



सत्यमेव जयते

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

Government of India

Ministry of Power

Central Electricity Authority



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EXECUTIVE SUMMARY

Chhattisgarh's abundant coal resources, thermal power plants, and industrial growth make it the 'Power Hub of India'. The state is home to significant energy clusters. As a power-surplus state that supplies electricity to the national grid, maintaining a modernized transmission infrastructure is vital. With the integration of diverse energy sources into its massive thermal baseload, maintaining grid stability becomes crucial. A modern transmission system enables efficient load balancing, enhances system flexibility, and minimizes the risk of grid disturbances and failures.

With respect to electricity demand, Chhattisgarh has witnessed an all-time high peak demand of 6819 MW in April 2025. From the analysis of peak demand of Chhattisgarh for past 10 years, it has been observed that peak electricity demand in Chhattisgarh is generally experienced in the months of March/April and has grown @5.8% per year. As per the revised 20th Electric Power Survey (EPS) Report, peak electricity demand is projected to increase to 9.12 GW by 2029-30 and 10.76 GW by 2034-35.

A comprehensive system study for strengthening of the transmission network, both ISTS and Intra-State, in Chhattisgarh has been carried out by CEA in association with CTUIL, Grid-India and CSPTCL, and Resource Adequacy plan has been prepared indicating the transmission capacity to be added in Chhattisgarh till the year 2034-35.

Summary of existing and planned transmission system under ISTS and InSTS in Chhattisgarh is given below:

Existing transmission system in Chhattisgarh as on 28.02.2026:

	765 kV	400 kV	220 kV	132 kV	Total
Inter-State Transmission System (ISTS)					
Transformation Capacity (MVA)	38000	4520	0	0	42520
Transmission Line (ckm)	7410	8214	0	0	15624
Intra-State Transmission System (InSTS)					
Transformation Capacity (MVA)	0	4410	11280	12216	27906
Transmission line (ckm)	0	1953	4445	8467	14865

Transmission System addition planned/ under planning by 2030:

	765 kV	400 kV	220 kV	132 kV	Total
Inter-State Transmission System (ISTS)					
Transformation Capacity (MVA)	4500	1000	0	0	5500
Transmission Line (ckm)	910	0	0	0	910
Intra-State Transmission System (InSTS)					
Transformation Capacity (MVA)	0	6815	7760	5414	19989
Transmission line (ckm)	0	451	2841	2614	5906

Transmission System addition under planning between 2030 and 2035:

	765 kV	400 kV	220 kV	132 kV	Total
Intra-State Transmission System (InSTS)					
Transformation Capacity (MVA)	0	3500	2000	1638	7138
Transmission line (ckm)	0	240	540	927	1707

Chapter-1

Power supply scenario in Chhattisgarh and projected electricity demand

1.1 Background

Chhattisgarh's rapid industrialization, burgeoning metallurgical and power-intensive sectors, and expanding urban infrastructure demand a robust transmission network capable of delivering power reliably across the state and beyond. While Chhattisgarh today has grown into a major power-generation hub, the state must equally focus on strengthening its intra-state and inter-state transmission systems to meet the projected growth in electricity demand. Given that Chhattisgarh also draws and dispatches power across states, the transmission network must be capable of efficiently evacuating surplus generation, reinforcing key substations and interconnecting transformers, and integrating increasing renewable energy flows. The state's transmission utility, Chhattisgarh State Power Transmission Company Limited (CSPTCL), in view of the concentration of pit-head thermal power generation in the state, undertakes coordinated transmission planning in consultation with the Central Electricity Authority (CEA) and other stakeholders for strengthening of both inter-state and intra-state transmission systems to ensure reliable evacuation of generation and long-term system adequacy. The planned transmission strengthening includes augmentation of transformation capacity at key substations, development of high-capacity transmission corridors, and enhancement of network redundancy. Such coordinated planning enables optimal utilization of pit-head generation assets while facilitating secure power transfer to load centres within and outside the state.

To ensure Chhattisgarh's economic growth, support industry, maintain power quality and system resilience, the transmission infrastructure must be expanded and modernized—including new high-capacity corridors, strengthened substation transformation capacity, reactive power compensation, and lines capable of handling bulk transfers and renewables integration.

1.2 Present Power Scenario in Chhattisgarh

1.2.1 Installed Generation Capacity (Intra-State) (as on 28/02/2026)

Table 1.1: Installed Capacity (in MW) of Power Utilities in Chhattisgarh, as per Allocated Shares in Joint and Central Sector Utilities. (As on 28/02/2026)

Ownership / Sector	Mode Wise Breakup									
	Thermal (in MW)					Nuclear (in MW)	Renewable (in MW)			Grand Total (in MW)
	Coal	Lignite	Gas	Diesel	Total		Hydro	RES (MNRE)	Renewable Total	
State	1840	0	0	0	1840	0	120	209.08	209.08	2169.08
Private	8072.5	0	0	0	8072.5	0	0	1932.64	1932.64	10005.14
Central	2789.35	0	0	0	2789.35	135.57	192.80	0	192.80	3117.72
Total	12701.85	0	0	0	12701.85	135.57	312.80	2141.72	2454.52	15291.94

1.2.2 Electricity Demand of Chhattisgarh

Till date, Chhattisgarh has witnessed an all-time high peak demand of 6819 MW which was observed in April 2025. From the analysis of peak demand of Chhattisgarh for past 10 years, it has been observed that peak demand of Chhattisgarh has grown @5.76% per year.

The recorded peak demand of Chhattisgarh for the years starting from FY 2015-16 to FY 2025-26 is given in the Table 1.2.

Table 1.2 Recorded Peak Demand of Chhattisgarh

Sr. No.	Year	Peak Demand (MW)
1	2015-16	3932
2	2016-17	3875
3	2017-18	4169
4	2018-19	4444
5	2019-20	4746
6	2020-21	4682
7	2021-22	5019
8	2022-23	5399
9	2023-24	6148
10	2024-25	6511
11	2025-26 (Till Feb, 2026)	6819

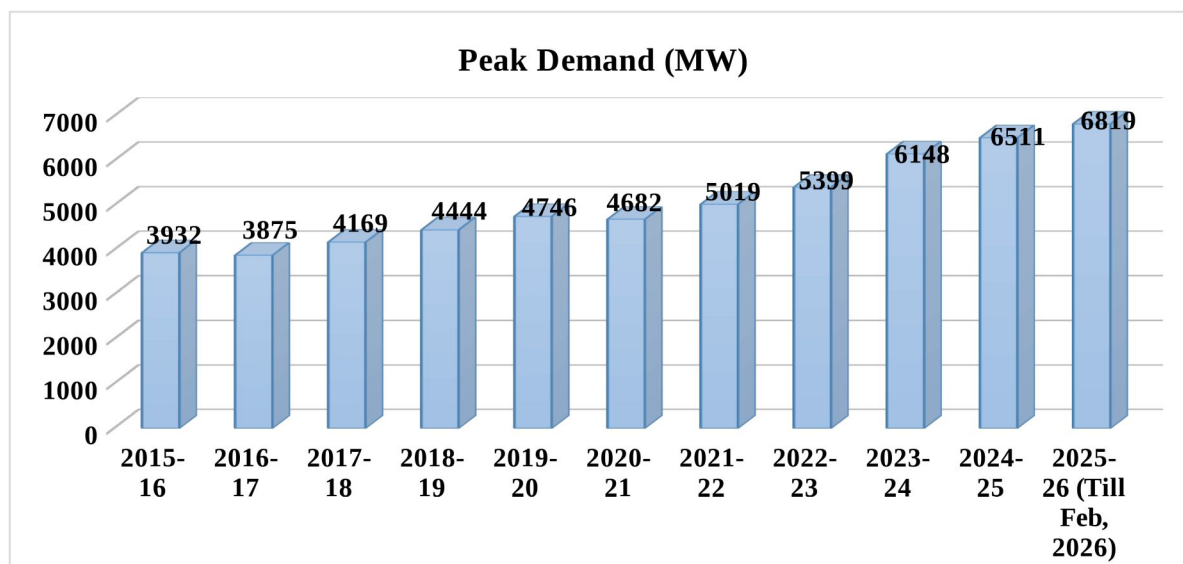


Fig 1.1: Recorded Peak demand in Chhattisgarh

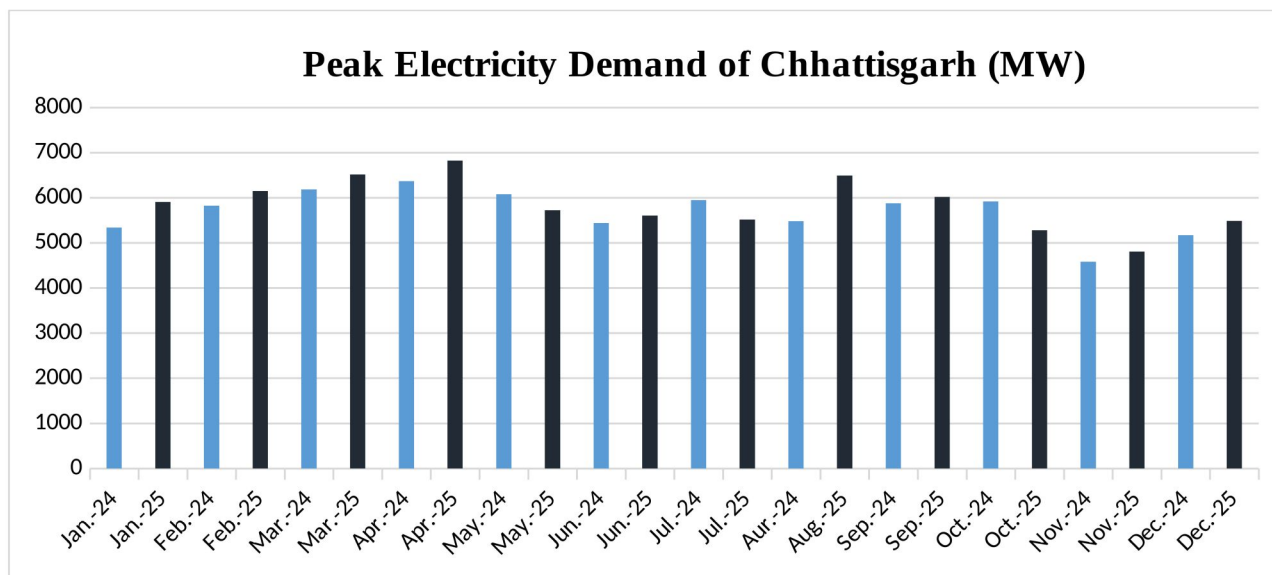


Fig 1.2: Month-wise peak electricity demand in Chhattisgarh for past two years.

Peak electricity demand in Chhattisgarh is generally experienced in the months of March/April. Monthly variation of Maximum Demand pattern of Chhattisgarh for past 5 years is shown in Fig. 1.2

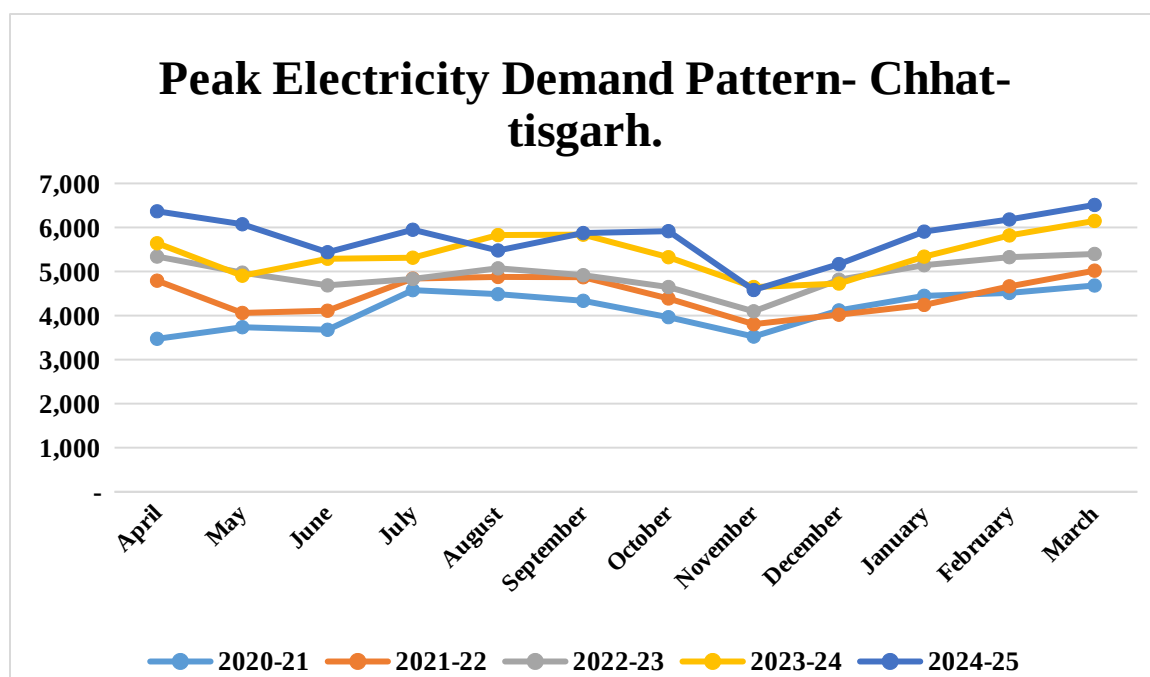


Fig 1.3: Peak electricity demand pattern in Chhattisgarh

1.3 Projected Electricity Demand of Chhattisgarh:

As per the revised 20th Electric Power Survey (EPS) Report, peak electricity demand is projected to increase to 9.124 GW by 2029-30 and to 10.76 GW by 2034-35 as given in Table 1.3.

Table 1.3: Projected electricity demand in Chhattisgarh:

Sl. No.	Year	Peak electricity demand in Chhattisgarh (MW)
1.	2023-24 (Actual)	6,148
2.	2024-25 (Actual)	6,511
3.	2025-26 (Projection)	7,209
4.	2026-27 (Projection)	7,750
5.	2027-28 (Projection)	8,218
6.	2028-29 (Projection)	8,686
7.	2029-30 (Projection)	9,124
8.	2030-31 (Projection)	9,512
9.	2031-32 (Projection)	9,857
10.	2032-33 (Projection)	10,197
11.	2033-34 (Projection)	10,499

Sl. No.	Year	Peak electricity demand in Chhattisgarh (MW)
12.	2034-35 (Projection)	10,759

1.4 Existing Transmission Network in Chhattisgarh (as on 28.02.2026)

1.4.1 Intra-State Transmission System in Chhattisgarh

The details of existing intra-state transmission network in Chhattisgarh is given in Table 1.4 and Table 1.5.

Table 1.4: Existing Intra-State Transmission system (Substations) (as 28.02.2026)

S.No.	Voltage level	Existing Intra- State transmission system (Substations)	
		No of Substations	MVA
1	400 kV	5	4410
2	220 kV	27	11280
3	132 kV	105	12216
	Total	137	27906

Table 1.5: Existing Intra-State Transmission system (Transmission Lines) (as on 28.02.2026)

S.No.	Voltage level	Existing Inter- State transmission system (Transmission Lines)
		(ckm)
1	400 kV	1953
2	220 kV	4445
3	132 kV	8467
	Total	14865

400 kV InSTS substations:

- 4x315 MVA, 400/220 kV Bhilai S/s.
- 2x315 MVA + 2x160 MVA + 2x40 MVA, 400/220/132/33 kV Jagdalpur S/s.
- 3x315 MVA, 400/220 kV Kurud (Dhamtari) S/s.
- 3x315 MVA, 400/220 kV, Raita S/s.
- 2x315 MVA + 2x160 MVA, 400/220/132 kV, Dhardehi (Bilaspur) S/s.-

1.4.2 Inter-State Transmission System in Chhattisgarh

The details of existing inter-state transmission network in Chhattisgarh is given in Table 1.6, Table 1.7 and Table 1.8.

Table 1.6: Existing Inter-State Transmission system (Substations) (as on 28.02.2026)

S.No.	Voltage level	Existing Inter- State transmission system (Substations)		
		No of Substations	MVA	
1	765 kV	7	765/400 kV	38000
			400/220 kV (2 substations)	1500
2	400 kV	3	400/220 kV	3020
	Total	10		42520

Table 1.7: Existing Inter-State Transmission system (Transmission Lines) (as 28.02.2026)

S.No.	Voltage level	Existing Inter- State transmission system (Transmission Lines)
		(ckm)
1	765 kV	7410
2	400 kV	8214
	Total	15624

765 kV ISTS Substation(s):

- (i) 3x1500 MVA, 765/400 kV Bilaspur S/s.
- (ii) 6x1500 MVA, 765/400 kV Champa (A&B) S/s.
- (iii) 2x1500 MVA + 2x500 MVA, 765/400/220 kV Dharamjaygarh S/s.
- (iv) 4x1500 MVA, 765/400 kV Raigarh-PS (Kotra) S/s.
- (v) 2x1500 MVA + 1x500 MVA, 765/400 kV Raipur-PS (Durg) S/s.
- (vi) 2x1000 MVA, 765/400 kV Sipat S/s.
- (vii) 4x1500 MVA, 765/400 kV Tamnar S/s.

400 kV ISTS Substation:

- (i) 3x315 MVA, 400/220 kV Bhatapara S/s.
- (ii) 2x315 MVA + 1x500 MVA, 400/220 kV Raigarh S/s.

(iii) 3x315 MVA, 400/220 kV Raipur S/s.

Table 1.8: Reactors in Chhattisgarh 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	11	2910	31	8340	11250
2	400 kV	11	1053	30	1724	2777
Total		22	3963	61	10064	14027

1.5 Constraints in Transmission Network in Chhattisgarh:

1.5.1 Operational constraints in ICTs at substations in Chhattisgarh

S. No.	ICT	Season/ Antecedent Conditions	Description of the constraints	Remedial Measures Planned	Status and SCoD
(1.).	1x500 MVA Korba West (CSPTCL) ICT	Demand of Chhattisgarh above 4000 MW with 2000 MW drawl	ICT loaded above 340 MW of its capacity for few instances. The constraint aggravated with decommissioning of all units (4x50 MW & 2x120 MW) at Korba East. Facilitating any line outage from Korba West & Korba NTPC has become very difficult. To control the ICT loading, 220kV Korba East Budhipadar and Raigarh Budhipadar circuits opened on SLDC request. Due to decline in generation at 220kV level and increase in demand of Chhattisgarh, drawl from 400kV level through 400/220kV ICTs has increased.	Establishment of 400/220 kV 2x500 MVA Korba East substation alongwith associated transmission lines	Planned (SCoD: 2029-30)
(2.).	2x315 MVA NSPCL	Demand of Chhattisgarh	Constraint: ICTs become N-1 non-compliant when	2x500 MVA, 400/220 kV	2x500 MVA ICTs at Durg

	ICTs	above 4000 MW & drawl > 2000 MW	total loading is above 540 MW.	ICTs at Durg along with 220 kV outlets from Raipur PS (Durg)	commissioned SCoD of 220 kV downstream network: 2026-27
(4.).	3x315 MVA Raipur ICTs	Demand of Chhattisgarh above 4000MW with 1900MW drawl	ICTs become N-1 non-compliant when total loading is above 760 MW.	400/220 kV, 500 MVA ICT augmentation (4 th) at Raipur.	Under Construction (SCoD: 2027-28)
(5.).	1x315 MVA Marwa ICT	Demand of Chhattisgarh above 4000MW and high generation at Marwa	ICT loaded above 70% of its capacity	400/220 kV, 500 MVA ICT augmentation (2 nd) at Marwa	Planned in the matching time-frame of additional 800 MW unit (U3) at Marwa
(6.).	2x315MVA Jagdalpur ICTs	Demand of Chhattisgarh above 4000 MW with 1900 MW drawl	When total loading on ICTs are above 310 MW, ICTs become N-1 non-compliant.	400/220 kV, 500 MVA ICT (3 rd) at Jagdalpur.	Planned (SCoD: 2027-28)

1.5.2 Operational constraints in Transmission lines

S. No.	Corridor	Season/ Antecedent Conditions	Description of the constraints	Remedial Measures Planned	Status and SCoD
(1.)	400 kV Lara-Kotra D/c line	During import from SR through +/- 800 kV Raigarh-puglur HVDC, high generation at Kotra, less generation at	When total loading on lines is above 1230 MW, lines become N-1 non-compliant. When HVDC Raigarh-Puglur powerflow is from SR to WR, full generation at Kotra and less export towards NR on Champa-Kurukshetra	Reconductorin g of existing Lara I – Raigarh (Kotra) 400kV D/c line (~20 km.) with twin HTLS conductor with minimum capacity of	Planned (SCOD: 15 months from award to implementing agency)

		Lara and, high power order in HVDC Champa Kurukshetra bipole	HVDC cause more loading on these lines. Further, regulating power order either in HVDC Champa or Raigarh results in critical loading on these lines.	2100MVA per ckt at nominal voltage	
(2.)	220 kV Bhatapara (PG)-Suhela-1 & 2 line	During peak demand and when Chhattisgarh drawl is above 1900 MW	Lines become N-1 non-compliant when loaded above 280 MW. Remedial Action:	220 kV Bhatapara (PG)-Bhatapara D/c line	Under Construction (SCoD: 2026-27)
(3.)	220 kV Raipur (PG)-Borjara S/c line	During peak demand and when Chhattisgarh drawl is above 1900 MW	N-1 non-compliance observed when line is loaded above 208 MW.	2x500 MVA, 400/220 kV S/s at Durg along with 220 kV outlets from Raipur PS (Durg).	2x500 MVA ICTs at Durg commissioned SCoD of 220 kV downstream network: 2026-27
(4.)	220 kV Raipur(PG) - Urla S/c line	During peak demand and when Chhattisgarh drawl is above 1900 MW	N-1 non compliance observed when line is loaded above 208 MW.		
(5.)	220 kV Bhatapara (PG)-Bhatapara (CG) S/c	During peak demand and when Chhattisgarh drawl is above 1900 MW	N-1 non-compliance observed when line is loaded above 208 MW.	Bhatapara (PG)-Bhatapara (CSPTCL) 220 kV D/c line	Under Construction (SCoD: 2026-27)
(6.)	220 kV Korba (West)-Chhuri-D/c	During peak demand period	N-1 non compliance observed when line is loaded above 330 MW.	2x500 MVA, 400/220 kV S/s at Dharamjaygarh along with 220 kV outlets from Dharamjaygarh	2x500 MVA 400/220 kV ICTs at Dharamjaygarh commissioned. SCoD of 220

				(PG) to Chhuri & Dharamjaygarh (CG)	kV downstream network: 2026- 27
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1.5.3 Nodes experiencing low voltage

S. No.	ICT	Season/ Antecedent Conditions
(1.).	400kV Bhatapara-PG	During peak hours
(2.).	400 kV Kurud	During peak morning hours
(3.).	400 kV Bhilai	During peak hours
(4.).	400kV Jagdalpur	During peak hours

Chapter-2

Transmission System Requirement by 2034-35

2.1 Load flow studies for preparation of Resource Adequacy of transmission system in Chhattisgarh

System studies for the resource adequacy plan for Chhattisgarh's InSTS 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
- (iii) Short Circuit Studies

The load flow studies have been carried out for the year 2034-35 with following considerations:

- (i) CSPTCL's transmission network has been represented at 132 kV and above voltage levels, where loads have been considered incidental on 132 kV 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 has been considered as recommended in the Manual on Transmission Planning Criteria of CEA (2023).
- (iv) Transformation capacity of the substations have been considered as per the Manual on Transmission Planning Criteria of CEA (2023) as given below:
- (v) 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

2.2 The transmission constraints observed as per load flow studies and planned remedial measures are as given below:

S.No.	Transmission Constraints	Remedial Measures
1.	High loading in Raipur- doma 220kV D/c line	Reconductoring of the line with HTLS conductor of 450/500 MVA capacity
2.	High loading in Gurur- Kanker 220kV D/c	Devri- Kanker 220 kV D/c line

	line	
3.	High loading in Korba West- Korba East 220kV D/c line	Loading under limit with retirement of 4x210 MW units and commissioning of 2x660 MW units at Korba West.
4.	High loading in Kanhera-Urla 220 kV D/c line	Raipur Pool- Kanhera 400 kV D/c line & Raipur Pool -Siltara 220 kV S/c line
5.	High loading in Bhorjara-Raipur 220 kV D/c line	Reconductoring of the line with HTLS conductor of 450/500 MVA capacity
6.	High loading in Ambikapur- Bishrampur line	Upgradation of Askala (near Ambikapur) 132 kV S/s to 220 kV & shifting of loads from 220 kV Bishrampur to Askala
7.	High loading in 2x315 + 1x500 MVA 400/220 kV ICTs at Raigarh (PG) when Intra-State generation is low and drawl from ISTS is higher	400/220 kV, 500 MVA ICT augmentation (4 th) at Raigarh (PG) along with reconductoring of Raigarh(PG)-Raigarh(CSPTCL) 220kV D/c line

2.3 Summary of the transmission schemes to be added under Intra-State during 2026-2030 is given below (Details given in Annexure A):

2.3.1 Transformation capacity (MVA) to be added under intra-state during 2026-30

Table 2.1: Transformation capacity (MVA) to be added under Intra-state during 2026-30

Transformation Capacity (MVA)				
S.No.	Voltage level	Under Construction	Planned	Total
1	400/220 kV	630	6185	6815
2	220/132 & 220/33 kV	2560	5200	7760
3	132/33 kV	1486	3928	5414
	Total	4676	15313	19989

2.3.2 Transmission lines (ckm) to be added under intra-state during 2026-30

Table 2.2: Transmission lines (ckm) to be added under Intra-state during 2026-30

Transmission Lines (ckm)				
S.No.	Voltage level	Under Construction	Planned	Total
1	400 kV	44	407	451

2	220 kV	819	2022	2841
3	132 kV	710	1904	2614
	Total	1573	4333	5906

2.3.3 Substations to be added under intra-state during 2026-30

Table 2.3: No of substations to be added to be added during 2026-30

Voltage level	No of substations
400 kV	5
220 kV	20
132 kV	34
Total	59

2.3.4 Major transmission schemes and substations planned under intra-state to be added during 2026-30 are given below:

- (i) Power Evacuation plan for new 2x660 MW Critical Thermal Power Plant Korba (West)
- (ii) 400/220 kV, 2x500 MVA, Devri Distt- Balod GIS S/s with 125 MVAR, 420 kV bus reactor
- (iii) 400/220/132 kV, 2x500 +2x200 MVA Aarang S/s Distt- Raipur with 125 MVAR, 420 kV bus reactor
- (iv) 400 /220 kV, 2x500 MVA, Korba (East) S/s with 125 MVAR, 420 kV bus reactor
- (v) 400/220 kV, 2x500 MVA, Pithora S/s with 125 MVAR, 420 kV bus reactor
- (vi) 400/132 kV, 2x315 MVA Kunkuri , Distt- Jaspur (GIS) S/s with 125 MVAR, 420 kV bus reactor

2.3.5 Reactive compensation planned under intra-state during 2026-30:

Table 2.4: Bus reactors planned under intra-state during 2026-30

Voltage level (kV)	Under Construction		Planned		Total	
	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR
400	1	125	7	875	8	1000

Table 2.5: Line reactors planned under intra-state during 2026-30

Voltage level (kV)	Under Construction		Planned		Total	
	No of reactor	MVAR	No of reactor	MVAR	No of reactor	MVAR
400	0	0	2	126	2	126

2.4 Summary of the transmission schemes to be added under Intra-State during 2030-2035 is given below (Details given in Annexure B):

2.4.1 Transformation capacity (MVA) to be added under intra-state during 2030-2035

Table 2.6: Transformation capacity (MVA) planned to be added under Intra-state during 2030-2035

S.No.	Voltage level	Transformation Capacity (MVA)
1	400/220 kV	3500
2	220/132 & 220/33 kV	2000
3	132/33 kV	1638
	Total	7138

2.4.2 Transmission lines (ckm) to be added under intra-state during 2030-35

Table 2.7: Transmission lines (ckm) to be added under Intra-state during 2030-2035

S.No.	Voltage level	Transmission Lines (ckm)
1	400 kV	240
2	220 kV	540
3	132 kV	927
	Total	1707

Table 2.8: No of substations to be added to be added during 2030-35

Voltage level	No of substations
400 kV	3

220 kV	3
132 kV	10
Total	16

2.4.3 Reactive compensation planned under intra-state during 2030-2035:

Table 2.9: Line reactors planned under intra-state during 2030-35

	Bus Reactors		Line Reactors	
Voltage level (kV)	No of reactors	MVAR	No of reactors	MVAR
400	4	500	1	63

2.4.4 Major transmission schemes and substations planned under intra-state to be added during 2030-2035 are given below:

- Transmission System for evacuation of Marwa U3 (800 MW)
- Upgradation of 220/132 kV Bilaigarh S/s to 400 kV level with 2x500 MVA, 400/220 kV ICTs and 125 MVAR, 420 kV bus reactor
- 400/220/132 kV, 2x500 MVA + 2x200 MVA, Kanhera, Distt-Raipur (GIS) S/s with 125 MVAR, 420 kV bus reactor
- 400/220 kV 2x500 MVA, Ambikapur S/s with 125 MVAR, 420 kV bus reactor
- Transmission System for evacuation of Hasdeo Bango PSP (800 MW) (to be connected with Dhardehi S/s through 400 kV dedicated transmission line)

2.5 Transmission elements to be added in Chhattisgarh under ISTS during 2026-30 is given below:

Scheme /details	Voltage level	Total ckm	Total MVA	Status	Anticipated SCoD
WR-ER Inter-Regional Network Expansion Scheme					
Establishment of 3x1500MVA, 765/400kV S/s (on 765kV Bus section-II & 400kV Bus Section-II) at Raigarh (Kotra)-II S/s in Chhattisgarh with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor (on 765kV Bus section-II & 400kV Bus Section-II)	765/400 kV		4500	Under bidding	2028 - 2029
Bypassing of Raigarh (Tamnar) – Dharamjaygarh (Sec-B) 765kV D/c line & Raigarh(Kotra) – Raigarh (Tamnar) 765kV D/c line at Raigarh (Tamnar) S/s so as to form at Raigarh (Kotra) – Dharamjaygarh (Sec-B) 765kV D/c line	765 kV	20		Under bidding	2029 - 2030

LILO of Dharamjaygarh (Sec-B) – Jharsuguda (Sec-A) 765kV D/c line at Raigarh (Kotra)-II S/s	765 kV	160		Under bidding	2028 - 2029
Raigarh (Tamnar)@- Raigarh(Kotra)-II S/s 765kV D/c line	765 kV	100		Under bidding	2029 - 2030
765kV, 2x330MVA switchable line reactor along with associated bays in each line of Raigarh(Tamnar) – Jamshedpur 765kV D/c line at Raigarh(Tamnar) end.	765 kV			Under bidding	2029 - 2030
Raigarh(Tamnar)@ – Jamshedpur (New) 765kV D/c line	765 kV	630		Under bidding	2029 - 2030
ICT augmentation					
1x500 MVA, 400/220 kV ICT augmentatiuon at Raipur (4 th)	400/220 kV		500	Under Construction	2027-28
1x500 MVA, 400/220 kV ICT augmentation (4 th) at Raigarh (PG)	400/220 kV		500	Planned	2029-30
Total		910	5500		

Chapter-3

Recommendations

- 3.1** Intra-State Transmission system to be added by 2029-30 in Chhattisgarh (132 kV and above) comprises of 5906 ckm of transmission lines and 19989 MVA of transformation capacity as detailed below:

Table 3.1: Transformation capacity and transmission lines (MVA & ckm) to be added under Intra-state during 2026-30.

3.2	Ckm and MVA to be added during 2026-30			
	400 kV	220 kV	132 kV	Total
Transmission lines (ckm)	451	2841	2614	5906
Transformation Capacity (MVA)	6815	7760	5414	19989

comprises of 1707 ckm of transmission lines and 7138 MVA of transformation capacity as detailed below:

Table 3.2: Transformation capacity and transmission lines (MVA & ckm) to be added under Intra-state during 2030-35.

	Ckm and MVA to be added during 2030-35			
	400 kV	220 kV	132 kV	Total
Transmission lines (ckm)	240	540	927	1707
Transformation Capacity (MVA)	3500	2000	1638	7138

- 3.3** All the planned transmission network should be timely implemented. In the past, it has been observed that many of the planned intra-state transmission schemes in Chhattisgarh have been delayed, causing the constraints in the transmission system. Tendering and award of the transmission elements should also be expedited.
- 3.4** Considering the high fault levels in Chhattisgarh, it is recommended that all new substations should be planned with higher short circuit capacity as per the manual on Transmission Planning Criteria.
- 3.5** CSPTCL should keep adequate space provision in the new substations for extension/augmentation to meet future load growth. Also, CSPTCL should provide

appropriate space provisions 33 kV bays in their 220/33 kV and 132/33 kV grid substations for supply of power to DISCOMs.

- 3.6** Transmission schemes which are not yet under implementation and are at planned stage for implementation by 2029-30 and 2034-35, may be taken up earlier or later as per requirement of Discom, actual load growth, commissioning of upcoming power plants etc. Accordingly, the Resource Adequacy study for transmission system in the state may be reviewed in the coming years.

Annexure A**Transmission schemes to be added in Chhattisgarh under Intra-State during 2026-30**

S.No	Scheme/ Details	Voltage (kV)	Line Length (in ckm)	Total MVA	Status (Under Construction/Planned)	Anticipated Schedule of Commissioning
A	Power Evacuation plan from upcoming thermal plants					
1	Power Evacuation plan for new 2x660 MW Critical Thermal Power Plant Korba (West)					
	400 kV generation switchyard for 2x660 MW thermal units at Korba (West) with 125 MVAR, 420 kV bus reactor	400	0	0	Planned	2028-29
	LILO of 400 kV Korba(W)-Dhardehi & 400 kV Korba(W)-Marwa lines at new 400 kV S/s Korba (W) New (2x660MW)	400	12	0	Planned	2028-29
B	400 kV substation along with associated transmission lines					
1	400/220 kV, 2x500 MVA, Devri Distt- Balod GIS S/s with 125 MVAR, 420 kV bus reactor	400/220	0	1000	Planned	2029-30
	LILO of both circuits of PGCIL Raipur (Kumhari)-Bhadrawati DCDS line at Devri along with 63 MVAR switchable line reactor at Devri end of Bhadravati- Deori section)	400	75	0	Planned	2029-30
	Conversion of existing line reactor at Raipur(Kumhari) end to Switchable line reactor (to be taken up under ISTS)		0	0	Planned	2029-30
	LILO of both circuit of 220 kV DCDS Bhilai-Gurur line at Devri	220	86	0	Planned	2029-30
	Devri- Kanker 220 kV D/c line	220	160	0	Planned	2029-30
2	400/220/132 kV, 2x500 +2x200 MVA Aarang S/s Distt- Raipur with 125 MVAR, 420 kV bus reactor.	400/220/132	0	1400	Planned	2029-30
	LILO of both circuit of 400 kV DCDS Raita-Kurud line at Aarang	400	40	0	Planned	2029-30
	Arang- Parsada (Naya Raipur) 220	220	60	0	Planned	2029-30

	kV D/c line					
	LILO of 132 kV Kachna-Mandir hasoud line or 132 kV Madirhasod-Kuhera line at Aarang	132	60	0	Planned	2029-30
	132 kV DCDS Aarang-Gullu line	132	3	0	Planned	2029-30
3	400 /220 kV, 2x500 MVA, Korba (East) S/s with 125 MVAR, 420 kV bus reactor	400/220	0	1000	Planned	2029-30
	400 kV D/c line from Korba(E) to be terminated into Korba(W) to Raita & Korba(W) to KNTPC so as to form • Korba (E) – Korba (W) 400 kV D/c line • KNTPC- Raita 400 kV S/c line	400	20	0	Planned	2029-30
	LILO of 220 kV Korba (W) - Visharampur DCDS line at Korba (East)	220	10	0	Planned	2029-30
4	400/220 kV, 2x500 MVA, Pithora S/s with 125 MVAR, 420 kV bus reactor	400/220	0	1000	Planned	2029-30
	LILO of both 400 kV circuits of Raipur (PGCIL) - JPL DCDS line at proposed 400/220 kV S/s Pithora with 80 MVAR SLR at Pithora end of Pithora- JPL section and 50 MVAR SLR at Pithora end of Pithora - Raipur section	400	260	0	Planned	2029-30
	220 kV DCDS Pithora - Saraipali line	220	102	0	Planned	2029-30
	220 kV DCDS Pithora - Paraswani line	220	102	0	Planned	2029-30
5	400/132 kV, 2x315 MVA Kunkuri , Distt- Jaspur (GIS) S/s with 125 MVAR, 420 kV bus reactor	400/132	0	630	Under Construction	2028-29
	LILO of both circuit of 400 kV Sipat (PGCIL)- Ranchi line DCDS line at Kunkuri	400	32	0	Under Construction	2028-29
	LILO of 132 kV Pathalgaon-Jaspur & 132 kV Pathalgaon-Kansabel lines at Kunkuri	132	32	0	Under Construction	2028-29
C	220/132 kV substations & associated Lines					
1	220/132/33 kV, 2x160 MVA + 2x40 MVA, Kanker S/s.	220/132/33	0	400	Under Construction	2027-28
	LILO of 220 kV Gurur - Barsoor	220	40	0	Under	2027-28

	line at Kanker				Constructi on	
	LILO of 132 kV Kanker (Existing) - Bhanupratappur line at Kanker (Proposed)	132	30	0	Under Constructi on	2027-28
2	220/132/33 kV, 2x160 + 2x40 MVA Ahiwara S/s.	220/132/33	0	400	Under Constructi on	2026-27
	LILO of 220 kV Khedamara-Bemetara line & LILO of 220 kV Khedamara- JK Laxmi line at 220 kV S/s Ahiwara	220	6	0	Under Constructi on	2026-27
	220 kV DCSS line from 220 kV J.K.Laxmi cement switchyard to 220 kV S/s Ahiwara	220	1	0	Under Constructi on	2026-27
	2nd circuiting of 220 kV line from 220/132 kV S/s Ahiwara to 220 kV S/s Bemetara	220	52	0	Under Constructi on	2026-27
	LILO of 132 kV Bhilai - Berla line at 220 kV S/s Ahiwara	132	19	0	Under Constructi on	2026-27
3	220/132/33 kV, 2x160 + 2x40 MVA, Semariya S/s.	220/132/33	0	400	Under Constructi on	2026-27
	LILO of one circuit of 220 kV Thelkadih - Khedamara D/c line at 220 kV S/s Semariya	220	4	0	Under Constructi on	2026-27
	LILO of 132 kV Dhamdha - Rasmada line at 220 kV S/s Semariya	132	10	0	Under Constructi on	2026-27
	LILO of 2nd circuit of 220 kV Khedamara-Thelkadih D/c line at 220 kV SS Semariya	220	10	0	Planned	2027-28
4	220/132/33 kV, 2x160 MVA + 2x40 MVA Daldalseoni S/s.	220/132/33	0	400	Under Constructi on	2026-27
	220 kV DCDS line from 400 kV S/s Raita to Daldalseoni S/s.	220	30	0	Under Constructi on	2026-27
	LILO of 132 kV Urla - Kachana line at Daldalseoni S/s.	132	1	0	Under Constructi on	2026-27
5	220/132/33 kV, 2x160 MVA + 2x40 MVA, Dharamjaigarh S/s.	220/132/33	0	400	Under Constructi on	2029-30
	LILO of 220 kV DSPM - Banari/ DSPM-Suhela line at 220 kV S/s Dharamjaigarh & 220 kV DCDS Dharamjaygarh (PGCIL)-	220	70	0	Under Constructi on	2029-30

	Dharamjaygarh (Hati) CSPTCL DCDS line					
	LILO of 132 kV Batauli - Pathalgaon line at proposed 220 kV S/s Dharamjaigarh	132	40	0	Under Construction	2029-30
6	220/132/33 kV, 2x160 MVA + 2x40 MVA, Kumhari S/s.	220/132/33	0	400	Under Construction	2026-27
	220 kV DCDS Bhilai/Khedamara - Kumhari line.	220	20	0	Under Construction	2026-27
	LILO of 132 kV Bhilai - Sarona and 132 kV Bhilai - Gudhiyari lines at proposed 220 kV S/s Kumhari	132	20	0	Under Construction	2026-27
7	220/132/33 kV, 2x200 MVA, Malda S/s.	220/132/33	0	400	Under Construction	2028-29
	220 kV DCDS Raigarh (PGCIL) - Malda line.	220	116	0	Under Construction	2028-29
	LILO of 1 Ckt of 220 kV Saraipali - Raigarh line at proposed 220 kV S/s Malda/Sarangarh.	220	50	0	Under Construction	2028-29
	132 kV DCDS Malda- Sarangarh line	132	20	0	Under Construction	2028-29
	132 kV DCDS Malda - Dabhara line	132	50	0	Under Construction	2028-29
8	220/132/33 kV, 2x160 MVA + 2x40 MVA, Patarras (Bacheli) S/s.	220/132/33	0	400	Under Construction	2028-29
	Rearrangement work for 220 kV DCDS supply to proposed 220/132 kV S/s Patarras (Bacheli) by following rearrangement: (i) 220 kV Barsoor (C.G.) –Lower Sileru (AP) DCDS presently charged at 132 kV line (one circuit connected to 132 kV Sukma and other circuit connected at 132 kV Dornapal, connectivity with Lower Sileru dismantled) to be terminated at Patarras, thereby creating following lines: (a) Barsoor- Patarras D/c line to be charged at 220 kV level (b) Patarras- Sukma 132 kV S/c line	220	4	0	Under Construction	2028-29

	(c) Patarras- Dornapal 132 kV S/c line (iii) Bypassing of one circuit of Barsoor- Patarras 220 kV D/c line and one circuit of Barsoor- Jagadapur (Parchanpal) 220 kV D/c line at Barsoor so as to form following lines: (a) Barsoor- Jagadapur (Parchanpal) 220 kV S/c line (b) Barsoor- Patarras 220 kV S/c line (c) Patarras- Jagadapur (Parchanpal) 220 kV S/c line					
	LILO of 132 kV Barsoor-Kirandul DCDS line at proposed 220 kV S/s Patarras	132	40	0	Planned	2028-29
9	220/132 kV, 2x200 MVA, Gandai S/s Distt - Khairagarh-Chhuikhadan-Gandai (by up-gradation of existing 132/33 kV SS Gandai)	220/132	0	400	Planned	2028-29
	LILO of 220 kV PGCIL Dhamdha- Gendpur DCDS line.	220	70	0	Planned	2028-29
10	220/132/33 kV, 2x200 MVA Sankra S/s (by up-gradation of existing 132/33 kV SS Sankra) Distt- Mahasamund (220/132/33 kV)	220/132/33	0	400	Planned	2029-30
	220 kV DCDS Pithora (400 kV) – Sankra DCDS line	220	120	0	Planned	2029-30
	LILO of 132 kV Basna-Jhalap line at proposed 220 kV Sankra S/s	132	20	0	Planned	2029-30
11	220/132 kV, 2x200 MVA Magarload S/s Distt.- Dhamtari (by up-gradation of existing 132/33 kV S/s)	220/132	0	400	Planned	2028-29
	220 kV DCDS line from 400 kV Kurud at proposed 220 kV S/s Magarlod	220	130	0	Planned	2028-29
12	220/132/33 kV, 2x200 MVA + 2x63 MVA, Naya Raipur S/s Distt- Raipur GIS)	220/132/33	0	526	Planned	2028-29
	220 kV DCDS line from 220 kV S/s Parswani to Naya Raipur	220	60	0	Planned	2028-29
	132 kV DCDS Naya Raipur - Kuhera line	132	18	0	Planned	2028-29
	LILO of 132 kV Kuhera-Paraswani & 132 kV Kuhera-	132	4	0	Planned	2028-29

	Mandirhasod lines at proposed 220 kV S/s Naya Raipur					
13	220/132/33 kV, 2x200 MVA + 2x63 MVA, Kalcha (Nagarnar) S/s Distt- Baster (220/132/33 kV)	220/132/33	0	526	Planned	2029-30
	220 kV DCDS from 400 kV S/s Jagdalpur to Kalcha	220	60	0	Planned	2029-30
	LILO of 132 kV Jagdalpur-Nagarnar line at proposed 220 kV S/s Kalcha.	132	30	0	Planned	2029-30
14	220/132/33 kV, 2x200 MVA + 2x63 MVA, Nevai S/s Distt-Durg (220/132/33 kV)	220/132/33	0	526	Planned	2028-29
	LILO of both circuit of 220 kV Bhilai - Devri Balod DCDS line at proposed 220 kV SS Nevai	220	40	0	Planned	2028-29
	LILO of both circuit of 132 kV Bhilai-Ruabandha DCDS line at proposed 220 kV SS Nevai	132	60	0	Planned	2028-29
15	220/132/33 kV, 2x200 MVA + 2x63 MVA, Bartori (Tilda Industrial area) Distt- Raipur	220/132/33	0	526	Planned	2028-29
	LILO of 220 kV Dhardehi-Raita (Siltara) line at proposed 220 kV SS Bartori	220	30	0	Planned	2028-29
	220 kV DCDS line from 400 kV SS Aarang to proposed 220 kV SS Bartori	220	70	0	Planned	2028-29
	132 kV DCDS Bartori-Tulsi line	132	30	0	Planned	2028-29
16	220/132/33 kV, 2x200 MVA + 2x63 MVA, Dhaba S/s Distt-Rajnandgaon (Up-gradable upto 400 kV SS)	220/132/33	0	526	Planned	2029-30
	220 kV D/c line from Thelkadih at proposed 220 kV Dhaba	220	70	0	Planned	2029-30
	220 kV D/c line from Devri Balod at proposed 220 kV Dhaba	220	100	0	Planned	2029-30
	LILO of 132 kV Dongargarh-Indamara line at proposed 220 kV Dhaba	132	30	0	Planned	2029-30
	132 kV DCDS Dhaba-Mahraipur(Bhandarpur) line	132	30	0	Planned	2029-30
17	220/132/33 kV, 2x200 MVA + 2x63 MVA, Devri (Balod) S/s.	220/132/33	0	526	Planned	2028-29
	220 kV DCDS Devri (400 kV S/s)-Devri line	220	4	0	Planned	2028-29
	132 kV DCDS Devri-Balod line	132	60	0	Planned	2028-29
	LILO of 132 kV Rajnandgaon-Dongargaon line at proposed 220	132	70	0	Planned	2028-29

	kV Devri					
18	220/132/33 kV, 2x200 MVA + 2x63 MVA, Bilaigarh, Distt-Bilaigarh- Sarangarh S/s (up-gradable to 400 kV)	220/132/33	0	526	Planned	2029-30
	220 kV Pithora-Bilaigarh DCDS line	220	120	0	Planned	2029-30
	132 kV DCDS Beltikari-Bilaigarh line	132	10	0	Planned	2029-30
	132 kV DCDS Kasdol-Bilaigarh (400 kV) line	132	60	0	Planned	2029-30
19	220/132/33 kV, 2x200 MVA+ 2x63 MVA, S/s Pratappur.	220/132/33	0	526	Planned	2029-30
	220 kV D/c Ambikapur (400 kV) - Pratappur line	220	90	0	Planned	2029-30
	LILO of 132 kV Vishrampur-Pratapur & Vishrampur-Wadraf Nagar D/c line at proposed 220 kV S/s Pratappur	132	40	0	Planned	2029-30
20	220/132/33 kV, 2x200 MVA + 2x63, MVA Kirandul S/s.	220/132/33	0	526	Planned	2029-30
	220 kV DCDS Patarras-Kirandul line	220	70	0	Planned	2029-30
	LILO of 132 kV Kirandul-M/s ESSAR & Kirandul-NMDC line at proposed 220 kV S/s Kirandul	132	10	0	Planned	2029-30
D	132/33 kV substations & associated Lines					
1	132/33 kV, 2x63 MVA, Sarora S/s Urla.	132/33	0	126	Planned	2029-30
	132 kV DCDS line from 220 kV S/s Borjhara to Sarora	132	20	0	Planned	2029-30
	132 kV DCDS line from 220 kV S/s Kumhari to Sarora	132	30	0	Planned	2029-30
2	132/33 kV, 2x40 MVA, Baloda S/s.	132/33	0	80	Planned	2028-29
	132 kV DCDS line from 220 kV S/s Banari to Baloda	132	42	0	Planned	2028-29
3	132/33 kV, 2x40 MVA, Betar S/s.	132/33	0	80	Under Construction	2026-27
	LILO of 1 circuit of proposed 132 kV DCDS line from 220 kV S/s Gendpur (Kawardha) to 132 kV S/s Baijalpur at proposed 132 kV S/s Betar	132	24	0	Under Construction	2026-27
4	132/33 kV , 2x40 MVA, Keshkal S/s.	132/33	0	80	Under Construction	2026-27

					on	
	LILO of 132 kV Kanker-Kondagaon line at Keshkal	132	2	0	Under Constructi on	2026-27
5	132/33 kV, 2x63 MVA, Metal Park, Siltara S/s.	132/33	0	126	Under Constructi on	2026-27
	LILO of existing Urla-Kachna & Urla-Siltara section of Urla-Siltara-Kachna D/c line at proposed 132 kV S/s Metalpark	132	2	0	Under Constructi on	2026-27
6	132/33 kV, 2x40 MVA, Arjuni (Dhamtari) S/s.	132/33	0	80	Under Constructi on	2026-27
	132 kV DCDS Patan - Arjuni line	132	76	0	Under Constructi on	2026-27
7	132/33 kV, 2x40 MVA, Raigarh Medical College S/s.	132/33	0	80	Planned	2027-28
	LILO of 132 kV Kondatarai - Jurda (NTPC) line at Raigarh Medical College S/s	132	6	0	Planned	2027-28
8	132/33 kV, 2x40 MVA, Bilaigarh S/s	132/33	0	80	Under Constructi on	2027-28
	132 kV DCDS Bilaigarh - Sheorinarayan line	132	84	0	Under Constructi on	2027-28
9	132/33 kV Bhilmi (Beltara) S/s	132/33	0	80	Under Constructi on	2027-28
	LILO of 132 kV SV Power - Koni line at Bhilmi (Beltara)	132	38	0	Under Constructi on	2027-28
10	132/33 kV, 2x63 MVA, Urla Colony (GIS) S/s.	132/33	0	126	Planned	2027-28
	132 kV DCDS line from 220 kV S/s Urla to Urla Colony (HTLS)	132	1	0	Planned	2027-28
	LILO of 132 kV Borjhra - Urla line at Urla Colony	132	2	0	Planned	2027-28
11	132/33 kV, 2x40 MVA, Jeora-Sirsa S/s Distt. Durg.	132/33	0	126	Planned	2027-28
	132 kV DCDS line from 220/132 kV S/sSemaria to Jeora-Sirsa.	132	38	0	Planned	2027-28
12	132/33 kV, 2x40 MVA, Maharajpur S/s Distt-Rajnandgaon.	132/33	0	80	Under Constructi on	2026-27
	132 kV DCDS Thelkadih (Rajnandgaon)- Maharajpur	132	104	0	Under Constructi	2026-27

	(Bhandarpur) line				on	
13	132/33 kV, 2x40 MVA S/s Jamgaon (R), South Patan, Distt- Durg	132/33	0	80	Under Construction	2026-27
	132 kV DCDS line from 220/132kV S/s Patan to Jamgaon	132	40	0	Under Construction	2026-27
14	132/33kV, 2x40 MVA, Anda S/s Distt- Durg.	132/33	0	80	Under Construction	2026-27
	132 kV DCDS line from 220/132kV S/s Patan to Anda	132	62	0	Under Construction	2026-27
15	132/33kV, 2x40 MVA, Tarekela S/s Tahsil-Pithora Distt- Mahasamund	132/33	0	80	Under Construction	2027-28
	LILO of one circuit of 132 kV Saraipali-Sarangarh DCDS line at Tarekela	132	56	0	Under Construction	2027-28
16	132/33 kV, 2x40 MVA, Rohara S/s District –Balodabazar - Bhatapara	132/33	0	80	Planned	2027-28
	132 kV DCDS line from 220/132 kV S/s Suhela to Rohara	132	44	0	Planned	2027-28
17	132/33 kV, 2x40 MVA, Sargawa S/s Distt. Surguja (Ambikapur)	132/33	0	80	Planned	2028-29
	LILO of 132 kV DCDS Ambikapur - Bishrampur line at Sargawa S/s	132	20	0	Planned	2028-29
18	132/33 kV, 2x63 MVA, Saraipali S/s Distt- Raigarh	132/33	0	126	Planned	2028-29
	LILO of 132 kV DCSS Gerwani - Gharghoda line at Saraipali S/s	132	2	0	Planned	2028-29
19	132/33 kV, 2x40 MVA Lakhanpur S/s, Distt. Surguja (Ambikapur)	132/33	0	80	Planned	2028-29
	132 kV DCDS Lakhanpur-Vishrampur line	132	66	0	Planned	2028-29
20	132/33 kV, 2x63 MVA, Narharpur (Kanker) S/s (up gradable to 220 kV)	132/33	0	126	Planned	2028-29
	132 kV DCDS from 220 kV Kanker to Narharpur	132	70	0	Planned	2028-29
21	132/33 kV, 2x63 MVA, Bodri-Dadar S/s (Mahasamund) (up-gradable to 220 kV)	132/33	0	126	Planned	2028-29
	132 kV DCDS from 220 kV SS Pithora/Sankra/Jhalap to Bodri-Dadar	132	60	0	Planned	2028-29

	LILO of 132 kV Jhalap-Bagbahra line at Bodri-Dadar	132	40	0	Planned	2028-29
22	132/33 kV, 2x63 MVA, Madeli (Chhura) S/s (up gradable to 220 kV)	132/33	0	126	Planned	2028-29
	LILO of 132 kV Rajim-Paraswani line at proposed 132 kV S/s Madeli	132	70	0	Planned	2028-29
	132 kV DCDS line from 220 kV Magarload to Madeli	132	80	0	Planned	2028-29
23	132/33 kV, 2x63 MVA, Palari - Watgan S/s (Baloda-bazar) (up gradable to 220 kV)	132/33	0	126	Planned	2029-30
	132 kV DCDS line from 220 kV Suhela to Palari-Watgan	132	60	0	Planned	2029-30
24	132/33 kV, 2x63 MVA, Jhikki, Bagicha (Jashpur) S/s.	132/33	0	126	Planned	2028-29
	132 kV DCDS line from 400 kV Kunkuri Jaspur to Jhikki	132	60	0	Planned	2028-29
25	132/33 kV, 2x63 MVA, Kushmi (Balrampur) S/s.	132/33	0	126	Planned	2028-29
	132 kV DCDS line from Kunkuri to Kushmi	132	160	0	Planned	2028-29
26	132/33 kV, 2x63 MVA, Sahaspur (Kawardha) S/s.	132/33	0	126	Planned	2029-30
	132 kV DCDS line from 220 kV SS Gandai to Sahaspur	132	60	0	Planned	2029-30
27	132/33 kV, 2x63 MVA, Askala (Ambikapur) (up-gradable to 220 kV)	132/33	0	126	Planned	2028-29
	LILO of 132 kV Ambikapur-Batouli line at Askala	132	14	0	Planned	2028-29
28	132/33 kV, 2x63 MVA, Farsabahr-Pathalgaon S/s.	132/33	0	126	Planned	2029-30
	132 kV DCDS line from 400 kV SS Kunkuri to Farsabahr	132	160	0	Planned	2029-30
29	132/33 kV, 2x63 MVA, Uphara, Distt-Bemetara S/s (Up gradable to 220 kV S/s)	132/33	0	126	Planned	2027-28
	LILO of 132 kV Bhilai-Simga line at Uphara	132	10	0	Planned	2027-28
30	132/33 kV, 2x63 MVA, Kodonar S/s Distt-Bastar.	132/33	0	126	Planned	2027-28
	LILO of 132 kV DCDS Barsoor-Jagdulpur line at Kodonar	132	4	0	Planned	2027-28
31	132/33 kV, 2x63 MVA, Kamal vihar (Koushliya Vihar) S/s Distt-Raipur	132/33	0	126	Planned	2029-30
	132 kV DCDS line from 220 kV	132	0	0	Planned	2029-30

	Doma to Kamal Vihar					
32	132/33 kV, 2x63 MVA Bhansula-Ambagarh Chowki S/s, Distt-Mohla-Manpur	132/33	0	126	Planned	2028-29
	132 kV DCDS Devri (Balod)-Bhansula line	132	80	0	Planned	2028-29
	LILO of 132 kV Dongargaon-Mohla DCDS line at Bhansula	132	20	0	Planned	2028-29
33	132/33 kV 2x63MVA Abhanpur (Bhelvadih) S/s Distt-Raipur, (up-gradable to 220 kV)	132/33	0	126	Planned	2029-30
	132 kV DCDS line from Rajim or LILO of 132 kV Rajim-Paraswani line at proposed 132 kV SS Abhanpur	132	80	0	Planned	2029-30
	132 kV DCDS line from 220 kV SS Doma to Abhanpur or LILO of 132 kV Doma-Mana line at Abhanpur	132	20	0	Planned	2029-30
34	132/33 kV, 2x63 MVA, Kunkuri S/s Distt.- Jashpur	132/33	0	126	Planned	2028-29
	LILO of Both circuit of 132 kV Kunkuri (400/132 kV S/s) - Jashpur D/c line at Kunkuri (132 kV)	132	10	0	Planned	2028-29
E	Other System Improvement Works (Connectivity from Central Sector and other intra-state works)					
1	400 kV DCDS Bilaspur pool Sipat(765 /400 kV PGCIL)-Bilaspur(Dhardehi) line (Quad Moose)	220	60	0	Under Construction	2026-27
2	LILO of 400 kV Raita-Jagdalspur line at 400 kV S/s Kurud with 50 MVAR line reactor at 400 kV S/s Kurud end of Kurud- Jagdalspur section	400	0	0	Under Construction	2026-27
3	Scheme to control fault level at Raipur (PG) & Bhilai (Khedamara) S/s (CSPTCL)- Bypassing of Raipur – Bhilai 400 kV S/c line at Bhilai end and connecting it to one circuit of Bhilai – Raita 400 kV T/c line so as to form Raipur – Raita 400 kV S/c line.	400	12	0	Under Construction	2026-27
4	2x125 MVAR bus reactor at 400	400	0	0	Planned	2027-28

	kV SS Dhardehi.					
5	220 kV DCDS Bilaspur(Dhardehi)-Mungeli line on Twin moose	220	36	0	Planned	2028-29
6	220 kV DCDS Raipur pool (PGCIL) - Thelkadih line	220	41	0	Under Construction	2027-28
7	220 kV DCDS Raipur pool (PGCIL) -Gendpur (Kawardha) line	220	65	0	Under Construction	2026-27
8	220 kV DCDS Raipur pool (PGCIL) - Bemetara line	220	42	0	Under Construction	2026-27
9	LILO of 220 kV Urla-Siltara line on Hybrid scheme at 765 kV S/s Raipur pool (PGCIL Dhamdha)	220	35	0	Under Construction	2028-29
10	220 kV DCDS Dharamjaigarh (PGCIL) - Dharamjaigarh (Hati) line.	220	45	0	Under Construction	2028-29
11	220 kV DCDS Dharamjaigarh (PGCIL) - Churri line	220	50	0	Under Construction	2028-29
12	220 kV DCDS Bhatapara (PGCIL) - Bhatapara line	220	8	0	Under Construction	2026-27
13	220 kV DCSS Patan - Doma line	220	22	0	Under Construction	2027-28
14	LILO of 220 kV Dhardehi-Siltara (Earlier Mopka-Siltara) line at 400 kV S/s Raita	220	29	0	Under Construction	2028-29
15	LILO of 220 kV Bhatapara-Bhilai (Earlier Bhatapara-Doma) line at 400 kV S/s Raita	220	29	0	Under Construction	2028-29
16	LILO of 220 kV Korba-Raigarh line at 765/400/220 kV Dharamjaigarh (PGCIL)	220	20	0	Planned	2027-28
17	LILO of 220 Gurur-Narayanpur line at 220 kV SS Kanker	220	24	0	Planned	2028-29
18	220 kV DCDS Paraswani-Jhalap line. (Presently on 132 kV)	220	70	0	Planned	2029-30
19	2nd circuiting of 220 kV Doma – Patan DCSS line.	220	40	0	Planned	2027-28
20	220 kV DCDS Arang-Bartori line	220	80	0	Planned	2029-30
21	LILO of 220 kV Gurur-Barsoor line at 220 kV S/s Narayanpur	220	2	0	Planned	2027-28
22	220 kV DCDS Paraswani-Rajim line	220	60	0	Planned	2028-29

F	ICT augmentations					
1	Addl 500 MVA 400/220 kV Transformer at 400 kV S/s Jagdalpur (3rd)	400/220	0	500	Planned	2027-28
2	Augmentation of existing 315 MVA transformer-II by 500 MVA ,400/220 kV transformer at 400 kV S/s Khedamara	400/220	0	185	Planned	2028-29
3	Additional 1x500 MVA 400/220 kV Transformer (3rd) at 400 kV SS Dhardehi	400/220	0	500	Planned	2028-29
4	Additional 1x500 MVA 400/220 kV Transformer (4th) at 400 kV SS Raita	400/220	0	500	Planned	2028-29
5	Additional 1x500 MVA 400/220 kV Transformer (4th) at 400 kV SS Kurud (Dhamtari).	400/220	0	500	Planned	2028-29
G	Reconductoring of existing lines					
1	Raipur- doma 220 kV D/c line with HTLS conductor of 450/500 MVA capacity	220	44		Planned	2027-28
2	Bhorjara-Raipur 220 kV D/c line with HTLS conductor of 450/500 MVA capacity	220	52		Planned	2027-28
3	Raigarh(PG)-Raigarh (CSPTCL) 220 kV D/c line with HTLS conductor of 450/500 MVA capacity	220	30		Planned	2027-28

Annexure B**Transmission schemes planned to be added in Chhattisgarh under Intra-State during 2030-2035**

S.No.	Scheme/ Details	Voltage (kV)	Line Length (in ckm)	Total MVA
A	Power Evacuation plan from upcoming thermal plants			
1	Transmission system for evacuation of power from Marwa (U3: 800 MW)			
	125 MVAR, 420 kV bus reactor at Marwa	400	0	0
	Upgradation of 220/132 kV Bilaigarh S/s to 400 kV level with 2x500 MVA, 400/220 kV ICTs and 125 MVAR, 420 kV bus reactor	400/220	0	1000
	400 kV DCDS Marwa-Bilaigarh line on TM	400	160	0
	220 kV DCDS line from 220 kV SS Nandorkhurd to Marwa	220	70	0
	1x500 MVA 400/220 kV ICT augmentation (2nd) at Marwa TPS	400/220	0	500
B	400 kV substation along with associated transmission lines			
1	400/220/132 kV, 2x500 MVA + 2x200 MVA, Kanhera, Distt-Raipur (GIS) S/s with 125 MVAR, 420 kV bus reactor	400/220/132	0	1400
	Raipur Pool- Kanhera 400 kV D/c line by utilizing a portion of Raipur- Raipur Pool 400 kV D/c line	400	60	0
	LILO of one circuit of 220 kV Urla-Borjhora DCDS line on hybrid mode (Mono pole, XLPE cable etc) & LILO of Urla-Raita 220 kV S/c line at proposed 400/220/132 kV Kanhera S/s	220	40	0
	132 kV DCDS Kanhera-Siltara-II line	132	20	0
	132 kV DCDS Kanhera-Sarora/Urla colony line	132	30	0
2	400/220 kV 2x500 MVA, Ambikapur S/s with 125 MVAR, 420 kV bus reactor	400/220	0	1000
	LILO of 400 kV D/c Mahan Energen Limited (MEL)- Bilaspur PS line along with 63 MVAR SLR at Ambikapur end of Ambikapur- Bilaspur section	400	20	0
	LILO of 220 kV Korba-Vishrampur line at Ambikapur	220	120	0
	Upgradation of 132 kV Askala to 220 kV level with 2x200 MVA 220/132 kV ICT	220/132		400
	Ambikapur- Askala 220 kV D/c line	220	120	0

C	220/132 kV substations & associated Lines			
1	220/132/33 kV, 2x200 MVA + 2x63 MVA, Kuhri/Jhalap S/s Distt- Mahasamund.	220/132/33	0	526
	220 kV DCDS Arang-Jhalap line.	220	100	0
	LILO of 132 kV Jhalap-Bagbahra DCDS line at proposed 220 kV Kuhri/Jhalap S/s	132	50	0
2	220/132/33 kV, 2x200 MVA + 2x63 MVA, Nandorkhurd , Distt.- Shakti (220/132/33 kV)	220/132/33	0	526
	LILO of 220 kV Korba-Raigarh line at proposed 220 kV SS Nandorkhurd	220	30	0
	LILO of 132 kV Champa-Chaple & Champa-Adbhar line at proposed 220 kV SS Nandorkhurd	132	60	0
3	220/132/33 kV, 2x200 MVA + 2x63 MVA, Hanfa, Distt-Bilaspur	220/132/33	0	526
	LILO of 220 kV Dardehi-Mopka line at proposed 220 kV Hanfa	220	60	0
	LILO of 132 kV Chakarbhata-Kota line at proposed 220 kV Hanfa.	132	40	0
D	132/33 kV substations & associated Lines			
1	132/33 kV, 2x40 MVA, Chotiya Distt. Korba S/s.	132/33	0	126
	LILO of 132 kV Bishrampur -Bango line at Chotiya S/s	132	30	0
2	132/33 kV, 2x63 MVA, Sonadih S/s Distt-Balodabazar (Up-gradable to 220 kV S/s)	132/33	0	126
	LILO of 132 kV Bhatapatra-Chilhati line at Sonadih	132	10	0
	2nd circuiting of Balodabazar-Lafarze line	132	17	0
3	132/33 kV, 2x63 MVA, Antagarh S/s Distt-Kanker	132/33	0	126
	132 kV DCDS line from 220 kV SS Narayanpur to Antagarh	132	120	0
4	132/33 kV, 2x63 MVA, Jilda S/s Distt-Korea	132/33	0	126
	LILO of 132 kV Bango-Bishrampur line at Jilda	132	30	0
5	132/33 kV, 2x63 MVA, Songra S/s Distt-Surajpur.	132/33	0	126
	132 kV DCDS Bishrampur-Songara line	132	60	0
6	132/33 kV, 2x63 MVA, Sariya S/s Distt.- Raigarh.	132/33	0	126
	132 kV DCDS line from 220 kV S/s Malda to Sariya	132	100	0
7	132/33 kV, 2x63 MVA, S/s Randhna , Distt-Kondagaon	132/33	0	126
	132 kV DCDS line from 220 kV S/s Narayanpur to Randhna	132	100	0
	LILO of 132 kV Parchanpal-Kondagaon line at proposed 132/33 kV S/s Randhna	132	20	0
8	132/33 kV, 2x63 MVA Cherpalli (Bhopalpatnam) Distt-Bijapur S/s.	132/33	0	126
	132 kV DCDS line from 132 kV S/s Bijapur to Cherpalli	132	120	0
9	132/33 kV, 2x63MVA Dharamjaigarh S/s.	132/33	0	126

	132 kV DCDS line from proposed 220 kV S/s Hati (Dharamjaigarh) to Dharamjaigarh	132	60	0
10	132/33 kV, 2x63 MVA Nageda Distt-Balodabazar-Bhatapara S/s.	132/33	0	126
	132 kV DCDS line from proposed 220 kV S/s Bhilaigarh to Nageda	132	60	0