

Government of India

Ministry of Power

Central Electricity Authority

Resource Adequacy Plan for Transmission System of Uttar Pradesh up to the year 2035-36







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Executive Summary

Uttar Pradesh, owing to its massive population and increasing electricity demand driven by rapid urbanization, industrial development, infrastructure growth, and agricultural expansion, requires a reliable and robust transmission network. The state serves not only as a major center for power consumption with surging peak demands, but also as a key component of the interconnected regional grid. Therefore, strengthening the transmission system is essential for efficient evacuation of power from generating stations, meeting the growing demand across urban and rural areas, and ensuring reliable and uninterrupted power supply to consumers.

In June 2026, Uttar Pradesh witnessed an all-time peak demand of 33,197 MW, which is about 5.5% higher than the peak demand of 31,486 MW in 2025-26. As per the revised 20th Electric Power Survey (EPS) Report, peak electricity demand in Uttar Pradesh is projected to increase to 38,890 MW by 2030-31 and to about 44,000 MW by 2035-36.

A comprehensive system study for strengthening of the transmission network in Uttar Pradesh has been carried out by CEA in association with UPPTCL, CTUIL, Grid-India and Resource Adequacy Plan has been prepared, indicating the transmission capacity required to be added in Uttar Pradesh till the year 2035-36. The studies have been carried out on the basis of data/inputs furnished by Uttar Pradesh (UPPTCL).

At present, the existing intra-state transformation capacity in Uttar Pradesh is around 135,360 MVA (at 220 kV & above voltage level), which is planned to be increased to 215,350 MVA by 2030-31 and 243,050 MVA by 2035-36.

Similarly, the existing intra-state transmission line length is around 30,101 ckm (at 220 kV & above voltage level), which is planned to be increased to 38,839 ckm by 2030-31 and 41,254 ckm by 2035-36.

To ensure uninterrupted 24x7 power supply to the consumers & evacuation of power from planned generation projects, implementation of the planned transmission system needs to be expeditiously taken up by UPPTCL.

Chapter-1

Power supply scenario in Uttar Pradesh and projected electricity demand

1.1 Background

Uttar Pradesh, the most populous state of India and one of the country's major economic and agricultural centres, is characterized by its vast alluvial plains, fertile agricultural lands, major river systems and rapidly expanding urban and industrial centres. The state is traversed by important rivers such as the Ganga, Yamuna, Ghaghara, Gomti, Rapti and Son, which support its extensive agricultural economy and provide favourable conditions for irrigation and other economic activities. With its large population, diversified economy and strategically important location in northern India, Uttar Pradesh occupies a significant position in the country's power sector. The state has a large and growing electricity demand arising from domestic, agricultural, commercial and industrial consumers, while its power supply is supported through a combination of generation within the state and power procurement from the national grid.

The power supply scenario in Uttar Pradesh is characterized by a large and steadily increasing electricity demand, supported by a diversified generation portfolio comprising thermal, hydroelectric, renewable and other generating stations. Major thermal power stations operated by central and state-sector utilities, including NTPC and Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL), form an important component of the state's generation capacity. The state has also witnessed increasing development of solar power, particularly utility-scale solar projects and distributed solar generation, as part of its efforts to diversify the energy mix and increase the share of renewable energy. In addition, electricity is procured through long-term, medium-term and short-term arrangements from generating stations located within as well as outside the state to meet the state's substantial electricity requirements.

Electricity distribution in Uttar Pradesh is managed primarily through the state distribution companies under Uttar Pradesh Power Corporation Limited (UPPCL), which is responsible for supplying reliable and quality power to a very large and diverse consumer base. The distribution network serves domestic, commercial, industrial, agricultural and public-service consumers spread across densely populated urban centres as well as extensive rural areas. The state has undertaken significant investments in strengthening and modernizing its transmission and distribution infrastructure, including augmentation of substations and transmission lines, strengthening of

distribution networks, reduction of technical and commercial losses, and improvement in reliability and quality of electricity supply.

As Uttar Pradesh continues to urbanize and industrialize, its internal electricity requirements are expected to increase substantially. The growth in electricity demand is being driven by rapid expansion of cities and urban agglomerations such as Lucknow, Kanpur, Noida, Greater Noida, Ghaziabad, Varanasi, Prayagraj and Agra, along with increasing industrialization across major industrial corridors. The state is witnessing growth in manufacturing, information technology, electronics, food processing, textiles, cement, chemicals, logistics and other energy-intensive sectors. Large-scale industrial and infrastructure developments, including those associated with the Delhi–Mumbai Industrial Corridor, dedicated freight corridors, defence and electronics manufacturing, and the expansion of industrial areas in western Uttar Pradesh, are expected to contribute significantly to future electricity demand. At the same time, increasing household electrification, rising appliance ownership, air-conditioning and cooling requirements, electrification of transport, and growing use of electric pumps and other agricultural equipment are likely to further increase peak electricity demand.

Uttar Pradesh also experiences significant seasonal and diurnal variations in electricity demand. During the summer months, high temperatures across the state result in substantial increases in cooling loads from air-conditioners, coolers and fans, leading to pronounced peaks in electricity demand. Agricultural electricity consumption also varies according to irrigation requirements and seasonal cropping patterns. During periods of extreme summer temperatures, the combined impact of residential cooling, commercial activity, industrial consumption and agricultural demand can result in very high peak demand. Consequently, maintaining adequate generation capacity, power procurement arrangements, transmission corridors and distribution infrastructure is essential for ensuring reliable supply during periods of maximum system stress.

Looking ahead, electricity demand in Uttar Pradesh is projected to grow steadily and substantially in line with population growth, economic development, urbanization, industrial expansion, infrastructure development and increasing electrification of end-use sectors. Meeting this growing demand will require augmentation and modernization of the transmission and distribution network, development of adequate generation and renewable energy capacity, strengthening of inter-state transmission corridors and optimization of power procurement. Greater penetration of solar and other renewable energy sources will also necessitate adequate energy storage, flexible generation

resources, demand-side management and improved grid-balancing mechanisms. The development of battery energy storage systems, pumped storage projects, smart-grid technologies, energy efficiency measures and electric-vehicle charging infrastructure will be increasingly important for maintaining reliability and flexibility of the power system. With its large consumer base and rapidly expanding economy, Uttar Pradesh will therefore remain one of the key states shaping the future electricity demand and power system development of northern India.

1.2 Present Power Scenario in Uttar Pradesh

1.2.1 Installed Generation Capacity

Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL) is a state-owned power generation company responsible for developing, operating and maintaining electricity generation projects in Uttar Pradesh. It has a significant portfolio of thermal and hydroelectric power projects, with a major role in meeting the state's rapidly growing electricity demand. UPRVUNL operates several major thermal power stations across the state and is also involved in the development of additional generation capacity to enhance energy security and reduce dependence on power procurement from external sources. In addition to conventional generation, Uttar Pradesh is increasingly promoting renewable energy, particularly solar power, through the development of utility-scale solar parks, floating solar projects and other renewable energy initiatives.

Table 1.1: Installed Electricity Generation Capacity

	Capacity (MW)
State Sector	9860.23
Power tied up from Private Generating Stations	17473.46
Allocation from Central Generating Stations	12313.73
Total	**39647.42**

Source: Installed Capacity Report CEA, July, 2026

Table 1.2: Existing Major Generation projects in Uttar Pradesh

S. No.	**Generation Project**	**Capacity (MW)**
NTPC		
1	Singrauli TPP	2000
2	Rihand-I TPP	1000
3	Rihand-II TPP	1000
4	Rihand-III TPP	1000

5	Unchahar-I TPP	420
6	Unchahar-II TPP	420
7	Unchahar-III TPP	210
8	Unchahar-IV TPP	500
9	Dadri-I TPP	840
10	Dadri-II TPP	980
11	Tanda-II TPP	1320
12	Auraiya Gas	663
13	Dadri Gas	830
THDC		
14	Khurja STPP	1320
UPRVUNL		
15	Anpara-A TPP	630
16	Anpara-B TPP	1000
17	Anpara-D TPP	1000
18	Obra-B TPP	1000
19	Harduaganj Extn.-I TPP	500
20	Harduaganj Extn.-II TPP	660
21	Parichha Extn.-I TPP	420
22	Parichha Extn.-II TPP	500
23	Jawaharpur TPP	1320
24	Obra-C TPP	1320
25	Panki TPP	660
Joint Venture		
26	Meja-I TPP	1320
27	Ghatampur TPP	1980
IPPs		
28	Rosa TPP	1200
29	Anpara-C TPP	1200
30	BHS TPP	450
31	Lalitpur TPP	1980
32	Prayagraj TPP	1980
UPJVNL		
33	Rihand HEP	300
NPCIL		
34	Narora Atomic Power Station	440

Table 1.3: Upcoming Major Thermal Generation projects in Uttar Pradesh by 2030-31

S.No.	Generation Project	Capacity (MW)
1	Obra-D TPP (2x800 MW)	1600
2	Anpara-E TPP (2x800 MW)	1600

3	Meja-II TPP (3x800 MW)	2400

Table 1.4: RE Capacity/PSP planned for integration in Uttar Pradesh by 2030-31 under GEC

S.No.	Location/District	RE Capacity
Under GEC-II		
1	Jalaun/Maheba	800
2	Hamirpur	350
3	Lalitpur	850
4	Mahoba	300
5	Jhansi	800
6	Banda	100
7	Chitrakoot	800
	Total (Solar)	**4000**
Under GEC-III		
1	Chitrakoot	700
2	Banda	250
3	**Jalaun:** Maheba	400
	Dakor	100
	Farrukhabad	200
4	**Jhansi:** Garotha	600
	Bamaur	100
	Bangra	100
5	**Lalitpur**	1200
	Birdha	100
	Mandwara	100
6	Hamirpur	100
7	Charkhari	50
8	Rihand Solar	600
9	Rihand PSP	900
10	JSW PSP Sonbhadra	1500
11	Adani PSP Sonbhadra	1250
Total - Solar: 4600 MW & PSP: 3650 MW		

Uttar Pradesh's electricity distribution is managed primarily by state-owned regional DISCOMs under the UPPCL, divided into PVVNL (West), MVVNL (Central), DVVNL (South), and PuVVNL (East). The major city of Kanpur receives its power through a dedicated urban utility known as KESCO. Additionally, private operators like NPCL service Greater Noida, while Torrent Power handles distribution in Agra. Together, these public and private entities form the backbone of the state's power network.

1.2.2 Electricity Demand of Uttar Pradesh

With respect to electricity demand, Uttar Pradesh has witnessed an all-time high peak demand of 33,197 MW in June 2026, surpassing the peak demand of 31,486 MW recorded in June 2025, representing an increase of about 5.5%. The state has experienced a strong and sustained growth in peak electricity demand over the past decade, driven by rapid urbanization, industrialization, increasing agricultural demand, rising cooling loads and higher electrification of end-use sectors. The peak demand in the state increased from about 17,183 MW in 2016-17 to 31,486 MW in 2025-26, indicating a CAGR of approximately 7% over this period. As per the revised 20th Electric Power Survey (EPS) projections of CEA, the peak electricity demand of Uttar Pradesh is projected to increase to approximately 38,890 MW by 2030-31.

The recorded peak demand of Uttar Pradesh for ten years starting from FY 2016-17 to FY 2025-26 is given in the Table 1.2.

Table 1.5 Recorded Peak Demand of Uttar Pradesh

Sr. No.	Year	Peak Demand (MW)
1	2016-17	17,183
2	2017-18	20,274
3	2018-19	20,498
4	2019-20	22,599
5	2020-21	23,797
6	2021-22	24,965
7	2022-23	27,369
8	2023-24	28,704
9	2024-25	30,618
10	2025-26	31,486

The daily peak demand pattern for the last two financial years (2024-25 and 2025-26) is indicated in figure below:

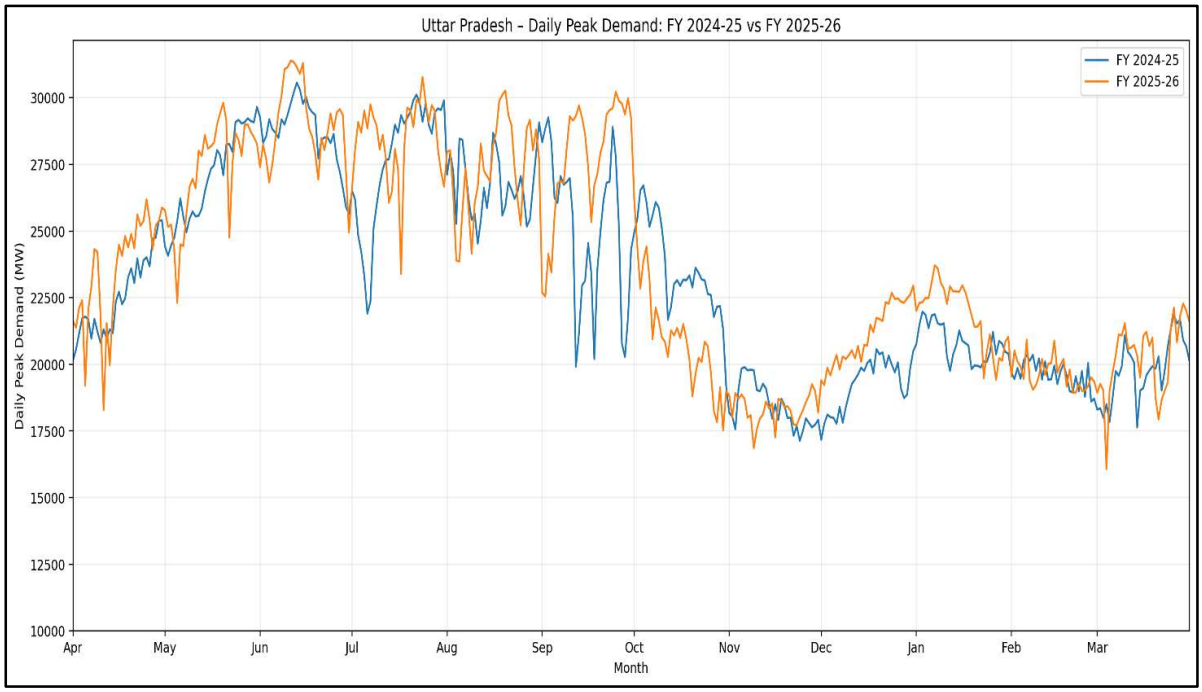


Figure 1.1: Daily peak demand for 2024-25 and 2025-26

Monthly variation of peak electricity demand in Uttar Pradesh for the past two years is shown in figure below:

Figure 1.2: Monthly variation in Peak Demand for 2024-25 and 2025-26

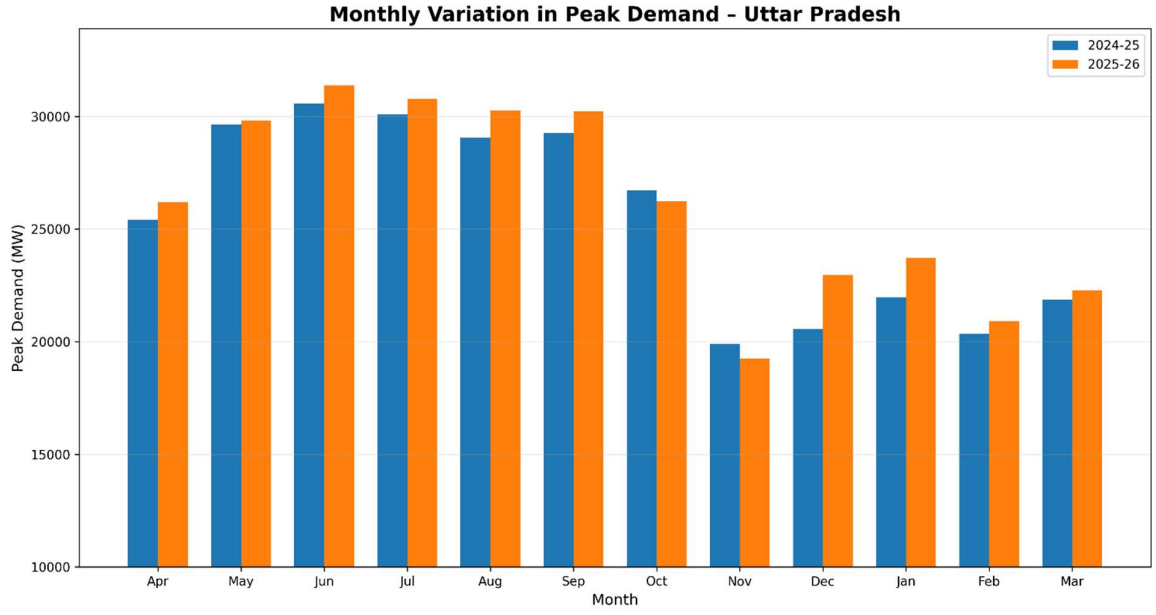


Figure 1.3: Hourly variation in Peak demand (in MW) for the month of June 2025

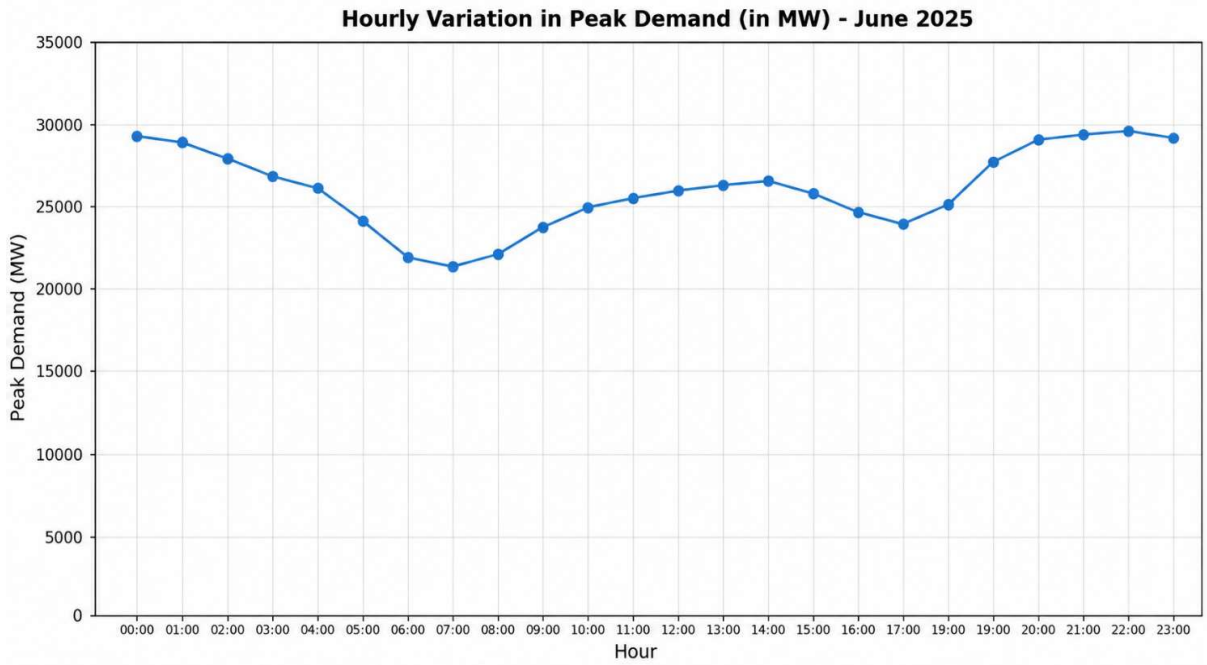
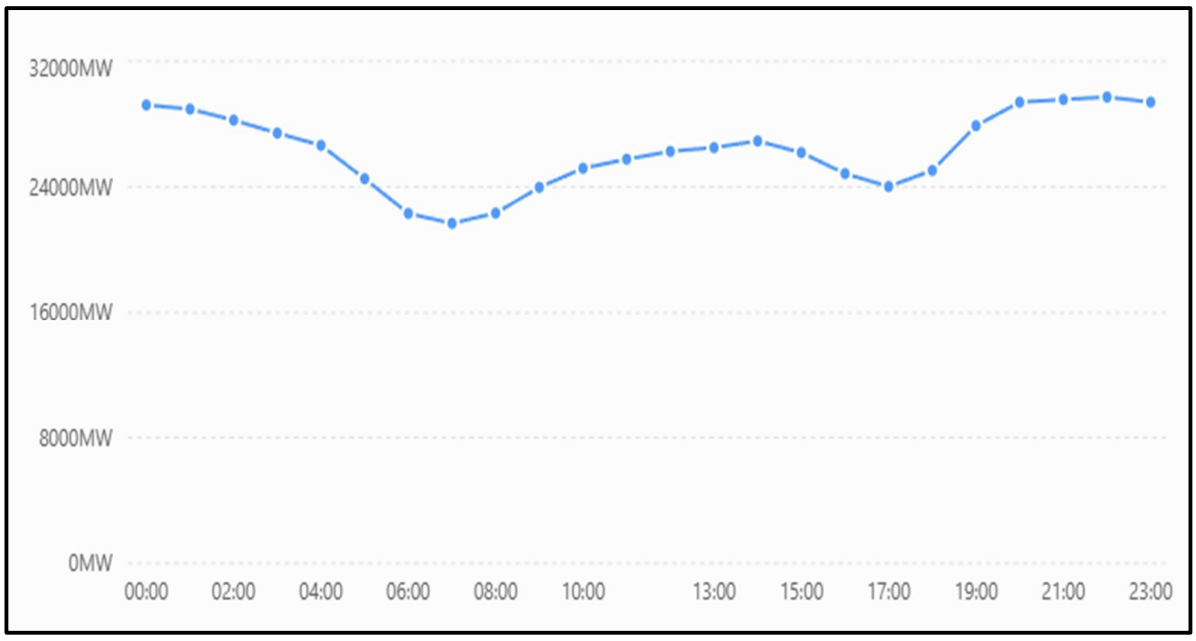


Figure 1.4: Hourly variation in Peak demand (in MW) for the month of June 2026



In 2024-25 and 2025-26, Uttar Pradesh had witnessed an all-time peak demand of 30,618 MW and 31,486 MW in the month of June 2024 and June 2025 respectively. Further, in June 2026, Uttar Pradesh had witnessed peak demand of 33,197 MW.

1.3 Projected Electricity Demand of Uttar Pradesh:

As per the revised 20th Electric Power Survey (EPS) Report, peak electricity demand is projected to increase to 42,758 MW by 2034-35 and expected to reach to 44,000 MW by 2035-36. Year-wise projected electricity demand of Uttar Pradesh is given in the Table 1.3 below:

Table 1.6: Projected electricity demand in Uttar Pradesh

Sl. No.	Year	Peak electricity demand in Uttar Pradesh (MW)
1.	2024-25 (Actual)	30,618
2.	2025-26 (Actual)	31,486
3.	2026-27 (Actual-*till July 2026*)	33,197
4.	2027-28 (Projection)	35,141
5.	2028-29 (Projection)	36,519
6.	2029-30 (Projection)	37,810
7.	2030-31 (Projection)	38,890
8.	2031-32 (Projection)	39,852
9.	2032-33 (Projection)	40,900
10.	2033-34 (Projection)	41,866
11.	2034-35 (Projection)	42,758
12.	2035-36 (envisaged)	44,000

However, UPPTCL has projected the peak electricity demand in Uttar Pradesh to reach to 42,200 MW by 2030-31 and above 50,000 MW by 2035-36.

1.4 Existing Transmission Network in Uttar Pradesh

Uttar Pradesh has 10 Nos. of 765 kV ISTS substations namely Agra (PG), Fatehpur, Meerut, Balia, Aligarh, Bareilly-PG(New), Kanpur, Orai, Lucknow(New) & Varanasi and 10 Nos. of 400 kV sub-stations namely Allahabad, Bagpat, Gorakhpur-PG, Kanpur, Lucknow-PG, Mainpuri, Saharanpur, Shahjahanpur, Sohawal and Bareilly. In intra-state transmission system, Uttar Pradesh has 07 Nos. of 765 kV sub-stations, namely Unnao, Fatehabad (Agra), Mainpuri, Hapur, Gr. Noida, Rampur and Meerut; 45 No. of 400 kV sub-stations and 172 Nos. of 220 kV sub-stations.

1.4.1 Intra-State Transmission System in Uttar Pradesh

The details of the existing transmission system which includes the number of Grid sub-station (GSS), transformation capacity (MVA), length of transmission lines (circuit kilometer) is shown in Tables below:

Table 1.7: Existing intra-state substations and transformation capacity (MVA) in Uttar Pradesh

S.No.	Voltage level	Existing Intra-State Substation	
		No of S/s.	MVA
UPPTCL			
1	765 kV	2	6000 (765/400 kV)
2	400 kV	32	28410 (400/220 kV) 2400 (400/132 kV) 5360 (220/132 kV) 200 (220/33 kV)
3	220 kV	172	56560 (220/132 kV) 5160 (220/33 kV)
TBCB			
1	765 kV	5	14000 (765/400 kV) 3630 (400/220 kV)
2	400 kV	13	10520 (400/220 kV) 400 (400/132 kV) 2360 (220/132 kV) 360 (220/33 kV)
	Total	**223**	**765 kV: 20000** **400 kV: 45360** **220 kV: 70000**

Table 1.8: Existing intra-state lines (ckm) in Uttar Pradesh

S.No.	Voltage level	(ckm) (UPPTCL+TBCB)
1	765 kV	2930 (1511 + 1419)
2	400 kV	9869 (7915 + 1954)
3	220 kV	17302

		(17224 + 78)
	Total	**30097**

1.4.2 Inter-State Transmission system in Uttar Pradesh

The details of existing Inter-State transmission network in Uttar Pradesh is given below.

Table 1.9: Existing ISTS substations and transformation capacity (MVA) in Uttar Pradesh

S.No.	Voltage level	Existing Inter- State transmission system (Substations)	
		No of Substations	MVA
1	765 kV	10	30500 (765/400 kV) 2705 (400/220 kV) 200 (400/132 kV)
2	400 kV	10	9410 (44/220 kV)
3	220 kV	1	500 (220/132 kV)
	Total	**21**	**43315**

1.5 Constraints in Transmission/EHV Network in Uttar Pradesh:

The key transmission constraints in transmission network (ISTS and In-STS) in Uttar Pradesh are as follows:

Table 1.10: Constraints in network and possible remedial measures

S. No.	Operational Constraints	Remedial Measures
1	Due to wide variations in demand across different load generation scenarios, low voltage in summer evening peak and high voltages in off peak scenario are observed in Northern Region incl. in Uttar Pradesh.	Installation of bus reactor at Agra, Aligarh & Orai ISTS Substation has been agreed after detailed reactive compensation studies. In the intra-state sub-stations suitable reactive compensation devices to be planned.
2	2x500 MVA, 400/220 kV ICTs at Lucknow(PG) are N-1 non-complaint	1x500 MVA (3rd) ICT approved at Lucknow(PG). Expected to be commissioned by Sept 2026.
3	ICTs under prolonged outage at 400/220 kV Obra	Revival of ICTs may be expedited by UPPTCL

4	2x315MVA, 400/220 kV ICTs at Agra (PG) are N-1 non-complaint	1x500 MVA (3rd) ICT at Agra (PG) S/s approved. Expected to be commissioned by Sept 2026.
5	3x315MVA, 400/220 kV ICTs at Sohawal(PG) are N-1 non-complaint	Augmentation to be planned by CTUIL
6	High loading in 400 kV Anpara-Obra line	LILO of 400kV Anpara-Obra line at 400kV Hindalco (proposed) S/s & Change of line conductor in to HTLS under GEC III is proposed.
7	N-1 non-complaint during some time in following 400/220 kV ICTs: 315+500 MVA ICTs at Gorakhpur 2x315 MVA ICTs at Harduaganj 2x315 MVA ICTs at Jaunpur 1x315+1x500 MVA ICTs at Panki	Augmentation planned by UPPTCL: 500 MVA ICT at Gorakhpur 315 MVA ICT at Harduaganj 315 MVA ICT at Jaunpur 500 MVA ICT at Panki

Chapter-2

Transmission System Requirement by 2030-31

2.1 Load Flow Studies for Preparation of Resource Adequacy Plan of Intra-State Transmission System in Uttar Pradesh

2.1.1 Scope of Load flow studies:

System studies for the Resource Adequacy plan for Uttar Pradesh's intra-state transmission system have been carried out using PSSE Software. The studies that have been carried out include the following:

(i) Steady state load flow studies

(ii) Contingency Analysis

Peak electricity demand in Uttar Pradesh generally used to occur in summer seasons during late evening; however, the difference in the day peak and evening peak has been on decreasing trend. Hence, for preparation of Resource Adequacy plan of Transmission system in Uttar Pradesh, both the scenarios i.e. Summer (high demand) and Winter (off-peak demand) have been studied. The load flow studies have been carried out for two time-frames: 2030-31 and 2035-36 for peak electricity demand scenarios occurring during summer and winter seasons. To meet the projected electricity demand, augmentation required in both ISTS as well as Intra-State Transmission System has been worked out.

2.1.2 Transmission Planning Guidelines

(i) Uttar Pradesh's transmission network has been represented generally at 132 kV and above voltage levels, where loads have been considered incidental on 132 kV level buses.

(ii) 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.

(iii) 'N-1' criterion is generally followed for providing reliable power supply to the consumers.

(iv) Transformation capacity of any single sub-station at 220 kV and 400 kV levels has been considered to be limited to 1000 MVA and 2500 MVA respectively as per the Manual on Transmission Planning Criteria of CEA (2025).

(v) Due to RoW constraints, re-conductoring in the existing 400 kV, 220 and 132 kV lines with higher capacity conductors HTLS (High Temperature Low Sag), having the ampacity more than double of existing ampacity of conductor has been considered.

(vi) The system voltage has been considered within the following limits as per the Manual on Transmission Planning Criteria, 2025:

132 kV	Max 145 kV, Min 122 kV
220 kV	Max 245 kV, Min 198 kV
400 kV	Max 420 kV, Min 380 kV
765 kV	Max 800 kV, Min 728 kV

2.2 Load Flow Studies for the year 2030-31:

(i) The load flow studies have been carried out for two scenarios:

a) Peak electricity demand scenario during summer season in the month of June and;

b) Peak solar hour scenario in both winter and summer seasons and;

c) Off peak (Night) scenario in both winter and summer seasons.

(ii) Peak electricity demand of Uttar Pradesh in 2030-31 as per revised 20th EPS projections is 38,890 MW; however, UPPTCL has projected the peak electricity demand as 42,200 MW in 2030-31 and the same has been considered for studies.

(iii) For the peak demand scenario of 2030-31, the transmission elements (new lines/ reconductoring of the existing lines and new substations/ICT augmentations) already taken up for implementation by UPPTCL have been considered.

(iv) Under implementation/Planned ISTS Schemes in Uttar Pradesh to be commissioned by 2030-31 have been considered in the studies, details of which are given below:

a) ISTS schemes under implementation/planned: Details of ISTS schemes under implementation/bidding/planned is given in Table 2.1:

Table 2.1: Under implementation/under bidding/planned ISTS schemes

S. No.	Transmission scheme	Status
1	**Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-1)-Part D** • Neemrana-II-Bareilly (PG) 765 kV D/c line along with 330 MVAr switchable line reactor for each circuit at each end	Under Implementation (Time frame 2026-27)

2	**Augmentation of transformation capacity at 765/400/220kV Agra (PG) S/s in Uttar Pradesh** • Augmentation of transformation capacity at 765/400/220kV Agra (PG) S/s by 1x500 MVA, 400/220kV ICT (3rd) along with associated bays	Under Implementation (Time frame 2027-28)
3	**Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-4: 3.5 GW) [Fatehgarh/ Barmer] Complex Part-A** • Establishment of 765/400kV, 2x1500 MVA S/s at suitable location near Ghiror (Distt. Mainpuri) along with 2x125 MVAr & 2x240 MVAr bus reactor at Ghiror S/s (UP) • Dausa - Ghiror 765 kV D/c line along with 240 MVAr switchable line reactor for each circuit at each end of Dausa - Ghiror 765 kV D/c line (~285 km) • LILO of both ckt of 765 kV Aligarh (PG)-Orai (PG) D/c line (~40 km) at Ghiror S/s along with 240 MVAr switchable line reactor for each circuit at Ghiror S/s end of 765 kV Ghiror -Orai D/c line • LILO of one ckt of 765kV Agra (PG)-Fatehpur(PG) 765kV D/c line at Ghiror along with 240 MVAr switchable line reactor at Ghiror S/s end of 765 kV Ghiror -Fatehpur line (~40 kms) • 400kV Ghiror-Firozabad (UP) D/c line (Quad) (~40 kms)	Under Implementation (Time frame 2027-28)
4	**Augmentation of transformation capacity at 400/220kV Lucknow (PG) S/s in Uttar Pradesh** • Augmentation of transformation capacity at 400/220kV Lucknow (PG) S/s by 1x500 MVA, 400/220kV ICT (3rd)	Under Implementation (Time frame 2027-28)
5	**Inter-regional (NR-WR) Transmission System strengthening to relieve the loading of 765 kV Vindhyachal-Varanasi D/c line** • Establishment of 765 kV Prayagraj S/s near Prayagraj (Uttar Pradesh) along with 2x330 MVAr 765 kV Bus reactors	Under Implementation (Time frame 2027-28)

	• LILO of 765 kV Fatehpur-Varanasi S/c line at Prayagraj (Line Length ~15 km (LILO length 15 km)) • LILO of 765 kV Fatehpur-Sasaram S/c line at Prayagraj (Line Length ~14 km (LILO length 14 km)) • 765 kV Vindhyachal Pool - Prayagraj D/c line along with 330 MVAr line reactor (switchable) at Prayagraj end on each ckt of 765 kV Vindhyachal Pool - Prayagraj D/c line (Line Length ~220 km)) • Bypassing of both ckts of 765 kV Sasan – Vindhyachal Pool 2xS/c line at Vindhyachal Pool and connecting it with 765 kV Vindhyachal Pool - Prayagraj D/c line, thus forming 765 kV Sasan - Prayagraj D/c line	
6	**Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District, Uttar Pradesh** • Establishment of 4x1500 MVA 765/400 kV Robertsganj Pooling Station near Robertsganj area in Sonbhadra distt. (Uttar Pradesh) along with 2x240 MVAr 765 kV & 2x125 MVAr 400 kV bus reactor • LILO of both circuits of 765 kV Varanasi-Gaya 2xS/c line at Robertsganj PS along with 240 MVAr switchable line reactor at each ckt of Robertsganj PS end of 765 kV Robertsganj PS - Gaya 2xS/c line (after LILO) (Line Length ckt 1 ~ 65 km (LILO length); Line Length ckt 2 ~ 75 km (LILO length)) • Robertsganj PS – Prayagraj S/s 765 kV D/c line along with 330 MVAr line reactor at each circuit of Robertsganj end of Robertsganj PS – Prayagraj S/s 765 kV D/c line (Line Length ~185 km))	Under Bidding (Time frame 2028-29)
7	**Augmentation at Bhadla-III, Ramgarh PS and Kanpur (PG)** • Augmentation of 765/400 kV, 1x1500 MVA (3rd) ICT at 765/400kV Kanpur (PG) substation	Under Bidding (Time frame 2028-29)

8	**Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part I** • Establishment of 6000MW, ±800KV Fatehpur(HVDC) terminal station at suitable location near Fatehpur (UP) • ±800KV HVDC line (Hexa lapwing) (4x1500 MW) between Bhadla-3 & Fatehpur (950km) with DMR. • Establishment of 5x1500MVA, 765/400KV ICTs at Fatehpur(HVDC) along with 2x330MVAr (765kV) bus reactor • LILO of both ckts of 765kV Varanasi – Kanpur (GIS) D/c at Fatehpur(30km)	Under Implementation (Time frame 2029-30)
9	**Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6 GW) (Bikaner Complex) (Bikaner V: 6 GW)** • Establishment of 765 kV S/s at suitable location near Bulandshahr (Distt. Bulandshahr) • 765 kV Panipat- Bulandshahr 2xD/c line • LILO of 765 kV Aligarh – Gr. Noida line at Bulandshahr S/s • 765 kV Bulandshahr - Noida sec-148 (UPPTCL) D/c line • Establishment of 765/400 kV, 2x1500 MVA Lucknow-II S/s at suitable location near Lucknow • 765 kV Bulandshahr – Lucknow-II D/c line • 400 kV Lucknow-II – Gonda D/c (Quad Moose) line • Establishment of 765/400 kV, 2x1500 MVA S/s at suitable location near Asana Village (Chandauli District) • 765 kV Lucknow-II - Asana D/c line • LILO of both ckts of 400 kV Varanasi – Biharsharif D/c line at Asana S/s • Asana – Nawada 765 kV D/c line	Under Bidding (Time frame 2029-30)

(v) Under implementation/Planned In-STS Schemes in Uttar Pradesh to be commissioned by 2030-31 have been considered in the studies, details of which are given below:

a) Sub-stations: The details of under-implementation/planned In-STS Substations to be commissioned by 2030-31 are given below:

Table 2.2: Details of Under-Implementation/planned In-STS substations in Uttar Pradesh

Sl. No.	Name of Sub-station	Voltage (kV)	Capacity (MVA)	ICTs (MVA)	Status	Timeframe
765 kV						
1	Talbehat (Lalitpur)(GEC-II)	765/400 400/220	1500 1000	1x1500+ 2x500	Under Construction	2026-27
2	Mirzapur (PS) (GEC-III)	765/400	6000	4x1500	Planned	2029-30
3	Sultanpur Road, Lucknow	765/400	4500	3x1500	Planned	2029-30
4	Up-gradation of 400kV Sector-148 to 765kV level	765/400	3000	2x1500	Planned	2029-30
	Total	**765/400 400/220**	**15000 1000**			
400 kV						
1	GIS Jewar	400/220	1000	2x500	Under Construction	2026-27
2	GIS Sirsira	400/220 220/132	1000 320	2x500+ 2x160	Under Construction	2027-28
3	Chitrakoot (GEC-II)	400/220	1000	2x500	Under Construction	2027-28
4	YEIDA Sector-28	400/220	1500	3x500	Under Construction	2028-29
5	Hindalco Renukoot GIS	400/220	1000	2x500	Under Construction	2028-29
6	Varun Vihar	400/220	1000	2x500	Planned	2028-29
7	IT City	400/220	1000	2x500	Planned	2028-29
8	Barabanki	400/220 220/132	1000 320	2x500+ 2x160	Planned	2029-30
9	Sitapur	400/220 220/132	1000 320	2x500+ 2x160	Planned	2029-30
10	Up-gradation of 220kV Mirzapur to 400kV level	400/220	1000	2x500	Planned	2029-30
11	Sultanpur Road	400/220	1000	2x500	Planned	2029-30
12	Ansal API (IT City)	400/220	1000	2x500	Planned	2029-30
13	Panki-II	400/220 220/132	1000 320	2x500+ 2x160	Planned	2029-30

14	Up-gradation of 220kV Phoolpur to 400kV level	400/220	1000	2x500	Planned	2029-30
15	Up-gradation of 200kV Knowledge Park to 400kV level	400/220	1000	2x500	Planned	2029-30
16	IMLC Gorakhpur	400/220	1000	2x500	Planned	2029-30
17	Ghazipur	400/220	1000	2x500	Planned	2030-31
18	Bharthana	400/220 220/132	1000 320	2x500+ 2x160	Planned	2030-31
19	Up-gradation of 220kV Bahraich to 400kV level	400/220	1000	2x500	Planned	2030-31
	Total	**400/220 220/132**	**19500 1600**			
220 kV level						
1	Details in Annexure-I		**20840**			Till 2030-31

b) ICT augmentation: The details of Under implementation/planned ICT augmentation works at In-STS Substations to be commissioned by 2029-30 are given below:

Table 2.3: Details of Under-Implementation/planned ICT augmentations (InSTS)

Sl. No.	Name of Sub-station	Voltage (in kV)	Existing Capacity (in MVA)	Augmented Capacity (in MVA)	Addition (in MVA)	Status	Timeframe
765 kV							
1	Talbehat (GEC-III)	765/400	1x1500	2x1500	1500	Planned	2029-30
	Total				**1500**		
400 kV							
1	Bareilly	400/220	3x315	2x500+ 1x315	370	Under Construction	2026-27
2	Jehta	400/220	2x500	3x500	500	Under Construction	2026-27
3	Bhaukhari	400/220	2x500	3x500	500	Under Construction	2026-27
4	Motiram Adda	400/220	2x500+ 1x315	3x500+ 1x315	500	Planned	2028-29
5	Banda	400/220	2x315	3x315	315	Planned	2028-29
6	Orai	400/220	3x315	315	240	Under Construction	2026-27

7	Machalishahar	400/220	2x315	3x315	315	Under Construction	2026-27
8	Sarnath	400/220	1x500+ 3x315	2x500+ 2x315	500	Under Construction	2026-27
9	Aligarh	400/220	2x500+ 1x315	3x500	185	Under Construction	2026-27
10	Sector-148	400/220	2x500	3x500	500	Under Construction	2026-27
11	Muradnagar-I	400/220	1x500+ 2x315	2x500+ 1x315	185	Under Construction	2026-27
12	Muradnagar-II	400/220	2x240+ 1x315	1x240+ 2x315	75	Under Construction	2026-27
13	Moradabad	400/220	2x500+ 1x240	2x500+ 1x315	75	Under Construction	2026-27
14	Sultanpur	400/220	3x315	3x315+ 1x500	500	Under Construction	2027-28
15	Agra	400/220	2x500+ 1x315	3x500	185	Under Construction	2027-28
16	Chitrkoot (GEC-III)	400/220	2x500	4x500	1000	Planned	2029-30
17	Maheba (GEC-III)	400/220	2x500	3x500	500	Planned	2029-30
18	Garautha (GEC-III)	400/220	3x500	4x500	500	Planned	2029-30
19	Rewa Road (GEC-III)	400/220	2x315	2x315+ 1x500	500	Planned	2029-30
	Total				**7280**		
220 kV							
1	Details at Annexure-II				**10140**		Till 2030-31

c) Transmission lines:

Table 2.4: Under-Implementation/planned In-STS lines in Uttar Pradesh

S.No.	Transmission Line	ckm	Status	Time-frame
765 kV				
1	LILO of Agra (765) - Lalitpur TPS 765 kV line at Talbehat (765)	37	Under Construction	2026-27
2	Anpara-E (2x800 MVA) - Mirzapur Pooling S/s-I 765 kV S/c line	83	Planned	2030-31
3	Obra-D (2x800 MVA) - Mirzapur Pooling S/s 765 kV S/c line	65	Planned	2030-31

4	Mirzapur Pooling S/s - Sultanpur Road, Lucknow 765 kV D/c line	550	Planned	2029-30
5	LILO of 765 kV Jahagirpur - Modipuram 765 kV line at Sector-148	80	Planned	2029-30
6	Anpara E(2x800 MVA) -Anpara D 765 kV S/c line	10	Planned	2030-31
7	Anpara E (2x800 MVA)-Obra D (2x800 MVA) 765 kV S/c line	35	Planned	2030-31
8	Bara-Mirzapur PS 765kV DC Line	107	Under Construction	2029-30
9	LILO of the one circuit of Bara-Mirzapur PS 765 kV D/c line at Meja-II (TPS)	25	Under Construction	2029-30
	Total	**992**		
400 kV				
1	LILO of 400 kV Greator Noida (765) - Sector-148 400 kV line at 400/220 kV Jewar	4	Under Construction	2026-27
2	Garautha - Talbehat (765) 400 kV D/c line	260	Under Construction	2026-27
3	Maheba (400) - Farrrukhabad (400) 400 kV D/c line	316	Under Construction	2026-27
4	Farrukhabad (400) - Badaun 400 kV D/c line	180.4	Under Construction	2026-27
5	Chitrakoot - Banda (400) 400 kV D/c line	260	Under Construction	2027-28
6	Aligarh PG (765) - YEIDA Sector-28 400 kV D/c line	84	Under Construction	2028-29
7	LILO of 400 kV Anpara-A&B – Obra-B 400 kV S/c line at 400 kV Switching S/s at M/s Hindalco	50	Under Construction	2028-29
8	LILO of 400 kV Unnao - Bareilly 400 kV line at 400 kV Varun Vihar	40	Planned	2028-29
9	Mohanlalganj - IT City (400) 400 kV D/c line	60	Planned	2028-29
10	LILO of Lucknow PG (765) - Mohanlalganj 400 kV line at 765/400 kV Sultanpur Road S/s, Lucknow	60	Planned	2029-30
11	LILO of 400 kV Mohanlalganj - Sultanpur 400 kV line at 765/400 kV Sultanpur Road S/s, Lucknow	60	Planned	2029-30
12	Sultanpur Road (765) Lucknow - Barabanki 400 kV D/c line	50	Planned	2029-30

13	Sultanpur Road (765) Lucknow - Sitapur 400 kV D/c line	176	Planned	2029-30
14	Mirzapur - Mirzapur PS (765) 400 kV D/c line	52	Planned	2029-30
15	Mirzapur - Sahupuri 400 kV D/c line	108	Planned	2029-30
16	Sultanpur Road (765) - Sultanpur Road 400 kV D/c line	80	Planned	2029-30
17	Sultanpur Road (765) - Ansal API 400 kV D/c line	120	Planned	2029-30
18	Panki-II - Gatampur (765) 400 kV D/c line	100	Planned	2029-30
19	Phoolpur - Mirzapur Pooling 400 kV D/c line	140	Planned	2029-30
20	Knowlegde Park - Khurja TPS 400 kV D/c line	140	Planned	2029-30
21	Chitrakoot – Bara 400 kV D/c line	90	Planned	2029-30
22	LILO of one circuit of Banda - Rewa Road 400 kV D/c line at Chitrakoot	60	Planned	2029-30
23	Maheba – Ghatampur TPS 400 kV D/c line	140	Planned	2029-30
24	Farrukhabad – Mainpuri 400 kV S/c line on D/c towers	80	Planned	2029-30
25	Gazipur - Mirzapur 400 kV D/c line	160	Planned	2030-31
26	LILO of one ckt of 400 kV Mainpuri - Orai 400 kV line at Bharthana	70	Planned	2030-31
27	Bahraich - Gonda/ Sitapur 400 kV D/c line	160	Planned	2030-31
28	M/s Mirzapur Thermal Energy (UP) Pvt. Ltd. (MTEUPPL)– Mirzapur PS 400kV DC Line	18.5	Under Construction	2029-30
30	JSW Pumped Storage Project (PSP) – Mirzapur PS (765 kV) 400kV DC Line	60	Planned	2029-30
31	Adani Pumped Storage Project (PSP) – Mirzapur PS (765kV) 400 kV DC Line	77	Planned	2029-30
	Total	**3255.9**		
220 kV				
1	Details at Annexure-III	**4490.1**	UC/Planned	Till 2030-31

Table 2.5: Under-Implementation/planned re-conductoring of In-STS lines in Uttar Pradesh

S.No.	Transmission Line	ckm	Status

1	Metro Depot (400) - M/s Avada Electron Ltd. 220 kV S/c line	12.35	Under implementation
2	Gr. Noida (Jahangirpur 765) - M/s SAEL Industrial Ltd. 220 kV S/c line	6.4	Under implementation
3	Panki – Bithoor Unnao 220 kV S/c line	56.4	Under implementation
4	Re-conductoring of existing 220 kV Banda (400) – Banda (220) D/c line with HTLS conductor	52	Planned
5	Re-conductoring of existing Lalitpur TPS – Jhansi 220 kV S/c line with HTLS conductor	93	Planned
6	Re-conductoring of existing Jhansi – Paricha 220 kV D/c line with HTLS conductor	50	Planned
7	Re-conductoring of existing Lalitpur TPS – Babina 220 kV S/c line with HTLS conductor	60	Planned
8	Re-conductoring of both Anpara A & B – Renukoot (Pipri) 400 kV section and Obra B - Renukoot (Pipri) section with HTLS conductor	90	Planned

2.3 Load Flow Study Results:

Based on the load flow studies, following was observed:

(i) The existing, under construction and planned sub-stations by UPPTCL by 2030-31 would be sufficient to cater the demand in the state of Uttar Pradesh.

a) In addition to the already planned works, the following augmentation in the ISTS/In-STS network may be required by 2030-31 for reliable supply of power in the state of Uttar Pradesh:

Table 2.6: Transformation augmentation works by 2030-31

Sl. No.	Name of Sub-station	Voltage (kV)	MVA
ISTS			
1	Orai (PG)	765/400	1000/1500 (3rd)
2	Kanpur (PG)	400/220	500 (3rd)
3	Sohawal (PG)	400/220	500 (4th)
Intra-state			
1	Unnao	765/400	1500 or 1000(1st)→1500
2	Agra South	400/132	315 (4th) or 200(1st)→315
3	Mau	400/132	315(4th)

4	Simbholi	400/220	500 (3rd)
5	Gonda	400/220	500 (3rd)

Table 2.7: Re-conductoring of existing lines by 2030-31

S. No.	Transmission Line
ISTS / Intra-state	
1	Kanpur New – Lucknow 400 kV D/c line
2	Bareilly (PG) – Bareilly (UP) 400 kV D/c line
3	Meerut – Modipuram 220 kV D/c line
4	Raebareilly – Unchahar 220 kV D/c line
5	Noida-148 – Noida-123 400 kV D/c line
6	Jhusi – Allahabad 220 kV line
7	Gorakhpur (PG) – Gorakhpur (UP) 220 kV line
8	Sahupuri – Robertsganj 220 kV line
10	Obra – Chunar 220 kV line
11	Sarnath – Gajokhar 220 kV line
12	RPH Kanpur – Panki 220 kV line
13	Unnao – Dahi Chowki 220 kV line
14	Muradnagar – Muradnagar 220 kV line
15	Sahupuri – Raja Ka Talab 220 kV line

b) Requirement of ICT augmentation at the sub-stations needs to be taken up based on the actual demand growth at that particular sub-station. Therefore, the actual loading at the sub-stations needs to be continuously monitored and augmentation works should be planned considering the same.

(ii) The planned transmission schemes for evacuation of power from upcoming Thermal generation are to be implemented in the matching timeframe of the commissioning of TPPs.

(iii) The transmission schemes proposed under Green Energy Corridor Phase-III (GEC-III) may be implemented commensurate to the addition of RE generation capacity.

2.4 Summary of Intra-State Transmission Network in Uttar Pradesh by 2030-31

The summary of Transformation capacity (MVA) and transmission lines (ckm) under intra-state transmission system in the state of Uttar Pradesh by 2030-31 is given below:

Table 2.8: Summary of intra-state transmission network augmentation in Uttar Pradesh

Intra-State Transmission System / EHV system	**765 kV level**	**400 kV level**	**220 kV level**	**Total**
Transformation Capacity (MVA):				
Existing Transformation Capacity (MVA)	20000	45360	70000	**135360**
Addition in Transformation Capacity (MVA) by 2030-31	18000	29410	32580	**79990**
Total Transformation Capacity by 2030-31 (MVA)	**38000**	**74770**	**102580**	**215350**
Transmission Lines:				
Existing Transmission Lines (ckm)	2930	9869	17302	**30101**
Addition of Transmission Lines by 2030-31(ckm)	992	3256	4490	**8738**
Total transmission lines by 2030-31 (ckm)	**3922**	**13135**	**21792**	**38839**

Additionally, reconductoring of existing intra-state lines is also to be considered.

Chapter-3

Transmission System addition planned by 2035-36

3.1 Load Flow Studies for the year 2035-36:

(i) The load flow studies have been carried out for following scenarios:

a) Peak electricity demand scenario during summer season in the month of June;

b) Peak solar hour scenario in both winter and summer seasons

c) Off peak (Night) scenario

(ii) The peak electricity demand in 2035-36 for load flow studies has been considered as 50,000 MW.

(iii) No significant addition in generation capacity has been planned in the state of Uttar Pradesh, signifying increase in import/drawl of power from NR grid by the intra-state network during 2031-2036 to meet the increased demand.

(iv) The transmission elements (new lines/reconductoring of the existing lines and new substations/ICT augmentations) planned by UPPTCL have been considered. The details are given below:

Table 3.1: Details of planned In-STS substations in Uttar Pradesh

S.No.	Sub-station	Voltage (kV)	MVA	Status
765 kV				
1	Hamirpur PS (conditional to Coal India Ltd.)	765/400	3000 (2x1500)	Planned
2	Anoopshahar	765/400	3000 (2x1500)	Planned
	Total		**6000**	
400 kV				
1	Gola	400/220	1000 (2x500)	Planned
2	Mathura	400/220	1000 (2x500)	Planned
3	Noida Pali-II	400/220	1000 (2x500)	Planned
4	Mansoorpur	400/220	1000 (2x500)	Planned
5	Madhogarh	400/220	1000 (2x500)	Planned
6	Kadaura	400/220	1000 (2x500)	Planned
7	Kalpi	400/220	1000 (2x500)	Planned

8	MRSS Bajana	400/220	1000 (2x500)	Planned
9	MRSS Chamaura	400/220	1000 (2x500)	Planned
10	MRSS Ambabai	400/220	1000 (2x500)	Planned
11	Ayodhya	400/220	1000 (2x500)	Planned
12	Charkhari	400/220	1000 (2x500)	Planned
13	Hata	400/220	1000 (2x500)	Planned
	Total		**13000**	
220 kV				
1	Details in Annexure-IV		**7200**	Planned

Table 3.2: Details of Planned In-STS transmission lines in Uttar Pradesh

S.No.	Transmission line	ckm	Status
765 kV			
1	LILO of 765 kV Rampur - Ghatampur S/c line at 765kV Hamirpur	80	Planned
2	LILO of 765 kV Rampur - Hamirpur line at Anoopshahar (after LILO of 765 kV Ghatampur - Rampur line at 765 kV Hamirpur)	2	Planned
	Total	**82**	
400 kV			
1	Gola - Sitapur 400 kV D/c line	100	Planned
2	Mathura - Hathras(765) 400 kV D/c line	60	Planned
3	Noida Pali II – Noida Sec 148 400 kV S/c line	30	Planned
4	Noida Pali II - Jalpura New 400 kV S/c line	35	Planned
5	Mansoorpur - Modipuram(765) 400 kV D/c line	80	Planned
6	Madhogarh - Hamirpur(765) 400 kV D/c line	128	Planned
7	Kadaura - Hamirpur(765) 400 kV D/c line	28	Planned
8	Kalpi - Hamirpur(765) 400 kV D/c line	20	Planned
9	Garotha(765) - Bajana 400 kV D/c line	180	Planned
10	Chamaraua - Talbehat(765) 400 kV D/c line	68	Planned

11	Chamaraua - Orai PG(765) 400 kV D/c line	180	Planned
12	Ayodhya - Sultanpur 400 kV D/c line	160	Planned
13	Charkhari - Garotha(765) 400 kV S/c line	40	Planned
14	Charkhari - Hamirpur(765) 400 kV S/c line	45	Planned
15	Lilo of 400 kV Gorakhpur PG - Motihari line at Hata S/s	4	Planned
	Total	**1158**	
220 kV			
1	Details in Annexure-V	**1175**	Planned

3.2 Load Flow Study Results:

Based on the load flow studies, following has been observed:

(i) The existing, under construction and planned sub-stations for state of Uttar Pradesh by 2035-36 would be required to cater the increasing demand. Further, it is recommended that new sub-stations may be planned taking into account N-1 contingency of the ICTs and sufficient reactive compensation.

(ii) Few intra-state sub-stations may get N-1 non-complaint in certain contingency scenario; therefore, UPPTCL to monitor real time loading and plan augmentation accordingly. The augmentation works needs to be taken up based on the actual demand growth at that particular sub-station. Therefore, the actual loading at the sub-stations needs to be continuously monitored and augmentation works should be planned considering the same.

(iii) The state of Uttar Pradesh may witness increase in demand due to Data Centers in areas around Noida. Therefore, the transmission augmentation works to be planned to meet the demand of data centres.

(iv) In addition to the already planned works, the following augmentation in the network may be required by 2035-36 for reliable supply of power in the state of Uttar Pradesh:

Table 3.3: Transformation augmentation works by 2035-36

Sl. No.	Name of Sub-station	Voltage (kV)	MVA
Intra-state			
1	Noida Sec-148	765/400	1500 (3rd)

Table 3.4: Reconductoring works of existing line by HTLS conductor

Sl. No.	Name of existing line
1	Jalpura – Khurja 400 kV D/c line (70 km)

(v) For reactive compensation suitable devices such as STATCOM may be planned in Noida/NCR area.

3.3 Summary of Transmission Network in Uttar Pradesh by 2035-36

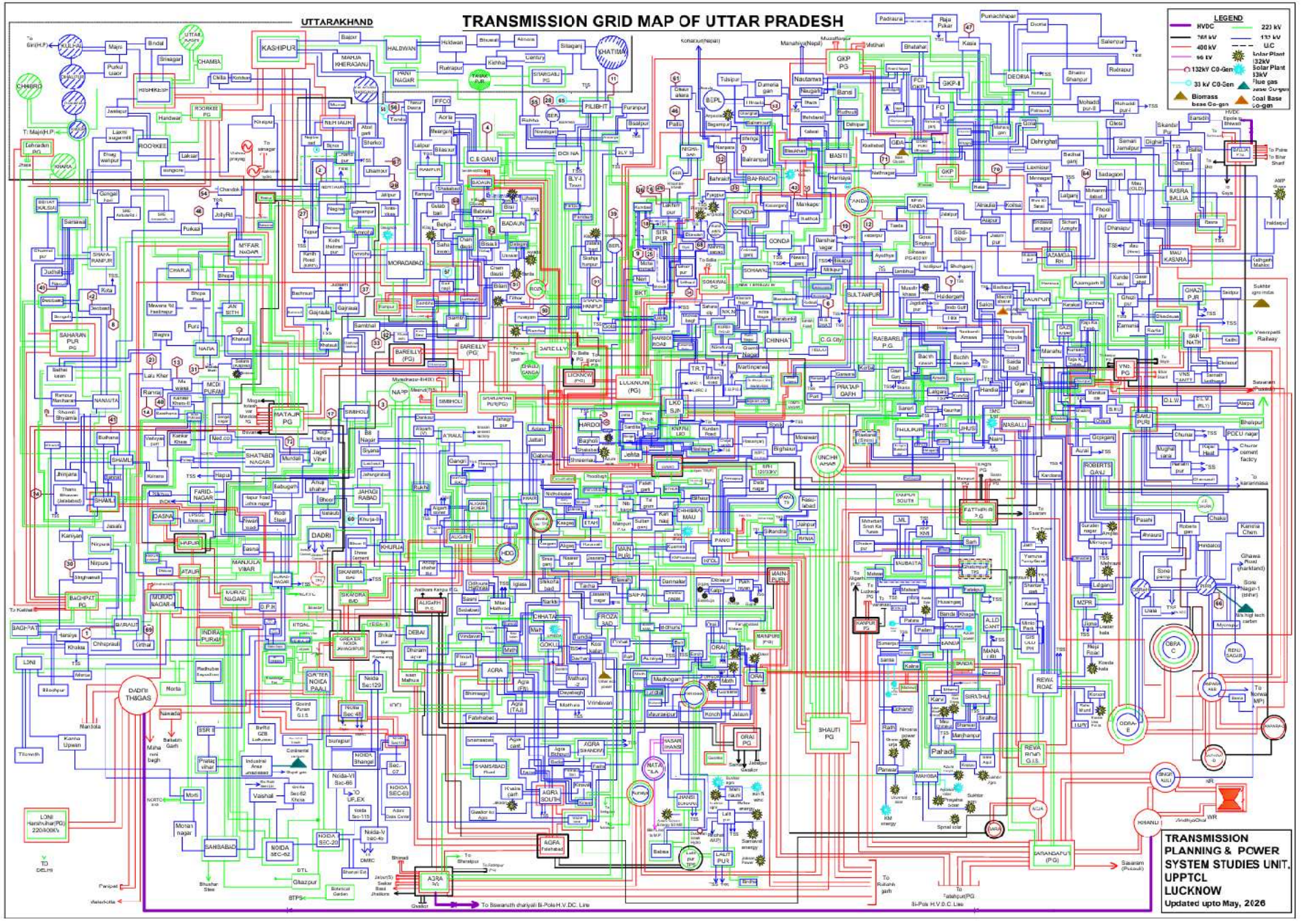
The summary of Transformation capacity (MVA) and transmission lines (ckm) under intra-state transmission network in the state of Uttar Pradesh by 2035-36 is given below:

Table 3.5: Intra-state transmission system in Uttar Pradesh by 2035-36

Intra-State Transmission System	765 kV level	400 kV level	220 kV level	Total
Transformation Capacity (MVA):				
Transformation Capacity (MVA) by 2030-31	38000	74770	102580	**215350**
Addition in Transformation Capacity (MVA)	7500	13000	7200	**27700**
Total Transformation Capacity by 2035-36 (MVA)	**45500**	**87770**	**109780**	**243050**
Transmission Lines:				
Transmission Lines (ckm) by 2030-31	3922	13135	21792	**38839**
Addition of Transmission Lines (ckm)	82	1158	1175	**2415**
Total transmission lines by 2035-36 (ckm)	**4004**	**14283**	**22967**	**41254**

Chapter-4
Recommendations

1. Intra-State system augmentation proposed till 2035-36 in the state of Uttar Pradesh comprises of 11,153 ckm (220 kV and above) of lines and 107,690 MVA of transformation capacity.
2. All the planned transmission network should be timely implemented and UPPTCL should expedite the transmission elements proposed for mitigation of transmission constraints in the state.
3. Action must be initiated by UPPTCL for approval of the schemes and subsequent award well in time to ensure timely commissioning of the planned transmission schemes. Some of the planned schemes may be reviewed based on growth of electricity demand and expected commissioning of proposed solar and thermal generators etc.
4. UPPTCL should provide appropriate space provisions for 132 kV and 33 kV bays in their 220 kV and above grid substations for supply of power to DISCOMs, and new substations should have adequate space provision for extension/augmentation to meet future load growth.
5. Projects which are planned for the time frame beyond 2030-31 and 2035-36, may be taken up earlier or later as per the generation evacuation plan and requirement of Discom. Accordingly, the Resource Adequacy study for transmission system in the state may be reviewed in the coming years.


TRANSMISSION GRID MAP OF UTTAR PRADESH
UTTARAKHAND
LEGEND
HVDC
765 kV
400 kV
220 kV
132kV C0-Gen
33 kV C0-Gen
Biomass base Co-gen
Solar Plant
Flue gas
Coal Base Co-gen
TRANSMISSION PLANNING & POWER SYSTEM STUDIES UNIT, UPPTCL LUCKNOW
Updated upto May, 2026

Annexure-I

Sl. No.	Name of Sub-station	Voltage (kV)	Capacity (MVA)	ICTs (MVA)	Status	Timeframe
765 kV						
1	Talbehat (Lalitpur)(GEC-II)	765/400 400/220	1500 1000	1x1500+ 2x500	Under Construction	2026-27
2	Mirzapur (PS) (GEC-III)	765/400	6000	4x1500	Planned	2029-30
3	Sultanpur Road, Lucknow	765/400	4500	3x1500	Planned	2029-30
4	Up-gradation of 400kV Sector-148 to 765kV level	765/400	3000	2x1500	Planned	2029-30
	Total	**765/400 400/220**	**15000 1000**			
400 kV						
1	GIS Jewar	400/220	1000	2x500	Under Construction	2026-27
2	GIS Sirsira	400/220 220/132	1000 320	2x500+ 2x160	Under Construction	2027-28
3	Chitrakoot (GEC-II)	400/220	1000	2x500	Under Construction	2027-28
4	YEIDA Sector-28	400/220	1500	3x500	Under Construction	2028-29
5	Hindalco Renukoot GIS	400/220	1000	2x500	Under Construction	2028-29
6	Varun Vihar	400/220	1000	2x500	Planned	2028-29
7	IT City	400/220	1000	2x500	Planned	2028-29
8	Barabanki	400/220 220/132	1000 320	2x500+ 2x160	Planned	2029-30
9	Sitapur	400/220 220/132	1000 320	2x500+ 2x160	Planned	2029-30
10	Up-gradation of 220kV Mirzapur to 400kV level	400/220	1000	2x500	Planned	2029-30
11	Sultanpur Road	400/220	1000	2x500	Planned	2029-30
12	Ansal API (IT City)	400/220	1000	2x500	Planned	2029-30
13	Panki-II	400/220 220/132	1000 320	2x500+ 2x160	Planned	2029-30
14	Up-gradation of 220kV Phoolpur to 400kV level	400/220	1000	2x500	Planned	2029-30
15	Up-gradation of 200kV Knowledge Park to 400kV level	400/220	1000	2x500	Planned	2029-30
16	IMLC Gorakhpur	400/220	1000	2x500	Planned	2029-30
17	Ghazipur	400/220	1000	2x500	Planned	2030-31
18	Bharthana	400/220 220/132	1000 320	2x500+ 2x160	Planned	2030-31
19	Up-gradation of 220kV Bahraich to 400kV level	400/220	1000	2x500	Planned	2030-31
	Total	**400/220 220/132**	**19500 1600**			

220 kV						
1	Khaga	220/132	320	2x160	Under Construction	2026-27
2	Varanasi Cantt	220/33	120	2x60	Under Construction	2026-27
3	Tirwa	220/132	320	2x160	Under Construction	2026-27
4	GIS Sector-45	220/132 220/33	160 120	1x160+2x60	Under Construction	2026-27
5	Vasundhra	220/33	180	3x60	Under Construction	2026-27
6	Hamirpur (GEC-II)	220/132	320	2x160	Under Construction	2026-27
7	Jaitpur (GEC-II)	220/132	160	1x160	Under Construction	2026-27
8	Mandwara (GEC-II)	220/132	160	1x160	Under Construction	2026-27
9	Bamaur (GEC-II)	220/132	160	1x160	Under Construction	2026-27
10	Extension 132kV level at 400kV Banda S/s	220/132	320	2x160	Under Construction	2026-27
11	GIS UPSIDA, Agra	220/33	120	2x60	Under Construction	2026-27
12	Mohan Road	220/132	320	2x160	Under Construction	2027-28
13	Up-gradation of 132 Kundan Road to 220 Level	220/132	320	2x160	Planned	2027-28
14	Up-gradation of 132kV Salempur to 220 Level	220/132	320	2x160	Under Construction	2027-28
15	Ranipur	220/132	320	2x160	Under Construction	2027-28
16	GIS Saraswati Hitech City	220/33	240	4x60	Under Construction	2027-28
17	Up-gradation of 132kV Tanda to 220kV Level	220/132	320	2x160	Planned	2027-28
18	Shahpur	220/132	320	2x160	Planned	2027-28
19	GIS Maurawa	220/132	320	2x160	Planned	2027-28
20	AIS Chunar	220/132	320	2x160	Under Construction	2027-28
21	YEIDA Sector-28	220/132	320	2x160	Under Construction	2027-28
22	Up-gradation of 132kV Shankargarh to 220 Level	220/132	320	2x160	Planned	2027-28
23	IMLC Meerut	220/132	320	2x160	Planned	2027-28
24	IMLC Sambhal	220/132	320	2x160	Planned	2027-28
25	Up-gradation of 132kV Akbarpur to 220 Level	220/132	320	2x160	Planned	2028-29
26	Up-gradation of 132kV Bisauli to 220 Level	220/132	320	2x160	Planned	2028-29

27	Up-gradation of 132kV Lakhauti to 220 Level	220/132	320	2x160	Planned	2028-29
28	Amra	220/132	320	2x160	Planned	2028-29
29	Jaunpur-II	220/132	320	2x160	Planned	2028-29
30	Up-gradation of 132kV Saraon to 220 Level	220/132	320	2x160	Planned	2028-29
31	Agra-II	220/132	320	2x160	Planned	2028-29
32	Up-gradation of 132kV Nanpara to 220 Level	220/132	320	2x160	Planned	2028-29
33	132 Mainpuri-II	220/132	320	2x160	Planned	2028-29
34	Aligarh New	220/132	320	2x160	Planned	2028-29
35	Creation of 132kV level on 400/220 Bareilly	220/132	320	2x160	Planned	2028-29
36	Up-gradation of 132kV Sandila to 220 Level	220/132	320	2x160	Planned	2028-29
37	Up-gradation of 132kV Jagdishpur to 220 Level	220/132	320	2x160	Planned	2028-29
38	Creation of 132 level on 765kV Rampur	220/132	320	2x160	Planned	2028-29
39	IMLC Sultanpur	220/132	320	2x160	Planned	2028-29
40	IMLC Barabanki	220/132	320	2x160	Planned	2028-29
41	Naimish Nagar	220/132	400	2x200	Planned	2028-29
42	Varun Vihar-I	220/132	400	2x200	Planned	2028-29
43	Varun Vihar-II	220/132	400	2x200	Planned	2028-29
44	IT City	220/132	400	2x200	Planned	2028-29
45	Wellness City	220/132	400	2x200	Planned	2028-29
46	Greator Bareilly (BDA)	220/33	120	2x60	Planned	2028-29
47	Up-gradation of 132kV Shatrughanpur to 220 Level	220/132	320	2x160	Planned	2028-29
48	Up-gradation of 132kV Dalmau to 220 Level	220/132	320	2x160	Planned	2029-30
49	Extention of 400 Nehtaur to 220 Level	220/132	320	2x160	Planned	2029-30
50	Up-gradation of 132 Atraulia to 220 Level	220/132	320	2x160	Planned	2029-30
51	Khair-II	220/132	320	2x160	Planned	2029-30
52	Tajpur-II	220/132	320	2x160	Planned	2029-30
53	Builder Area (Greater Noida)	220/132	320	2x160	Planned	2029-30
54	Ecotech (Greater Noida)	220/132	320	2x160	Planned	2029-30
55	Sector-2 (Greater Noida)	220/132	320	2x160	Planned	2029-30
56	Birondi (Greater Noida)	220/132	320	2x160	Planned	2029-30
57	Moradabad-II	220/132	320	2x160	Planned	2029-30

58	IMLC Banda	220/132	320	2x160	Planned	2029-30
59	Haidergarh	220/132	320	2x160	Planned	2030-31
60	Colonelganj-II	220/132	320	2x160	Planned	2030-31
61	Powayan	220/132	320	2x160	Planned	2030-31
62	Chakalbanshi	220/132	320	2x160	Planned	2030-31
63	Shahganj	220/132	320	2x160	Planned	2030-31
64	Meerut By Pass	220/33	180	3x60	Planned	2030-31
65	IMLC Jalaun	220/132	320	2x160	Planned	2030-31
66	IMLC Chitrakoot	220/132	320	2x160	Planned	2030-31
67	Upgradation of 132kV Pipari at 220kV level (GEC-III)	220/132	400	2x200	Planned	2029-30
68	Upgradation of 132kV Mayorpur at 220kV level (GEC-III)	220/132	400	2x200	Planned	2029-30
	Total		**20840**			

Annexure-II

Sl. No.	Name of Sub-station	Voltage (in kV)	Existing Capacity (in MVA)	Augmented Capacity (in MVA)	Augmentation (in MVA)	Status	Timeframe
765 kV							
1	Talbehat (GEC-III)	765/400	1x1500	2x1500	1500	Planned	2029-30
	Total				**1500**		
400 kV							
1	Bareilly	400/220	3x315	2x500+ 1x315	370	Under Construction	2026-27
2	Jehta	400/220	2x500	3x500	500	Under Construction	2026-27
3	Bhaukhari	400/220	2x500	3x500	500	Under Construction	2026-27
4	Motiram Adda	400/220	2x500+ 1x315	3x500+ 1x315	500	Planned	2028-29
5	Banda	400/220	2x315	3x315	315	Planned	2028-29
6	Orai	400/220	3x315	315	240	Under Construction	2026-27
7	Machalishahar	400/220	2x315	3x315	315	Under Construction	2026-27
8	Sarnath	400/220	1x500+ 3x315	2x500+ 2x315	500	Under Construction	2026-27
9	Aligarh	400/220	2x500+ 1x315	3x500	185	Under Construction	2026-27
10	Sector-148	400/220	2x500	3x500	500	Under Construction	2026-27
11	Muradnagar-I	400/220	1x500+ 2x315	2x500+ 1x315	185	Under Construction	2026-27
12	Muradnagar-II	400/220	2x240+ 1x315	1x240+ 2x315	75	Under Construction	2026-27
13	Moradabad	400/220	2x500+ 1x240	2x500+ 1x315	75	Under Construction	2026-27
14	Sultanpur	400/220	3x315	3x315+ 1x500	500	Under Construction	2027-28
15	Agra	400/220	2x500+ 1x315	3x500	185	Under Construction	2027-28
16	Chitrkoot (GEC-III)	400/220	2x500	4x500	1000	Planned	2029-30
17	Maheba (GEC-III)	400/220	2x500	3x500	500	Planned	2029-30
18	Garautha (GEC-III)	400/220	3x500	4x500	500	Planned	2029-30
19	Rewa Road (GEC-III)	400/220	2x315	2x315+ 1x500	500	Planned	2029-30
	Total				**7280**		
220 kV							
1	Darshan Nagar	220/132	1x160	2x160	160	Planned	2026-27
2	Barabanki	220/132	2x160	3x160	160	Planned	2026-27
3	Faridpur	220/132	2x100	1x160+1x100	60	Under Implementation	2026-27
4	Sarojni Nagar	220/132	3x200	3x200+1x160	160	Under Implementation	2026-27
5	Kurshi Raod	220/132	1x100+1x160+ 1x200	2x160+1x200	60	Under Implementation	2026-27

6	Gomti Nagar	220/33	4x60	1x100+3x60	40	Under Implementation	2026-27
7	Kanpur Road GIS	220/33	3x60	4x60	60	Under Implementation	2026-27
8	Sultanpur	220/132	2x160+1x200	3x200	80	Planned	2026-27
9	Gola	220/132	2x160	2x160+1x200	200	Planned	2028-29
10	Orai	220/132	2x160	2x200	80	Planned	2026-27
11	Sahupuri	220/132	2x200+1x160	2x200+2x160	160	Under Implementation	2026-27
12	Phulpur	220/132	2x160	1x160+1x200	40	Planned	2028-29
13	Rewa Road	220/132	2x200+1x160	3x200	240	Planned	2028-29
14	Sarnath	220/132	1x200+2x160	1x200+3x160	160	Under Implementation	2026-27
15	Shamshabad Road	220/132	2x160	1x160+1x200	40	Planned	2026-27
16	Boner	220/33	1x100+1x160	2x160	60	Under Implementation	2026-27
17	Harduaganj Vistar-II	220/132	1x160	2x160	160	Under Implementation	2026-27
18	Khair	220/132	3x160	4x160	160	Planned	2026-27
19	Saifai	220/132	2x160	3x160	160	Planned	2028-29
20	Nibkarori	220/132	1x160+2x100	2x160+1x100	60	Under Implementation	2026-27
21	Chhibramau	220/132	2x160	3x160	160	Planned	2026-27
22	Rania	220/132	3x100	1x160+2x100	60	Planned	2026-27
23	Panki	220/132	3x160+1x100	4x160+1x100	160	Planned	2026-27
24	Gokul	220/132	2x160	3x160	160	Planned	2026-27
25	Nehtaur	220/132	2x160+1x100	3x160	220	Planned	2028-29
26	Sikandrabad	220/132	2x100+1x160	1x100+2x160	160	Under Implementation	2026-27
27	Dadri	220/132	1x160+1x100	2x160+1x100	160	Under Implementation	2026-27
28	Sector-20	220/132	3x160	4x160	160	Under Implementation	2026-27
29	Sector-148	220/132	2x160	3x160	160	Under Implementation	2026-27
30	Faridnagar	220/132	1x100+1x160	2x160	60	Planned	2026-27
31	Morti	220/132	2x160	1x160+1x200	40	Planned	2028-29
32	Muradnagar	220/132	2x200+1x160	2x200+2x160	160	Planned	2026-27
33	Sahibabad	220/132	2x200	2x200+1x160	160	Planned	2028-29
34	Loni	220/132	1x200+1x150	1x200+1x150+ 1x160	160	Under Implementation	2026-27
35	Pratap Vihar Hibrid	220/132	1x160+1x100	2x160	60	Under Implementation	2026-27
36	Modipuram	220/132	2x200	2x200+1x160	160	Planned	2026-27
37	Partapur	220/132	3x160	4x160	160	Planned	2026-27
38	Modipuram-II	220/132	2x160	3x160	160	Planned	2026-27
39	Moradabad	220/132	3x160	4x160	160	Planned	2026-27
40	Muzaffarnagar	220/132	2x160	3x160	160	Under Implementation	2026-27
41	Chandausi	220/132	2x160	2x200	80	Planned	2028-29
42	Sambhal	220/132	2x160+1x100	3x160	220	Planned	2028-29
43	Ayodhya	220/132	2x160	3x160	160	Planned	2027-28
44	Dohna	220/132	2x160	1x200+1x160	40	Planned	2027-28
45	Pilibhit	220/132	2x160	1x200+1x160	40	Planned	2027-28
46	Azamgarh II	220/132	2x160	3x160	160	Planned	2027-28
47	Deoria	220/132	2x160+1x100	3x160	220	Under Implementation	2027-28

48	Orai	220/132	2x160	3x160	160	Planned	2027-28
49	Malwan	220/132	2x160	2x200	80	Planned	2027-28
50	Mirzapur	220/132	3x160	2x160+1x200	40	Planned	2027-28
51	Jhusi	220/132	2x200	2x200+1x160	160	Planned	2027-28
52	Gajokhar	220/132	2x160	2x200	80	Planned	2027-28
53	Bah	220/132	2x160	1x160+1x200	40	Planned	2027-28
54	Sikandra	220/132	2x160+1x100	3x160	220	Under Implementation	2027-28
55	Naubasta	220/132	2x160	3x160	160	Planned	2027-28
56	Amroha	220/132	2x160	1x200+1x160	40	Planned	2027-28
57	Rampur	220/132	3x100+1x60	2x100+2x160	260	Under Implementation	2027-28
58	Sohawal	220/132	2x160	3x160	160	Planned	2029-30
59	Barahua	220/132	2x160+1x200+ 1x100	2x200+2x160	220	Planned	2029-30
60	Hata	220/132	2x160+1x100	3x160+1x100	220	Planned	2029-30
61	Mahrajganj	220/132	2x160	3x160	160	Planned	2029-30
62	Mirzapur	220/132	2x160+1x200	3x200	80	Planned	2029-30
63	Shamshabad Road	220/132	1x160+1x200	2x200	200	Planned	2029-30
64	Amroha	220/132	1x200+1x160	2x200	200	Planned	2029-30
65	Gajraula	220/132	3x160	1x160+2x200	240	Planned	2029-30
66	Mawana (GIS)	220/132	2x160	3x160	160	Planned	2029-30
67	Dakor (GEC-III)	220/132	1x160	1x200+ 1x160	200	Planned	2029-30
68	Bamaur (GEC-III)	220/132	1x160	1x200+ 1x160	200	Planned	2029-30
69	Bangra (GEC-III)	220/132	1x160	1x200+ 1x160	200	Planned	2029-30
70	Birdha (GEC-III)	220/132	1x160	1x200+ 1x160	200	Planned	2029-30
71	Mandwara (GEC-III)	220/132	1x160	1x200+ 1x160	200	Planned	2029-30
72	Fatehpur (GEC-III)	220/132	2x200	3x200	200	Planned	2029-30
	Total				**10140**		

Annexure-III

S.No.	Transmission Line	ckm	Status	Time-frame
765 kV				
1	LILO of Agra (765) - Lalitpur TPS 765 kV line at Talbehat (765)	37	Under Construction	2026-27
2	Anpara-E (2x800 MVA) - Mirzapur Pooling S/s-I 765 kV S/c line	83	Planned	2030-31
3	Obra-D (2x800 MVA) - Mirzapur Pooling S/s 765 kV S/c line	65	Planned	2030-31
4	Mirzapur Pooling S/s - Sultanpur Road, Lucknow 765 kV D/c line	550	Planned	2029-30
5	LILO of 765 kV Jahagirpur - Modipuram 765 kV line at Sector-148	80	Planned	2029-30
6	Anpara E(2x800 MVA) -Anpara D 765 kV S/c line	10	Planned	2030-31
7	Anpara E (2x800 MVA)-Obra D (2x800 MVA) 765 kV S/c line	35	Planned	2030-31
8	Bara-Mirzapur PS 765kV DC Line	107	Under Construction	2029-30
9	LILO of the one circuit of Bara-Mirzapur PS 765 kV D/c line at Meja-II (TPS)	25	Under Construction	2029-30
	Total	**992**		
400 kV				
1	LILO of 400 kV Greator Noida (765) - Sector-148 400 kV line at 400/220 kV Jewar	4	Under Construction	2026-27
2	Garautha - Talbehat (765) 400 kV D/c line	260	Under Construction	2026-27
3	Maheba (400) - Farrrukhabad (400) 400 kV D/c line	316	Under Construction	2026-27
4	Farrukhabad (400) - Badaun 400 kV D/c line	180.4	Under Construction	2026-27
5	Chitrakoot - Banda (400) 400 kV D/c line	260	Under Construction	2027-28
6	Aligarh PG (765) - YEIDA Sector-28 400 kV D/c line	84	Under Construction	2028-29
7	LILO of 400 kV Anpara-A&B – Obra-B 400 kV S/c line at 400 kV Switching S/s at M/s Hindalco	50	Under Construction	2028-29
8	LILO of 400 kV Unnao - Bareilly 400 kV line at 400 kV Varun Vihar	40	Planned	2028-29
9	Mohanlalganj - IT City (400) 400 kV D/c line	60	Planned	2028-29
10	LILO of Lucknow PG (765) - Mohanlalganj 400 kV line at 765/400 kV Sultanpur Road S/s, Lucknow	60	Planned	2029-30
11	LILO of 400 kV Mohanlalganj - Sultanpur 400 kV line at 765/400 kV Sultanpur Road S/s, Lucknow	60	Planned	2029-30
12	Sultanpur Road (765) Lucknow - Barabanki 400 kV D/c line	50	Planned	2029-30
13	Sultanpur Road (765) Lucknow - Sitapur 400 kV D/c line	176	Planned	2029-30
14	Mirzapur - Mirzapur PS (765) 400 kV D/c line	52	Planned	2029-30
15	Mirzapur - Sahupuri 400 kV D/c line	108	Planned	2029-30
16	Sultanpur Road (765) - Sultanpur Road 400 kV D/c line	80	Planned	2029-30
17	Sultanpur Road (765) - Ansal API 400 kV D/c line	120	Planned	2029-30
18	Panki-II - Gatampur (765) 400 kV D/c line	100	Planned	2029-30
19	Phoolpur - Mirzapur Pooling 400 kV D/c line	140	Planned	2029-30
20	Knowlegde Park - Khurja TPS 400 kV D/c line	140	Planned	2029-30
21	Chitrakoot – Bara 400 kV D/c line	90	Planned	2029-30

22	LILO of one circuit of Banda - Rewa Road 400 kV D/c line at Chitrakoot	60	Planned	2029-30
23	Maheba – Ghatampur TPS 400 kV D/c line	140	Planned	2029-30
24	Farrukhabad – Mainpuri 400 kV S/c line on D/c towers	80	Planned	2029-30
25	Gazipur - Mirzapur 400 kV D/c line	160	Planned	2030-31
26	LILO of one ckt of 400 kV Mainpuri - Orai 400 kV line at Bharthana	70	Planned	2030-31
27	Bahraich - Gonda/ Sitapur 400 kV D/c line	160	Planned	2030-31
28	M/s Mirzapur Thermal Energy (UP) Pvt. Ltd. (MTEUPPL)– Mirzapur PS 400kV DC Line	18.5	Under Construction	2029-30
30	JSW Pumped Storage Project (PSP) – Mirzapur PS (765 kV) 400kV DC Line	60	Planned	2029-30
31	Adani Pumped Storage Project (PSP) – Mirzapur PS (765kV) 400 kV DC Line	77	Planned	2029-30
	Total	**3255.9**		
220 kV				
1	Fatehpur (765) PG - Khaga 220 kV D/c line	100	Under Construction	2026-27
2	LILO of 220 kV Sarnath (400) - Gajoghar 220 kV line at Cantt (220)	83	Under Construction	2026-27
3	LILO of 220 kV Mainpuri - Bhauti PG (Kanpur) 400 kV 220 kV line at Tirwa	26	Under Construction	2026-27
4	Multi Circuit Line from Noida Sector-148 (400) - Noida Sector-45 (GIS) 220 kV D/c line	43	Under Construction	2026-27
5	LILO of 220 kV Muradnagar (400) - Sahibabad (220) 220 kV line at Vansundhra (220)	1	Under Construction	2026-27
6	Indirapuram (400) - Vasundhra (220) 220 kV S/c line	5.50	Under Construction	2026-27
7	Hamirpur (220) - Maheba (400) 220 kV D/c line	180	Under Construction	2026-27
8	LILO of Maheba (220)- Banda (400) 220 kV line at 220 kV Hamirpur S/s	70	Under Construction	2026-27
9	220 kV Talbehat (765)- Lalitpur TPS 220 kV D/c line	72	Under Construction	2026-27
10	LILO of 220 kV Chhibramau- Farrukhabad 220 kV line at Farrukhabad	62	Under Construction	2026-27
11	220 kV Firozabad (400)- UPSIDA (IMC Agra) 220 kV D/c line	63	Under Construction	2026-27
12	LILO of Sarojini Nagar (400)- Hardoi Road (220) 220 kV line at Mohan Road (220)	1	Under Construction	2027-28
13	220 kV Unnao (765)- Kundan Road 220 kV S/c line	10	Planned	2027-28
14	LILO of 220 kV Rasara- Deoria 220 kV line at 132 kV Salempur	6.6	Under Construction	2027-28
15	220 kV Rasra (400)- Ranipur (Mau) 220 kV D/c line	121	Under Construction	2027-28
16	LILO of 220 kV Obra TPS- Rewa road 220 kV line at Saraswati Hitech city	52	Under Construction	2027-28
17	Rampur - Tanda 220 kV D/c line	80	Planned	2027-28
18	Mohanlalganj - Shahpur 220 kV D/c line	100	Planned	2027-28
19	Maurawa - Unnao (765) 220 kV S/c line	45	Planned	2027-28
20	LILO of 220 kV Obra (400) - Sahupuri 220 kV line at 220 kV Chunar	36	Under Construction	2027-28
21	Jewar(400) - Sector-28 YEIDA 220 kV D/c line	4	Under Construction	2027-28
22	LILO of Rewa road - Pahadi 220 kV line at Shankargarh	40	Planned	2027-28
23	Farid Nagar (220) - IMLC 220 kV D/c line	26	Planned	2027-28

24	Sambhal (400) - IMLC 220 kV D/c line	44	Planned	2027-28
25	LILO of 220 kV NTPC (Tanda) - Sultanpur (400) 220 kV S/c line	10	Planned	2028-29
26	Badaun (400) - Bisauli 220 kV D/c line	70	Planned	2028-29
27	Lakhauti - Simbhauli (400) 220 kV D/c line	60	Planned	2028-29
28	Sahupuri (400) - Amra 220 kV D/c line	90	Planned	2028-29
29	Machhlisahar (400) - Jaunpur II 220 kV S/c line	35	Planned	2028-29
30	Soraon (220) - Phoolpur (400) 220 kV D/c line	40	Planned	2028-29
31	Agra (400) - Agra - II 220 kV D/c line	50	Planned	2028-29
32	Gonda (400) - Nanpara 220 kV D/c line	170	Planned	2028-29
33	Mainpuri (400) - Mainpuri-II 220 kV D/c line	40	Planned	2028-29
34	Aligarh New - Aligarh (400) 220 kV D/c line	70	Planned	2028-29
35	Sandila - Jehata (400) 220 kV D/c line	82	Planned	2028-29
36	Jagdishpur - Sultanpur (400) 220 kV D/c line	70	Planned	2028-29
37	LILO of LILO of 220 kV Sultanpur (400) - Tanda TPS Line 220 kV line	2	Planned	2028-29
38	Bachhrwan (220) - IMLC 220 kV D/c line	40	Planned	2028-29
39	Jehta (400) - Naimish Nagar 220 kV D/c line	20	Planned	2028-29
40	Varun Vihar-I - Varun Vihar (400) 220 kV D/c line	40	Planned	2028-29
41	Varun Vihar-II - Varun Vihar (400) 220 kV D/c line	60	Planned	2028-29
42	IT City (400) - IT City (220) 220 kV D/c line	30	Planned	2028-29
43	IT City (400) - Wellness City (220) 220 kV D/c line	30	Planned	2028-29
44	Bareilly (400) - Greator Bareilly (220) 220 kV D/c line	40	Planned	2028-29
45	LILO of LILO of 220 kV Motiram Adda (400) - Gorakhpur-II 220 kV line	50	Planned	2028-29
46	LILO of 220 kV Chinhat - Kursi Road 220 kV line at 400/220 kV Barabanki S/s	30	Planned	2029-30
47	LILO of 220 kV Gomti Nagar - Chinhat 220 kV line at 400/220 kV Barabanki S/s	30	Planned	2029-30
48	Sitapur (400)-Sitapur 220 kV S/c line	15	Planned	2029-30
49	LILO of Nighasan - Sitapur line at Sitapur (400)		Planned	
50	Sitapur (400) - Kanduni 220 kV D/c line	110	Planned	2029-30
51	Sitapur (400) - Nighasan 220 kV S/c line	60	Planned	2029-30
52	Sitapur (400) - Sitapur 220 kV S/c line	30	Planned	2029-30
53	Unchahar (400) - Dalmau 220 kV S/c line	35	Planned	2029-30
54	Nehtaur (400) - Nehtaur, Suar 220 kV S/c line	30	Planned	2029-30
55	New Tanda - Atrauli 220 kV D/c line	80	Planned	2029-30
56	Nehtaur (400) - Tajpur-II 220 kV D/c line	90	Planned	2029-30
57	Jalpura (400) - Builder 220 kV D/c line	50	Planned	2029-30
58	Metro Depot (400) - Ecotech 220 kV D/c line	30	Planned	2029-30
59	Jalpura (400) - Sector-2 220 kV D/c line	50	Planned	2029-30
60	Metro Depot (400) - Birondi 220 kV S/c line	20	Planned	2029-30
61	RC Green - Birondi 220 kV S/c line	25	Planned	2029-30
62	Moradabad (400) - Moradabad II 220 kV S/c line	40	Planned	2029-30
63	Raibarelly - Phoolpur 220 kV D/c line	160	Planned	2029-30
64	Motiram Adda (400) - IMLC 220 kV D/c line	90	Planned	2029-30
65	LILO of One Ckt of 220 kV Banda (400) - Pahadi 220 kV D/c line	2	Planned	2029-30
66	Banda (400) - Banda (220) S/c line on D/c towers (HTLS)	26	Planned	2029-30
67	Stringing of 2nd circuit on 220 kV Banda (220) – Fatehpur (220) S/c line on D/c towers	67	Planned	2029-30
68	Farrukhabad(400) – Farrukhabad(220) 220 kV D/c line (by opening of LILO of 1st ckt of Chhibramau	24	Planned	2029-30

	– Farrukhabad 220 kV D/c line at Farrukhabad(400))			
69	Removing the LILO of Banda – Mahoba 220 kV S/c line at Hamirpur and extending the LILO portion till Banda (400) S/s - 10km so as to form Hamirpur – Banda (400) 220 kV D/c line (to be re-conductored with HTLS - 45km) and Banda(400) - Mahoba 220 kV S/c line	110	Planned	2029-30
70	Stringing of 2nd circuit on Dakor – Maheba 220 kV S/c line on D/c towers	42	Planned	2029-30
71	Stringing of 2nd circuit on Bamaur – Garotha 220 kV S/c line on D/c towers	34	Planned	2029-30
72	Stringing of 2nd circuit on Bangra – Garotha 220 kV S/c line on D/c towers	45	Planned	2029-30
73	Stringing of 2nd circuit on Birdha – Lalitpur 220 kV S/c line on D/c towers	30	Planned	2029-30
74	Stringing of 2nd circuit on Mandwara – Lalitpur 220 kV S/c line on D/c towers	55	Planned	2029-30
75	Renukoot (Pipri) – Pipri 220 kV D/c line (HTLS)	20	Planned	2029-30
76	Renukoot (Pipri) – Mayorpur 220 kV D/c line (HTLS)	40	Planned	2029-30
77	Barabanki (400) - Haidergarh 220 kV D/c line	100	Planned	2030-31
78	Gonda (400) - Colonelganj - II 220 kV D/c line	80	Planned	2030-31
79	Shahjahanpur PG - Powayan 220 kV D/c line	90	Planned	2030-31
80	220 kV Unnao - Chakalbanshi 220 kV D/c line	80	Planned	2030-31
81	Machhalishahar (400) - Shahganj 220 kV D/c line	90	Planned	2030-31
82	Modipuram (765) - Meerut By Pass 220 kV D/c line	100	Planned	2030-31
83	LILO of One Ckt of 220 kV Parichha (400) - Orai 220 kV D/c line	14	Planned	2030-31
84	Chitrakoot (400) - IMLC 220 kV D/c line	96	Planned	2030-31
	Total	**4490.1**		

Annexure-IV

S.no.	Voltage (kV)	Ss / Line	Name of Sub-station and associated transmission line
1	220	SS	220kV Akbarpur S/s
	220	Line	220kV Tanda TPS- akbarpur DC line-35kM
2	220	SS	220kV Milkipur S/s
	220	Line	220kV Ayodhya(400kV) - Milkipur DC line-30kM
3	220	SS	220kV Lakhimpur S/s
	220	Line	220kV Sitapur(400)-Lakhimpur DC line
4	400	SS	400kV Gola S/s
	400	Line	400kV Gola – Sitapur DC line -50kM
5	220	SS	220kV Pooranpur S/s
	220	line	Lilo of 220kV Philibhit- Bareilly at Pooranpur -25kM
6	220	SS	220 kV Rani ki Sarai SS
	220	line	220kV Amamgarh(400)- Rani ki sarai DC line 30kM
7	220	SS	220kV Ballia S/s 2x160MVA
	220	Line	220kV Ballia- Rasra(400) DC line-35kM
8	220	SS	Upgradation of 132kV Kerakat S/s 2x160
	220	Line	220kV Jaunpur(400)-Kerakat line DC-40km
9	220	SS	220kV Badagao S/s 2x160+2x40
	220	line	220kV Badagao- Rasra(400) DC line 40kM
10	220	SS	220kV Jahanabad S/s 2x160+2x40MVA
	220	line	220kV Jahanabad-Mawana DC line-35kM
11	220	SS	Up gradation of 132kV Chhanbey S/s at 220kV level 2x160MVA
	220	line	220kV Chhanbey - Mirzapur(400) DC line 30kM
12	220	SS	Up gradation of 132kV Kunda S/s at 220kV level 2x160MVA
	220	Line	220kV Kunda - Phulpur(400) DC line 40kM
13	220	SS	Up-gradation of 132kV Koroan to 220kV level 2x160MVA
	220	Line	220kV Koroan - Mirzapur(400) DC line-50kM
14	400	SS	400kV Mathura 2x500MVA S/s
	400	Line	400kV Mathura-Hathras(765) DC line 30kM
15	400	SS	400kV Noida Pali II 2x500MVA
	400	Line	400kV Noida Pali II-Noida Sec 148 SC line 30km
	400	Line	400kV Noida Pali II-Jalpura new SC line 35km
16	400	SS	400kV Mansoorpur 2x500MVA
	400	Line	400kV Mansoorpur- Modipuram(765)-40kM
17	765	SS	765/400kV Pooling S/s near Hamirpur S/s
	765	Line	Lilo of 765kV Rampur-Ghatampur SC line at 765kV Hamirpur 40kM
18	400	SS	400kV Madhogarh S/s
		Line	400kV Madhogahr- Hamirpur(765) SC line-64km
19	400	SS	400kV Kadaura S/s
		Line	400kV Kadaura-hamirpur(765) SC line 14kM
20	400	SS	400kV Kalpi S/s
		Line	400kV Kalpi-Hamirpur(765) SC line 10km
21	220	SS	220kV Kuthond S/s
		Line	220kV Kuthond-Maheba DC line -30km
22	220	SS	220kV Orai new S/s
		Line	220kV Orai new - Maheba SC line- 25kM
23	132	SS	132kV Bhadrekhi S/s
		Line	132kV Bhadrekhi - Maheba(400) line - 10kM

24	400	SS	400/220 kV MRSS Bajana(969MW)
		Line	400kV Garotha(765)- Bajana DC Quad moose line - 90km
25	220	SS	220/33 kV RSS Parasai
		Line	220kV Parasai- Bajana(400) DC line-10km
26	220	SS	220/33 kV RSS Khaira
		Line	220kV Khaira- Bajana(400) DC line-10km
27	220	SS	220/33 kV RSS Rajapur
		Line	220kV Rajapur- Bajana(400) DC line-10km
28	220	SS	220/33 kV RSS Amarpur
		Line	220kV Amarpur- Bajana(400) DC line-10km
29	400	SS	400/220 kV MRSS Chamaraua S/s(797MW)
		Line	400kV Chamaraua- Talbehat(765) Dc Quad Moose line line-34km
30	220	SS	220/33 kV RSS Chamaraua
		Line	220kV Chamaraua-Chamaraua(400) DC line-3km
31	220	SS	220/33 kV RSS Murari,Baidora
		Line	220kV Murari,Baidora-Chamaraua(400) DC line-5km
32	220	SS	220/33 kV RSS Khilchwara, Bujurg
		Line	220kV RSS Khilcgwara-Chamaraua(400) DC line-5km
33	220	SS	220/33 kV RSS Khajuraha Buzurg
		Line	220kV RSS Khajuraha Buzurg-Chamaraua(400) DC line-5km
34	400	SS	400/220 kV MRSS Ambabai SS(717MW)
		Line	400kV Chamaraua- Orai PG(765) Dc Quad Moose line line-90km
35	220	SS	220/33 kV Domagor SS
		Line	220kV Ambabai-Domagor(400) DC line-3km
36	220	SS	220/33 kV Kotkhera S/s
		Line	220kV Ambabai-Kothera DC line-5km
37	220	SS	220/33 kV Simra S/s
		Line	220kV Ambabai-Simra DC line-5km
38	220	SS	220/33 kV RSS Khajuraha Buzurg
		Line	220kV RSS Khajuraha Buzurg-Chamaraua(400) DC line-5km
39	400	SS	400kV kV Ayodhya
		Line	400kV Ayodhya- Sultanpur DC line- 80 km
40	400	SS	400kV Charkhari S/s
		Line	400kV Charkhari - Garotha(765) SC line-40kM
		Line	400kV Charkhari - Hamirpur(765) SC line-45kM
41	765	SS	765kV Substation Anoopsahar S/s (near lilo point of 765kV Hapur-Ghatampur at Rampur S/s.
		Line	LILO of 765 kV Rampur-Hamirpur line at Anoopsahar S/s (after LILO of 765kV Ghatampur- Rampur line at Hamirpur)
42	400	SS	400/220 kV Hata S/s 2x500MVA
		Line	Lilo of 400kV Gorakhpur PG - Motihari line at 400kV Hata S/s
	220	Line	Lilo of 220kV Anandnagar- Mahrajganj line at Hata(400)
		Line	Lilo of Khorabar- Barahua(Gorakhpur) at Hata(400)
		Line	220kV Hata-Hata(400) DC line
43	220	SS	Upgradation of existing 132/33kV RajaPakad S/s(2x160MVA)
		Line	220kV Hata(400)- RajaPakad S/s DC line