1	132 KV Aswaraopet – T.Narsapur – I	5.5
2	132 KV Aswaraopet – T.Narsapur – II	5.5
3	132 KV Nagarjunasagar – RCPH	7.7
4	132 KV Chillakallu – Pammy	17
5	132 KV Chillakallu – Bonakallu – I	2.8
6	132 KV Chillakallu – Bonakallu – II	2.8
7	132 KV Alampur – Kurnool – I	5.86
8	132 KV Chillakallu – Madhira	7
9	132 KV Chillakallu – Pedagogathi	36
10	132 KV Chillakallu – Kodada	9.84
11	132 KV Tangeda – New Wadapalli	1.3
12	132 KV Piduguralla – New Wadapalli	1.3
13	132 KV A.P. Carbides – Alampur – II	5.86
TOTAL		108.46

Annexure-B**Transmission schemes to be added in Telangana under Intra-State by 2029-30**

List of 400 kV S/s planned to be implemented by 2029-30 under Intra -State Transmission System (In-STs)				
S. No.	Name of Transmission Line	Voltage (kV)	Capacity (MVA)	
			400kV	220kV
A)	Augmentation of ICT capacities in existing Substations:			
1	400/220/132/33kV Raidurg GIS Substation	400/220	500	
2	400/220kV Maheshwaram Substation	400/220	500	
3	400/220kV Shankarapally Substation (Upgradation of 2x315 to 2x500 MVA)	400/220	370	
4	400/220kV Kethireddipally Substation	400/220	315	
5	400/220kV Dindi Substation	400/220	315	
6	400/220kV Damaracherla Substation	400/220	500	
7	400/220kV Gajwel Substation [(2x500 + 2x315) -> (Upgradation of 1x315 to 3x500 MVA)	400/220	185	
8	400/220kV Mamidipally Substation [(4 x 315) -> (2x500 + 2x315)]	400/220	370	
9	400/220kV Veltoor Substation [(2x500+2x315) -> (4x500)]	400/220	370	
10	400/220kV Nirmal Substation	400/220	315	
11	400/220kV Maheshwaram Substation (4&5 ICTs- 2x500MVA)	400/220	1000	
	Sub-Total		4,740	
B) New Substations planned (Approved by CEA):				
1	400/220kV Chandanvelly GIS Substation (3x500 MVA, 1x125 MVAR)	400/220	1500	
2	400/220kV Shadnagar GIS Substation (3x500 MVA, 1x125 MVAR)	400/220	1500	
3	400/220kV Parigi Substation (2x500 MVA, 1x125 MVAR)	400/220	1000	
4	400/220/132/33kV GIS Substation proposed at Kokapet (3x500 + 3x160(220/132kV) + 2x160(220/33kV) + 4x80MVA - 132/33kV)	400/220	1500	
		220/132		480
		220/33		320
5	220/33kV Gopannapally Substation (2x160 MVA)	220/33		320
6	220/33kV Manchirevula Substation (2x160 MVA)	220/33		320
7	Upgradation of 132/33kV RC Puram to 220/132/33kV with 2x160 MVA PTRs	220/132		320

8	220kV features at existing Tukkapur 400/11kV LI Substation with 400/220kV 2x500 MVA ICTs	400/220	1000	
9	Upgradation of 132/33kV Habsipur Substation to 220kV level with 2x160 MVA PTRs	220/132		320
	Sub-Total		6500	2080
C)	New Substations Proposed			
10	400/220kV Bharat City Substation-I (5x500 MVA)	400/220	2500	
11	400/220kV Bharat City Substation-II (4x500 MVA)	220/132	2000	
	Sub-Total		4,500	
	Grand Total		15,740	2,080

List of 400 kV and 220 kV Transmission Lines under implementation/ already planned to be added by 2029-30 under InSTS

Sl No	Name of Transmission Line	Voltage (kV)	Length (ckm)	
			400kV	220kV
A)	400kV On-going Schemes (Under Construction)			
1	400kV YTPP - Jangaon QMDC Line	400	278	
B)	400kV Schemes Planned			
1	LILO of one circuit of 400 kV Suryapet – Kethireddypally QMDC line to 400/220 kV Chandanvally GIS Substation	400	2	
2	400kV QMDC Line from upcoming 400kV CTRLS Switching Station to 400 kV Chandanvally GIS Substation	400	18	
3	LILO of one circuit of 400 kV Suryapet – Kethireddypally QMDC Line to 400/220kV Shadnagar GIS Substation	400	10	
4	400kV QMDC Line from LILO of one circuit of 400kV Kethireddypally - Shankarpally QMDC Line to 400kV Parigi SS	400	70	
5	220kV TMDC Line from 400/220kV Chandanvally GIS Substation to existing 220kV Chandanvally SS	220		5
6	Parigi (400kV) - Parigi (220kV) 220kV SMDC Line	220		8
7	Parigi (400kV) - Tandur 220kV SMDC Line	220		70
8	220kV TMDC Line from Parigi 400/220kV SS to existing 220/132kV KP Laxmidevipally LI SS	220		30
9	a) LILO of circuit-II of 400kV Maheswaram - Shankarpally to 400kV Kokapet GIS Substation with Twin Moose HTLS Conductor	400	46	
	b) Re-conductoring of circuit-II of existing 400kV Shankarpally - Maheswaram TMDC Line with Twin Moose HTLS Conductor	400	85	

10	Strengthening of 400kV Dindi - Maheswaram TMDC Line with Twin HTLS Conductor	400	122	
11	220kV DC Line from 400/220kV Tukkapur SS to 220/132kV Habsipur Substation	220		39
12	Kokapet (400kV) - R.C. Puram 220kV DC UG Cable Line (5 km UG Cable + 6 km OH Line)	220		22
13	Kokapet (400kV) - Gopannapally 220kV DC UG Cable Line	220		9.8
14	Kokapet (400kV) - Manchirevula 220kV DC UG Cable Line	220		10
			353	193.8
	New Lines Proposed			
15	400kV QMDC Line for LILO of one circuit of 400kV Suryapet - Kethereddypally QMDC Line at 400kV Bharat City Substation-I	400	2	
16	Maheswaram (765kV PGCIL) - Bharat City Substation-I 400kV QMDC Line	400	10	
17	Bharat City Substation-I - Bharat City Substation-II 400kV QMDC Line	400	10	
18	400kV Twin HTLS DC Line for LILO of Maheswaram (765kV) - Ghanapur (765kV) 400kV TMSC Line of PGCIL at 400kV Bharat City Substation-II	400	3	
19	400kV Twin HTLS DC Line for LILO of one circuit of Maheswaram - Shankarpally 400kV TMDC Line (to be upgraded with HTLSC) at 400kV Bharat City Substation-II	400	2	
20	400kV Twin HTLS DC Line for LILO of one circuit of Maheswaram - Mamidipally 400kV TMDC Line (to be upgraded with HTLSC) at 400kV Bharat City Substation-II	400	1	
21	400kV Twin HTLS DC Line for LILO of Maheswaram (765kV) - Kurnool (AP) 400kV TMSC Line (being upgraded with HTLSC) at 400kV Bharat City Substation-II	400	3	
	400 kV DC works proposed			
22	a) 400kV Twin HTLS DC Line for LILO of Circuit-I of Maheswaram - Shankarpally 400kV TMDC Line (to be upgraded with HTLSC) at Loc.No.341/136 to CtrlS	400	10	
23	b) Re-conductoring of circuit-I of existing 400kV Shankarpally - Maheswaram TMDC Line with Twin Moose HTLS Conductor	400	85	
			126	
	Total		757	193.8

List of 220 kV Substations planned to be commissioned by 2029-2030 under Intra State Transmission system			
Sl.No.	Name of the Substation	Voltage (kV)	Transformation Capacity addition (MVA)
Under Construction			
1	Upgradation of existing 132/33 KV Kathalapur SS to 220/132/33 KV SS Kathalapur in Jagityal Dist (2 x100MVA)	220	200
2	Erection of 220/33 kV Substation in the premises of Central Power Research Institute (CPRI), Hyderabad (2 x 100 MVA)	220	200
	SUB-TOTAL		400
Planned			
3	220/33 kV GIS Substation at Nemalinagar in Rangareddy District. (3 x 100MVA)	220	300
4	220/132/33 kV Substation at Chinnamadur (Singarajupally) in Devaruppula mandal in Jangaon district (2x160MVA)	220	320
5	Erection of 220/132/33 kV Sub-Station at Penpahad (V) & (M) with connected lines & bays in Suryapet District. (2 x 160MVA)	220	320
6	33 KV features at existing 400/220KV SS Asupaka (2 x 50MVA)	220	100
7	220/132 kV Nandipet Substation with connected lines& bays in Nizamabad District. (3 x 160MVA)	220	480
8	220/33 kV GIS HMT Hills SS with connected lines in Medchal - Malkajgiri district. (2 x 100MVA)	220	200
9	Upgradation of existing 132/33KV Khaithalapur SS to 220/132/33KV SS by making LILO of existing Gachibowli - Shapur Nagar 220 KV line with 2500 sqmm UG cable (2 x 160MVA)	220	320
10	Upgradation of 132/33 KV Asifnagar Substation to 220/132/33 KV GIS SS (2 x160MVA)	220	320
11	33 KV features at 220/11 kV Rajeswarraopet SS in Karimnagar District (2x50MVA)	220	100

12	33KV features at 400/220KV SS Kamalapuram in Bhadradri Kothagudem District (2x50 MVA)	220	100
13	220/132/33 KV SS Achampally (2x160 MVA)	220	320
14	220/132/33 KV SS Kollur (3x160 MVA)	220	480
15	33 KV features at 220/11 KV LIS Rampur (2x50 MVA)	220	100
16	132 KV & 33 KV features at existing 220 KV SS Switching station, Chalakurthy (2x160 MVA)	220	320
17	220/132/33 KV SS Luxettipet (2x160MVA)	220	320
	SUB-TOTAL		4100
UNDER -PLANNING			
18	220/132/33 KV SS Medchal (New) (2 x160MVA)	220	320
19	220/132/33 kV Bapughat (3 x 160MVA)	220	480
20	220/132/33 kV Donthanpally (2x 160MVA)	220	320
	SUB-TOTAL		1120
TOTAL			5620
List of 220 kV lines planned to be commissioned by 2029-2030 under Intra State Transmission System			
Sl.No.	Name of the Substation	Voltage (kV)	Length (CKM)
A) 220 kV lines for which administrative approvals were issued (Under Construction)			
1	220KV DC line to 220/132/33 kV Kathalapur SS by making LILO of 220 kV Medaram – Dichpally line (1.85KM)	220	3.7
2	220KV DC line to 220/33KV GIS SS Nemalinagar by making LILO of 220KV Shivarampally-Gachibowli OH Line with 220KV 1200 Sq.mm UG cable.(3km)	220	6
	SUB-TOTAL		9.7
B) 220 kV lines for which administrative approvals were issued			

3	220Kv DC line to 400 KV SS Nirmal by making LILO of one circuit of existing 220 KV Jagtial – Nirmal DC line (3.145KM)	220	6.284
4	220KV DC line to 220/132/33kV SS Chinnamadur by making LILO of 220KV SC line from 220KV SS Waddekothapally - 400/220 KV SS Jangoan .(6KM)	220	12
5	220KV DC line to 220/132/33kV SS Penpahad by making LILO of 220KV SC line from KTPS - Miryalaguda.(2KM)	220	4
6	220KV DC line with 1200Sqmm XLPE UG Cable from 220/132KV GIS SS Osmania University to 220/132KV SS Nagole with connected 220KV Bays. (7KM)	220	14
7	220KV DC line to 220/132KV SS Nandipet by making double LILO of 220KV Dichpally-Saragapur DC line.(16.5KM)	220	66
8	Laying of 220 KV Single Circuit line from 400/220/132/33KV Raidurg GIS to 220/132 KV Erragadda GIS with 1000sqmm XLPE UG Cable with connected bay (10KM)	220	10
9	220KV DC line to 220/33KV HMT Hills GIS Substation by making LILO of 220KV Shapurnagar-Gachibowli line with 2500Sqmm UG cable. (0.2 KM)	220	0.4
10	220KV DC line to 220/132/33KV SS Khaitalapur by making LILO of Shapurnagar-Gachibowli 220KV line with 2500sqmm UG cable (3 KM)	220	6
11	220KV DC line to 220/132/33KV SS Jangaon by making LILO of 220 KV Jangaon (400 kV) - Waddekothapally circuit-I (5KM)	220	10
12	220KV DC line to 220/132 KV SS Bheemgal by making LILO of Nandimedaram-Dichpally 220KV line (1.5KM)	220	3
13	220KV DC line from 400/220 KV SS Tippapur(22KM) to 220/132KV Achampally and LILO of one circuit of 132kV Siricilla-Padmanagar (5KM) line to 220/132KVSS Achampally	220	54

14	Alternate source to 220KV SS Gunrock(Shapurnagar to Gunrock (or) making LILO of Shapurnagar-Jangaon) (12.5KM)	220	25
15	220KV DC line to 220/132/33kV SS Kollur by making LILO of one circuit of 220kV Shankarpally-Gachibowli DC line(1.5KM)	220	3
16	220KV TMDC line from Uddandapur SS to 220 kV Shadnagar SS (50KM) with HTLS conductor	220	100
17	220 KV DC line to 220/132/33 KV SS Manchirevula by making LILO of Gachibowli-Shivramapally line	220	10
	SUB-TOTAL		323.684
220 kV lines to be planned			
18	220KV DC line to 220/132/33 KV SS Medchal by making LILO of one circuit of 220 kv Medchal –Gajwel line (1kM)	220	2
19	220KV DC line to 220/132/33 KV SS Medchal by making LILO of Shapurnagar-Bhongir line (1kM)	220	2
20	220KV DC line to Bapughat SS by making LILO of one circuit of 220KV SS Shivarampally-Gachibowli line (5 kM)	220	10
21	220 kV DC line from Bapughat to 220/132/33 KV SS Manchirevula (8 kM)	220	16
22	220kV DC line from Donthanpally to 220/33 KV Gopannapally GIS (15KM)	220	30
	SUB-TOTAL		60
Total			393.384

List of LIS S/s planned to be implemented by 2029-30 under Intra -State Transmission system (In-STs)

Sl. No.	Name of the Substation	Voltage (kV)	Transformation Capacity (MVA)
Augmentation of existing Substations			

1	220/11 kV Medigadda SS (Augmentation)	220/11	$2 \times 160 \text{ MVA} = 320 \text{ MVA}$
New 400/11KV and 220KV/11 KV Substations			
1	400/11 kV Velgatoor Sub-station	400/11	$5 \times 160 \text{ MVA} + 2 \times 25 \text{ MVA} = 850 \text{ MVA}$
2	400/11 kV Namapur Sub-station	400/11	$4 \times 160 \text{ MVA} + 2 \times 25 \text{ MVA} = 690 \text{ MVA}$
3	400 kV Kachapur Switching Station	400 SwS	-
4	400/11 kV Veljipur Sub-station	400/11	$4 \times 160 \text{ MVA} + 2 \times 25 \text{ MVA} = 690 \text{ MVA}$
5	400/11 kV Yellaipally Sub-Station	400/11	$6 \times 160 \text{ MVA} + 2 \times 25 \text{ MVA} = 1010 \text{ MVA}$
6	400/11 kV New Tukkapur SS	400/11	$4 \times 120 \text{ MVA} + 2 \times 25 \text{ MVA} = 530 \text{ MVA}$
7	400/220 kV Annaram Sub-Station	400/220	$3 \times 500 \text{ MVA} = 1500 \text{ MVA}$
8	220/11 kV Yacharamthanda Sub-station	220/11	$3 \times 40 \text{ MVA} + 2 \times 25 \text{ MVA} = 170 \text{ MVA}$
9	220/11 kV Manichippa Sub-station	220/11	$2 \times 40 \text{ MVA} + 2 \times 10/16 \text{ MVA} = 112 \text{ MVA}$
10	220/11 kV Budpur Sub-station	220/11	$2 \times 40 \text{ MVA} + 2 \times 25 \text{ MVA} = 130 \text{ MVA}$
11	220/11 kV Vutkur Sub-station	220/11	$2 \times 40 \text{ MVA} + 2 \times 25 \text{ MVA} = 130 \text{ MVA}$
12	220/11 kV Jayamma Cheravu Sub-station	220/11	$2 \times 40 \text{ MVA} + 2 \times 25 \text{ MVA} = 130 \text{ MVA}$
13	Additional Load at Manichippa PH	220/11	$2 \times 31.5 \text{ MVA} + 2 \times 25 \text{ MVA} = 113 \text{ MVA}$
14	220/132/11 kV SS Chelmeda	220/132/11	$2 \times 160 \text{ MVA PTRs} + 132/11 \text{ kV: } 3 \times 60 \text{ MVA PTRs} = 500 \text{ MVA}$
15	220/132/11 kV SS Borancha	220/132/11	$2 \times 100 \text{ MVA PTRs} + 132/11 \text{ kV: } 2 \times 60 \text{ MVA PTRs} = 320 \text{ MVA}$
16	220/11 kV SS Pokkur	220/11	$2 \times 25 \text{ MVA PTRs} = 50 \text{ MVA}$

400 kV & 220 kV LIS/PRLIS Transmission lines commissioned by 2029-2030 under InSTS

Sl. No.	Name of the Line	Voltage Level (kV)	Length (CKM)
1	400 kV QMDC line: SCCL (Jaipur) to proposed 400/220 kV Annaram Substation	400	40.34
2	LILO of 400KV QMDC line from STPP Jaipur to 400/220/11KV Ramadugu SS	400	19.14
3	400 kV QMDC line 400 kV Kachapur Sws Substation to 400/220/132KV Gajwel	400	14.46
4	LILO of 400KV QMDC line from NTPC to 400KV Narsapur SS	400	7.82
5	400 kV QMDC Line: 400 kV Kachapur Switching Station to 400/11 kV Namapur SS	400	30.28
6	400 kV QMDC Line: 400/11 kV Namapur SS to 400/11 kV Velgatoor – 21.74×2 KM	400	43.48
7	400 kV QMDC Line: 400 kV Kachapur Switching Station to 400/11 kV Velgatoor SS	400	49.4
8	400 kV QMDC Line: 400/11 kV TIPPAPUR Substation to 400/11 kV Veljipur Switchyard	400	10.2
9	400 kV DC line: 400/11 kV Tukkapur SS to 400/11 kV New Tukkapur Switchyard – 1 KM	400	1
10	400 kV QMDC Line: existing 400/13.8/11 kV Chandulapur SS to proposed 400/11 kV Yellaipally SS – 9.548 KM	400	19.1
11	400 kV QMDC Line: 765/400 kV Nizamabad PGCIL SS to 400/13.8/11 kV Chandlapur SS – 93.998 KM	400	188
SUB-TOTAL			423.22
12	LILO of 220KV TMDC line of 400/220KV Sundilla and 220KV Medigadda line to 220/11KVSS Pokkur	220	6
13	220 kV DC line: 400/220 kV Ditchpally SS to 220/11 kV Yacharamthanda SS – 26.902 KM	220	53.804

14	220 kV TMDC Line: 400/220 kV Annaram SS to 220/11 kV SS at Medigadda – 40.494 KM	220	80.988
15	220 kV DC line: 400/220 kV Dichpally SS to proposed 220/11 kV Manchippa LIS SS – 24.176 KM	220	48.352
16	220 kV DC line: existing 400/220 kV Veltoor Substation to proposed 220/11 kV Budpur pump house – 39.0 KM	220	78
17	220 kV DC line: proposed 220/11 kV Budpur Substation to proposed 220/11 kV Vutkooor pump house – 28.0 KM	220	56
18	220 kV DC line: proposed 220/11 kV Vutkooor Substation to proposed 220/11 kV Jayamma Cheruvu pump house – 15.0 KM	220	30
19	220 kV DC line: proposed 220/11 kV Jayamma cheruvu Substation to existing 220/132 kV KOSIGI Substation – 29.0 KM	220	58
20	New 220 kV DC line (12.5 KM): existing 220/132 kV Sadasivapet SS to proposed 220/132/11 kV SS at Chelmeda Pump House	220	25
21	Replacement of existing 220 kV DC line (38.0 KM) with HTLS Conductor (520mm ² ACCC): 400/220 kV Shankarpally SS to 220/132 kV Sadasivapet SS	220	76
22	New 220 kV SMDC line (73 KM): existing 400/220 kV Narsapur SS to proposed 220/132/11 kV SS at Borancha	220	146
23	New 220 kV SMDC line (40 KM): proposed 220/132/11 kV SS Chelmeda to proposed 220/132/11 kV SS at Borancha	220	80
SUB-TOTAL			738.144

400/220/132kV Substations planned to be commissioned by 2029-30 under GEC-III Scheme

Sl No	Name of Sub-station	Voltage (kV)	Transformation Capacity (MVA)		
			400kV	220kV	132kV
1	400/220/132kV Substation at Adilabad (4x500+4x160MVA+1x125 MVAR Bus Reactor)	400/220	2000		
		220/132		640	
2	132/33kV Substation at Jainath (2x80 MVA)	132/33			160
3	132/33kV Substation at Mavala (2x80 MVA)	132/33			160

4	400/220/132kV Substation at Asifabad (3x500+3x160 MVA+1x125 MVAR Bus Reactor)	400/220	1500		
		220/132		480	
5	220/132kV Substation at Sirpurkagaznagar (2x160 MVA)	220/132		320	
6	220/132/33kV Substation at Muttapur (2x160+2x80 MVA)	220/132		320	
		132/33			160
7	132/33kV Substation at Rasoolpally (2x80 MVA)	132/33			160
8	132/33kV Substation at Tallapet (2x80 MVA)	132/33			160
9	400/220/132kV Substation at Rampur (5x500+3x160 MVA+1x125 MVAR Bus Reactor+2x80 MVAR Line Shunt Reactors-Tukkapur DC Line)	400/220	2500		
		220/132		480	
10	220/132kV Substation at Bhainsa (2x160 MVA)	220/132		320	
11	220/132kV Substation at Pochampad (2x160 MVA)	220/132		320	
12	132/33kV Substation at Kubeer (2x80 MVA)	132/33			160
13	132/33kV Substation at Dilawarpur (2x80 MVA)	132/33			160
14	400/220/132kV Substation at Kamareddy (2x500+3x160 MVA+2x80+1x125 MVAR Bus Reactor)	400/220	1000		
		220/132		480	
		132/33			160
15	220/132kV Substation at Chinnashankarampet (2x160 MVA)	220/132		320	
16	33kV features at 220kV Kamareddy Substation (2x80 MVA)	132/33			160
17	33kV features at 220/11kV Yacharam Thanda LI SS (2x50 MVA, 220/33kV)	220/33		100	
18	132/33kV Substation at Pitlam (2x80 MVA)	132/33			160
19	220/132/33 kV features at 400/11kV Uddandapur LI Substation (2x500+4x160+2x80 MVA+1x125 MVAR Bus Reactor)	400/220	1000		
		220/132		640	
		132/33			160
20	220/132/33kV Substation at Jadcherla (4x160+3x80 MVA)	220/132		640	
		132/33			240
21	132/33kV Substation at Nawabpet (3x80 MVA)	132/33			240

22	132/33kV Substation at Gundiyal (2x80 MVA)	132/33			160
23	400/220/132/33kV Substation at Peddakothapally (3x500+5x160+3x80 MVA+1x125 MVAR Bus Reactor)	400/220	1500		
		220/132		800	
		132/33			240
24	220/132/33kV Substation at Amrabad (3x160+3x80 MVA)	220/132		480	
		132/33			240
25	220/132/33kV SS at Polkampally (Vangoor)	220/132		320	
		132/33			160
26	Augmentation of PTRs capacity at existing Nagarkurnool 220/132/33kV Substation from 2x100MVA to 1x100+2x160MVA	220/132		220	
27	33kV features at 220kV Thimmajipet Substation (2x80 MVA)	132/33			160
28	132/33kV Substation at Bijinepally (2x80 MVA)	132/33			160
29	400/220/132kV Wanaparthy Substation (5x500+4x160 MVA+1x125 MVAR Bus Reactor)	400/220	2500		
		220/132		640	
30	220/132kV Substation at Khilla Ghanpur (3x160 MVA)	220/132		480	
31	220/33kV Substation at Pangal (4x100 MVA)	220/33		400	
32	132/33kV Substation at Vemula (3x80 MVA)	132/33			240
33	132/33kV Substation at Pebbair (3x80 MVA)	132/33			240
34	33kV features at 132/11kV Kothakota Substation (2x80 MVA)	132/33			160
35	400/220/132kV Substation at Gadwal (5x500+3x160 MVA+1x125 MVAR Bus Reactor)	400/220	2500		
		220/132		480	
36	220/132/33kV Substation at Erravalli (2x160+3x80 MVA)	220/132		320	
		132/33			240
37	132/33kV Substation at Rayapuram (2x80 MVA)	132/33			160
	Total		14500	8880	4344
	Grand Total:	27724			

Transmission Lines planned to be commissioned by 2029-30 under GEC-III Scheme

Sl No	Name of Transmission Line	Length (ckm)			
		Voltage (kV)	400kV	220kV	132kV
1	400kV Adilabad - Nirmal QMDC Line	400	200		
2	220kV Adilabad (400kV) - Indravelly TMDC Line	220		100	
3	220kV Indravelly - Sirpurkagaznagar TMDC Line	220		170	
4	132kV Adilabad (400kV) - Jainath DC Line	132			60
5	132kV Adilabad (400kV) - Mavala DC Line	132			60
6	400kV Asifabad - Sundilla QMDC Line	400	210		
7	220kV Asifabad (400kV) - Sirpurkagaznagar SMDC Line	220		80	
8	220kV Asifabad (400kV) - Muttapaur TMDC Line	220		110	
9	220kV Asifabad (400kV) - Mandamarri TMDC Line	220		120	
10	132kV Mandamarri (220kV) - Rasoolpaliy DC Line	132			50
11	132kV Mandamarri (220kV) - Tallapet DC Line	132			112
12	400kV Rampur - Chandulapur QMDC Line	400	340		
13	220kV Rampur (400kV) - Bhainsa TMDC Line	220		90	
14	220kV Rampur (400kV) - Pochampad TMDC Line	220		70	
15	132kV Bhainsa (220kV) - Kubeer DC Line	132			40
16	132kV Rampur (400kV) - Dilawarpur DC Line	132			20
17	400kV Kamareddy - Narsapur QMDC Line	400	140		
18	220kV Kamareddy (400kV) - Chinnashankarampet SMDC Line	220		100	
19	220kV Narsapur (400kV) - Chinnashankarampet HTLS DC Line	220		54	
20	220kV Kamareddy (400kV) - Minpur SMDC Line	220		100	
21	220kV Kamareddy (400kV) - Banswada SMDC Line	220		140	
22	220kV Kamareddy (400kV) - Kamareddy TMDC Line	220		50	
23	220kV Kamareddy (220kV) - Yacharam Thanda (LIS) DC Line	132		86	
24	132kV Banswada (220kV) - Pitlam DC Line	220			53
25	220kV Uddandapur (400kV) - Jadcherla TMDC Line	220		15	
26	220kV Uddandapur (400kV) - Kosigi SMDC Line	220		140	
27	220kV Uddandapur (400kV) - Cheguru TMDC Line	220		120	
28	220kV Uddandapur (400kV) - Shadnagar HTLS DC Line	220		100	
30	132kV Uddandapur (400kV) - Nawabpet DC Line	132			40
31	132kV Uddandapur (400kV) - Balanagar DC Line	132			50
32	132kV Kosigi (220kV) - Gundiyal DC Line	132			60

33	400kV Peddakothapally - Yedula (LIS) QMDC Line	400	40		
34	220KV Dindi(400KV)-Polkampally TMDC line	220		36	
35	220kV Peddakothapally (400kV) - Gudipalligattu TMDC Line	220		30	
36	220kV Gudipalligattu - Nagarkurnool TMDC Line	220		40	
37	220kV Peddakothapally (400kV) - Nagarkurnool TMDC Line	220		50	
38	220kV LILO of Dindi (400kV) - Domalapenta Line to Amrabad	220		20	
39	132kV Thimmajipet - Bijinepally DC Line	132			60
40	132kV Nagarkurnool (220kV) - Achampet DC Line	132			72
41	LILO both ckts. of Yedula-Vattem 400kV QMDC Line to Wanapathy (2x35 km)	400	140		
42	220kV Wanaparthy (400kV) - Khilla Ghanpur TMDC Line	220		60	
43	220kV Khilla Ghanpur - Wanaparthy (existing) TMDC Line	220		60	
44	220kV Wanaparthy (400kV) - Pangal DC Line	220		40	
45	132kV Khilla Ghanpur (220kV) - Vemula HTLS DC Line	132			26
46	132kV Erravalli (220kV) - Pebbair HTLS DC Line with RC Towers	132			40
47	400kV Veltoor - Gadwal QMDC Line	400	140		
48	220kV Gadwal (400kV) - Erravalli SMDC Line	220		80	
49	220kV Gadwal (400kV) - Jurala TMDC Line	220		80	
50	220kV Veltoor (400kV) - Jurala HTLS DC Line	220		60	
51	220kV TMDC Line from Jurala SS to Erravalli	220		74	
52	132kV Gadwal (400kV) - Rayapuram DC Line	132			40
53	LILO of Alampur - Ieeza 132kV Line to Gadwal (400kV)	132			60
54	LILO of Alampur - Chinnamarur 132kV Line to Erravalli	132			10
55	LILO of Alampur - Gadwal 132kV Line to Erravalli SS	132			10
	Total		1210	2275	863
	Grand Total	4344	KM		

Annexure-C**Strengthening/Re-conductoring of existing Transmission Lines planned under Transmission System requirement dedicatedly for RE Power Evacuation in Telangana State**

Sl No	Description	Line Length (ckm)	
		220kV	132kV
1	220kV Mandamarri - Murmur SC Line Strengthening with HTLS conductor	30	
2	220kV Mandamarri - Sundilla Line Strengthening with HTLS conductor	24	
3	220kV Sundilla - RSS (Malyalapally) Line Strengthening with HTLS conductor	11	
4	220kV Kosigi - Parigi DC Line Strengthening with HTLS conductor	80	
5	132kV Bhoothpur - Kothakota SC Line Strengthening with HTLS conductor		46
6	220kV Dindi - Nagarkurnool DC Line Strengthening with HTLS conductor	84	
7	220kV Dindi - Madgula DC Line Strengthening with HTLS conductor	86	
8	132kV Wanaparthi - Khilla Ghanpur SC Line Strengthening with HTLS Conductor		29
9	Strengthening with HTLS Conductoring of Ieeza - Gadwal 132kV Line (37-30 km)		7
10	Strengthening with HTLS Conductoring of 132kV Chinnamaroor - Erravalli Line (49-5 km)		44
11	Strengthening with HTLS Conductoring of 132kV Gadwal - Erravalli Line (24-5 km)		19
12	132kV Jurala - Panchadevpada SC Line Strengthening with HTLS Conductor		31
	Total	315	176

AUGMENTATION of 220 kV PTR by 2029-30**Year-wise Summary
(220 KV PTR Augmentations)**

S. No.	Year	Total Existing PTR Capacity (MVA)	Total Capacity after Augmentation (MVA)	Additional MVA Added	Under Construction
1	2026-27	16631.5	21900	5268.5	128.5 *
2	2027-28	9040	11520	2480	
3	2028-29	6050	7260	1210	

4	2029-30	4720	5840	1120	
				10078.5	

Additional 5268.5 MVA planned is inclusive of 128.5 MVA under construction.

220KV PTR Augmentations 2026-27

Sl. No.	Proposed year of Augmentation	Name of the Substation	Existing PTR Capacity (MVA)		Capacity after Augmentation (MVA)	
1	2026-27	220 KV SS Manthani	3x100 (300 MVA)	300	1x100+2x160 (420 MVA)	420
2	2026-27	220/132 KV SS Kamareddy	1x160+1x100 (260 MVA)	260	1x160+2x100 (360 MVA)	360
3	2026-27	220/132 KV SS Aswaraopet	2x100 (200 MVA)	200	3x100 (300 MVA)	300
4	2026-27	220/132 KV SS Tandur	2x100 (200 MVA)	200	3x100 (300 MVA)	300
5	2026-27	220/132KV SS Parigi (Under Const)	2x100 (200 MVA)	200	2x160(320 MVA)	320
6	2026-27	220/132 KV SS Chandanvally	1x100 (100 MVA)	100	2x100 (200 MVA)	200
7	2026-27	400/220 KV SS Malkaram	1x160+1x100 (260 MVA)	260	2x160 (320 MVA)	320
8	2026-27	220/132 KV SS Shadnagar	2x100+1x160 (360 MVA)	360	2x160+1x100 (420 MVA)	420
9	2026-27	220 KV Meenajipet SS	1x100 (100 MVA)	100	2x100 (200 MVA)	200
10	2026-27	220/132 KV SS Nagarkurnool (Also included in GEC)	2x100 (200 MVA)	200	3x100 (300 MVA)	300
11	2026-27	220 KV Siddipet SS (Siddipet)	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480
12	2026-27	400/220/132KVSS Chotuppall	2x160(320 MVA)	320	3x160 (480 MVA)	480
13	2026-27	220/132 KV SS Kalluru (Khammam)	2x100 (200 MVA)	200	3x100 (300 MVA)	300
		SUB- TOTAL MVA		3120		4400
		NET ADDITION MVA	1280			

1	2026-27	220/33KV SS Singotam (Under Const)	1X31.5+1X50 (81.5MVA)	81.5	3X50(150 MVA)	150
2	2026-27	220/33 KV SS Hayathnagar	2x100 (200 MVA)	200	3x100 (300 MVA)	300
3	2026-27	220/33 GIS Chanchalguda	3x50 (150 MVA)	150	1x50+2X100 (250MVA)	250
		SUB-TOTAL MVA		431.5		700
		NET ADDITION MVA	268.5			
		TOTAL		3551.5		5100
		NET ADDITION MVA	1548.5			

220KV PTR Augmentations 2027-28

S.No.	Proposed year of Augmentation	Name of the Substation	Existing PTR Capacity (MVA)	Capacity after Augmentation (MVA)		
1	2027-28	220 KV SS Jagtial	2x100+2x160 (520 MVA)	520	1x100+3x160 (580 MVA)	580
2	2027-28	220 KV SS Sircilla	1x100+2x160 (420 MVA)	420	3x160 (480 MVA)	480
3	2027-28	220/132 KV SS Dichpally	4x160 (640 MVA)	640	4x160+1x100 (740 MVA)	740
4	2027-28	220/132 KV Minpur SS	3x160 (480 MVA)	480	3x160+1x100 (580 MVA)	580
5	2027-28	220/132 KV SS Parigi	1x160+1x100 (260 MVA)	260	2x160 (320 MVA)	320
6	2027-28	220/132 KV SS Madgula	2x100 (200 MVA)	200	2x100+1x160 (360 MVA)	360
7	2027-28	220/132 KV SS Shadnagar	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480
8	2027-28	220/132 KV SS Chandrayangutta	4x160 (640 MVA)	640	3x160+1x200 (680 MVA)	680
9	2027-28	220/132 KV SS Chegur	2x160 (320 MVA)	320	3x160 (480 MVA)	480
10	2027-28	220/132 KV SS Kalwakurthy	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480

11	2027-28	220/132/33 KV SS Bonguluru	2X100(200 MVA)	200	2x160 (320 MVA)	320
12	2027-28	220/132 KV SS Banswada	3x100 (300 MVA)	300	2x160+1x100 (420 MVA)	420
13	2027-28	400/220/132 KV SS KTHP	2x100 (200 MVA)	200	2x160 (320 MVA)	320
14	2027-28	220/132 KV Sadasivpet SS	2x160 (320 MVA)	320	3x160 (480 MVA)	480
15	2027-28	220/132 KV Ghanapur SS	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480
16	2027-28	220/132 KV Nagole SS	2x100 (200 MVA)	200	1x160+1x100 (260 MVA)	260
17	2027-28	220 KV SS Narketpally	2x100+2x160 (520 MVA)	520	1x100+3x160 (580 MVA)	580
18	2027-28	220 KV SWS Chalakurthy	-		2x100 (200 MVA)	200
19	2027-28	220KVSS KMpally	4X100(400 MVA)	400	3x100+1X160 (460 MVA)	460
20	2027-28	220KVSS Minpur	3X160(480 MVA)	480	4x160 (640 MVA)	640
21	2027-28	220 KV SS Bhongir	3x100 (300 MVA)	300	3x100+1X160 (460 MVA)	460
22	2027-28	220KVSS Huzurnagar	2x100 (200 MVA)	200	2x100+1x160 (360 MVA)	360
23	2027-28	220KVSS Nirmal	2x100+2x160 (520 MVA)	520	1x100+3x160 (580 MVA)	580
24	2027-28	220/132 KV SS Nagarkurnool (Also included in GEC)	3x100 (300 MVA)	300	2x100+(1X160) (360 MVA)	360
25	2027-28	220KVSS Huzurabad	2x100+1x160 (360 MVA)	360	1x100+2x160 (420 MVA)	420
		TOTAL MVA		9040		11520
		NET ADDITION MVA	2480			

220KV PTR Augmentations 2028-29

S.No.	Proposed year of Augmentation	Name of the Substation	Existing PTR Capacity (MVA)	Capacity after Augmentation (MVA)		
1	2028-29	220/132 KV SS Bheemgal	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480

2	2028-29	220/132 KV SS Dichpally	4x160+1x100 (740 MVA)	740	5x160 (900 MVA)	900
3	2028-29	220/132 KV SS Kamareddy	1x160+2x100 (360 MVA)	360	2x160+1x100 (420 MVA)	420
4	2028-29	220/132 KV Yeddumailaram SS	3x160+1x100 (580 MVA)	580	4x160 (640 MVA)	640
5	2028-29	220/132 KV SS Chandanvally	2x100 (200 MVA)	200	3x100 (300 MVA)	300
6	2028-29	220/132 KV SS Fabcity	2x100+1x160 (360 MVA)	360	2X160+1X100 (480 MVA)	480
7	2028-29	220/132 KV SS Shadnagar	3x160 (480 MVA)	480	4x160 (640 MVA)	640
8	2028-29	220/132 KV SS Chandrayangutta	3x160+1x200 (680 MVA)	680	2x160+2x200 (720 MVA)	720
9	2028-29	220/132 KV SS Thimmajipet	2x100 (200 MVA)	200	2x100+1x160 (360 MVA)	360
10	2028-29	220KVSS Nirmal	1x100+3x160 (580 MVA)	580	4x160 (640 MVA)	640
11	2028-29	220KVSS Mandarri	2x100+1x160 (360 MVA)	360	2x160+1x100 (420 MVA)	420
12	2028-29	220/132 KV Nagole SS	1x160+1x100 (260 MVA)	260	2x160 (320 MVA)	320
13	2028-29	220 KV SS Narketpally	1x100+3x160 (580 MVA)	580	4x160 (640 MVA)	640
		SUB TOTAL MVA		5800		6960
	NET ADDITION MVA			1160		
1	2028-29	220/33 KV GIS Chanchalguda	1x50+2X100 (250 MVA)	250	3x100 (300 MVA)	300
		SUB TOTAL MVA		250		300
	NET ADDITION MVA			50		
TOTAL				6050		7260
NET ADDITION MVA			1210			

220KV PTR Augmentations 2029-30

Sl. No.	Proposed year of Augmentation	Name of the Substation	Existing PTR Capacity (MVA)		Capacity after Augmentation (MVA)	
1	2029-30	220/132 KV SS Banswada	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480

2	2029-30	400/220 KV Narsapur SS	4x160 (640 MVA)	640	5x160 (800 MVA)	800
3	2029-30	220/132 KV SS Chandrayangutta	2x160+2x200 (720 MVA)	720	1x160+3x200 (760 MVA)	760
4	2029-30	400/220 KV SS Malkaram	2x160 (320 MVA)	320	2x160+1x100 (420 MVA)	420
5	2029-30	220/132 KV Moulali SS	3x160 (480 MVA)	480	4x160 (640 MVA)	640
6	2029-30	220/132 KV Ghanapur SS	3x160 (480 MVA)	480	4x160 (640 MVA)	640
7	2029-30	220 KV Husnabad SS	2x100 (200 MVA)	200	1x100+1x160 (260 MVA)	260
8	2029-30	400 KV SS KTPP	2x160 (320 MVA)	320	3x160 (480 MVA)	480
9	2029-30	220KVSS Sithapuram	2X100(200 MVA)	200	3x100 (300 MVA)	300
10	2029-30	220/132 KV SS Nagarkurnool (Also included in GEC)	2x100+(1X160) (360 MVA)	360	1x100+(2X160) (420 MVA)	420
11	2029-30	220 KV SS Jagtial	1x100+3x160 (580 MVA)	580	4x160 (640 MVA)	640
		TOTAL MVA		4720		5840
	NET ADDITION MVA			1120		

Annexure-D**Transmission schemes to be added in Telangana under Inter-State by 2029-30**

S.No.	Scheme /details	Voltage level (kV)	Total ckm	Total MVA	Status	Anticipated SCoD
1	Transmission System for integration of Kurnool-IV REZ - Phase-II				Under Construction	2029-30
	Augmentation of Kurnool-IV PS by 400/220 kV, 4x500 MVA ICTs	400/220		2000		
	220 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects					
	400 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects					
	Augmentation of Kurnool-IV PS by 765/400 kV, 2x1500 MVA and 400/220 kV, 6x500 MVA ICTs	765/400/220		6000		
	220 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects					
	400 kV line bays at Kurnool-IV PS for termination of dedicated transmission lines of RE generation projects					
	Establishment of 4x1500 MVA, 765/400 kV Doma Substation with 2x330 MVar (765 kV) bus reactors with space provision for establishment of 220 kV switchyard	765/400		6000		
	LILO of Kurnool-IV – Bidar 765 kV D/C line at Doma	765	40			
	Doma – Shadnagar GIS S/s (TGTRANSCO) 400 kV Twin HTLS D/c line	400	80			
	Doma – Kethiredipally (TGTRANSCO) 400 kV Twin HTLS D/C line	400	100			
2	Transmission Scheme for Solar Energy Zone in Bidar (2500 MW), Karnataka				Under construction	2026-27
	Establishment of Bidar PS 3x1500 MVA, 765/400 kV and 5x500 MVA, 400/220 kV ICTs	765/400		7000		
	Bidar PS–Maheshwaram (PG) 765KV D/C line	765	479			

3	Transmission System for integration of Krishnagiri REZ Phase-I				Under Bidding	2028-29
	Establishment of 4x1500 MVA, 765/400 kV and 5x500 MVA, 400/220kV Krishnagiri Pooling Station near Kodumur in Kurnool district	765/400/220		8500		
	± 300 MVar STATCOM at Krishnagiri PS					
	Krishnagiri– Doma 765 kV D/c line with 240 MVar SLR (convertible) at both ends on both circuits	765	480			
	Krishnagiri – Raichur New 765 kV D/c line with 240 MVar SLR (convertible) at Raichur New end on both circuits	765	300			
	Establishment of 3x1500 MVA, 765/400 kV Sagar substation with 2x330 MVar (765 kV) bus reactors	765/400		4500		
	Krishnagiri – Sagar 765 kV D/c line (about 240 km) with 240 MVar SLR (convertible) at both ends on both circuits	765	480			
4	Transmission system for proposed Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-I)				Under Bidding	2028-29
	Establishment of 4x1500 MVA, 765/400 kV Pendurthi (Vizag) GIS substation with 1x330 MVar (765 kV) bus reactor	765/400		6000		
	(i)± 300 MVar STATCOM with 2x125 MVar MSC at Pendurthi (Vizag) GIS with control switching arrangement for proposed 1x330 MVar bus reactor (ii) Space provision for 2nd ± 300 MVar STATCOM with 2x125 MVar MSC at Pendurthi (Vizag) GIS					
	Pendurthi (Vizag) – Srikakulam 765 kV D/c line with 330 MVar SLR (convertible) at Srikakulam end on both circuits	765	400			
	LILO of Kalpakka – Maradam 400 kV (quad) D/c line at Pendurthi	400	80			

	Establishment of 3x1500 MVA, 765/400 kV Khammam-II substation with 1x330 MVAR (765 kV) bus reactor	765/400		4500		
	Khammam-II – Warangal New 765 kV D/c line	765	200			
	Khammam-II – Pendurthi (Vizag) 765 kV D/c line with 330 MVAR SLR (convertible) at both ends on both circuits	765	700			
	Khammam-II – Khammam (existing) 400 kV (quad) D/c line	400	40			
5	Augmentation of transformation capacity by 1x1500 MVA (3rd), 765/400 kV ICT at Maheshwaram (PG) substation in Telangana	765/400		1500	Under construction	2026-27
6	Reconductoring of Raichur – Veltloor (Mahabubnagar) 400 kV S/c line with HTLS conductor	400			Under construction	2026-27
7	Reconductoring of Maheshwaram (PG)-Hyderabad 400 KV S/C line with HTLS conductor	400			Under construction	2026-27
9	Scheme for reduction of high short circuit levels at Maheshwaram (TGTRANSCO) and Maheshwaram (PGCIL) substations				Under Planning	2028-29
	Installation of 12 ohms fault limiting series reactor on Line-1 at Maheshwaram (TGTRANSCO) end of Maheshwaram (PGCIL) – Maheshwaram (TGTRANSCO) 400kV (Quad) D/c line					
	Installation of 12 ohms fault limiting series reactor on line-2 at Maheshwaram (PGCIL) end of Maheshwaram (PGCIL) – Maheshwaram (TGTRANSCO) 400kV (Quad) D/c line					
10	Augmentation of transformation capacity by 1x500 MVA (5th), 400/220kV ICT at Hyderabad (Ghanapur) S/s in Telangana	400/220		500	Under Planning	2028-29

Annexure-E**Transmission schemes to be added in Telangana under Intra-State during 2030-35**

List of 400 kV and 220 kV S/s planned to be added in Telangana under Intra-State during 2030-35			
Sl No	Name of Sub-station	Voltage (kV)	Transformation Capacity (MVA)
A)	Augmentation of ICT capacities in existing Substations:		
1	400/220kV Shankarpally Substation (Upgradation of 1x315 to 1x500 MVA)	400/220	185
2	400/220kV Kethireddipally Substation	400/220	315
3	400/220kV Malkaram Substation (Upgradation of 3x315 to 3x500 MVA)	400/220	555
4	400/220kV Maheswaram Substation	400/220	500
5	400/220kV Gajwel Substation (Upgradation of 1x315 to 1x500 MVA)	400/220	185
6	400/220kV Narsapur Substation (Upgradation of 1x315 to 500 + 500 MVA)	400/220	685
7	400/220kV Dindi Substation	400/220	315
8	400/220kV Suryapet Substation	400/220	315
9	400/220/132kV Choutuppal Substation	400/220	315
10	400/220kV Damaracherla Substation	400/220	315
11	400/220kV Jangaon Substation	400/220	500
12	400/220kV Julurupad Substation	400/220	315
13	400/220kV Asupaka Substation	400/220	315
14	400/220kV Nirmal Substation	400/220	500
15	400/220kV Dichpally Substation (Upgradation of 1x315 to 500 MVA)	400/220	185
	Total		5,500

List of 400 kV and 220 kV S/s planned to be commissioned by 2034-35 under Intra State

Sl No	Name of Sub-station	Voltage (kV)	Transformation Capacity (MVA) 400kV	Transformation Capacity (MVA) 220kV
	New Substations proposed:			
1	400/220/132kV Gourelly GIS Substation (3x500 + 2x160 MVA)	400/220	1500	
		220/132		320
2	Upgradation of existing 220/132kV Shivarampally Substation to 400kV level	400/220	1000	
3	400/220/132/33kV Adibatla GIS Substation (2x500 + 2x160 + 2x80 MVA)	400/220	1000	
		220/132		320
4	400/220/132kV Kandi GIS Substation (2x500 + 2x160 MVA)	400/220	1000	
		220/132		320
5	220kV features in existing 400/11kV Tippapur LI SS	400/220	630	
6	400/220/132kV Substation at Eligedu (Peddapalli Dist.) (2x500 + 2x160 MVA)	400/220	1000	
		220/132		320
7	400/220/132kV Warangal Substation (3x500 + 2x160MVA)	400/220	1500	
		220/132		320
8	400KV Switching Station at M/s CTRLS Data center Ltd for connected load of 2000MVA	400	-	-
	Total		7,630	1,600
	Grand Total		13,130	1,600

220 kV S/s planned to be commissioned by 2034-35 under Intra State

Sl.No.	Name of the Substation	Voltage (kV)	Transformation Capacity addition (MVA)
1	220/33 KV SS at Infosys Pocharam(2x100MVA)	220	200
2	220KV SS in the premises of 132 KV Peechara SS (2x160MVA)	220	320

3	220/132 KV SS Thirumalaipalem (2 x 160MVA)	220	320
4	Upgradation of 132/33 KV SS Bhadrachalam to 220KV SS (2 x 160MVA)	220	320
5	220/132/33 KV SS at Kachavanisingaram (2 x 100MVA)	220	200
6	220/132/33 KV New High court AGL University SS (2x160 MVA)	220	320
7	220/132/33 KV Ilapur GIS (2 x 160MVA)	220	320
8	33KV features at existing 220/11 KV LIS SS VK Ramavarm of Mulkalpally (M) (2 x 50MVA)	220	100
9	220/33kV SS Sainikpuri (3x 100MVA)	220	300
10	Upgradation of 132 KV SS Kanagal (2 x 160MVA)	220	320
11	220 kV SS Moosarambagh (Upgradation)(2 x 160MVA)	220	320
12	220/132/33 kV SS Attapur (2 x 160MVA)	220	320
13	220/33 kV Puranapool (3 x 160MVA)	220	480
14	220/33 KV SS Uppal Bhagayat(3 x 160MVA)	220	480
15	220/132/33 kV Manchirevula(3x 100MVA)	220	300
16	33 KV features at 220/11kV SS Vemnur (2 x 50MVA)	220	100
		Total	4420

PRLIS SUBSTATION DATA (2034-35)			
S.No.	Name of the Substation	Voltage (kV)	Transformation Capacity (MVA)
1	400/11 kV Narlapur LI SS	400/11	5X165 MVA=825 MVA
2	400/11 kV Yedula LI SS	400/11	5X165 MVA=825 MVA
3	400/11 kV Vattam LI SS	400/11	5X165 MVA=825 MVA
4	400/11 kV Uddandapur L SS	400/11	3X165 MVA=495 MVA

400 kV Transmission Lines planned to be commissioned by 2034-35 under InSTS

Sl No	Name of Transmission Line	Voltage (kV)	Length (ckm) 400kV	Length (ckm) 220kV
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1	Ghanapur (400kV PGCIL) - Gourelly 400kV QMDC Line	400	13	
2	LILO of Ghanapur (400kV PGCIL) - Mamidipally 400kV TMDC Line to Gourelly 400kV GIS Substation	400	7	
3	LILO of one circuit of Mamidipally - Maheswaram 400kV TMDC Line to Gourelly 400kV GIS Substation	400	80	
4	Gourelly (400kV) - Kachavani Singaram 220kV TMDC Line	220		15
5	Gourelly (400kV) - Koheda 220kV TMDC Line	220		40
6	Gourelly (400kV) - Puranapool 220kV TMDC Line	220		70
7	Gourelly (400kV) - Uppalbhagayath 220kV TMDC Line	220		40
8	400kV Mamidipally - Shivarampally DC Line	400	60	
9	LILO of one circuit of 400kV Choutuppal - Mamidipally DC Line to 400kV Shivarampally SS	400	53	
10	400kV Maheswaram - Shivarampally DC Line	400	98	
11	LILO 400kV Maheswaram - Uddandapur QMSC Line to 400kV Shivarampally SS	400	94	
12	LILO of one circuit of 400kV Maheswaram - Mamidipally TMDC Line to 400kV Shivarampally SS	400	50	
13	LILO of one circuit of 400kV Kethireddypally - Raidurg Twin HTLS DC Line to 400kV Shivarampally SS	400	18	
14	220kV Shivarampally - Attapur UG Cable Line	220		20
15	LILO of 220kV Shivarampally - Asifnagar to Attapur SS	220		10
16	220kV Shivarampally - Manchirevula UG Cable Line	220		30
17	LILO of 220kV Shivarampally - Gachibowli Line to Manchirevula	220		10
18	LILO of one circuit of 400kV Ghanapur - Mamidipally SC Line to 400kV Adibatla GIS Substation	400	8	
19	LILO of 400kV Choutuppal - Mamidipally TMDC Line to 400kV Adibatla GIS Substation	400	18	
20	220kV DC Line for LILO of 220kV Mamidipally - Fabcity Line to 400/220/132kV Adibatla GIS SS	220		48

21	220kV UG Cable DC Line for LILO of 220kV Bonguluru - Chandrayangutta Line to 400/220/132kV Adibatla GIS SS	220		14
22	LILO of one circuit of 400kV Dichpally - Shankarpally DC Line to 400kV Kandi GIS Substation	400	10	
23	LILO of one circuit of 400kV Narsapur - Shankarpally DC Line to 400kV Kandi GIS Substation	400	10	
24	220kV Kandi (400kV) - Yeddumailaram DC Line	220		20
25	LILO of 220kV Shankarpally (400kV) - Sadasivpet DC Line to Kandi 400kV GIS SS	220		40
26	220kV Tippapur (400kV) - Siricilla DC Line	220		50
27	220kV Tippapur (400kV) - Husnabad DC Line	220		50
28	LILO of one circuit of 220kV Siddipet - Durshed DC Line to Tippapur 400kV LI Substation	220		70
29	RTS-B TPP to proposed 400kV Eligedu SS 400kV QMDC Line	400	70	
30	LILO of one circuit of Ramadugu - Gajwel 400kV DC Line to proposed 400kV Eligedu SS 400kV QMDC Line	400	10	
31	220kV TMDC Line for LILO of 220kV RSS - Jagityal DC Line to 400kV Eligedu Substation	220		120
32	220kV TMDC Line for LILO of 220kV RSS - Durshed DC Line to 400kV Eligedu Substation	220		20
33	LILO of one circuit of 400kV Julurupad - Jangaon QMDC Line to proposed 400kV Sub-tation in Warangal Dist.	400	110	
34	400kV QMDC Line from KTPS (1x800MW) Palvanha to 400kV Substation proposed in Warangal Dist.	400	320	
35	Warangal (400kV) - Ammavaripet 220kV DC Line	220		20
36	Warangal (400kV) - KMTP Textile Park 220kV DC Line	220		20
37	Warangal (400kV) - Chinnamaduru 220kV DC Line	220		140
38	LILO of Warangal - Mahabubabad 220kV DC Line	220		10
39	LILO of one circuit of KTPS, Pavoncha - Waddekothapally 220kV DC Line	220		120

40	LILO of one Circuit of 400kV Maheswaram (PGCIL) - Maheswaram (Sec-A) at CTRLS Switching Station with 1 No. SLRs at CTRLS Switching Station	400	0.2	
41	400kV QMSC Line from Maheswaram (PGCIL) to CTRLS Switching Station with 12 Ohms SLR at CTRLS Sw. Stn. end	400	-	
Total :			1,029.02	977

220 kV lines planned to be commissioned by 2034-2035 under Intra State Transmission System

Sl.No.	Name of the Substation	Voltage (kV)	Length (CKM)
	PLANNED WORKS		
1	220kV Single Moose DC Line from proposed 400/220/132kV KTPP SS to 220/132kV Manthani SS (49KM)	220	98
2	220KV DC line to to 220/33 KV Hayatnagar SS with 1200 Sq.mm XLPE UG cable by making LILO of one circuit of 220KV DC line from Chandrayangutta SS-Ghanapur SS (9KM)	220	18
	SUB-TOTAL		116
	UNDER PLANNING		
3	220KV DC line from existing Infosys Pocharam to Infosys(0.5KM)	220	1
4	220KV DC line to 220 KV SS Peechara by making LILO of existing 220KV Devannapeta-Jangaon TMDC line (13KM)	220	26
5	2nd source to 220/132/33 KV KMTP (Kakatiya Megatextile Park) by making LILO of existing 220KV Warangal-Mahabubabad line to under construction 220/132/33 KV SS KMTP(5.5KM)	220	11
6	220KV KTS-Miryalaguda SC line by making LILO to the proposed 220/132 KV SS Thirumalaipalem.(10KM)	220	20

7	LILO of 220KV KTS-Lower Sileru (presently B.G.Kothur -Chintur) line for proposed upgradation of 132/33 KV Bhadrachalam SS to 220KV SS (5KM)	220	10
8	LILO with cable of 220 kV line from Nagole to proposed 400 kV SS Gourelly to Kachavani singaram (1.6 km)	220	3.2
9	220KV DC line to New High Court AGL University SS by making LILO of 220KV Shivarampally-Gachibowli line (7.5KM)	220	15
10	220KV DC line from existing Loc.No:136 of 220KV DC line erected from 400KV SS Narsapur upto ORR on MC Tower (idle line) to the proposed Ilapur GIS (8KM)	220	16
11	220kV DC line from 400/220/132kV Narsapur SS to 220/132/33kV Minpur SS (27KM)	220	54
12	DC cable from 400/220/132 KV SS Malkaram to 220/33 KV SS Sainikpuri (8km)	220	16
13	220KV DC line from Annaram SS to 220/132 KV SS Manthani in Peddapally District(15KM)	220	30
15	220KV DC line to 220KV SS Moosarambagh by making LILO of 220KV Osmania University- Nagole line (7 km)	220	14
16	220KV DC line to 220KV SS Moosarambagh by makingLILO of 220KV Gourelly –Imlibun line (2 km)	220	4
17	220 KV DC line from 220/33KV Puranapool SS to 220/132/33 KV SS Attapur (7KM)	220	14
18	220 KV DC line from Imlibun to 220/33 KVPuranapool (8 km)	220	16
19	220 KV DC line to 220/33 KV Uppal Bhagayat SS by making LILO of Ghanapur-Nagole line (5 km)	220	10
20	220KV DC line from Attapur SS to 220/132/33 KV SS Bapughat (6 km)	220	12
SUB-TOTAL			272.2
Grand total			388.2

Augmentation by 2034-35
Year-wise Summary (220 KV PTR Augmentations)

S. No.	Year	Total Existing PTR Capacity (MVA)	Total Capacity after Augmentation (MVA)	Additional MVA Added
1	2030-31	5220	6240	1020
2	2031-32	1640	1940	300
3	2032-33	1680	2060	380
4	2033-34	420	480	60
5	2034-35	2100	2460	360

220 KV PTR Augmentations – 2030-31

Sl. No.	Year of Augmentation	Name of the Substation	Existing Transformer Capacity (MVA)		Capacity of PTRs after Augmentation (MVA)	
1	30-31	220/132 KV Minpur SS	3x160+1x100 (580 MVA)	580	4x160 (640 MVA)	640
2	30-31	220/132 KV SS Parigi	2x160 (320 MVA)	320	2x160+1x100 (420 MVA)	420
4	30-31	220/132 KV SS Shamshabad	3x100 (300 MVA)	300	2x100+1x160 (360 MVA)	360
5	30-31	220/132 KV SS Chandrayangutta	1x160+3x200 (760 MVA)	760	4x200 (800 MVA)	800
6	30-31	220/132 KV Nagole SS	2x160 (320 MVA)	320	2x160+1x100 (420 MVA)	420
7	30-31	220 KV SS Bhongiri	1x100+2x160 (420 MVA)	420	3x160 (480 MVA)	480
8	30-31	400 KV SS Choutuppall	2x160 (320 MVA)	320	3x160 (480 MVA)	480
9	30-31	220/132 KV SS Seetharampatnam	3x100 (300 MVA)	300	2x100+1x160 (360 MVA)	360
10	30-31	220/132 KV SS Manuguru	2x160 (320 MVA)	320	2x160+1x100 (420 MVA)	420
11	30-31	220/132/33 KV SS Yerravalli	2x160 (320 MVA)	320	2x160+1x100 (420 MVA)	420
12	30-31	400/220 KV SS Suryapet (Suryapet)	3x160+1x100 (580 MVA)	580	4x160 (640 MVA)	640
13	30-31	220/132KVSS Indravelly	1X100+1X160(260 MVA)	260	2x160(320 MVA)	320
14	30-31	220KKVSS Mandamarri	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480
		TOTAL MVA		5220		6240
		NET ADDITION MVA		1020		

220 KV PTR Augmentations – 2031-32

Sl. No.	Year of Augmentation	Name of the Substation	Existing Transformer Capacity (MVA)		Capacity of PTRs after Augmentation (MVA)	
1	31-32	220 KV SS Manthani (Peddapalli)	2x100+1x160 (360 MVA)	360	2x160+1x100 (420 MVA)	420
2	31-32	220/132 KV SS Madgula (Rangareddy)	2x100+1x160 (360 MVA)	360	1x100+2x160 (420 MVA)	420
3	31-32	220 KV Husnabad SS (Siddipet)	1x160+1x100 (260 MVA)	260	2x160 (320 MVA)	320
4	31-32	220KVSS Sithapuram (Suryapet)	3x100 (300 MVA)	300	2x100+1x160 (360 MVA)	360
5	31-32	220KVSS Huzurnagar (Suryapet)	2x100+1x160 (360 MVA)	360	1x100+2x160 (420 MVA)	420
		TOTAL MVA		1640		1940
		NET ADDITION MVA	300			

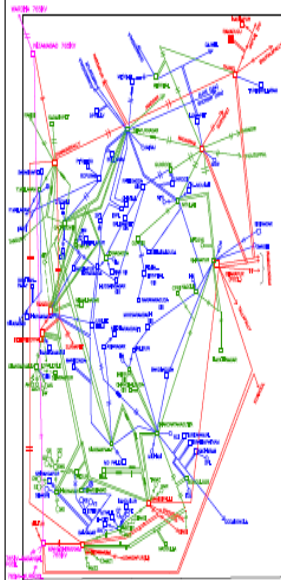
220 KV PTR Augmentations – 2032-33

Sl. No.	Year of Augmentation	Name of the Substation	Existing Transformer Capacity (MVA)		Capacity of PTRs after Augmentation (MVA)	
1	32-33	220/132 KV SS Shamshabad (Rangareddy)	2x100+1x160 (360 MVA)	360	1x100+2x160 (420 MVA)	420
2	32-33	220 KV SS Bhongiri (Yadadri)	3x160 (480 MVA)	480	3x160+1x100 (580 MVA)	580
3	32-33	220/132 KV SS Thimmajipet (Nagarkurnool)	2x100+1x160 (360 MVA)	360	1x100+2x160 (420 MVA)	420
4	32-33	220/132 KV SS Kamareddy (Kamareddy)	3x160 (480 MVA)	480	4x160 (640 MVA)	640
		TOTAL MVA		1680		2060
		NET ADDITION MVA		380		

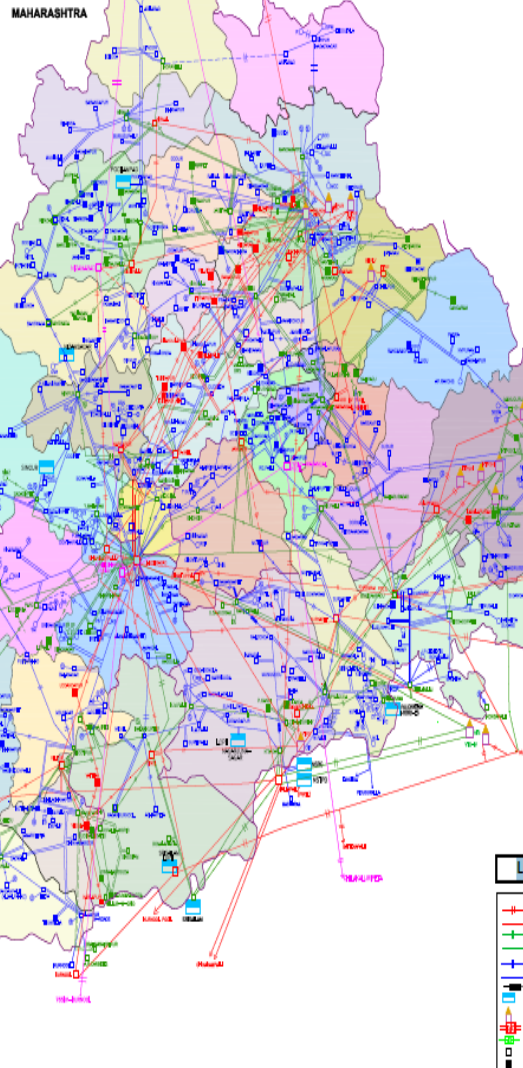
220 KV PTR Augmentations – 2033-34

Sl. No.	Year of Augmentation	Name of the Substation	Existing Transformer Capacity (MVA)		Capacity of PTRs after Augmentation (MVA)	
1	33-34	220/132/33 KV SS Yerravalli (Wanaparthi)	2x160+1x100 (420 MVA)	420	3x160 (480 MVA)	480
		TOTAL MVA		420		480
		NET ADDITION MVA		60		

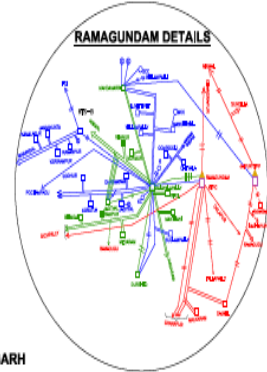
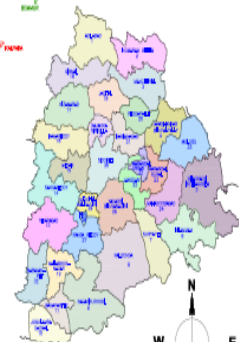
220 KV PTR Augmentations – 2034-35						
Sl. No.	Year of Augmentation	Name of the Substation	Existing Transformer Capacity (MVA)		Capacity of PTRs after Augmentation (MVA)	
1	34-35	220/132 KV SS Madgula	1x100+2x160 (420 MVA)	420	3x160 (480 MVA)	480
2	34-35	220/132 KV SS Aswaraopet	3x100 (300 MVA)	300	2x100+1x160 (360 MVA)	360
3	34-35	220/132 KV SS Kalluru	3x100 (300 MVA)	300	2x100+1x160 (360 MVA)	360
4	34-35	220/132 KV SS Ammavaripet	3x100 (300 MVA)	300	2x100+1x160 (360 MVA)	360
5	34-35	220KVSS Huzurnagar	1x100+2x160 (420 MVA)	420	3x160 (480 MVA)	480
6	34-35	220KVSS Huzurabad	2x100+1x160 (360 MVA)	360	1x100+2x160 (420 MVA)	420
		TOTAL MVA		2100		2460
		NET ADDITION MVA		360		

Annexure-F**GRID MAP OF TELANGANA STATE AS ON 31-03-2026****HYDERABAD, MEDCHAL, RANGAREDDY
AND SANGAREDDY DISTRICTS**

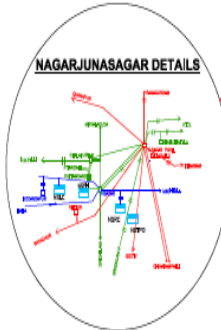
MAHARASHTRA



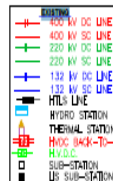
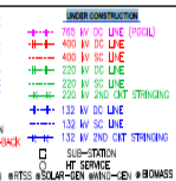
CHATTISGARH

RAMAGUNDAM DETAILS**DISTRICTS OF TELANGANA STATE**

KARNATAKA

NAGARJUNASAGAR DETAILS

ANDHRA PRADESH

LEGEND**NOT TO SCALE**

TOTRANSCO NETWORK	
BALIENT FEATURES	
SUBSTATIONS (NO.)	
400 kV	29
220 kV	106
132 kV	258
LINES (CIRCUIT KM)	
400 kV	7740
220 kV	16356
132 kV	13210