



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा में / To,

सूची के अनुसार

As per list

विषय: वर्ष 2034-35 तक ओडिशा के लिए अंतर-राज्यीय ट्रांसमिशन संसाधन पर्याप्तता योजना पर रिपोर्ट ।

Subject: Report on "Intra State Transmission Resource Adequacy Plan for Odisha by the year 2034-35".

The Electricity (Transmission System Planning, Development and Recovery of Inter-State Transmission Charges) Rules 2021, provides that CEA to draw up short term plan every year on rolling basis for up to next five years and perspective plan every alternate year on rolling basis for next ten years.

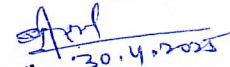
Further, according to "Guidelines for Resource Adequacy Planning Framework for India" issued by MoP on 28.06.2023, Central Electricity Authority shall publish Long-term National Resource Adequacy Plan (LT-NRAP) which shall determine the optimal Planning Reserve Margin (PRM) requirement at the All-India level conforming to the reliable supply targets. This national-level PRM would act as a guidance for all the States/UTs to consider while undertaking their RA exercises.

Accordingly, the transmission system requirement of Odisha by the year 2034-35 has been identified in consultation with Odisha state, CTUIL and ERLDC.

The report on the "Intra State Transmission Resource Adequacy Plan for Odisha by the year 2034-35" is enclosed herewith.

Encl.: As above.

भवदीय/Yours faithfully,


(बी.एस.बैरवा / B.S. Bairwa)

मुख्य अभियंता/Chief Engineer

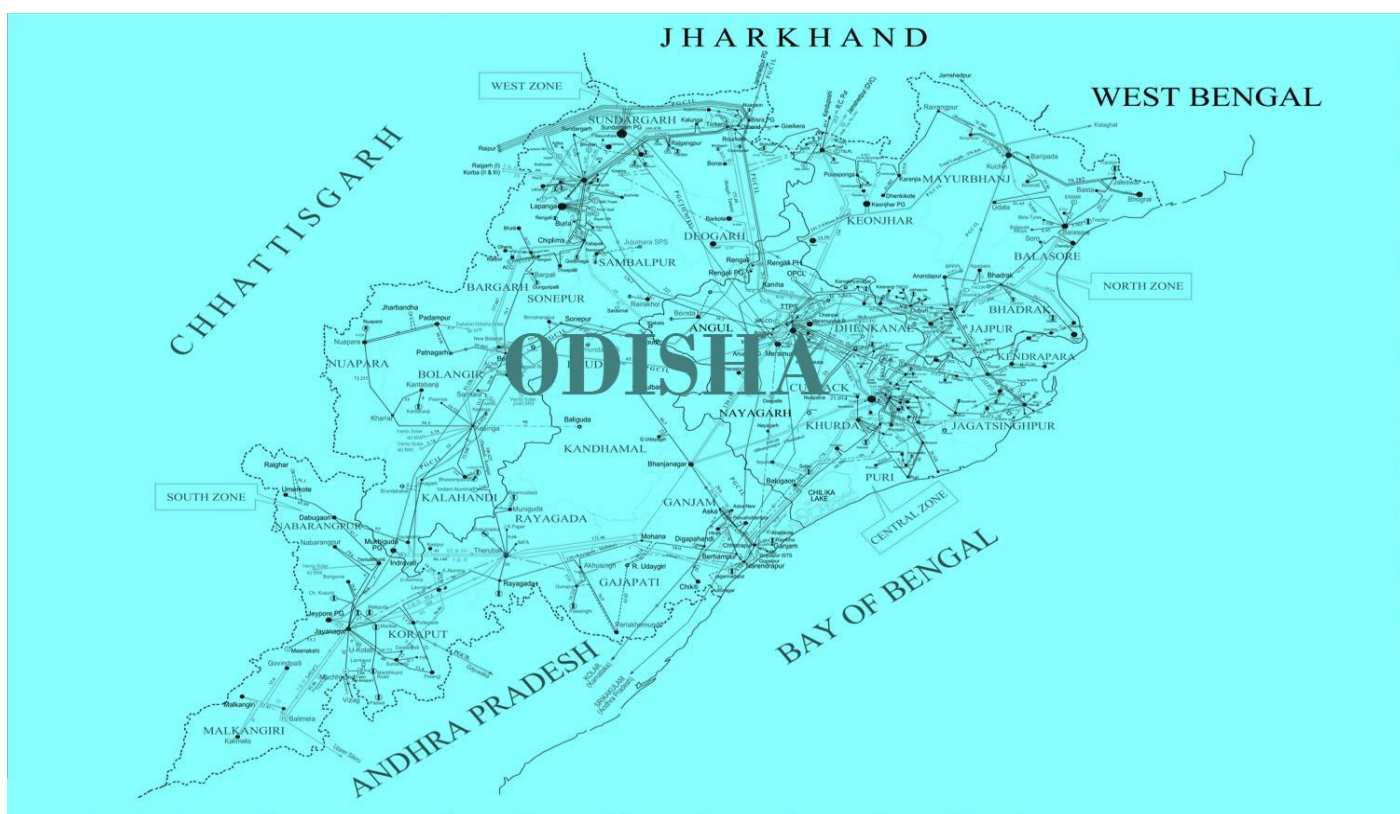
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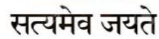
सत्यमेव जयते

REPORT ON INTRA STATE TRANSMISSION RESOURCE ADEQUACY PLAN FOR ODISHA BY THE YEAR 2034-35



CENTRAL ELECTRICITY AUTHORITY

New Delhi



April, 2025

Central Electricity Authority
PSPA-II Division

Executive Summary

Electricity (Transmission System Planning, Development and Recovery of Inter-State Transmission Charges) Rules 2021, provides that CEA to draw up short term plan every year on rolling basis for up to next five years and perspective plan every alternate year on rolling basis for next ten years.

Further, Guidelines for Resource Adequacy Planning Framework for India issued by MoP on 28.06.2023 provides that CEA to prepare the Resource Adequacy Plan for each states. Generation resource adequacy studies for the Odisha State has already been carried out by CEA.

For the transmission part, this report presents a comprehensive assessment of the intra-state transmission infrastructure in Odisha, with projections and planning aimed at ensuring transmission resource adequacy by the year 2034-35. The analysis incorporates current electricity demand, projected growth, existing and planned transmission assets, and key recommendations for strengthening the state's transmission network.

The highest peak demand met by Odisha in 2024-25 was 6,905 MW, and Projected Peak Demand by 2034-35 is estimated to 11,400 MW, which is near about the Electric Power Survey report. Further, existing Installed Capacity in the state is about 8335 MW including allocation from Central Sector Generation. Presently, the state has 8,607 ckm of 132 kV lines, 6,835 ckm of 220 kV lines and 1,197 ckm of 400 kV lines. It has transformation capacity of 10,290 MVA at 132 kV, 12,292 MVA at 220 kV and 3,835 MVA at 400 kV level.

Considering the anticipated demand, generation capacity, demand pattern, operational feedback from ERLDC and SLDC, system studies have been conducted for Summer evening peak, Winter evening peak (High Thermal), June Solar Max, February Night Off-peak and August Peak Load demand scenarios for the timeframe 2031-32 and 2034-35 in consultation with Odisha, CTUIL and Grid-India. Based on the studies, the requirement of transmission system by the year 2034-35 has been identified.

A total of 22,680 MVA transformation capacity addition/augmentation and 4,836 ckm of new transmission lines and 295 ckm reconductoring of old lines and 146 ckm underground cabling at an estimated cost of ₹ 12,798 cr. would be required in the intra-state transmission system for meeting the electricity demand of the state by the year 2034-35. Further, reactive power compensation need to be provided at various substations at distribution level for addressing low voltage issues.

Summary of year-wise MVA capacity, ckm addition and tentative expenditure required for implementation of above recommended proposals is given below

Year	Capacity Addition (in MVA)				Transmission line addition (in ckm)				Reconductoring (in ckm)			UG Cable (ckm)	Estimated Cost (in Rs. Cr.)
	132 kV	220 kV	400 kV	765 kV	132 kV	220 kV	400 kV	765 kV	132 kV	220 kV	400 kV	132 kV	
2026-27	0	480	2080	0	474.76	160	350	0	129.79	65.72	25.6	98	2397.31
2027-28	360	0	1000	3000	148	50	50	74	74.06	0	0	48	1884

2028-29	0	640	3600	0	56	56	1210	0	0	0	0	0	1947
2029-30	0	160	500	3000	0	0	200	760	0	0	0	0	2973
2030-31	0	0	2000	0	0	0	114	0	0	0	0	0	590
2031-32	0	0	0	3000	0	0	56	50	0	0	0	0	741
2032-33	0	0	1000	0	0	180	586	0	0	0	0	0	1373
2033-34	0	0	0	0	0	0	0	0	0	0	0	0	0
2034-35	360	0	1500	0	62	60	140	0	0	0	0	0	893
Total	720	1280	11680	9000	740.76	506	2706	884	203.85	65.72	25.6	146	12798.31

To ensure reliable and adequate power supply in Odisha by 2034-35, substantial investments and infrastructure upgrades are essential. With a projected demand of 11,400 MW and local generation and contracted capacity covering only part of this, a robust and resilient transmission network becomes critical. The outlined plan, if implemented timely, will ensure resource adequacy and support economic and industrial development in the state.

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Intra State Transmission Resource Adequacy of Odisha by the year 2034-35

1. Demographics

Odisha is a state in Eastern India, with Bhubaneswar as its capital. It is bordered by the Indian states of West Bengal to the north, Jharkhand to the west, Chhattisgarh to the south-west, and Andhra Pradesh to the south. To the east, it has a coastline along the Bay of Bengal. Odisha covers an area of 155,707 square kilometers (60,119 square miles) and has a population of over 46 million. The state is known for its rich cultural heritage, temples, and diverse communities, including Odia, Tribal, and other ethnic groups. The primary languages spoken are Odia and various tribal languages. Odisha has a significant presence in industries such as steel, aluminium, and textiles, and is also known for its vast mineral resources, particularly bauxite, iron ore, and coal.

2. Electricity profile of state

2.1. Power generation-demand scenario of state:

2.1.1. In the FY 2024-25, Odisha had peak electricity demand of 6905 MW and for FY 2023-24 total electrical energy requirement of 41358 MU. As on March 2025, state has central sector allocation of 1980.22 MW which includes hydro plants (105.01 MW), RES (MNRE) (10 MW) and thermal plants (1865.21 MW). In addition, installed capacity in state sector is 3840.52 MW and installed capacity in private sector is 2513.99 MW. Per capita consumption of the state was 2419 kWh in the year 2022-23.

2.1.2. Peak demand & Energy met by Odisha state during previous seven years is given at Table 2-1 below

Table 2-1 Peak demand & Energy of Odisha

Odisha	Peak Demand(MW)	MW as per EPS	Energy(MU)	MUs as per EPS
2018-19	5,357	4,816	32,145	29,124
2019-20	5,292	5,016	29,692	30,302
2020-21	4,984	5,176	29,848	31,224
2021-22	5,643	5,645	38,339	38,344
2022-23	6,566	6,490	42,631	43,060
2023-24	6,927	6,635	41,358	43,582
2024-25	6,905	6,918	42,786	44,985

Source: PSP and EPS Reports of CEA

2.1.3. The graph indicating the above Peak Demand (MW) & Energy (MU) is given at Figure 2-1 below.

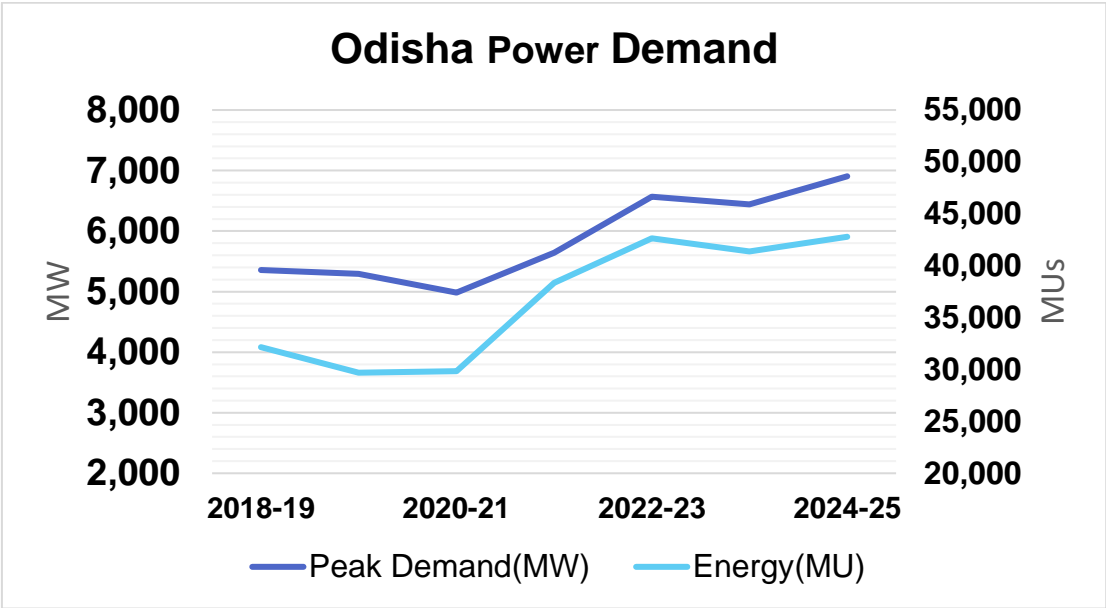


Figure 2-1 Peak Demand and Energy

2.1.4. The peak demand of Odisha generally occurs in the summers. The graph indicating of Seasonal Load variation in the year 2024 is given at Figure 2-2 below.

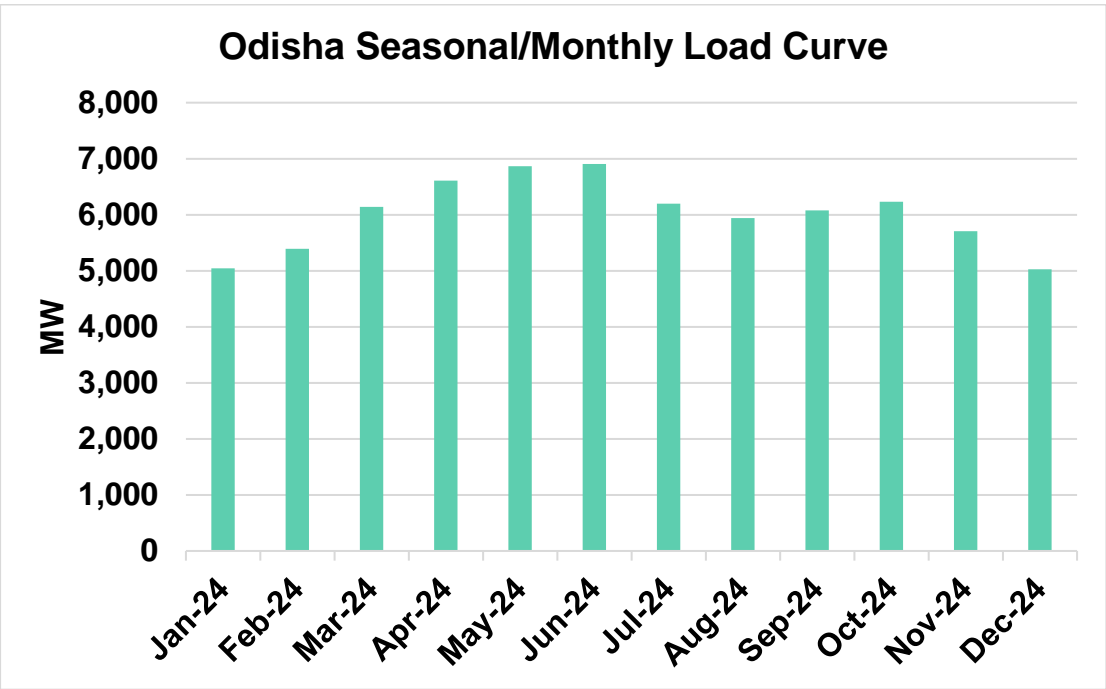


Figure 2-2 Seasonal Load Curve

2.1.5. The graph indicating of Hourly Load variation for four months in the year 2024 is given at Figure 2-3 below. It indicated that peak demand generally occurs in the evening hours of the day.

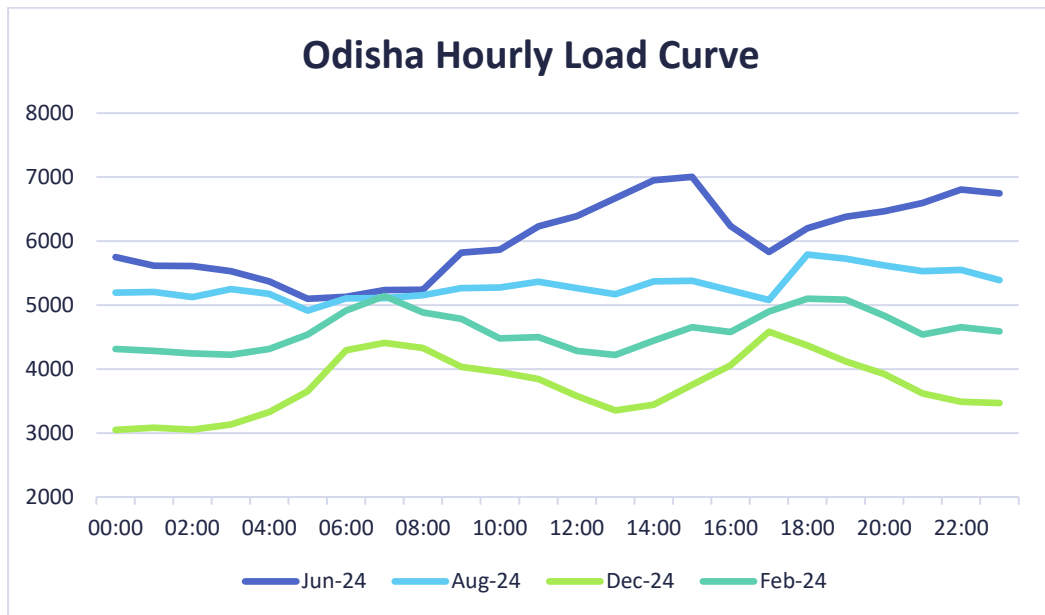


Figure 2-3 Hourly Load Curve

2.1.6. The projected peak electricity demand as per 20th EPS report is 12347 MW in the year 2036-37.

2.1.7. Contracted capacity (MW) by Odisha as on March 2025 is given at Table 2-2 below:

Table 2-2 contracted and installed capacity

SECTOR	HYDR O	THERMAL					NUC L- EAR	R.E.S. (MNRE)	TOTAL
		COAL	LIGNITE	GAS	DIESEL	TOTAL			
State	2074.2 2	1740	0	0	0	1740	0	26.30	3840.52
Private	0	1746	0	0	0	1746	0	767.99	2513.99
Central allocation	105.01	1865.2 1	0	0	0	1865.2 1	0	10	1980.22
Total	2179.2 3	5351.2 1	0.00	0.00	0.00	5351.2 1	0.00	804.29	8334.73
%	26.15	64.20	0.00	0.00	0.00	64.20	0.00	9.65	100

Source: Installed Capacity Report, CEA

2.1.8. The graph indicating the generation capacity mix is given at Figure 2-4 below

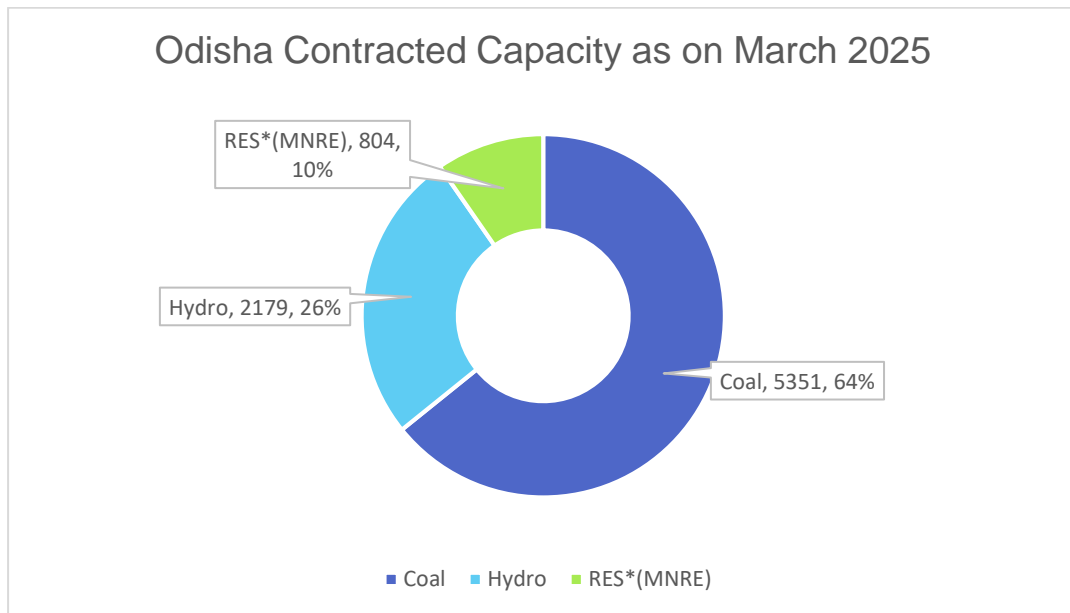


Figure 2-4 Contracted Capacity

2.1.9. As on March 2025, the General Network Access (GNA) quantum for ISTS drawal is 2157 MW and Available Transfer Capability (ATC) of the state is 4202 MW (Import ATC) and 1407 MW (Export ATC) respectively.

3. Existing Transmission System

The details of existing Intra-state and Inter-state transmission system in Odisha are as under.

3.1. Existing Intra State Transmission assets (as on March 2025):

3.1.1. Growth of intra State Transmission assets of Odisha state in past five years is given at Table 3-1 below

Table 3-1 Intra State Transmission assets in Odisha

Financial Year	Voltage (kV)	Transmission lines (ckm)	Substations (MVA)
2018-19	132	6824	8101
	220	5975	8610
	400	1197	2520
2019-20	132	6983	8547
	220	6191	9540
	400	1197	2835
2020-21	132	7396	9166
	220	6222	10300
	400	1197	2835
2021-22	132	8011	9449
	220	6499	11120
	400	1197	3835

2022-23	132	8157	9844
	220	6676	11666
	400	1197	3835
2023-24	132	8480	10161
	220	6831	12272
	400	1197	3835
2024-25	132	8607	10290
	220	6835	12292
	400	1197	3835

*Source: State data

3.1.2. Odisha state has total 8607 ckm of 132 kV, 6835 ckm of 220 kV, 1197 ckm of 400 kV transmission line and 10290 MVA of 132 kV, 12292 MVA of 220 kV, 3835 MVA of 400 kV Substation capacity in Intra-state transmission system. Details of existing system given in **Annexure - I**

3.1.3. The graph indicating of year on year growth of Transmission lines is given at Figure 3-1 below.

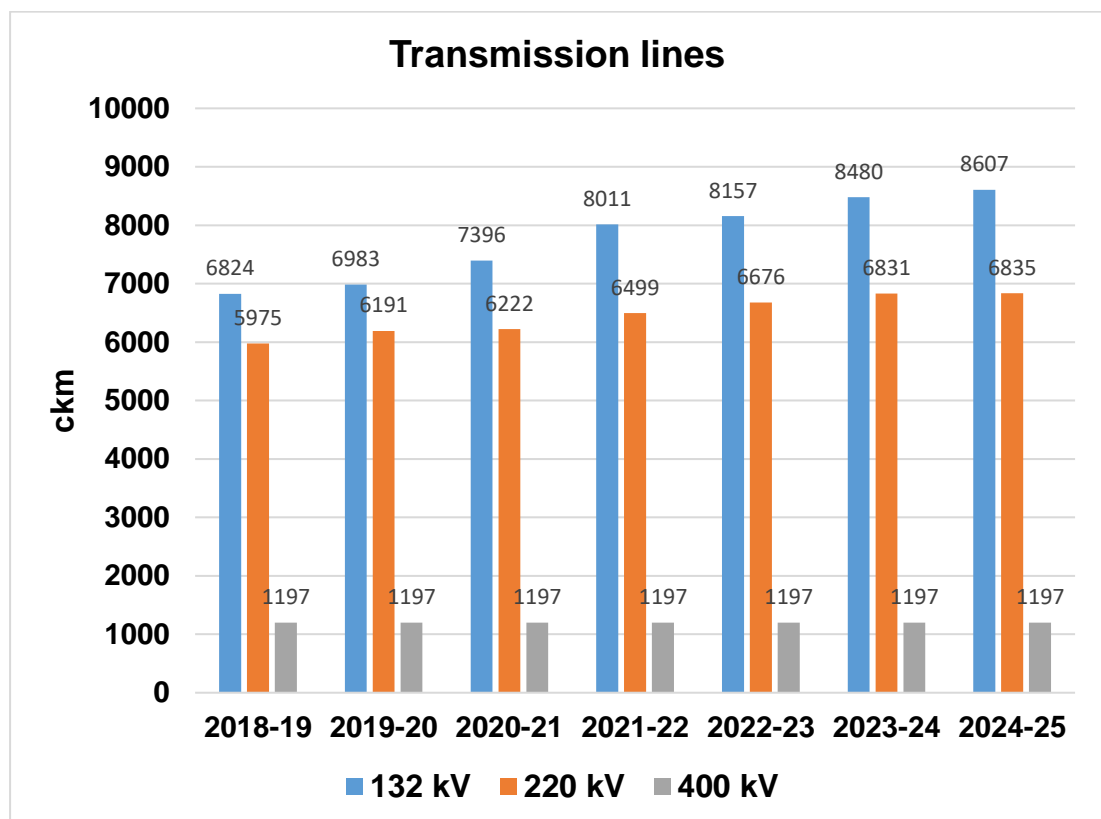


Figure 3-1 Existing Intra-state Transmission Line

3.1.4. The graph indicating of year on year growth of substation MVA capacity is given at Figure 3-2 below.

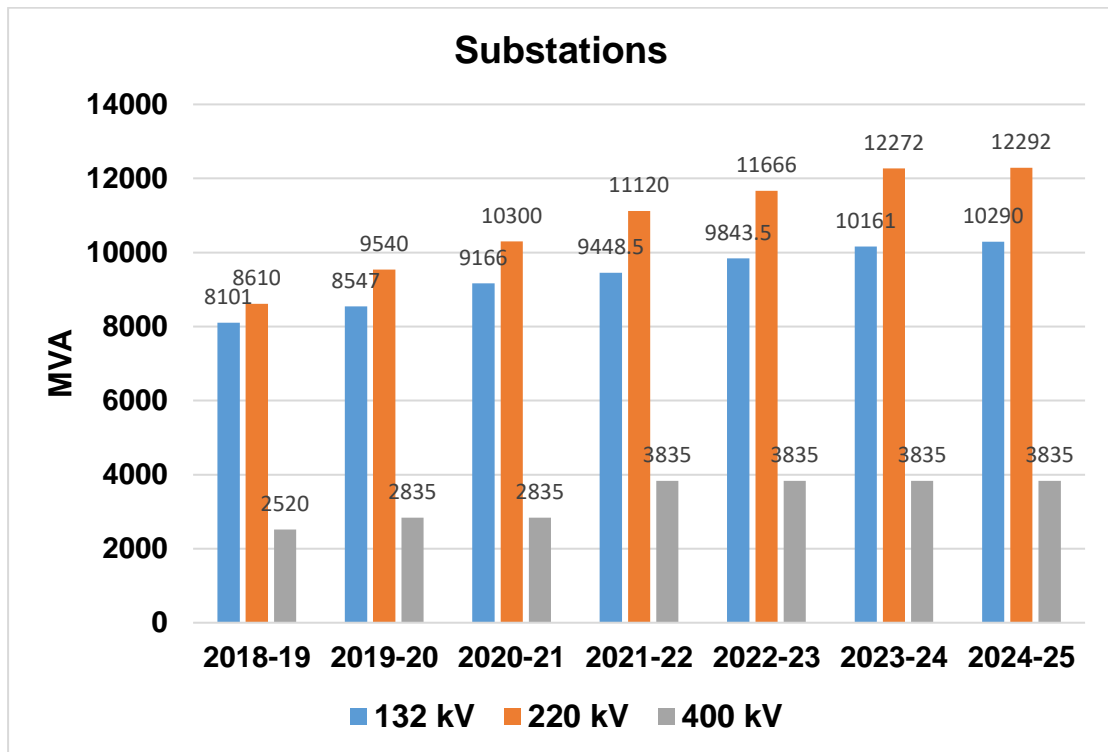


Figure 3-2 Existing Substations

3.2. Existing Inter-State Transmission system in the state:

- 3.2.1. The State has 11 nos. (19,175 MVA+1,000 MW HVDC) existing substation capacity. Further, 1 nos. of 400/220 kV, 500 MVA ISTS substation at Pandiabil and 2 nos. of 765/400 kV, 6000 MVA ISTS substation at Paradeep & Gopalpur is under implementation which is scheduled for completion in November 2026 and December 2027 respectively.
- 3.2.2. The State has a total of 10,315 ckm of existing ISTS network and 1,130 ckm + re-cond. 543 ckm of under construction network. Brief details of the ISTS network (including ISTS lines owned by states) are given at Table 3-2 below:

Table 3-2 Existing, under-implementation ISTS of Odisha

Transmission lines	Existing	Under Construction
400 kV	4683 ckm	240 ckm + re-cond. 543 ckm
765 kV	2894 ckm	890 ckm
HVDC	2738 ckm	-
Total	10,315 ckm	1,130 ckm + re-cond. 543 ckm
Substations	Existing	Under Construction
400/220/132kV	1 (1130MVA+320MVA) Baripada	-
400/220kV	7 (5725MVA) Bolangir, Indravati, Pandiabil, Jeypore, Keonjhar, Rengali & Rourkela	1 (500MVA) Pandiabil (Augmentation)

765/400kV	2 (12000MVA) Angul & Sundargarh	2 (3000MVA + 3000MVA) Paradeep and Gopalpur
HVDC (Back-to-Back)	1 (2x500MW) Gazuwaka	-
Total	11 Nos. (19175MVA+ 1000MW HVDC)	2 Nos. (6500MVA)

4. Under Implementation Transmission System

4.1. Under implementation Intra-State Transmission assets (as on March 2025):

4.1.1. The summary of under implementation Intra-state transmission system in Odisha as on March 2025 are as under. The list of under construction elements is attached at **Annexure-II**.

Table 4-1 Under Implementation Intra-State Transmission assets in Odisha (as on March 2025)

Voltage (kV)	Transmission lines (ckm)	Substations (MVA)
132	1316.28	772.00
220	1049.8	1600.00
400	281.20	1500

4.1.2. The graph showing summary of under implementation Intra State Transmission assets of Odisha state is given at Figure 4-1 below

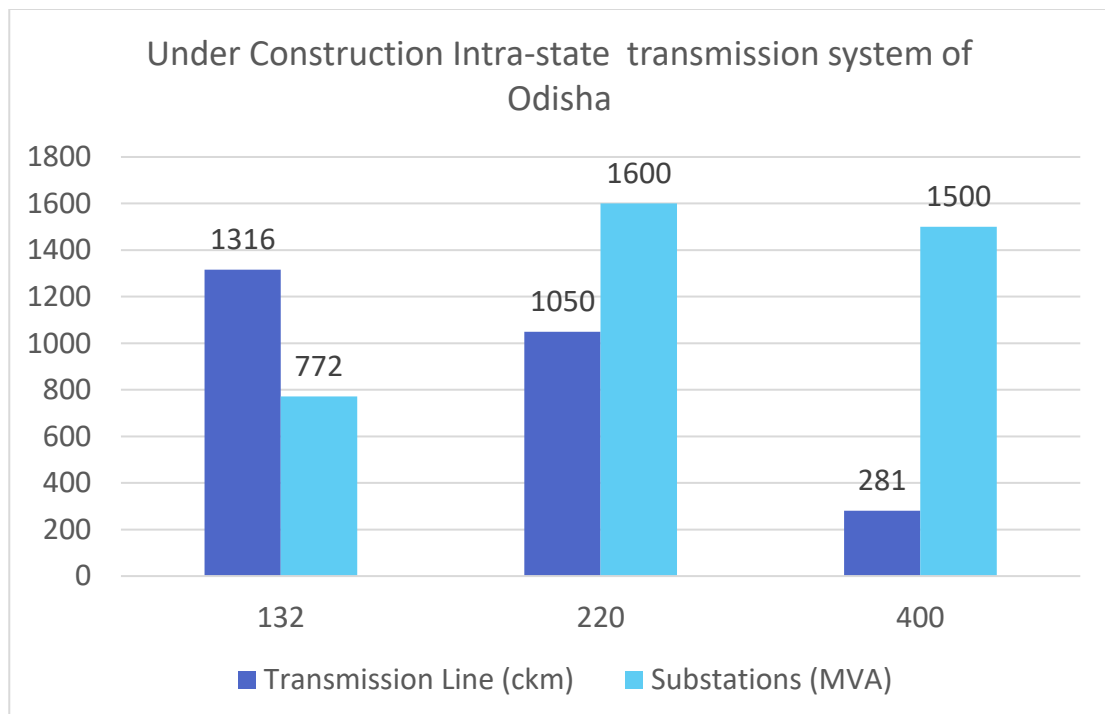


Figure 4-1 Under Construction Intra-state transmission system as on March 2025

4.2. Under implementation Inter-State Transmission assets (as on March 2025):

Detailed of under implementation ISTS network in Odisha (as on March, 2025) are as given below:

4.2.1. Under Construction ISTS (RTM mode)

i. ERES-XXIX: Nov 2025

- Reconductoring of Jharsuguda/Sundargarh (POWERGRID) – Rourkela (POWERGRID) 400kV 2xD/c Twin Moose line with Twin HTLS conductor (with ampacity Single HTLS as 1228A at nominal voltage). (1404ckm)
- Bay upgradation at Rourkela (POWERGRID) end for 3150A rating – 04 nos. diameters in one and half breaker scheme (except 09 nos. existing circuit breakers which are of minimum 3150 A rating).

Note: No upgradation in line bays is envisaged at Jharsuguda/Sundargarh (POWERGRID) S/s as the existing line bays are rated for 3150A.

ii. ERES-42: Sep 2026

- Installation of new 1x500MVA, 400/220kV (3rd) ICT at Pandiabili (POWERGRID) S/s along with associated bay at 220kV level [using the bay no. 413 at 400kV level, which is already under implementation under ERBS-I scheme].

Note: POWERGRID is inter alia implementing a full diameter (413-414-415) under ERBS-I scheme for termination of one circuit of Talcher-III – Pandiabili (POWERGRID) 400kV D/c line in bay no. 415. The other bay of the diameter viz. 413 is planned to be used for termination of the 3rd 400/220kV ICT

iii. ERES-43: Mar 2026

- Reconductoring of Talcher (NTPC) – Meramundali (OPTCL) 400kV D/c (Twin Moose) line (one circuit via Angul and bypassed at Angul) with Twin HTLS conductor (with ampacity of single HTLS as 1228A) – 140ckm
- Upgradation of associated 400kV bay equipment at Talcher (NTPC)
- Upgradation of associated 400kV bay equipment at Meramundali (OPTCL)

Note:

- a) NTPC and OPTCL to provide unconditional access to the ISTS licensee for upgradation of identified bay equipment at their respective substation / generation switchyard. The equipment released after

replacement shall be handed over to NTPC and OPTCL on as is where is basis by the ISTS licensee.

- b) *ISTS licensee needs to coordinate with NTPC and OPTCL for replacement of equipments at Talcher switchyard and Meramundali S/s respectively.*

iv. ERBS-I: Sep 2026

- Extension at Pandiabili 400/220kV GIS substation
 - 400kV GIS line bays: 2 nos. (i.e. one full diameter 413-414-415)
[Bay no. 415 shall be used for termination of one ckt of Talcher-III – Pandiabili 400kV D/c dedicated transmission line (line under the scope of NTPC Ltd.)]
 - 400kV GIB: 600m approx.

[For termination of one ckt of Talcher-III – Pandiabili 400kV D/c dedicated transmission line (line under the scope of NTPC Ltd.) in existing bay no. 410]

4.2.2. Under Construction ISTS (TBCB mode)

i. Inter-regional ER-WR Interconnection (SPV Name: ER-WR Transmission Limited): April 2025 - by POWERGRID

- Jeypore (POWERGRID) – Jagdalpur (CSPTCL) 400kV D/c line (conductor with minimum capacity of 2100 MVA/Ckt at nominal voltage)
- 2 no. of 400kV GIS line bays at Jeypore (POWERGRID) S/s for termination of above line
- 2 no. of 400kV line bays at Jagdalpur (CSPTCL) S/s for termination of above line

ii. ERES-XXXIV: Nov 2026 (by M/s Paradeep Transmission Limited i.e. M/s TATA Power)

- Establishment of Paradeep 765/400kV, 2x1500MVA GIS S/s (7x500MVA single phase units including one spare).
- Angul (POWERGRID) – Paradeep 765kV D/c line along with 765kV, 1x330MVAr switchable line reactor with 500ohm NGR (with NGR bypass arrangement) at Paradeep end in both circuits (190km)
- Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line (10km)
- 2 nos. 765kV, 330MVAr (7x110MVAr single phase units including one spare unit for both bus and line reactors) Bus Reactors along with associated bays at Paradeep substation
- 2 nos. 420kV, 125MVAr Bus reactor

- 2 nos. 765kV line bays (along with space for future switchable line reactor) at Angul 765/400kV S/s for termination of Angul (POWERGRID) – Paradeep 765kV D/c line.
- 2 nos. 400kV GIS diameters [2 no. of bays in different diameter for termination of Paradeep (ISTS) – Paradeep (OPTCL) 400kV D/c (Quad) line and utilization of balance 2 Nos. shall be identified in future for connecting transmission line/reactor/ICT as per ISTS requirement].

#As the bus scheme of Paradeep (OPTCL) GIS S/s is one and half breaker scheme, 2 nos. full diameter i.e. 4 nos. of GIS bays needs to be implemented in the scheme for requirement of 2 nos. GIS bays for termination of Paradeep (OPTCL) – Paradeep 400kV D/c (Quad) line in two different diameters. Utilisation of other 2 nos. GIS bays of these diameters shall be identified in future for connecting transmission line/reactor/ICT as per ISTS requirement.

Note:

- (a) *POWERGRID shall provide space at Angul (POWERGRID) 765/400kV S/s for implementation of 2 no. of 765kV line bays (along with space for future switchable line reactor) for termination Angul (POWERGRID) – Paradeep 765kV D/c line.*
- (b) *OPTCL shall provide space at under implementation Paradeep (OPTCL) 400/220kV GIS S/s (expected by Dec 2024) for implementation of 2 no. of 400kV GIS line bays for termination of Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line and utilization of balance 2 no. of bays shall be identified in future for connecting transmission line/reactor/ICT as per ISTS requirement..*

iii. ERES-XXXIX: Dec 2027 (by M/s ERES-XXXIX Power Transmission Limited i.e. M/s TATA Power):

- Establishment of Gopalpur 765/400 kV 2x1500 MVA GIS S/s
- Angul (POWERGRID) – Gopalpur 765 kV D/c line along with 765 kV, 1x330 MVAr switchable line reactor with 500 ohm NGR (with NGR bypass arrangement) at Gopalpur end in both circuits
- Gopalpur – Gopalpur (OPTCL) 400 kV D/c (Quad) line (10km) @
- 2 nos. 765kV AIS line bays (along with space for future switchable line reactor) at Angul 765/400 kV S/s for termination of Angul (POWERGRID) – Gopalpur 765 kV D/c line, including bus extension in GIS of about 3000m.
- 2 nos. 400 kV GIS line bays at Gopalpur (OPTCL) S/s for termination of Gopalpur – Gopalpur (OPTCL) 400 kV D/c (Quad) line.

Note:

- (a) *Implementation of this scheme may be taken up only upon receipt of Connectivity/GNA applications by CTU/OPTCL.*
- (b) *@To be reviewed based on inputs of OPTCL regarding availability of contiguous land for establishment of both 765/400kV (ISTS) and 400/220kV (Intra-state) substations at Gopalpur.*
- (c) *#The bus scheme of 400kV level at Gopalpur (OPTCL) GIS S/s shall be one and half breaker scheme, 2 nos. full diameter i.e. 4 nos. of GIS bays needs to be implemented in the scheme for requirement of 2 nos. GIS bays for termination of Gopalpur (OPTCL) – Gopalpur 400kV D/c (Quad) line in two different diameters. Utilisation of other 2 nos. GIS bays of these diameters shall be identified in future.*
- (d) *POWERGRID shall provide space at Angul (POWERGRID) 765/400kV S/s for implementation of 2 nos. of 765kV GIS/Hybrid line bays (along with space for future switchable line reactor) for termination Angul (POWERGRID) – Gopalpur 765kV D/c line.*
- (e) *OPTCL shall provide space at under implementation Gopalpur (OPTCL) 400/220kV GIS S/s for implementation of 2 nos. of 400kV GIS line bays for termination of Gopalpur (ISTS)*

iv. ERGS-I: Scheme Agreed in 16th NCT meeting & subsequently completion schedule change agreed in 19th NCT. Bidding is being undertaken by PFCCL. Completion schedule 28-03-2028

- *LILO of both circuits of Angul – Sundargarh (Jharsuguda) 765 kV 2xS/c lines at NLC-Talabira generation switchyard*

Note: *NLC India Ltd. shall provide following at 765 kV level its Talabira generation switchyard:*

- (a) *2 no. 765kV GIS line bays with PIR in different diameters for termination of Talabira – Sundargarh (Jharsuguda) 765 kV D/c line.*
- (b) *2 no. of 765kV GIS line bays with PIR in different diameters for termination of Talabira – Angul 765 kV D/c line, each with 765 kV, 1x240MVAR (3x80MVAR single phase units) switchable line reactor along with 400ohm NGR (with NGR bypass arrangement). There shall be total 7x80MVAR single phase units against 2x240 MVAR line reactors and the 7th 1-phase unit shall be spare as hot stand by. The spare 1-phase shunt reactor unit shall be placed and connected in such a way that the spare unit can be utilized without its physical movement. Further, the connection arrangement of switchable line reactors shall be such that it can be used as line reactor as well as bus reactor with suitable NGR bypass arrangement.*

v. Planned ISTS System

(II). Paradeep – Andaman HVDC Interconnection: Approved in 26th NCT.

A. Transmission Line

- a) 400 kV D/c (Twin Moose) Paradeep 765/400 kV GIS S/s - Paradeep HVDC Station line: 12 km
- b) Paradeep HVDC Station – Andaman Island: 320 kV, 500 MW HVDC Undersea Cable: 1150 km
- c) Andaman Island – Nicobar Island 320 kV, 250 MW HVDC Undersea Cable: 550 km

Remarks: 66 kV lines at Andaman and Nicobar side not considered and expected to be under Andaman & Nicobar Electricity Department Scope

B. Substation

- a) Establishment of new HVDC station at Paradeep, Odisha
 - ± 320 kV, 250 MW VSC based Symmetric Monopole HVDC terminal at Paradeep, Odisha
 - Power will be injected at 400 kV AC bus through VSC converter Transformers
 - 400 kV line bays (AIS): 2 nos. for termination of Paradeep HVDC Station – Paradeep 765/400 kV GIS Substation (400 kV D/c Twin Moose) line
 - 400 kV VSC bays: 2 Nos. for evacuation through VSC Pole
- b) Extension at Paradeep 765/400 kV GIS Substation S/S
 - 2 Nos. 400 kV line bays (GIS) at Paradeep 765/400 kV GIS Substation S/S for termination Paradeep HVDC Station – Paradeep 765/400 kV GIS Substation 400 kV D/c (Twin Moose) line
- c) Establishment of new HVDC station at Andaman Island
 - ± 320 kV, 250 MW VSC based Symmetric Monopole HVDC terminal at Andaman Island
 - Power will be drawn at 66 kV AC bus through VSC interface transformers
 - 12 nos. 66 kV GIS line bays for termination of outgoing 66kV feeder
 - 1 No. 66 kV GIS (3000 A) VSC Bay for evacuation from VSC System
- d) Establishment of new HVDC station at Nicobar Island

- ± 320 kV, 250 MW VSC based Symmetric Monopole HVDC terminal at Nicobar Island
- Power will be drawn at 66 kV AC bus through VSC interface transformers
 - 12 Nos. 66 kV GIS line bays for termination of outgoing 66kV feeder
 - 1 No. 66 kV GIS (3000 A) VSC Bay for evacuation from VSC System

5. System operator feedback

- 5.1. The operational constraint faced in the Intra-state transmission network by Odisha SLDC including transmission line constraints, ICT constraints, nodes experiencing high voltage/ low voltage are attached at **Annexure-III**.
The operational constraint faced in the Intra-state and Inter-state transmission network by ERLDC including transmission line constraints, ICT constraints, nodes experiencing high voltage/ low voltage are attached at **Annexure-IV**.

6. Assumptions for study

- 6.1. Peak electricity demand (MW) of Odisha according to the 20th EPS Report and as estimated by the state are given at Table 6-1 below:

Table 6-1 Peak electricity demand

Reference↓ / Parameter→	Year	Peak Demand (MW)	CAGR
Actual Peak	2024-25	6905	
As per 20 th EPS	2025-26	7252	5.03
	2026-27	7630	5.12
	2027-28	8053	5.26
	2028-29	8514	5.38
	2029-30	9107	5.69
	2030-31	9456	5.38
	2031-32	9782	5.10
State Estimated Peak electricity demand	2034-35	11400*	5.14
As per 20 th EPS	2036-37	12347	4.96

*including upcoming industrial demand.

6.2. Industrial Demand:

The details of major upcoming Industries are as under.

- 6.2.1. The total upcoming industrial demand of intra-state system is 2924 MW which is expected by 2035 at following locations

a) **Duburi** : TATA - 700 MVA, JSPL – 300 MVA

- b) **Balasore** : 300 MW
- c) **Bhadrak** : FACOR – 145 MW, Dhamra LMG – 30 MVA
- d) **Neulopoi** : M/s Waree Energies Ltd. – 330 MW (Solar Panel Manufacturing Plant), M/s Kalyani Steel Ltd.- 203 MW
- e) **Naraj** : M/s JSW Group – 350 MW (Integrated EV Complex)
- f) **Khurdha** : Mundamba Industrial Park (45 MW)
- g) **Angul** : Angul Aluminium Park (50 MW)
- h) **Paradeep** : Paradeep Plastic Park (55 MW)
- i) **Joda** : Rungta Mines-(118 MW), JSW-mines-(118 MW), Triveni Earth movers-(100 MW), Tata steel-(40 MW), ESSR-(40 MW)

6.3. Generation capacity by 2031-32 and 2034-35

The additional generation capacity expected in the state by 2031-32 is 8,430 MW.

The details of upcoming generation by considered for the study time frame i.e. 2031-32 and 2034-35 are as under.

Table 6-2 Upcoming generation by 2034-35

Sl. No	Technology	Place	Capacity	Capacity in Intra-STs (MW)	Considered in Study Time Frame
1.	Thermal	TTPS-III – (Talchar)	1320	660	2031-32
2.	Thermal	Talabira	2400	400	2031-32
3.	Thermal	Darlipalli-II (800 MW)	800	400	2031-32
4.	Thermal	OPGC Stg.-III	1320	1320	2031-32
5.	Floating Solar (FS)	Hirakud Basin	3000	3000	2031-32
6.	FS & PSP	Hirakud & Chipilima Basin	1000	1000	2031-32
7.	PSP	Upper Kolab	320	320	2034-35
8.	PSP	Balimela	500	500	2034-35
9.	PSP	Upper Indravati	600	600	2031-32
10.	Solar	Mamunda	50	50	2031-32
11.	Floating Solar (FS)	Rengali	500	500	2034-35
12.	Wind	Deomali	250	250	2031-32
		Rayagada	250	250	2031-32
		Paradeep-Astaranga	500	500	2031-32
13.	PSP	Duburi (Khandadhar)	700	700	2034-35

14.	PSP	Sunki / Narayanpatna	1000	1000	2034-35
15.	Hydro	Kharag	63	63	2034-35
Total			14573	11513	

6.3.1. The additional generation capacity expected in the state by 2034-35 is 11513 MW. Presently, two generations are also being implemented in the central sector, namely Talcher-III (2x660MW) of NTPC Ltd. and Talabira (3x800MW) of NLC Ltd. Both shall be dual connected, enabling the state to draw its share of power directly from generation switchyard.

6.3.2. For the purpose of the study the Mundra UMPP in Gujarat state has been considered as Swing/Slack Bus.

6.4. The following Parameters were considered during the study

- a) The total intra state generation installed capacity: 15000 MW (including 5,000 MW RE Power) by 2031-32 and 20600 MW by 2034-35 (including 10,000 MW RE Power).
- b) The Inter-state Generation capacity located in Odisha has been considered as 18,600 MW. Further, an HVDC terminal of 6000 MW has been considered at Begunia. Thus, there will be total 24,600 MW injection at ISTS in Odisha.
- c) Peak Demand: 9,782 MW by the year 2031-32 and 11,400 MW (including 3915 MW non-scalable industrial demand) by 2034-35
- d) Additional demand of 12,000 MW has been considered at ISTS network (Paradeep – 6,000 MW and Gopalpur – 6,000 MW).
- e) The demand pattern of the State such as seasonal and hourly variation are consistent, however to capture the load variations, and high solar injection from adjacent states, the scenarios considered for the study are mentioned at Table 6-3 .

Table 6-3 Demand and dispatch of the study

S.No.	Scenario	Demand Factor	Dispatch Factors		
			Hydro	Thermal	Solar
1.	Peak Demand (Summer Evening Peak-Scenario-5)	100%	90%	75%	0%
2.	High Thermal (Winter Evening Peak-Scenario-8)	70%	60%	75%	0%
3.	June Solar Max (Scenario-4)	90%	70%	55%	85%
4.	February Night Off-peak (Scenario-9)	50%	30%	60%	0%

5.	August Peak Load (Scenario-2)	85%	90%	75%	0%
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7. Study Results

- 7.1. Based on the demand and generation projections, the State has outlined its need for new transmission elements. Taking into account operational feedback from Odisha SLDC and ERLDC, as well as the provisions in the Manual on Transmission Planning Criteria (with Amendment-I), 2025, studies were conducted to identify the state's transmission system requirements, which are detailed in Paragraph 8. Taking in account of identified system and related assumptions, the import/export on tie lines by the year 2031-32 are presented in Table 7-1 below:

Table 7-1 Study Results for the time frame 2031-32

Parameter↓ / Scenario→	Peak Demand (Summer Evening Peak- Scenario-5)	High Thermal (Winter Evening Peak- Scenario-8)	June Solar Max (Scenario-4)	February Night Off- peak (Scenario-9)	August Peak Load (Scenario-2)
Generation despatch (intra- state + ISGS located in state) (in MW)	14800 (Intra: 4400 & ISTS*: 10400)	13400 (Intra: 3000 & ISTS*: 10400)	14200 (Intra: 3700 & ISTS*: 10500)	11600 (Intra: 2100 & ISTS*: 9500)	14300 (Intra: 4400 & ISTS*: 9900)
Total load including losses (in MW)	22500 (Intra:10200 & ISTS: 12300)	19700 (Intra:7300 & ISTS: 12400)	21800 (Intra:9400 & ISTS: 12400)	17600 (Intra: 5300 & ISTS*: 12300)	21100 (Intra:8800 & ISTS: 12300)
Net interchange ((-) import / (+)export) at ISTS-STU periphery (in MW)	5500	3600	5500	2500	4200

*Power Import of HVDC at Begunia is taken into consideration.

The import/export on tie lines by the year 2034-35 are presented in Table 7-2 below.

Table 7-2 Study Results for the time frame 2034-35

Parameter↓ / Scenario→	Peak Demand (Summer Evening Peak- Scenario-5)	High Thermal (Winter Evening Peak- Scenario-8)	June Solar Max (Scenario-4)	February Night Off- peak (Scenario-9)	August Peak Load (Scenario-2)
Generation despatch (intra- state + ISGS)	17000 (Intra: 6500 & ISTS*: 10500)	15700 (Intra: 5300 & ISTS*: 10400)	15000 (Intra: 4500 & ISTS*: 10500)	13700 (Intra: 4200 & ISTS: 9500)	17400 (intra: 7500 & ISTS* 9900)

located in state) (in MW)					
Total load including losses (in MW)	24300 (Intra:12000 & ISTS: 12300)	20900 (Intra: 8500 & ISTS:12400)	23600 (Intra: 11000 & ISTS: 12600)	18500 (Intra: 6200 & ISTS: 12300)	22500 (Intra:10200 & ISTS: 12300)
Net interchange (-) import / (+)export) at ISTS-STU periphery (in MW)	5300	2700	6300	1500	2800

**Power Import of HVDC at Begunia is taken into consideration.*

- 7.2. The June Solar Max scenario (i.e. scenario-4) was found to be critical scenario during the system studies.
- 7.3. The line flows and voltage were in permissible limit as mentioned in the Manual on Transmission Planning Criteria (with Amendment-I), 2025 in the critical as well as other scenario after modelling the required additional transmission system by 2031-32 and 2034-35.
- 7.4. The planned transmission system of the state is N-1 contingency criteria compliant. The planned system addresses the all the constraints in the Intra-state transmission as mentioned by Odisha SLDC and ERLDC at **Annexure-III** and **Annexure-IV** respectively. The constraints in ISTS system mentioned at **Annexure-IV** would be duly taken care in the Inter-state transmission planning.
- 7.5. According to CEA's generation recourse adequacy report for Odisha (2033-34) Odisha is likely to have unserved energy in coming years and may need to contract non-fossil capacities for meeting energy requirements other than the planned capacities. The additional quantum of capacities required (other than already planned) to be contracted by 2033-34 is as under.
 - 55 MW from Coal,
 - 4168 MW from solar,
 - 1026 MW from Wind,
 - 645 MW from Hydro,
 - 3393 MW of DRE
- 7.6. The agreed system by the year 2031-32 and 2034-35 was modelled and studied considering the N-1 contingency criteria, in such situation no constraints were observed in transmission system of Odisha taking into account of above future contract capacity requirement. Hence, the transmission system as planned by 2031-32 and 2034-35 (including new schemes identified in this report) ensure the Resource Adequacy in the Transmission system of the State.

8. Intra-state Transmission system requirement by 2034-35.

8.1. New substations alongwith their associated transmission lines which are required by 2034-35 are listed at Table 8-1 below

Table 8-1 New substations alongwith their associated transmission lines of Odisha

Sl. No	Name of the Project with scope of work	Justification	Estimated Cost (₹. Cr.)	Time-frame
1.	i. Establishment of new 400/220/33 kV, (2x500 + 2x40) MVA S/s at Bhandaripokhari Textile Park (Bhadrak)	Upcoming loads in Bhadrak command area FACOR - 145MW Dhamra LMG - 30MVA	259	2026-27
	ii. 420 kV, 1x125 MVA Bus reactor along with associated bays	System strengthening over loading of Duburi – Bhadrak – Balasore line	13	
	iii. LILO of Duburi – Kuchei 400 kV S/c line at Bhandaripokhari (30 ckm Loop In & 30 ckm Loop Out)		98	
	iv. LILO of Kuchei – Pandiabil 400 kV S/c line at Bhandaripokhari (30 ckm Loop In & 30 ckm Loop Out)		98	
	v. Bhandaripokhari - Bhadrak 220kV D/c line (70 ckm)		26	
	vi. LILO of Dhamra – Duburi New 220 kV S/c line at Bhandaripokhari (05 ckm Loop In & 05 ckm Loop Out)		4	
2.	i. Establishment of new 400/220 kV, 2x500 MVA S/s at Neulapoi (Dhenkanal)	Upcoming loads in Dhenkanal command area Waree- 660 MVA Kalani Steel -203 MW	210	2026-27
	ii. 420kV, 1x125 MVA Bus reactor along with associated bays		13	
	iii. LILO of Meramunduli-B – Duburi 400 kV D/c line at Neulapoi (46ckm Loop In & 46ckm Loop Out)		151	
	iv. LILO of Meramunduli-A – Mendhasal 400 kV D/c line at Neulapoi (50 ckm Loop In & 50 ckm Loop Out)		165	
3.	i. Establishment of new 220/132 kV, 2x160 MVA S/s at Khuntuni (Dhenkanal)	System strengthening - overloading of Dhenkanal - ICCL line	50	2026-27
	ii. Neulapoi – Khuntuni 220 kV D/c line (40 ckm line length)		15	
4.	i. Establishment of new 220/33kV, 2x80 MVA S/s at Koida	to meet additional load requirement of 69MW in the industrial area	70	2026-27
	ii. Koida – Barbil GSS 220 kV D/c line (40 ckm line length)		15	

Sl. No	Name of the Project with scope of work	Justification	Estimated Cost (₹. Cr.)	Time-frame
5.	i. Establishment of new 400/220 kV, 2x500 MVA S/s at Remuli (Joda)	To meet the load requirement of upcoming industries in Joda command area	187	2027-28 Additional 3 rd ICT would be required by the year 2034-35
	ii. 420kV, 1x125 MVAR Bus reactor along with associated bays		13	
	iii. LILO of Kaniha – Bisra 400 kV D/c line at Remuli (25ckm Loop In & 25ckm Loop Out)		503	
	iv. LILO of Telkoi – Joda 220 kV S/c line at Remuli (15ckm Loop In & 15ckm Loop Out)		24	
	v. LILO of Keonjhar (OPTCL) – Joda 220Vkv S/c line at Remuli (10ckm Loop in & 10ckm Loop out)		24	
	vi. Remuli – Barbil (upgradation of existing 132kV Barbil GSS to 220kV GSS) 220 kV D/c line (80 ckm line length)		129	
6.	i. Establishment of new 765/400 kV, 2x1500 MVA S/s at Duburi-765 (Kendujhar)	Upcoming loads in Duburi command area TATA – 700 MVA JSPL – 300 MVA And evacuation of power of Duburi (Khandadhar) 700 MW PSP	452	2027-28
	ii. 765kV, 1x240 MVAR Bus reactor along with associated bays		34	
	iii. 420kV, 1x125 MVAR Bus reactor along with associated bays		13	
	iv. LILO of Angul – Paradeep PG 765 kV D/c line at Duburi (15 ckm Loop In & 15ckm Loop Out)		165	
	v. Duburi 765/400 kV S/s – Duburi 400/220 kV 400 kV D/c line (44 ckm line length)		72	
7.	i. Establishment of new 400/220 kV, 2x500 MVA S/s at Gopalpur	Power supply for Green Ammonia and Green Hydrogen Industries like ACME, AVAADA, HHPFPL	197	2028-29
	ii. 420kV, 1x125 MVAR Bus reactor along with associated bays		13	
	iii. Gopalpur (PG) – Gopalpur (OPTCL) 400kV D/c line (30 ckm line length)		60	
	iv. Pandiabili – Gopalpur (OPTCL) 400 kV D/c line (340 ckm line length)		323	
	v. LILO of Narendrapur – Aska New 220 kV S/c line at Gopalpur (OPTCL) (05ckm Loop In & 05ckm Loop Out)		4	
	vi. LILO of Narendrapur – Gunupur 220 kV S/c line at Gopalpur		8	

Sl. No	Name of the Project with scope of work	Justification	Estimated Cost (₹. Cr.)	Time-frame
	(OPTCL) (10 ckm Loop In & 10 ckm Loop Out)			
8.	i. Establishment of new 400/220 kV, 2x500 MVA S/s at Theruvali (Rayagada)	Evacuation of PSP power of Indravati – 600 MW	157	2028-29
	ii. 420 kV, 1x125 MVar Bus reactor along with associated bays		13	
	iii. Gopalpur (OPTCL) – Theruvali 400 kV D/c line (400 ckm line length) along with 80MVar line reactor in each ckt at Theruvali end		380	
	iv. Theruvali – Jeypore PG 400 kV D/c line (260 ckm line length)		247	
	v. Indravati PSP – Theruvali 400 kV D/c line (180 ckm line length)		171	
9.	i. Establishment of new 220/132/33kV, 2x160 MVA S/s at Choudwar Industrial	To meet upcoming industrial load at OTM, Choudwar & system strengthening for Choudwar command area	86	2028-29
	ii. Bidanasi – Choudwar Industrial 220 kV D/C line (36 ckm line length)		20	
	iii. LILO of Bahugram - ICCL 132 kV line at Choudwar Industrial (10 ckm Loop In & 10 ckm Loop Out)		10	
	iv. LILO of Choudwar – Bidanasi 132 kV line at Choudwar Industrial (08 ckm Loop In & 08 ckm Loop Out)		8	
10.	i. Establishment of new 765/400 kV, 2x1500 MVA S/s at Kolabira	Evacuation of 1320 MW OPGC power and 1200 MW power Floating Solar from Hirakud	452	2029-30
	ii. 765kV, 1x240 MVar Bus reactor along with associated bays		34	
	iii. 420kV, 1x125 MVar Bus reactor along with associated bays		13	
	iv. Sundergarh-B – Kolabira 765 kV D/c line (140 ckm line length)		385	
	v. Duburi (OPTCL) – Kolabira 765 kV D/c line (620 ckm line length) along with 1x330MVar line reactor in each ckt at Kolabira end & 1x240MVar line reactor in each ckt at Duburi end)		1705	
	vi. OPGC unit-5,6 – Kolabira 400 kV D/c Quad line (80 ckm Line Length)		131	

Sl. No	Name of the Project with scope of work	Justification	Estimated Cost (₹. Cr.)	Time-frame
	vii. Hirakud (Floating Solar) – Kolabira 400 kV D/c line (120 ckm line length)		197	
11.	i. Establishment of new 400/220 kV, 2x500 MVA Tarkera GSS	To meet upcoming industrial load of RSP(450MW), Other industrial Growth (200MW)	167	2030-31
	ii. 420kV, 1x125 MVar Bus reactor along with associated bays		13	
	iii. LILO of Rourkela – Jharsuguda 400 kV D/c line at Tarkera (15 ckm Loop In & 15 ckm Loop Out) (rating commensurate with Rourkela – Jharsuguda 400kV D/c line being reconducted under ERES-XXIX).		60	
12.	i. Establishment of new 400/220 kV, 2x500 MVA S/s at Naraj	To meet the load requirement of JSW - 350 MW	199	2030-31
	ii. 420kV, 1x125 MVar Bus reactor along with associated bays		13	
	iii. Naraj – Khuntuni 400 kV D/c line (64 ckm line length)		105	
	iv. LILO of Meramundali – Mendhasal 400 kV D/c line at Naraj (10 ckm Loop In & 10 ckm Loop Out)		33	
13.	i. Establishment of new 765/400 kV , 2x1500 MVA, S/s at Khuntuni	System strengthening - to meet additional load requirement of JSW, Warea, Kalyani Steel, etc. (approx - 1200 MW)	465	2031-32
	ii. 765 kV, 1x240 MVar Bus reactor along with associated bays		34	
	iii. 420 kV, 1x125 MVar Bus reactor along with associated bays		13	
	iv. Angul – Khuntuni 765 kV D/c line (50 ckm line length)		137	
	v. Neulapoi – Khuntuni 400 kV D/c line (56 ckm line length)		92	
14.	i. 400 kV Pooling Station at Jayanagar	To evacuate PSP power of Balimela (500 MW), Upper Kolab (320 MW) and Sunki (1000 MW)	176	2032-33
	ii. 420kV, 1x125 MVar Bus reactor along with associated bays		13	
	iii. LILO of Jeypore – Theruvali 400 kV D/c line at Jayanagar (25 ckm Loop In & 25 ckm Loop Out)		82	
	iv. Balimela - Upper Kolab - Jayanagar Pooling Station 400 kV D/c line (76 ckm line length)		125	

Sl. No	Name of the Project with scope of work	Justification	Estimated Cost (₹. Cr.)	Time-frame
15.	i. Establishment of new 400/220 kV , 2x500 MVA Grid Substation at Titlagarh	To mitigate low voltage pockets of the command area and evacuation of Solar Projects. System Strengthening	170	2032-33
	ii. 420kV, 1x125 MVAR Bus reactor along with associated bays		13	
	iii. Titlagarh – Kolabira 400kV D/C line (460 ckm line length) along with 420kV, 1x80MVAR line reactor in each ckt at Titlagarh end.		727	
	iv. Titlagarh – Kesinga 220kV D/c line (40 ckm line length)		15	
	v. Titlagarh – Nuapada (upgradation of existing 132kV Nuapada GSS to 220kV GSS) 220KV D/C line(140 ckm line length)		52	
17.	i. Creation of 132 kV level at Nuabetanda 220/33kV under implementation S/s with (2x160+2x20 MVA) transformation capacity	To strengthen the reliability at Konark	40	2034-35
	ii. Nuabetanda – Konark 132 kV D/c line (62 ckm)		16	
18.	i. Creation of 132 kV level at Sarasmal 220/33 kV under implementation S/s with (2x160+2x20 MVA) transformation capacity	To strengthen the reliability at Barpali	40	2027-28
	ii. Sarasmal – Barpali 132 kV D/c line (68 ckm)		17	
19.	i. Establishment of new 400/220 kV , 2x500 MVA Grid Substation at Rengali	Evacuation of 500 MW Floating Solar at Rengali	112	2034-35
	ii. Rengali – Meramundali 400 kV D/c line (140 ckm)		588	

8.2. New Intra-state Transmission lines which are required by 2034-35 are listed at Table 8-2 below

Table 8-2 New Transmission lines of Odisha

Sl.No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
1.	TTPS – Meramundali-B 400 kV D/c line (38 ckm)	Evacuation of Power from TTPS (2x660 MW)	47.00	2026-27

Sl.No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
2.	Kantabanji – Patnagarh 132 kV S/c on D/c tower (39.93 ckm)	Radial to Ring Conversion	25.48	2026-27
3.	LILO of Budhipadar – Sundergarh 132 kV S/c line at Bamra (35.42 ckm)	Radial to Ring Conversion	25.48	2026-27
4.	Ghense – Padampur 132 kV S/c Line on D/c Tower (40.47. ckm)	Radial to Ring Conversion	19.82	2026-27
5.	Dhenkikote – Turmunga 132 kV D/c Line (85.04 ckm)	Radial to Ring Conversion	30.5	2026-27
6.	Jayapatna – Junagarh 132 kV D/c Line (92.9 ckm)	System strengthening	47.4	2026-27
7.	Paralakhemundi – Akhusing 132 kV D/c line (14 ckm)	System strengthening	7.2	2026-27
8.	2 nd circuit stringing of Kendrapada – Pattamundai 132 kV S/c line (20 ckm)	System strengthening	10	2026-27
9.	2 nd circuit stringing of Atri – Banki 132 kV S/c line (20 ckm)	System strengthening	10	2026-27
10.	2 nd circuit stringing of Banki – Nuapatna 132 kV S/c line (21 ckm)	System strengthening	10	2026-27
11.	2 nd circuit stringing of Khariar – Nuapara 132 kV S/c line (72 ckm)	System strengthening	37	2026-27
12.	Khariar – Kantabanji 132 kV S/c line (33 ckm)	System strengthening	13	2026-27
13.	2 nd circuit stringing of Nimapada – Konark 132 kV S/c line (20 ckm)	System strengthening	10	2028-29
14.	Kharag HEP– Baliguda 220 kV D/c line (60 ckm)	For evacuation of 63 MW Hydro power at Kharag	47	2034-35

8.3. Reconductoring of existing transmission lines which are required by 2034-35 are listed at Table 8-3 below

Table 8-3 Reconductoring of existing transmission lines of Odisha

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
1.	Cuttack – Jagtsingpur 132 kV S/c line along with upgradation of requisite bay equipment (35.69 ckm)	Due to increased loading in the area reconductoring of this line is required. <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 1996 	21.76	2026-27

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
		<ul style="list-style-type: none"> Ampacity of HTLS conductor – 160 MW 		
2.	Kesura – Pratapsasana – Ransingpur 132 kV S/c line along with upgradation of requisite bay equipment (35.58 ckm)	<p>Due to increased loading in the area reconductoring of this line is required.</p> <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 2000 Ampacity of HTLS conductor – 160MW 	19.81	2026-27
3.	Chaipal – Angul 132 kV S/c line along with upgradation of requisite bay equipment (15.02 ckm)	<p>Due to increased loading in the area reconductoring of this line is required.</p> <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 2001 Ampacity of HTLS conductor – 160 MW 	10.5	2026-27
4.	Angul – TTPS 132 kV S/c line along with upgradation of requisite bay equipment (15.98 ckm)	<p>Due to increased loading in the area reconductoring of this line is required.</p> <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 1963 Ampacity of HTLS conductor – 160 MW 	10.8	2026-27
5.	<p>Katapali – Bargarh 132 kV S/c line along with upgradation of requisite bay equipment(74.06 ckm)</p> <p>The line subsequently has been made LILLO at Thuapali</p>	<p>Due to increased loading in the area reconductoring of this line is required.</p> <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 1979 Ampacity of HTLS conductor – 160 MW 	55	2027-28
6.	Bidanasi – Choudwar 132 kV S/c line (14.29 ckm)	<p>Due to increased loading in the area reconductoring of this line is required.</p> <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 1969 Ampacity of HTLS conductor – 160 MW 	10.3	2026-27

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
7.	Barbil - Bee kay steel 132 kV S/c line along with upgradation of requisite bay equipment (13.23 ckm) The Line subsequently has been made LILO at various points	Due to increased loading in the area reconductoring of this line is required. <ul style="list-style-type: none"> Ampacity of Existing conductor- 80 MW Year of commissioning – 2010 Ampacity of HTLS conductor – 160 MW 	24.6	2026-27
8.	OPGC(IB) – Lapanga 400 kV line along with upgradation of requisite bay equipment (25.6 ckm)	Due to increased loading in the area reconductoring of this line is required. <ul style="list-style-type: none"> Ampacity of Existing conductor- 1050 MW Year of commissioning – 2018 Ampacity of HTLS conductor – 2300 MW 	97.36	2026-27
9.	Budhipadar –Lapanga 220 kV D/c Line along with upgradation of requisite bay equipment(18.2 ckm)	Due to increased loading in the area reconductoring of this line is required. <ul style="list-style-type: none"> Ampacity of Existing conductor- 180 MW Year of commissioning – 2007 Ampacity of HTLS conductor –300 MW 	31.94	2026-27
10	Lapanga – Katapali 220 kV D/c Line along with upgradation of requisite bay equipment(47.52 ckm)	Due to increased loading in the area reconductoring of this line is required. <ul style="list-style-type: none"> Ampacity of Existing conductor- 180MW Year of commissioning – 2007 Ampacity of HTLS conductor – 300 MW 	81.45	2026-27

Note: - Before taking up the reconductoring, state shall ensure the tower healthiness and commensurate rating of Bay equipment.

8.4. New Under Ground lines which are required by 2034-35 are listed at Table 8-4 below

Table 8-4 New under Ground lines of Odisha

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
1.	Argul GSS –Ransinghpur GSS 132 kV UG Cabling. (25 ckm)	Laying of UG Cable for disaster resilient infrastructure	144.93	2026-27

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
2.	Narendrapur GSS – Berhampur GSS 132 kV UG Cabling (27 ckm)	Laying of UG Cable for disaster resilient infrastructure	166.34	2026-27
3.	Balasore GSS – Chandipur GSS 132 kV UG Cabling (15 ckm)	Laying of UG Cable for disaster resilient infrastructure	98.1	2026-27
4.	Chandaka GSS – Mancheswar-A GSS 132 kV UG Cabling (16 ckm)	Laying of UG Cable for disaster resilient infrastructure	104.34	2026-27
5.	Samangara GSS –Puri GSS 132 kV UG Cabling (5 ckm)	Laying of UG Cable for disaster resilient infrastructure	38.3	2026-27
6.	Samuka GSS –Puri GSS 132 kV UG Cabling (10 ckm)	Laying of UG Cable for disaster resilient infrastructure	66.9	2026-27
7.	Autonagar –Narendrapur and Autonagar – Berhampur 132/33 kV UG Cabling (24 km) (two circuits)	Laying of UG Cable for disaster resilient infrastructure	156.00	2027-28

8.5. Augmentation of Substations which are required by 2034-35 are listed at Table 8-5 below

Table 8-5 Augmentation of Substations of Odisha

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Remarks
1.	Augmentation of transformer capacity by Replacement of 3x315 MVA ICT with 3x500 MVA at 400/220/132 kV at Mendhasal S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 3x315 MVA	120.00	Time frame: 2028-29 The replaced 3x315 MVA ICTs would be kept as spare. Total capacity after Augmentation: 3x500 MVA
2.	Augmentation of transformer capacity by Replacement of 2x315 MVA ICT with 2x500 MVA at 400/220/132 kV at Duburi New S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 2x315+1x500 MVA	80.00	Time frame: 2028-29 The replaced 2x315 MVA ICTs would be kept as spare.

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Remarks
				Total capacity after Augmentation: 3x500 MVA
3.	Augmentation of transformer capacity by adding 1x500 MVA ICT at 400/220/132 kV at Lapanga S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 2x315 MVA	40.00	Time frame: 2029-30 Total capacity after Augmentation: 2x315+500 MVA
4.	Augmentation of transformer capacity by addition of 1x160 MVA ICT at 220/132 kV at Aska New S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 2x160 MVA	20.00	Time frame: 2028-29 Total capacity after Augmentation: 3x160 MVA
5.	Augmentation of transformer capacity by addition of 1x160 MVA ICT at 220/132 kV at Jayanagar S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 2x160 MVA	20.00	Time frame: 2028-29 Total capacity after Augmentation: 3x160 MVA
6.	Augmentation of transformer capacity by addition of 1x160 MVA ICT at 220/132 kV at Bargarh new S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 260 MVA	16.00	Time frame: 2029-30 Total capacity after Augmentation: 420 MVA
7.	Augmentation of transformer capacity by addition of 1x500 MVA ICT 400/220 kV at Remuli (Joda)	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required.	90	Time frame: 2034-35 Total capacity after Augmentation: 3* 500 MVA

8.6. The power map of the state, including the above planned system is attached at **Annexure-V**

9. Inter-state Transmission system requirement by 2034-35.

9.1. Options being explored in ISTS

- 9.1.1. The requirement of Inter-state transmission system (ISTS) in Odisha would be identified after the study of complete transmission system including neighbouring states, however options has been suggested in ISTS which are detailed hereunder.
- 9.1.2. The new planned ISTS substation viz. Paradeep 765/400kV and Gopalpur 765/400kV in ISTS and Khuntuni 765/400kV, Neulapoi 400/220kV and Naraj 400/220kV in intra-state, are dependent on Angul (POWERGRID) 765/400 kV for power supply.
- 9.1.3. Angul (POWERGRID) 765/400 kV is also major point for ER-SR interconnection, wherein Angul – Srikakulam 2nd 765 kV D/c line has been planned. Any major mishap at Angul S/s could jeopardise power supply to all these major industrial complexes.
- 9.1.4. The presently planned system for Paradeep and Gopalpur can meet about 3 to 3.5 GW demand at each location.
- 9.1.5. To meet the future upcoming and projected demand in ISTS and intra-state, a new 765 kV substation at Begunia has been envisaged with connection to Khuntuni, Paradeep, and Gopalpur. Begunia S/s can be fed either directly through a HVDC or through a combination of HVDC and 1100kV UHVAC corridor or even through only AC system.
- 9.1.6. Keeping in view the evacuation requirement from Renewable Energy projects in Northern Region and Western Region and bulk power drawl requirement in Odisha, two alternatives are proposed:
 - a) Alt-1: ± 800 kV, 6000MW HVDC Bipole from NR/WR to Begunia in Odisha (about 1800 km)
 - b) Alt-2: HVDC to Champa + 1100kV UHVAC Champa – Bolangir – Begunia.

10. Reactive compensation:

- 10.1. The system studies of the State has identified the Reactive power compensation requirement by 2034-35 at transmission level (132 kV and above voltage level)
- 10.2. The following reactive power compensation requirement has been identified to be implemented alongwith implementation of above recommended Intra-state transmission system:

Sl. No	Name of the Substation/Node	Reactor
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1	(2x500 + 2x40) MVA, 400/220/33kV S/S at Bhandaripokhari Textile Park (Bhadrak)	420kV, 1x125MVA _r Bus reactor along with associated bays
2	2x500 MVA, 400/220kV S/S at Neulapoi (Dhenkanal)	420kV, 1x125MVA _r Bus reactor along with associated bays
3	2x500 MVA, 400/220kV S/S at Remuli	420kV, 1x125MVA _r Bus reactor along with associated bays
4	2x1500 MVA, 765/400kV S/S at Duburi-765 (Kendujhar)	i. 765kV, 1x240MVA _r Bus reactor along with associated bays ii. 420kV, 1x125MVA _r Bus reactor along with associated bays
5	2x500 MVA, 400/220kV S/S at Gopalpur	420kV, 1x125MVA _r Bus reactor along with associated bays
6	2x500 MVA, 400/220kV S/S at Theruvalli (Rayagada)	i. 420kV, 1x125MVA _r Bus reactor along with associated bays ii. 420kV, 1x80 MVA _r Line reactor along with associated bays for Gopalpur D/c line
7	2x1500 MVA, 765/400kV S/S at Kolabira	i. 765kV, 1x240MVA _r Bus reactor along with associated bays ii. 765kV, 1x240MVA _r Line reactor along with associated bays for Duburi 765kV D/c line. iii. 420kV, 1x125MVA _r Bus reactor along with associated bays
8	2x500 MVA 400/220kV Tarkera GSS	420kV, 1x125MVA _r Bus reactor along with associated bays
9	2x500 MVA, 400/220kV S/S at Naraj	420kV, 1x125MVA _r Bus reactor along with associated bays
10	2x1500 MVA, 765/400kV S/S at Khuntuni	i. 765kV, 1x240MVA _r Bus reactor along with associated bays ii. 420kV, 1x125MVA _r Bus reactor along with associated bays
11	400kV Pooling Station at Jayanagar	420kV, 1x125MVA _r Bus reactor along with associated bays
12	2x500 MVA, 400/220 kV Grid Substation at Titlagarh	i. 420kV, 1x125MVA _r Bus reactor along with associated bays ii. 420kV , 1x80MVA _r Line reactor along with associated bays for Kolabira D/c line
13	2x500 MVA, 400/220kV S/s at Balasore	420kV, 1x125MVA _r Bus reactor along with associated bays
14	2x160MVA 220/132/33kV S/s at Jayanagar	245kV, 1x50MVA _r Bus reactor along with associated bays

11. Summary of identified transmission system by 2034-35:

11.1. A total of 24390 MVA transformation capacity addition/augmentation and 3981 ckm of new transmission lines/reconductoring of old lines at an estimated cost of Rs 11674.65 Crs. would be required for implementing the intra-state transmission proposals for meeting the electricity demand of the state by the year 2034-35.

The summary of voltage wise identified transmission system of the state by 2034-35 is as below:

11.1.1. 765 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	3	-	9000	1369
2.	Augmentation of existing substation	-	-	-	-
3.	New transmission line including LILO and 2 nd Ckt Stringing	5	884	-	2464
4.	Reconductoring of transmission line	-	-	-	-
5.	Underground Cable	-	-	-	-
6.	Bus Reactor	3	-	-	102

11.1.2. 400 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	10	-	9080	1834
2.	Augmentation of existing substation	4	-	2600	330
3.	New transmission line including LILO and 2 nd Ckt Stringing	21	-	-	4383
4.	Reconductoring of transmission line	1	25.6	-	97.36
5.	Underground Cable	-	-	-	-
6.	Bus Reactor	12	-	-	156

11.1.3. 220 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	3	-	800	206
2.	Augmentation of existing substation	3	-	480	56
3.	New transmission line including LILO and 2 nd Ckt Stringing	12	516	-	254
4.	Reconductoring of transmission line	2	65.72	-	113.39
5.	Underground Cable	-	-	-	-
6.	Bus Reactor	-	-	-	-

11.1.4. 132 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	2	-	720	80
2.	Augmentation of existing substation	-	-	-	-
3.	New transmission line including LILO and 2 nd Ckt Stringing	17	740.76	-	425.88
4.	Reconductoring of transmission line	7	203.85	-	152.77
5.	Underground Cable	7	146	-	774.91
6.	Bus Reactor	-	-	-	-

11.2. Summary of year-wise MVA capacity, ckm addition and tentative expenditure required for implementation of above recommended proposals is given below

Year	Capacity Addition (in MVA)				Transmission line addition (in ckm)				Reconductoring (in ckm)			Under ground Cable (ckm)	Estimate d Cost (in Rs. Cr.)
	132 kV	220 kV	400 kV	765 kV	132 kV	220 kV	400 kV	765 kV	132 kV	220 kV	400 kV	132 kV	
2026-27	0	480	2080	0	474.76	160	350	0	129.79	65.72	25.6	98	2397.31
2027-28	360	0	1000	3000	148	50	50	74	74.06	0	0	48	1884
2028-29	0	640	3600	0	56	56	1210	0	0	0	0	0	1947
2029-30	0	160	500	3000	0	0	200	760	0	0	0	0	2973
2030-31	0	0	2000	0	0	0	114	0	0	0	0	0	590
2031-32	0	0	0	3000	0	0	56	50	0	0	0	0	741
2032-33	0	0	1000	0	0	180	586	0	0	0	0	0	1373
2033-34	0	0	0	0	0	0	0	0	0	0	0	0	0
2034-35	360	0	1500	0	62	60	140	0	0	0	0	0	893
Total	720	1280	11680	9000	740.76	506	2706	884	203.85	65.72	25.6	146	12798.31

12. Conclusion

12.1. By the year 2034-35, the power demand of Odisha would be increasing significantly. Total expected demand of Odisha by the year 2034-35 is around 11,400 MW. This anticipated increase in demand includes the expected industrial load coming progressively from 2024-25 to 2034-35.

- 12.2. About 04 Nos. of Pumped Storage hydro power projects and 03 solar projects connected with Intra-state transmission network are expected to be commissioned by 2034-35.
- 12.3. In order to meet this growing load demand, evacuation of power from solar and hydro generation and for drawal of power from ISTS in accordance with GNA requirement of Odisha by 2034-35, the intra-state as well as inter-state transmission system of the state need to be strengthened. It has been observed that the transmission system infrastructure in Odisha at voltage levels of 132 kV, 220 kV and 400 kV needs to be upgraded.
- 12.4. The planned network is related to the intra-state transmission system of the State, the State is also advised to plan its downstream network at distribution level in matching timeframe with this planned transmission system.
- 12.5. At some of the sub-stations there may be low voltage issues due to long lines the State is advised to installed suitable capacitor at distribution level (i.e. 33 kV or 11 kV level). The compensation requirement is given at Paragraph-10 above in this report.
- 12.6. It is recommended that Odisha shall update their intra-state transmission systems on the PM GatiShakti (PMGS) National Master Plan on regular basis.
- 12.7. The quantum of GNA is nearing the ATC of the Odisha and demand of the state is increasing, therefore, the state is advice to take up their transmission system strengthening progressively. As per CERC (Connectivity and General Network Access to the Inter-State Transmission System) Regulations, 2022 States (STUs) may apply for additional GNA once in a financial year by the month of September for the next 3 (three) financial years. Therefore, it is suggested that State shall asses their GNA requirement and apply well before considering the timelines prescribed in the regulations.
- 12.8. A total of 19,820 MVA transformation capacity addition/augmentation and 4,250 ckm of new transmission lines/reconductoring/underground cabling at an estimated cost of ₹ 10,532.31 cr. would be required for implementing the intra-state transmission proposals for meeting the electricity demand of the state by the year 2031-32.
- 12.9. Further, a total of 22,680 MVA transformation capacity addition/augmentation and 5,278 ckm of new transmission lines/reconductoring/underground cabling at an estimated cost of ₹ 12,798.31 cr. would be required for implementing the intra-state transmission proposals for meeting the electricity demand of the state by the year 2034-35.
- 12.10. To ensure reliable and adequate power supply in Odisha by 2034-35, a robust and resilient transmission network becomes critical. The outlined plan, if implemented timely, will ensure resource adequacy and support economic and industrial development in the state.

Annexure-I

List of Intra-state Elements

A. List of existing sub-stations

Sl. No.	S/S Name	kV Level	S/S Capacity (MVA)
1	Bhubaneswar	132/33 kV	3x63 MVA, 132/33 kV
2	Bhubaneswar Power	132 kV	132 kV Switching Station
3	Chandaka	220/132/33 kV	2x160+2x100 MVA, 220/132 kV 3x63 MVA, 132/33 kV
4	Chandaka-B	220/132/33 kV	2x160, 220/132 kV 2x40 MVA, 132/33 kV
5	Infocity-II	220/33kV	2x40 MVA, 220/33 kV
6	Kantabada	220/33kV	2x63 MVA, 220/33 kV
7	Kesura	132/33 kV	2x63 MVA, 132/33 kV
8	Mancheswar-B	132/33 kV	2x40 MVA, 132/33 kV
9	Nayapalli	132/33 kV	1x20 + 1x63 MVA, 132/33 kV
10	Pratapsasan	220/132/33 kV	2x160 MVA, 220/132 kV 2x40 MVA, 132/33 kV
11	Ranasinghpur	132/33 kV	3x63 MVA, 132/33 kV
12	Unit-8	132/33 kV	2x40 MVA, 132/33 kV
13	Argul	132/33 kV	2x40 MVA, 132/33 kV
14	Atri	220/132/33 kV	2x160 MVA, 220/132 kV 1x20 MVA, 132/33 kV
15	Banki	132/33 kV	2x20 MVA, 132/33 kV
16	Chandpur	132/33 kV	1x40 + 1x20 +1x12.5MVA, 132/33 kV
17	Khurda	132/33 kV	4x40 MVA, 132/33 kV
18	Nayagarh	220/33 kV	2x40+1x20 MVA, 220/33 kV
19	Mendhasal	400/220/132/33 kV	3x315 MVA, 400/220 kV 2x100 MVA, 220/132 kV 2x20, 220/33kV
20	Konark	132/33 kV	2x20 MVA, 132/33 kV
21	Nimapara	132/33 kV	3x40 MVA, 132/33 kV
22	Puri	132/33 kV	3x40 MVA, 132/33 kV
23	Samagara	220/132/33 kV	2x160 MVA, 220/132 kV 2x20 MVA, 132/33 kV
24	Satasankha	132/33 kV	2x20 MVA, 132/33 kV
25	Shamuka	132/33 kV	1x40 + 1x31.5 MVA, 132/33 kV
26	Angul	132/33 kV	2x40+1x20 MVA, 132/33 kV
27	Boinda	132/33 kV	1x20+2x12.5 MVA, 132/33 kV
28	Chainpal	132/33 kV	2x40+1x20 MVA, 132/33 kV
29	Rengali	220/33 kV	2x20 MVA, 220/33 kV
30	Global	132 kV	132 kV Switching Station
31	Dhenkanal	132/33 kV	3x40 MVA, 132/33 kV
32	Goda	220/132/33 kV	2x160 MVA. 220/132 kV 1x40 + 1x20 MVA, 132/33 kV
33	Gondia	132/33 kV	2x20 MVA, 132/33 kV
34	Kalarangi	132/33 kV	1x20+2x12.5 MVA, 132/33 kV
35	Kamakhyanagar	132/33 kV	1x20+2x12.5 MVA, 132/33 kV
36	Khajuriakata	132/33 kV	2x20 MVA, 132/33 kV
37	Kharagprasad	132/33 kV	2x20 MVA, 132/33 kV
38	OPCL	132 kV	132 kV Switching Station
39	Meramundali	400/220/132/33 kV	2x315 MVA, 400/220 kV 3x100 MVA, 220/132 kV 2x12.5 MVA, 132/33 kV
40	Meramundali-B	400/220 kV	2x500 MVA, 400/220 kV
41	Arati Steels	132 kV	132 kV Switching Station
42	Bahugram	132/33 kV	2x40 MVA, 132/33 kV

Sl. No.	S/S Name	kV Level	S/S Capacity (MVA)
43	Choudwar	132/33 kV	3x40 MVA, 132/33 kV
44	ICCL	132 kV	132 kV Switching Station
45	Grid Steel	132 kV	132 kV Switching Station
46	Khuntuni	132/33 kV	2x40 MVA, 132/33 kV
47	Mania	132/33 kV	1x12.5+1x20 MVA, 132/33 kV
48	Narasinghpur	220/33 kV	1x40+1x20 MVA, 220/33 kV
49	Nuapatna	132/33 kV	1x40+1x20+1x12.5 MVA, 132/33 kV
50	OCL	132 kV	132 kV Switching Station
51	Salipur	132/33 kV	3x20 MVA, 132/33 kV
52	TSAIloys	132 kV	132 kV Switching Station
53	Ultratech	132 kV	132 kV Switching Station
54	Bidanasi	220/132/33 kV	1x160+2x100 MVA, 220/132 kV 2x63+1x40 MVA, 132/33 kV
55	Brajabiharipur	132/33 kV	2x40 MVA, 132/33 kV
56	Cuttack	220/132/33 kV	1x160+1x100 MVA, 220/132 kV 2x40 + 1x63 MVA, 132/33 kV
57	Godisahi	220/33 kV	2x63 MVA, 220/33 kV
58	Jagatsinghpur	132/33 kV	2x40+1x20 MVA, 132/33 kV
59	Phulnakhara	132/33 kV	2x40+1x20 MVA, 132/33 kV
60	Balichandrapur	220/33 kV	1x40 + 1x20 MVA, 132/33 kV
61	Chandikhole	132/33 kV	1x40 + 2x20 MVA, 132/33 kV
62	Kendrapara	132/33 kV	2x40 MVA, 132/33 kV
63	Marshaghai	132/33 kV	2x20 MVA, 132/33 kV
64	Olavar	132/33 kV	2x20 MVA, 132/33 kV
65	Paradeep	220/132/33 kV	2x160+1x100 MVA, 220/132 kV 3x20 MVA, 132/33 kV
66	Pattamundai	132/33 kV	3x20 MVA, 132/33 kV
67	Rajnagar	132/33 kV	2x20 MVA, 132/33 kV
68	RAMCO	132 kV	132 kV Switching Station
69	Tirtol	132/33 kV	2x40MVA, 132/33 kV
70	Balasore	220/132/33 kV	3x160 MVA, 220/132 kV 3x63 MVA, 132/33 kV
71	Basta	132/33 kV	2x20+1x12.5 MVA, 132/33 kV
72	Bhogarai	132/33 kV	2x40 MVA, 132/33 kV
73	Chandipur	132/33 kV	2x20 MVA, 132/33 kV
74	Jaleswar	132/33 kV	2x31.5+1x12.5 MVA, 132/33 kV
75	Somanathpur	132/33 kV	2x12.5 MVA, 132/33 kV
76	Soro	132/33 kV	2x40+1x20 MVA, 132/33 kV
77	Agarpada	132/33 kV	1x40+1x20 MVA, 132/33 kV
78	Bhadrak	220/132/33 kV	2x160+1x100 MVA, 220/132 kV 3x63 MVA, 132/33 kV
79	Chandbali	132/33 kV	1x40+1x20 MVA, 132/33 kV
80	Dhamara	220/132/33 kV	2x160 MVA, 220/132 kV 2x40 MVA, 132/33 kV
81	Bangiriposi	132/33 kV	2x12.5 MVA, 132/33 kV
82	Baripada	132/33 kV	3x40 MVA, 132/33 kV
83	Betanati	132/33 kV	1x20 + 1x40 MVA, 132/33 kV
84	Karanjia	132/33 kV	1x20+2x12.5 MVA, 132/33 kV
85	Rairangpur	132/33 kV	2x20+1x12.5 MVA, 132/33 kV
86	Udala	132/33 kV	2x40 MVA, 132/33 kV
87	New Duburi	400/220/33 kV	2x315 MVA, 400/220kV 1x20 MVA, 220/33 kV
88	Anandpur	132/33 kV	1x20+2x12.5 MVA, 132/33 kV

Sl. No.	S/S Name	kV Level	S/S Capacity (MVA)
89	Brahmani River Pellets Ltd.	132 kV	132 kV Switching Station
90	B C Mohanty and Sons	132kV	132 kV Switching Station
91	Daitari	132/33 kV	1x12.5 MVA, 132/33 kV
92	Duburi	220/132/33 kV	2x160+1x100 MVA, 220/132 kV 2x40 MVA, 220/33 kV
93	Jabamayee Ferro Alloys	132 kV	132 kV Switching Station
94	Jaipur Road	132/33 kV	3x40 MVA, 132/33 kV
95	Jaipur Town	132/33 kV	2x40+1x20 MVA, 132/33 kV
96	JSWCL	132 kV	132 kV Switching Station
97	Arya Iron	132 kV	132 kV Switching Station
98	Barbil	132/33kV	2x12.5+1x20MVA, 132/33kV
99	Bee Kay Steel	132 kV	132 kV Switching Station
100	Bolani	132 kV	132 kV Switching Station
101	Dhenkikote	132/33 kV	2x20 MVA, 132/33 kV
102	Joda	220/132/33 kV	1x100+2X160 MVA, 220/132 kV 1x40+3x20 MVA, 132/33 kV
103	Keonjhar	220/33 kV	2x20 MVA, 220/33 kV
104	Palasponga	132/33 kV	1x40+2x20 MVA, 132/33 kV
105	Rungta Mines Ltd.	132 kV	132 kV Switching Station
106	Telkoi	220/33 kV	2x20 MVA, 220/33 kV
107	Turumunga	220/132/33 kV	1x160 MVA, 220/132 kV 1x20 MVA, 220/33 kV
108	ACME	132 kV	132 kV Switching Station
109	Birmaharajpur	132/33 kV	2x20 MVA, 132/33 kV
110	Bolangir	132/33 kV	3x40 MVA, 132/33 kV
111	Boudh	132/33 kV	2x20 MVA, 132/33 kV
112	New Bolangir	220/132/33 kV	3x160 MVA, 220/132 Kv 1x40+1x20 MVA, 132/33 kV
113	Patnagarh	132/33 kV	1X40+2x20 MVA, 132/33 kV
114	Sonepur	132/33 kV	2x40+1x20 MVA, 132/33 kV
115	Tusura	132/33 kV	1x20+1x40 MVA, 132/33 kV
116	ABREL	132 kV	132 kV Switching Station
117	Bhawanipatna	132/33 kV	2x12.5 + 1x20 MVA, 132/33 kV
118	Brundabahal	132/33 kV	1x20 MVA, 132/33 kV
119	Jayapatana	220/132/33 kV	2x160 MVA, 220/132 kV 2x40 MVA, 132/33 kV
120	Junagarh	132/33 kV	3x20 MVA, 132/33 kV
121	Kesinga	220/132/33 kV	2X160 MVA, 220/132 kV, 1x40+2x20 MVA, 132/33 kV
122	Saintala	132/33 kV	1x12.5+1x10 MVA, 132/33 kV
123	Vedant Alumina	132 kV	132 kV Switching Station
124	Kantabanji	132/33 kV	2x40 MVA, 132/33 kV
125	Khariar	132/33 kV	2x40 MVA, 132/33 kV
126	Nuapara	132/33 kV	2x20 MVA, 132/33 kV
127	Padampur	132/33 kV	1x40+2x20 MVA, 132/33 kV
128	Bargarh	132/33 kV	3x40 MVA, 132/33 kV
129	Bargarh New	220/132/33 kV	1x160+1x100 MVA, 220/132 kV 2x40 MVA, 132/33 kV
130	Barpali	132/33 kV	1x40+2x20 MVA, 132/33 kV
131	Bhatli	132/33 kV	2x40 MVA, 132/33 kV
132	Ghens	132/33 kV	2x40 MVA, 132/33 kV
133	Thuapalli	132/33 kV	2x20 MVA, 132/33 kV
134	Aryan-Viraj	132 kV	132 kV Switching Station
135	Hirakud	132/33 kV	1x40 MVA, 132/33 kV

Sl. No.	S/S Name	kV Level	S/S Capacity (MVA)
136	Katapali	220/132/33 kV	1x160+2x100 MVA, 220/132 kV 1x40+2x20 MVA, 132/33 kV
137	Maneswar	132/33 kV	2x40 MVA, 132/33 kV
138	Rairakhole	132/33 kV	3x12.5 MVA, 132/33 kV
139	Sambalpur	132/33 kV	2x40+2x31.5 MVA, 132/33 kV
140	Shyam DRI	132 kV	132 kV Switching Station
141	Bamra	220/132/33 kV	2x160 MVA, 220/132 kV 1x40+1x20 MVA, 132/33 kV
142	Brajarajnagar	132/33 kV	1X40+3x20 MVA, 132/33 kV
143	Budhipadar	220/132/33 kV	2x160 MVA, 220/132 kV 1x20+1x12.5 MVA, 132/33 kV
144	Jharsuguda	132/33 kV	2X40 MVA, 132/33 kV
145	Kuchinda	132/33kV	2x20 MVA, 132/33kV
146	Lakhanpur	132/33kV	2x20 MVA, 132/33kV
147	Lephrpada	220/33 kV	2x20 MVA, 220/33 kV
148	SMC Power	132 kV	132 kV Switching Station
149	Lapanga	400/220/132/33 kV	2x315 MVA, 400/220 kV 2x160 MVA, 220/132 kV 1x40 + 1x20 MVA, 132/33 kV
150	Kalunga	132/33 kV	3X40 MVA, 132/33 kV
151	Rajgangpur	132/33 kV	3x40 MVA, 132/33 kV
152	Shiva	132 kV	132 kV Switching Station
153	Sundargarh	132/33 kV	1x40+2x20 MVA, 132/33 kV
154	Barkote	220/33 kV	2x40 MVA, 220/33 kV
155	Bonai	220/33 kV	2x20 MVA, 220/33 kV
156	Chhend	132/33 kV	3x40 MVA, 132/33 kV
157	Deogarh	220/33 kV	2x20 MVA, 220/33 kV
158	Kuarnmunda	220/132/33 kV	2x160 MVA, 220/132 kV 2x40 MVA, 132/33 kV
159	Rourkela	132/33 kV	2x35+2x40 MVA, 132/33 kV
160	Shree Ganesh Metaliks	132 kV	132 kV Switching Station
161	Tarkera	220/132 kV	4x100 MVA, 220/132 kV
162	Berhampur	132/33 kV	2x40+1x20 MVA, 132/33 kV
163	Chikiti	132/33 kV	1x40+ 1x20 MVA, 132/33 kV
164	Digapahandi	132/33 kV	2x20+1x12.5 MVA, 132/33 kV
165	Hinjili	132/33 kV	2x20 MVA, 132/33 kV
166	Mohana	132/33 kV	2x12.5 MVA, 132/33 kV
167	Narendrapur	220/132/33 kV	2x160 +1x100MVA, 220/132 kV 3x40+1x20 MVA, 132/33 kV
168	R.Udaygiri	132/33 kV	2x20 MVA, 132/33 kV
169	Aska	132/33 kV	3x40, 132/33 kV
170	Aska New	220/132/33 kV	2x160 MVA, 220/132 kV 1x40 + 1x20 MVA, 132/33 kV
171	Bhanjanagar	220/132/33 kV	2x160 MVA, 220/132 kV 2x40 + 1x20 MVA, 132/33 kV
172	G. Udaygiri	132/33 kV	2x20 MVA, 132/33 kV
173	Phulbani	132/33 kV	2x40+1x12.5 MVA, 132/33 kV
174	Balugaon	132/33 kV	1x40+1x20+1x12.5 MVA, 132/33 kV
175	Chhatrapur	132/33 kV	3x20 MVA, 132/33 kV
176	Ganjam	132/33 kV	1x12.5 + 1x20 MVA, 132/33 kV
177	Purusottampur	132/33 kV	2x12.5+1X20 MVA, 132/33 kV
178	Boriguma	132/33 kV	1x20 MVA, 132/33 kV
179	Dabugaon	132/33 kV	2x12.5 MVA, 132/33 kV
180	Jayanagar	220/132/33 kV	2x160 MVA, 220/132 kV 3x20+1x12.5 MVA, 132/33 kV

Sl. No.	S/S Name	kV Level	S/S Capacity (MVA)
181	Nabarangpur	132/33 kV	2x20 MVA, 132/33 kV
182	Patangi	132/33 kV	1x20 + 1x12.5 MVA, 132/33 kV
183	Podagada	132/33 kV	1x12.5 + 1x20 MVA, 132/33 kV
184	Sunabeda	132/33 kV	1x20+2x12.5 MVA, 132/33 kV
185	Tentulikhunti	132/33 kV	2x20+1x12.5 MVA, 132/33 kV
186	Umerkote	132/33 kV	2x20 + 1x40 MVA, 132/33 kV
187	Balimela	220/33 kV	1x40 +1x20 MVA, 220/33 kV
188	Kalimela	220/33 kV	2x20 MVA, 220/33 kV
189	Malkangiri	220/33 kV	2x40 MVA, 220/33 kV
190	Govindpalli	220/33 kV	2x20 MVA, 220/33 kV
191	Akhusingh	132/33 kV	2x12.5 MVA, 132/33 kV
192	Gunupur	220/132/33 kV	2x160 MVA, 220/132 kV 2x20 MVA, 132/33 kV
193	Kasipur	220/33 kV	1x20 MVA, 220/33 kV
194	Laxmipur	220/33kV	2x20MVA, 220/33kV
195	Muniguda	132/33 kV	1x12.5 + 1x20 MVA, 132/33 kV
196	Paralakhemundi	132/33 kV	3x12.5 MVA, 132/33 kV
197	Rayagada	132/33 kV	1x20+2x12.5 MVA, 132/33 kV
198	Therubali	220/132/33 kV	2x100+1x160 MVA, 220/132 kV 2x12.5 MVA, 132/33 kV

B. List of Transmission lines

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
400 kV					
1	400 kV Indravati - Indravati PG	400	3.970	1999	Twin Moose
2	400 kV Meramundali - New Duburi DC	400	193.200	2015	Twin ACSR Moose (54+7/3.53 mm)
3	400 kV Meramundali - JSPL DC	400	75.832	2010	Twin AAAC Moose (61/3.45 mm)
4	400 kV Meramundali - Mendhasala DC	400	200.902	2003	Twin AAAC Moose (61/3.45 mm)
6	400 kV Meramundali - Vedanta DC(Loc No..... To Loc No...)	400	418.000	2015	Twin AAAC Moose (61/3.45 mm)
7	400kV Lapanga Line In Ckt-I & II on DC Towers (on 400 kV Meramundali - Vedanta DC)	400	1.335	2018	Twin AAAC Moose (61/3.45 mm)
8	400kV Lapanga Line Out Ckt-I & II on DC Towers (on 400 kV Meramundali - Vedanta DC)	400	1.335	2018	Twin AAAC Moose (61/3.45 mm)
9	400kV Lapanga LILO DC on Multi Circuit Towers (on 400 kV Meramundali - Vedanta DC)	400	11.816	2018	Twin AAAC Moose (61/3.45 mm)
10	400 kV IB-Lapanga DC	400	48.982	2018	Twin AAAC Moose (61/3.45 mm)
11	400 kV Rengali - Kolaghat SC (Loc. No. 1 to 663)	400	241.500	1995	Twin ACSR Moose (54+7/3.53 mm)
220kV					
1	220 kV Atri - Pandiabil DC	220	47.400	2015	ACSR Zebra (54+7/3.18mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
2	220 kV Atri LILO DC (220 kV Narendrapur - Mendhasal Ckt-I)	220	2.400	2016	ACSR Zebra (54+7/3.18mm)
3	220 kV Atri LILO DC (220 kV Narendrapur - Mendhasal Ckt-II)	220	2.400	2016	ACSR Zebra (54+7/3.18mm)
4	220 kV Balichandrapur LILO DC (220 kV New Duburi-Paradeep Ckt-I)	220	1.964	2024	ACSR Zebra (54+7/3.18mm)
5	220 kV Bidanasi - Cuttack DC	220	18.600	2016	ACSR Zebra (54+7/3.18mm)
6	220 kV Bhanjanagar - Meramundali DC (Loc. No. 196 upto Meramundali)	220	117.350	1967 (Ckt-I) 1979 (Ckt-II)	ACSR Zebra (54+7/3.18mm)
7	220 kV Chandaka-B LILO DC (220kV Mendhasal - Chandaka Ckt-IV)	220	0.058	2017	ACSR Zebra (54+7/3.18mm)
8	220 kV Duburi New - Paradeep DC	220	226.866	2008	ACSR Zebra (54+7/3.18mm)
9	220 kV Goda LILO DC (On 220 kV Meramundali - Duburi Old Ckt -I)	220	12.056	2020	ACSR Zebra (54+7/3.18mm)
10	220 kV Godisahi LILO DC (On 220 kV Mendhasal-Bidanasi Ckt -II)	220	0.280	2022	ACSR Zebra (54+7/3.18mm)
11	220 kV INFOCITY-II LILO DC (Narendrapur-Mendhasal Ckt-II)	220	3.400	2015	
12	220 kV Kaniha - Meramundali DC	220	85.040	1995	ACSR Zebra (54+7/3.18mm)
13	220 kV Kantabada LILO DC (220 kV Chandaka-Mendhasal Ckt-III)	220	0.092	2023	ACSR Zebra (54+7/3.18mm)
14	220 kV Link DC (From Meramundali S/S to 400 kV Meramundali - Mendhasala Line)	220	3.000	2003	ACSR Zebra (54+7/3.18mm)
15	220 kV Mendhasala - Bidanasi DC	220	62.248	2014	ACSR Zebra (54+7/3.18mm)
16	220 kV Mendhasala - Chandaka DC (Ckt - I & II)	220	14.520	2003	ACSR Zebra (54+7/3.18mm)
17	220 kV Mendhasala LILO DC (Bhanjanagr - Nayagarh - Mendhasala)	220	11.916	2008	ACSR Zebra (54+7/3.18mm)
18	220 kV Mendhasala LILO DC (Narendrapur - Chandaka Ckt - III & IV)	220	12.080	2008	ACSR Zebra (54+7/3.18mm)
19	220 kV Meramundali - Bhusan Steel DC	220	4.800	2006 (Ckt-I) 2011 (Ckt-II)	ACSR Zebra (54+7/3.18mm)
20	220 kV Meramundali - Duburi DC	220	191.112	1995	ACSR Zebra (54+7/3.18mm)
21	220 kV T- Connection from Meramundali-Duburi line to Meramundali-B GSS	220	0.658	2021	ACSR Zebra (54+7/3.18mm)
22	220 kV T- Connection from Meramundali-Goda line to Meramundali-B GSS	220	0.658	2021	ACSR Zebra (54+7/3.18mm) & UG Cable
23	220 kV NALCO - Meramundali DC	220	22.930	2004	ACSR Zebra (54+7/3.18mm)
24	220 kV NALCO - Rengali PH SC	220	62.700	1984	ACSR Zebra (54+7/3.18mm)
25	220 kV NALCO - TTPS SC	220	8.637	1984	ACSR Zebra (54+7/3.18mm)
26	220 kV Narasinghpur LILO DC (Bhanjanagar - Meramundali)	220	10.096	2018	ACSR Zebra (54+7/3.18mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
27	220 kV Narendrapur - Mendhasala DC (Balugaon to Mendhasala)	220	180.000	2010	ACSR Zebra (54+7/3.18mm)
28	220 kV Nayagarh - Chandaka DC	220	161.000	1989	ACSR Zebra (54+7/3.18mm)
29	220 kV Pandiabil LILO DC (Atri - Pandiabil ckt - I)	220	3.000	2017	ACSR Zebra (54+7/3.18mm)
30	220 kV Pandiabil LILO DC (Atri - Pandiabil ckt - II)	220	3.000	2017	ACSR Zebra (54+7/3.18mm)
31	220 kV Pandiabil - Samagara DC	220	91.800	2015	ACSR Zebra (54+7/3.18mm)
32	220 kV Pandiabil - Pratapsasan DC	220	61.376	2022	ACSR Zebra (54+7/3.18mm)
33	220 kV Paradeep - Essar Steel DC	220	17.736	2012	ACSR Zebra (54+7/3.18mm)
34	220 kV Paradeep - IOCL SC (in DC Towers)	220	6.000	2014	ACSR Zebra (54+7/3.18mm)
35	220 kV Rengali - Rengali PGCIL DC	220	2.000	1997	ACSR Zebra (54+7/3.18mm)
36	220 kV Rengali - Tarkera DC (Loc. 1 to 187)	220	69.360	1979	ACSR Zebra (54+7/3.18mm)
37	220 kV Rengali PH - Kaniha SC	220	29.500	1984	ACSR Zebra (54+7/3.18mm)
38	220 kV Rengali PH - Rengali DC	220	10.000	1997	ACSR Zebra (54+7/3.18mm)
39	220 kV TTPS - Joda DC (Loc. No. 1 to 234)	220	140.000	1967 (Ckt-I) 1970 (Ckt-II)	ACSR Sheep (30+7/3.99 mm)& ACSR Zebra(54+7/3.18mm)
40	220 kV TTPS - Kaniha SC	220	34.500	1984	ACSR Zebra (54+7/3.18mm)
41	220 kV TTPS - Meramundali DC	220	22.310	1967	ACSR Zebra (54+7/3.18mm)
42	220 kV Bhadrak LILO DC	220	2.864	2008	ACSR Zebra (54+7/3.18mm)
43	220 kV Dhamara LILO DC (220 kV New Duburi-Balasore)	220	70.438	2023	ACSR Zebra (54+7/3.18mm)
44	220 kV Duburi - Duburi New DC	220	12.768	1996 (Ckt-I) 1997 (Ckt-II)	ACSR Zebra (54+7/3.18mm)
45	220 kV Duburi - NINL SC (in DC Towers)	220	5.580	2000	ACSR Zebra (54+7/3.18mm)
46	220 kV Duburi New - Balasore DC	220	275.788	1996 (Ckt-I) 1997 (Ckt-II)	ACSR Zebra (54+7/3.18mm)
47	220 kV Joda - Jamshedpur SC	220	32.000	1985	ACSR Zebra (54+7/3.18mm)
48	220 kV Joda - Ramchandrapur SC	220	15.500	1985	ACSR Zebra (54+7/3.18mm)
49	220 kV Joda - TSLPL SC (in DC Towers)	220	7.300	2007	ACSR Zebra (54+7/3.18mm)
50	220kV JSPL LILO DC (Joda - Jamshedpur Line)	220	9.600	2010	ACSR Zebra (54+7/3.18mm)
51	220 kV Keonjhar PG - Keonjhar DC	220	15.000	2018	AAAC Zebra (37/4.00 mm)
52	220 kV Kuchei - Balasore DC	220	153.718	2007 (Ckt-I) 2010 (Ckt-II)	AAAC Zebra (37/4.00 mm)
53	220 kV TTPS - Joda DC (Loc. No. 235 to 503)	220	168.000	1967 (Ckt-I) 1970 (Ckt-II)	Zebra
54	220 kV Telkoi LILO from 220 kV TTPS - Joda Ckt-I	220	29.166	2021	Zebra
55	220 kV Aska New LILO DC (on Therubali - Narendrapur Ckt II)	220	85.063	2024	ACSR Zebra (54+7/3.18mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
56	220 kV Balimela PH - Balimela SC (in DC Towers)	220	0.200	2008	ACSR Zebra (54+7/3.18mm)
57	220 kV Balimela - Malkangiri DC	220	44.820	2017	ACSR Zebra (54+7/3.18mm)
58	220 kV Balimela PH - U.Sileru SC	220	24.760	1982	ACSR Zebra (54+7/3.18mm)
59	220 kV Bhanjanagar - Aska New DC	220	57.200	2019	Zebra
60	220 kV Bhanjanagar - Meramundali DC (Loc. No. 197 to 470)	220	161.000	1974	Zebra
61	220 kV Bhanjanagar - Nayagarh DC (Loc. No. 1 to 230)	220	137.180	1989	ACSR Zebra (54+7/3.18mm)
62	220 kV Govindpalli LILO DC (on 220 kV Balimela PH- Jayanagar Ckt III)	220	2.154	2024	Low Loss ACSR Zebra(490 mm2)
63	220 kV Gunupur LILO DC (on Therubali - Narendrapur Ckt I)	220	27.200	2022	Low Loss ACSR Zebra(490 mm2)
64	220 kV Jayanagar - Balimela - III SC	220	93.460	1982	Zebra (54+7/3.18mm)
65	220 kV Jayanagar - Balimela DC	220	184.144	1974	Zebra (54+7/3.18mm)
66	220 kV Jayanagar - PGCIL DC	220	15.460	1990	Zebra (54+7/3.18mm)
67	220 kV Jayanagar - PGCIL DC Ckt (3 & 4)	220	15.460	2020	Zebra (54+7/3.18mm)
68	220 kV Jayanagar - Therubali - III SC	220	123.000	1984	ACSR Zebra (54/7/0.125)
69	220 kV Jayanagar - Therubali DC	220	246.400	1974	ACSR Zebra (54/7/0.125)
70	220 kV Jayanagar - Upper Kolab DC	220	12.000	1987	Zebra (54+7/3.18mm)
71	220 kV Jayapatana LILO DC (on Therubali - Indravati Ckt IV)	220	32.000	2019	AAAC Zebra(37/4 mm)
72	220 kV Kalimela LILO DC (on Balimela- Malkangiri Ckt I)	220	71.502	2022	ACSR Zebra
73	220 kV Kasipur LILO DC (on Therubali - Indravati Ckt IV)	220	6.448	2019	AAAC Zebra(37/4 mm)
74	220 kV Laxmipur - Aditya Alumina DC (Loc 1 -64)	220	33.862	2014	AAAC Zebra(37/4 mm)
75	220 kV Laxmipur - NALCO DC	220	73.980	2019	ACSR Zebra (54+7/3.18mm)
76	220 kV Laxmipur - Utkal Alumina DC (Loc 70 - 117)	220	28.218	2014	AAAC Zebra(37/4 mm)
77	220 kV Laxmipur RTSS SC on DC	220	2.450	2021	AAAC Zebra(37/4 mm)
78	220 kV Narendrapur - Mendhasala DC (Upto Balugaon)	220	168.000	2004	
79	220 kV Narendrapur - Tata Steel Gopalpur DC (including UG cable)	220	16.200	2020	
80	220 kV Therubali - Bhanjanagar DC (Loc. No. 471 to 827)	220	209.600	1974	ACSR Zebra (54+7/3.18mm)
81	220 kV Therubali - Bhanjanagar DC (Loc. No. 828 to 1049)	220	133.320	1974	ACSR Zebra (54/7/0.125)
82	220 kV Therubali - Indravati DC (I & II)	220	172.296	2001	AAAC Zebra(37/4 mm)
83	220 kV Therubali - Indravati DC (III & IV)	220	182.000	2007	AAAC Zebra(37/4 mm)
84	220 kV Therubali - Narendrapur DC (Loc. No. 1 to 293)	220	176.540	1999	ACSR Zebra (54+7/3.18mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
85	220 kV Therubali - Narendrapur DC (Loc. No. 293 to 656)	220	215.600	1999	ACSR Zebra (54+7/3.18mm)
86	220 kV Bamra LILO (220 kV Budhipadar - Tarkera Ckt-II)	220	10.600	2022	ACSR Zebra (54+7/3.18mm)
87	220 kV Barkote LILO DC	220	1.792	2001	ACSR Zebra (54+7/3.18mm)
88	220 kV Deogarh LILO DC from 220 kV Rengali-Barkote line	220	24.740	2021	ACSR Zebra (54+7/3.18mm)
89	220 kV Bargarh New LILO DC (220 kV Katapalli - New Bolangir Ckt-I)	220	0.070	2018	ACSR Zebra (54+7/3.18mm)
90	220 kV Bolangir PG LILO DC (220 kV Katapalli - New Bolangir Ckt-II)	220	1.800	2016	ACSR Zebra (54+7/3.18mm)
91	220 kV New Bolangir-Bolangir PG Ckt-II SC on DC	220	2.700	2020	ACSR Zebra (54+7/3.18mm)
92	220 kV New Bolangir-Kesinga SC on DC	220	83.356	2022	ACSR Zebra (54+7/3.18mm)
93	220 kV Bolangir PG-Kesinga SC on DC	220	80.596	2022	ACSR Zebra (54+7/3.18mm)
94	220 kV Bonai LILO DC (220 kV Rengali - Tarkera Ckt-I)	220	5.534	2017	ACSR Zebra (54+7/3.18mm)
95	220 kV Bonai-Bimlagarh RTSS SC on DC Towers	220	20.218	2021	ACSR Zebra (54+7/3.18mm)
96	220 kV Budhipadar - Aditya Aluminium DC	220	41.014	2013	ACSR Zebra (54+7/3.18mm)
97	220 kV Budhipadar - Basundhara SC (in DC Towers)	220	35.293	2012	ACSR Zebra (54+7/3.18mm)
98	220 kV Budhipadar - Bhusan DC	220	29.840	2005	ACSR Zebra (54+7/3.18mm)
99	220 kV Budhipadar - IB DC (Ckt - I & II)	220	52.000	1995	AAAC Moose (61/3.45 mm)
100	220 kV Budhipadar - IB DC (Ckt - III & IV)	220	50.560	2008	AAAC Moose (61/3.45 mm)
101	220 kV Budhipadar – Katapali DC	220	123.432	2007	AAAC Zebra(37/4 mm)
102	220 kV Budhipadar - Korba DC	220	120.000	1997	ACSR Zebra (54+7/3.18mm)
103	220 kV Budhipadar - SPS DC	220	14.200	2007	ACSR Zebra (54+7/3.18mm)
104	220 kV Budhipadar - Tarkera DC (Bamra to Tarkera, Loc. No. 121 to 328)	220	132.904	1995	ACSR Zebra (54+7/3.18mm)
105	220 kV Budhipadar - Tarkera DC (Upto Bamra, Loc. No. 1 to 120)	220	86.772	1995	ACSR Zebra (54+7/3.18mm)
106	220 kV Chandiposh Traction LILO DC	220	10.400	2000	ACSR Zebra (54+7/3.18mm)
107	220 kV Katapali – New Bolangir DC	220	235.694	2010 (Ckt-I) 2011 (Ckt-II)	ACSR Zebra (54+7/3.18mm)
108	220 kV Katapali – HINDALCO DC	220	28.000	2016	ACSR Zebra (54+7/3.18mm)
109	220 kV Kuarnmunda LILO DC (from 220 kV Tarkera - Budhipadar)	220	32.860	2023	ACSR Zebra (54+7/3.18mm)
110	220 kV Lapanga LILO (220 kV Burla - Budhipadar)	220	6.606	2014	ACSR Zebra (54+7/3.18mm)
111	220 kV Lephripada LILO (220 kV Budhipadar - Basundhara)	220	7.750	2021	ACSR Zebra (54+7/3.18mm)
112	220 kV Tarkera - Bisra (PGCIL) DC	220	30.670	1993	ACSR Zebra (54+7/3.18mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
113	220 kV Tarkera - Rengali DC (Loc. No. 188 to 645)	220	234.000	1979	ACSR Zebra (54+7/3.18mm)
114	220 kV Tarkera - RSP DC Ckt I & II	220	20.000	2008 (Ckt-I) 2013 (Ckt-II)	ACSR Zebra (54+7/3.18mm)
115	220 kV Tarkera - RSP DC Ckt III & IV	220	8.000	2019	ACSR Zebra (54+7/3.18mm)
132kV					
1	132 kV Angul - Boinda SC	132	38.500	1963	ACSR Panther(30+7/3.00mm)
2	132 kV Angul - Chainpal SC	132	14.931	2001	ACSR Panther(30+7/3.00mm)
3	132 kV Angul - MCL DC	132	21.652	1994 (Ckt-I) 1998 (Ckt-II)	ACSR Panther(30+7/3.00mm)
4	132 kV Angul - TTPS SC	132	16.000	1963	ACSR Panther(30+7/3.00mm)
5	132 kV Arati Steels LILO DC	132	22.022	2005	ACSR Panther(30+7/3.00mm)
6	132 kV Atri - Arugul DC	132	38.800	2016	ACSR Panther(30+7/3.00mm)
7	132 kV Atri - Banki SC	132	20.900	2016	ACSR Panther(30+7/3.00mm)
8	132 kV Atri LILO MC on (132 kV Khurda - Chandpur) and on (132 kV Khurda - Shamuka)	132	42.842	2020	ACSR Panther(30+7/3.00mm)
9	132 kV Badagada LILO in DC Towers (Chandaka – Nimapara Line)	132	31.740	2010	ACSR Panther(30+7/3.00mm)
10	132 kV Bahugram LILO DC (132 kV ICCL-Salipur Line)	132	6.058	2022	ACSR Panther(30+7/3.00mm)
11	132 kV Banki - Nuapatana SC (in DC Towers)	132	21.014	2018	ACSR Panther(30+7/3.00mm)
12	132 kV Bhubaneswar - Cuttack SC	132	19.800	1984	ACSR Panther(30+7/3.00mm)
13	132 kV from Bhubaneswar GSS to Mancheswar – B GIS SC UG cable	132	5.180	2020	630 mm ² XLPE Single Core 3 run Copper cable
14	132 kV Bhubaneswar Power LILO DC (on 132 kV Bidanasi - Chandaka SC at Loc No. 54)	132	1.100	2016	
15	132 kV Brajabiharipur LILO DC (on 132 kV Bidanasi - Chandaka SC at Loc No. 14-15)	132	8.260	2020	ACSR Panther(30+7/3.00mm)
16	132 kV Bidanasi - Chandaka SC (Loc. No. 52 to 90)	132	12.814	1969	ACSR Panther(30+7/3.00mm)
17	132 kV Bidanasi - Chandaka SC (Loc. 1 - 51)	132	14.621	1969	ACSR Panther(30+7/3.00mm)
18	132 kV Bhubaneswar - Nayapalli SC (UG Cable)	132	6.160	2024	132 kV XLPE UG Cable
19	132 kV Bidanasi LILO DC	132	13.600	1993	ACSR Panther(30+7/3.00mm)
20	132 kV Boinda- RTSS Boinda SC	132	2.947	2019	ACSR Panther(30+7/3.00mm)
21	132 kV Chainpal - Talcher Traction SC	132	0.448	2017	ACSR Panther(30+7/3.00mm)
22	132 kV Chainpal - Choudwar Ckt - I SC (Loc. No. 148 to 268)	132	42.700	1958	ACSR Panther(30+7/3.00mm)
23	132 kV Chainpal - Choudwar Ckt - I SC (Loc. No. 1 to 147)	132	43.200	1958	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
24	132 kV Chainpal - Choudwar Ckt - II SC (Loc. No. 152 to 314 via ICCL)	132	47.300	1972	ACSR Panther(30+7/3.00mm)
25	132 kV Chainpal - Choudwar Ckt - II SC (Loc. No. 1 to 151)	132	43.780	1972	ACSR Panther(30+7/3.00mm)
26	132 kV Chainpal - FCI DC	132	14.000	1975	ACSR Panther(30+7/3.00mm)
27	132 kV Chandaka - Bhubaneswar Ckt-I SC	132	5.500	1979	HTLS
28	132 kV Chandaka - Bhubaneswar Ckt-II SC	132	5.400	1979	HTLS
29	132 kV Chandaka - Mancheswar-B Ckt-I UG cable SC	132	11.200	2020	UG CABLING
30	132 kV Chandaka - Khurda SC	132	36.500	1969	ACSR Panther(30+7/3.00mm)
31	132 kV Chandaka - Nimapara DC	132	124.000	1996	One ckt to Nimapara is AAAC Panther (37/3.15 mm)/ACSR Panther(30+7/3.00mm) One ckt to Ranasinghpur is HTLS
32	132 kV Chandaka B- Unit 8 UG Cable SC	132	11.400	2019	Under Ground Cable
33	132 kV Chandikhole LILO DC	132	3.260	2003	ACSR Panther(30+7/3.00mm)
34	132 kV Chandpur LILO DC (Khurda - Balugaon)	132	4.620	2012	ACSR Panther(30+7/3.00mm)
35	132 kV Choudwar - Bidanasi SC	132	8.614	1969	ACSR Panther(30+7/3.00mm)
36	132 kV Choudwar - Kendrapara Road Traction SC (in DC Towers)	132	4.600	2008	ACSR Panther(30+7/3.00mm)
37	132 kV Cuttack - Jagatsinghpur SC (in DC Towers)	132	35.112	1996	ACSR Panther(30+7/3.00mm)
38	132 kV Dhenkanal - Joranda Traction SC (in DC Towers)	132	19.345	2005	ACSR Panther(30+7/3.00mm)
39	132 kV Nuapatna LILO (on 132kV Meramundali - Arati Ckt earlier termed as Chainpal - Choudwar ckt-I)	132	70.000	1994	ACSR Panther(30+7/3.00mm)
40	132 kV Global LILO DC(on Chainpal - FCI ckt-I)	132	4.614	2020	ACSR Panther(30+7/3.00mm)
41	132 kV Goda LILO DC(on 132kV Kamakhyanagar-Kalarangi line)	132	1.600	2020	ACSR Panther(30+7/3.00mm)
42	132 kV Gondia LILO DC(on 132kV TTPS-Duburi Ckt-II)	132	48.918	2021	ACSR Panther(30+7/3.00mm)
43	132 kV Grid Steel LILO DC (On 132kV Dhenkanal - Choudwar SC)	132	2.240	2015	
44	132 kV Kendrapara RTSS (from 132/33 kV Marshaghai S/s)	132	14.080	2020	ACSR Panther(30+7/3.00mm)
45	132 kV Khajuriakata LILO DC (on 132 kV Meramundali - Arati Ckt)	132	31.060	2017	ACSR Panther(30+7/3.00mm)
46	132 kV Kharagprasad - NBVL DC	132	1.154	2005 (Ckt-I) 2010 (Ckt-II)	ACSR Panther(30+7/3.00mm)
47	132 kV Kharagprasad - Meramundali Traction SC (in DC Towers)	132	1.170	2003	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
48	132 kV Kharagprasad - MGM SC (in DC Towers)	132	7.140	2015	ACSR Panther(30+7/3.00mm)
49	132 kV Kharagprasad - Samal Metalic SC (in DC Towers)	132	1.030	2010	ACSR Panther(30+7/3.00mm)
50	132 kV Khuntuni LILO DC (132 kV Chainpal - Choudwar Ckt - II SC)	132	1.840	2018	ACSR Panther(30+7/3.00mm)
51	132 kV ICCL - Salipur Ckt-I on DC Towers	132	25.815	2006	ACSR Panther(30+7/3.00mm)
52	132 kV ICCL - Salipur Ckt-II on DC Towers	132	25.815	2021	ACSR Panther(30+7/3.00mm)
53	132 kV Jagatsinghpur - Gorakhnath Traction SC (in DC Towers)	132	16.530	2011	ACSR Panther(30+7/3.00mm)
54	132 kV Jajpur Road - Kendrapara DC	132	126.220	1979	PANTHER 37/.118mm & 21mm dia
55	132 kV Kamakhya Nagar LILO DC	132	2.000	1999	ACSR Panther(30+7/3.00mm)
56	132 kV Kamakhya Nagar RTSS	132	4.940	2020	ACSR Panther(30+7/3.00mm)
57	132 kV Kendrapara - Paradeep DC	132	69.548	1981	ACSR Panther(30+7/3.00mm)
58	132 kV Kendrapara - Pattamundai SC (in DC Towers)	132	19.500	1997	ACSR Panther(30+7/3.00mm)
59	132 kV Khurda - Balugaon SC	132	68.566	1978	ACSR Panther(30+7/3.00mm)
60	132 kV Khurda - Kaipadar Traction SC (in DC Towers)	132	11.259	2002	ACSR Panther(30+7/3.00mm)
61	132 kV Khurda - Puri SC	132	57.570	1984	ACSR Panther(30+7/3.00mm)
62	132 kV Marshaghai LILO DC (132 kV Kendrapara - Paradeep)	132	4.800	2015	ACSR Panther(30+7/3.00mm)
63	132 kV Maheswari Ispat LILO DC	132	9.776	2006	ACSR Panther(30+7/3.00mm)
64	132 kV Mania LILO DC	132	1.200	2016	
65	132 kV Mendhasal LILO DC (Chandaka - Khurda)	132	1.600	2015	ACSR Panther(30+7/3.00mm)
66	132 kV Meramundali - BRG Steel SC (in DC Towers)	132	3.550	2007	ACSR Panther(30+7/3.00mm)
67	132 kV Meramundali - Kharagprasad DC	132	11.034	2005	ACSR Panther(30+7/3.00mm)
68	132 kV Meramundali - Rungta Mines Ltd., FAD SC (in DC Towers)	132	7.468	2007	ACSR Panther(30+7/3.00mm)
69	132 kV Meramundali -Rungta Mines Ltd., DSP SC (in DC Towers)	132	10.530	2021	ACSR Panther(30+7/3.00mm)
70	132 kV Meramundali LILO DC (Chainpal - Meramundali)	132	3.470	2007	ACSR Panther(30+7/3.00mm)
71	132 kV Meramundali LILO DC (Meramundali - Choudwar)	132	3.470	2007	ACSR Panther(30+7/3.00mm)
72	132 kV Nimapara - Konark SC(in DC Towers)	132	20.310	2015	ACSR Panther(30+7/3.00mm)
73	132 kV Nimapara - Puri DC	132	60.000	1998	ACSR Panther(30+7/3.00mm)
74	132 kV OCL LILO DC	132	31.738	2008	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
75	132 kV Olavar - Chandbali DC	132	24.996	2019	ACSR Panther(30+7/3.00mm)
76	132 kV OPCL LILO DC	132	46.000	2009	ACSR Panther(30+7/3.00mm)
77	132 kV Paradeep - IFFCO DC	132	14.342	1999 (Ckt-I) 2002 (Ckt-II)	AAAC Panther (37/3.15 mm)
78	132KV Paradeep - Jagatsinghpur SC (in DC Towers)	132	56.073	2013	AAAC Panther (37/3.15 mm)
79	132 kV Paradeep - PPL DC	132	12.410	2000 (Ckt-I) 2001 (Ckt-II)	AAAC Panther (37/3.15 mm)
80	132 kV Paradeep - PPT DC	132	15.318	2001	AAAC Panther (37/3.15 mm)
81	132 kV Paradeep - SIJU RTSS	132	5.081	2022	ACSR Panther(30+7/3.00mm)
82	132 kV Pattamundai - Olavar DC	132	48.676	2017	AAAC Panther (37/3.15 mm)
83	132 kV Pattamundai - Rajnagar DC	132	44.572	2021	AAAC Panther (37/3.15 mm)
84	132 kV Phulnakshara LILO DC (Bhubaneswar - Cuttack Line)	132	23.596	2009	AAAC Panther (37/3.15 mm)
85	132 kV Pratapsasan LILO in DC Towers (Badagada – Nimapara Line)	132	4.484	2018	ACSR Panther(30+7/3.00mm)
86	132 kV Pratapsasan - Phulnakshara DC	132	30.076	2021	ACSR Panther(30+7/3.00mm)
87	132 kV RAMCO LILO DC(on Jajpur Road-Kendrapada ckt-II)	132	8.250	2020	ACSR Panther(30+7/3.00mm)
88	132 kV Ranasinghpur LILO in DC Towers (Chandaka – Nimapara Line)	132	2.660	2000	One ckt ACSR Panther(30+7/3.00mm) One ckt HTLS
89	132 kV Rawmet Ferrous LILO DC	132	17.560	2007	ACSR Panther(30+7/3.00mm)
90	132 kV Salipur - Kendrapara SC(on DC Towers)	132	34.400	2017	ACSR Panther(30+7/3.00mm)
91	132 kV Samagara LILO DC (Nimapara - Puri Ckt-I)	132	3.990	2015	ACSR Panther(30+7/3.00mm)
92	132 kV Samagara - Satasankha DC	132	56.946	2020	ACSR Panther(30+7/3.00mm)
93	132 kV Samagara - Malatipatpur RTSS SC on DC	132	5.535	2021	ACSR Panther(30+7/3.00mm)
94	132 kV Shamuka LILO DC (Khurda - Puri Line)	132	21.224	2015	ACSR Panther(30+7/3.00mm)
95	132 kV Shree Cements Ltd. SC on DC line (From Khuntuni GIS)	132	6.450	2021	ACSR Panther(30+7/3.00mm)
96	132 kV Tirtol LILO DC (Paradeep - Jagatsinghpur Line)	132	10.840	2017	ACSR Panther(30+7/3.00mm)
97	132 kV TTPS - Chainpal - I SC	132	3.000	1968	ACSR Panther(30+7/3.00mm)
98	132 kV TTPS - Chainpal - II & III DC	132	6.000	1980 (Ckt-II) 1981 (Ckt-III)	ACSR Panther(30+7/3.00mm)
99	132 kV Ultratech LILO DC(from 132 kV Aarti Steel- TS Alloy line)	132	15.268	2023	ACSR Panther(30+7/3.00mm)
100	132 kV Agarpada LILO DC (Bhadrakh - Anandpur Line)	132	23.340	2019	ACSR Panther(30+7/3.00mm)
101	132 kV Arya Iron LILO DC	132	0.940	2008	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
102	132 kV Arya Iron - BRPL SC (in DC Towers)	132	9.008	2013	ACSR Panther(30+7/3.00mm)
103	132 kV B.C. Mohanty - Tomka Traction SC (in DC Towers)	132	11.860	2013	ACSR Panther(30+7/3.00mm)
104	132 kV Chandipur LILO DC from 132 kV Balasore - Soro SC line	132	52.464	2022	ACSR Panther(30+7/3.00mm)
105	132 kV Daitari LILO DC from 132 kV BC Mohanty- Bamnipal (TISCO) SC line	132	19.000	2021	ACSR Panther(30+7/3.00mm)
106	132 kV Balasore - Baripada SC	132	57.300	1984	ACSR Panther(30+7/3.00mm)
107	132 kV Balasore - Bhadrak SC	132	74.195	1980	ACSR Panther 37/7/0.118 mm
108	132 kV Balasore - Birla Tyres SC (in DC Towers)	132	2.598	1991	ACSR Panther 37/7/0.118 mm
109	132 kV Balasore - EMAMI Paper SC (in DC Towers)	132	8.571	2008	ACSR Panther 37/7/0.118 mm
110	132 kV Balasore - Balasore Alloys SC	132	6.450	1986	ACSR Panther 37/7/0.118 mm
111	132 kV Balasore - Jaleswar SC	132	55.772	1991	ACSR Panther(30+7/3.00mm)
112	132 kV Balasore - Traction SC (in DC Towers)	132	3.565	2005	ACSR Panther 37/7/0.118 mm
113	132 kV Bangiriposi LILO DC (132 kV Kuchei - Rairangpur)	132	1.400	2016	ACSR Panther 37/7/0.118 mm
114	132 kV Kuchei - Bangiriposi Ckt-II (SC on DC)	132	31.256	2021	ACSR Panther 37/7/0.118 mm
115	132 kV Barbil LILO DC (132 kV Joda - Bolani)	132	2.736	2014	ACSR Panther 37/7/0.118 mm
116	132 kV Barbil- RML (KSP) SC on DC (OH line-23.711 km & UG Cable- 8.1 km)	132	31.811	2023	ACSR Panther 37/7/0.118 mm & 630 mm ² XLPE Single Core 4 run Copper cable
117	132 kV Baripada - Rairangpur SC	132	76.386	1984	ACSR Panther(30+7/3.00mm)
118	132 kV Basta LILO DC	132	1.072	2010	ACSR Panther(30+7/3.00mm)
119	132 kV Bee Kay Steels LILO DC	132	4.800	2010	ACSR Panther(30+7/3.00mm)
120	132 kV Betanati LILO DC	132	6.208	2019	ACSR Panther(30+7/3.00mm)
121	132 kV Bhadrak – Anandpur SC (in DC Towers)	132	46.764	2019	ACSR Panther(30+7/3.00mm)
122	132 kV Bhadrak – Dhamara Port SC (in DC Towers)	132	64.700	2010	ACSR Panther(30+7/3.00mm)
123	132 kV Bhadrak - Dhamra Traction SC (in DC Towers)	132	35.700	2011	ACSR Panther(30+7/3.00mm)
124	132 kV Bhadrak - FACOR SC	132	4.564	1983	ACSR Panther, 37/7/3.0mm
125	132 kV Bhadrak - Traction SC (in DC Towers)	132	8.086	2003	ACSR Panther, 37/7/4 mm
126	132 kV Bhogarai LILO DC	132	53.434	2017	ACSR Panther, 37/7/4 mm
127	132 kV Bolani LILO DC (Joda - Nalda Line)	132	15.760	1995	ACSR Panther(30+7/3.00mm)
128	132 kV Brahamani River Pellets LILO DC	132	5.560	2011	ACSR Panther(30+7/3.00mm)
129	132 kV Dhamara - Chandbali DC	132	54.746	2024	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
130	132 kV Duburi - Baminipal SC	132	20.974	1985	ACSR Panther(30+7/3.00mm)
131	132 kV Duburi - Jajpur Road DC	132	26.400	1969	ACSR Panther(30+7/3.00mm)
132	132 kV Duburi - Jakhapura Traction SC (in DC Towers)	132	12.851	2005	ACSR Panther(30+7/3.00mm)
133	132 kV Duburi - MESCO DC	132	13.300	2000	ACSR Panther(30+7/3.00mm)
134	132 kV Jabamayee Ferro Alloys LILO DC	132	1.476	2008	ACSR Panther(30+7/3.00mm)
135	132 kV Jabamayee Ferro Alloys-Sukinda RTSS (SC on DC) (OH= 3.07 km & UG Cable= 0.8 km)	132	3.870	2023	ACSR Panther(30+7/3.00mm)
136	132 kV Jajpur Road - Anandpur DC	132	60.000	2010	ACSR Panther(30+7/3.00mm)
137	132 kV Jaipur Road - Bhadrak SC	132	44.932	1979	ACSR, Panther, 37/7/4 mm
138	132 kV Jajpur Town LILO DC	132	21.038	1998	ACSR Panther(30+7/3.00mm)
139	132 kV Jaleswar - Traction SC (in DC Towers)	132	2.340	2003	ACSR Panther(30+7/3.00mm)
140	132 kV JSWCL LILO DC (on 132 kV Duburi Old - MESCO Ckt - II)	132	9.380	2019	ACSR Panther(30+7/3.00mm)
141	132 kV Joda - Bansapani Traction SC (in DC Towers)	132	2.990	2012	ACSR Panther(30+7/3.00mm)
142	132 kV Joda - FAP SC (in DC Towers)	132	0.060	2003	ACSR Panther(30+7/3.00mm)
143	132 kV Joda - Kenduposi SC	132	49.900	1985	ACSR Panther(30+7/3.00mm)
144	132 kV Joda - Nalda - Bhalulata SC	132	59.000	1959	ACSR Panther(30+7/3.00mm)
145	132 kV Joda - Palasponga - Rairangpur SC (Loc. 1 to 111)	132	37.000	1981	ACSR Panther(30+7/3.00mm)
146	132 kV Kalarangi LILO DC	132	26.040	1998	ACSR Panther(30+7/3.00mm)
147	132 kV Karanjia - Dhenkikote SC (in DC Towers)	132	41.902	2018	ACSR Panther(30+7/3.00mm)
148	132 kV Karanjia LILO DC	132	47.028	2009	ACSR Panther(30+7/3.00mm)
149	132 kV Kuchei - Jaleswar DC	132	158.564	2017	ACSR Panther(30+7/3.00mm)
150	132 kV Kuchei LILO DC (Baripada - Rairangpur Line)	132	2.200	2005	ACSR Panther(30+7/3.00mm)
151	132 kV Palasponga - Keonjhar Traction SC (in DC Towers)	132	19.433	2011	ACSR Panther(30+7/3.00mm)
152	132 kV Palasponga - ESSAR (ESIL) SC on DC	132	19.093	2014	ACSR Panther(30+7/3.00mm)
153	132 kV Palasponga LILO DC (Loc. No. 73/1 to 73/6)	132	36.000	1981	ACSR Panther(30+7/3.00mm)
154	132 kV Palasponga - Rairangpur SC (Loc. No. 111 to 336)	132	79.100	1980	ACSR Panther(30+7/3.00mm)
155	132 kV Rungta Mines LILO DC (on 132 kV Joda-Rourkela SC Line)	132	4.320	2021	ACSR Panther 37/7/118

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
156	132 kV Rungta Mines Sw. Strn. To Karakolha Steel Plant SC (in DC Towers)	132	0.894	2021	ACSR Panther(30+7/3.00mm)
157	132 kV Soro LILO DC	132	2.020	1997	ACSR Panther 37/7/.118
158	132 kV TTPS - Duburi DC	132	173.600	1969	ACSR Panther(30+7/3.00mm)
159	132 kV Turumunga LILO DC (on 132 kV Palasponga-Karanjia SC Line)	132	62.708	2024	Low Loss ACSR (15/8/7-3.5/3.95/2.55MM)
160	132 kV Udala LILO DC (on 132 kV Baripada - Balasore Line)	132	83.300	2018	ACSR Panther 37/7/.118
161	132 kV Akhusingh - Parlakhemundi SC (in DC Towers)	132	76.900	2001	ACSR Panther(30+7/3.00mm)
162	132 kV Akhusingh - Gunupur SC (in DC Towers)	132	23.296	2021	ACSR Panther(30+7/3.00mm)
163	132 kV Aska - Berhampur SC	132	33.960	1980	ACSR Panther(30+7/3.00mm)
164	132 kV Aska - Chhatrapur DC	132	87.650	1982	ACSR Panther(30+7/3.00mm)
165	132 kV Aska New - Digapahandi DC	132	76.374	2021	ACSR Panther(30+7/3.00mm)
166	132 kV Aska New LILO DC (on 132 kV Aska - Berhampur Line)	132	5.200	2019	ACSR Panther(30+7/3.00mm)
167	132 kV Aska New LILO DC (on 132 kV Aska - Chhatrapur Line)	132	12.400	2019	ACSR Panther(30+7/3.00mm)
168	132 kV Balugaon - Solari TSS SC (in DC Towers)	132	14.500	2001	AAAC Zebra(37/4 mm)
169	132 kV Balugaon LILO DC	132	18.270	1991	ACSR Panther(30+7/3.00mm)
170	132 kV Berhampur - Mohana SC	132	58.000	1962	ACSR Lynx (30+7/2.79 mm)
171	132 kV Bhanjanagar - Aska DC	132	67.440	1980	ACSR Panther(30+7/3.00mm)
172	132 kV Bhanjanagar - Phulbani SC	132	86.500	1986	ACSR Panther(30+7/3.00mm)
173	132 kV Boriguma LILO DC (132 kV Jayanagar-Nabarangpur)	132	32.800	2023	ACSR Panther(30+7/3.00mm)
174	132 kV Chhatrapur - Balugaon SC	132	54.190	1982	ACSR Panther(30+7/3.00mm)
175	132 kV Chhatrapur - Ganjam SC	132	12.600	1968	ACSR Panther(30+7/3.00mm)
176	132 kV Chhatrapur - Rambha TSS SC (in DC Towers)	132	28.904	2003	ACSR Panther(30+7/3.00mm)
177	132 kV Chhatrapur- IRE DC	132	11.600	1981	ACSR Panther(30+7/3.00mm)
178	132 kV Dabugaon - Umerkote SC (in DC Towers)	132	45.890	2015	ACSR Panther(30+7/3.00mm)
179	132 kV Digapahandi LILO DC	132	3.764	2003	AAAC Panther (37/3.15 mm)
180	132 kV Digapahandi- Chikiti DC	132	59.000	2019	AAAC Panther (37/3.15 mm)
181	132 kV G. Udaygiri LILO DC (from 132 kV Bhanjanagar-Phulbani SC line)	132	23.000	2021	AAAC Panther (37/3.15 mm)
182	132 kV Gunupur - Parlakhemundi SC (in DC towers)	132	62.600	2025	ACSR Panther (37/3.15 mm)
183	132 kV Hinjili LILO DC (from 132 kV Berhampur-Aska New SC line)	132	0.820	2021	ACSR Panther (37/3.15 mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
184	132 kV Jayanagar - Damanjodi SC	132	45.272	1986	AAAC Panther (37/3.15 mm)
185	132 kV Jayanagar - Rayagada SC	132	110.000	1956	ACSR Lynx (30+7/2.79 mm)
186	132 kV Jayanagar - Sunabeda SC on DC Ckt-I	132	40.000	1970	ACSR Panther (37/3.15 mm)
187	132 kV Jayanagar - Sunabeda SC on DC Ckt-II	132	39.630	2024	ACSR Panther (37/3.15 mm)
188	132 kV Jayanagar - Tentulikhunti SC on DC Ckt-I	132	56.400	1985	ACSR Panther (30+7/3.0 mm)
189	132 kV Jayanagar - Tentulikhunti SC on DC Ckt-II	132	58.290	2021	ACSR Panther (30+7/3.0 mm)
190	132 kV Jayapatna - Dabugaon SC on DC	132	66.390	2020	ACSR Panther (30+7/3.0 mm)
191	132 kV Machkund PH - Jayanagar (RE Line) SC	132	148.000	1982	ACSR Lynx (Loc.1-17) & ACSR Panther (Loc.17 to remaining portion)
192	132 kV Machkund PH - Jayanagar SC	132	43.000	1956	ACSR Panther (30+7/3.0 mm) (Loc.1-28, 8km.) + ACSR Lynx (30+7/2.79 mm) (Loc.28-153, 35km.)
193	132 kV Manbar - Jayangar Diversion SC in DC Towers (Loc. No. 258 to 278)	132	7.106	2007	ACSR Panther(30+7/3.00mm)
194	132 kV Muniguda - Bissamcuttack RTSS SC in DC Towers	132	13.850	2018	ACSR Panther(30+7/3.00mm)
195	132 kV Muniguda LILO DC (On Therubali - Kesinga SC))	132	3.800	2017	ACSR Panther(30+7/3.00mm)
196	132 kV Nabarangpur LILO from 132 kV Jayanagar-Tentulikhunti Ckt-II	132	39.200	2021	AAAC Panther (37/3.15 mm)
197	132 kV Narendrapur - Berhampur DC	132	21.820	2004	AAAC Panther (37/3.15 mm)
198	132 kV Narendrapur - Chatrapur DC	132	26.564	2004	AAAC Panther (37/3.15 mm)
199	132 kV Narendrapur - Jagannathpur TSS SC (in DC Towers)	132	0.540	2000	AAAC Panther (37/3.15 mm)
200	132 kV Palasingi RTSS (from 220/132/33 kV Gunupur S/s)	132	16.214	2023	ACSR Panther(30+7/3.00mm)
201	132 kV Podagada LILO DC (Jayanagar - Rayagada Line)	132	2.235	2017	ACSR Panther(30+7/3.00mm)
202	132 kV Podagada-Patangi SC	132	52.000	2021	ACSR Panther(30+7/3.00mm)
203	132 kV Purusottampur LILO DC (Aska - Chhatrapur Line)	132	5.000	2013	ACSR Panther(30+7/3.00mm)
204	132 kV Rayagada - Akhusingh - Mohana SC	132	120.000	1962	ACSR Lynx (30+7/2.79 mm)
205	132 kV Rayagada - Rayagada Traction SC	132	2.646	2017	ACSR Panther(30+7/3.00mm)
206	132 kV Rayagada - VBC Ferro SC	132	0.300	2005	ACSR Panther(30+7/3.00mm)
207	132 kV Sunabeda - Damanjodi SC	132	13.000	1985	ACSR Panther(30+7/3.00mm)
208	132 kV Sunabeda - HAL SC (in DC Towers)	132	0.700	2005	ACSR BEAR (30+7/3.353 mm)
209	132 kV Sunabeda - Pottangi SC (in DC Towers)	132	33.400	2019	ACSR BEAR (30+7/3.353 mm)
210	132 kV Tentulikhunti - Dabugaon SC (in DC Towers)	132	43.200	2015	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
211	132 kV Tentulikhunti - Vento 40MW Solar SC (in DC Towers)	132	4.192	2018	ACSR Panther(30+7/3.00mm)
212	132 kV Therubali-Bhalumaska RTSS SC on DC Towers	132	31.100	2021	ACSR Panther(30+7/3.00mm)
213	132 kV Therubali - IMFA SC	132	2.000	1992	ACSR Panther(30+7/3.00mm)
214	132 kV Therubali - JK Paper SC	132	9.680	1998	ACSR Panther(30+7/3.00mm)
215	132 kV Therubali - Rayagada SC	132	20.000	1967	ACSR Panther(30+7/3.00mm)
216	132 kV ABREL LILO (132 kV Kesinga-Saintala)	132	2.300	2022	ACSR Panther(30+7/3.00mm)
217	132 kV ACME LILO (132 kV Bolangir - Saintala)	132	2.600	2015	ACSR Panther(30+7/3.00mm)
218	132 kV Aryan - Viraj LILO DC (Burla PH - Rajgangpur - Rourkela Ckt)	132	0.940	2009	ACSR Panther(30+7/3.00mm)
219	132 kV Bamra LILO (132 kV Budhipadar - Rajgangpur)	132	11.600	2022	ACSR Panther(30+7/3.00mm)
220	132 kV Bamra Traction LILO DC	132	10.000	1998	ACSR Panther(30+7/3.00mm)
221	132 kV Bargarh - ACC DC	132	5.740	1993	ACSR Panther(30+7/3.00mm)
222	132 kV Bargarh - Bolangir SC	132	79.700	1981	ACSR Panther(30+7/3.00mm)
223	132 kV Bargarh New- Bhatli DC	132	80.450	2023	ACSR Panther(30+7/3.00mm)
224	132 kV Bargarh New- Ghens DC	132	59.060	2018	ACSR Panther(30+7/3.00mm)
225	132 kV Bargarh New LILO DC (Bargarh-Barpali SC line)	132	9.600	2021	ACSR Panther(30+7/3.00mm)
226	132 kV Barpali - Dunguripalli RTSS SC (in DC Towers)	132	13.605	2018	ACSR Panther(30+7/3.00mm)
227	132 kV Barpali LILO DC	132	6.714	2009	ACSR Panther(30+7/3.00mm)
228	132 kV Bhalulata Traction SC 'T' off (in DC Towers)	132	2.710	1999	ACSR Panther(30+7/3.00mm)
229	132 kV Bhawanipatna LILO DC	132	13.220	2013	ACSR Panther(30+7/3.00mm)
230	132 kV Bhawanipatna- Lanjigarh RTSS SC/DC (in DC Towers)	132	34.584	2020	ACSR Panther(30+7/3.00mm)
231	132 kV Bhawanipatna- Bhawanipatna RTSS SC/DC (in DC Towers)	132	2.102	2023	ACSR Panther(30+7/3.00mm)
232	132 kV Bolangir - Patnagarh DC (DC from New Bolangir LILO Tower)	132	80.005	2001	ACSR Panther(30+7/3.00mm)
233	132 kV Bolangir - Saintala SC	132	39.980	1980	ACSR Panther(30+7/3.00mm)
234	132 kV Bolangir - Sonapur SC (in DC Towers)	132	53.845	2001	ACSR Panther(30+7/3.00mm)
235	132 kV New Bolangir - Sonapur Ckt-II SC (in DC Towers)	132	52.446	2024	ACSR Panther(30+7/3.00mm)
236	132 kV Brajrannagar -Belpahar RTSS DC on DC/MC towers	132	22.586	2023	ACSR Panther(30+7/3.00mm)
237	132 kV Brajrannagar -Kechobahal RTSS SC (in DC Towers)	132	11.752	2020	ACSR Panther(30+7/3.00mm)
238	132 kV LILO Lakhanpur in DC/MC (from new 132 kV Budhipadar- Brajrannagar Ckt- II)	132	39.018	2023	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
239	132 kV LILO from Loc. No. 17 of old 132 kV Budhipadar- MCL (Jurabaga) Ckt-II to Brajrajnagar GSS	132	12.470	2023	ACSR Panther(30+7/3.00mm)
240	132 kV Budhipadar - Brajrajnagar Ckt-I	132	11.745	1995	ACSR Panther(30+7/3.00mm)
241	132 kV Budhipadar - Jharsuguda SC	132	7.000	1995	ACSR Panther(30+7/3.00mm)
242	132 kV Budhipadar - MCL DC (Jorabag)	132	46.000	2000 (Ckt-I) 2004 (Ckt-II)	ACSR Panther(30+7/3.00mm)
243	132 kV Budhipadar - MSP Metalics SC (in DC Towers)	132	0.592	2008	ACSR Panther(30+7/3.00mm)
244	132 kV Budhipadar - Sundargarh DC	132	59.840	2003	AAAC Panther 37/3.15 mm
245	132 kV Budhipadar - Tarkera Ckt - I SC (Rajgangpur to Tarkera, Loc. No. 1 to 88)	132	29.000	1958	ACSR Panther(30+7/3.00mm)
246	132 kV Budhipadar - Tarkera Ckt - II SC (Rajgangpur to Tarkera, Loc. No. 1 to 89)	132	29.000	1958	ACSR Panther(30+7/3.00mm)
247	132 kV Budhipadar - Tarkera DC (Bamra to Rajgangpur, Loc. No. 283 to 410)	132	74.000	1958	ACSR Panther(30+7/3.00mm)
248	132 kV Budhipadar - Tarkera DC (Upto Bamra, Loc. No. 164 to 283)	132	88.000	1958	ACSR Panther(30+7/3.00mm)
249	132 kV Burla PH - Boinda SC from	132	129.70 0	1963	ACSR Panther(30+7/3.00mm)
250	132 kV Burla PH - Budhipadar DC	132	114.66 2	1958	ACSR Panther(30+7/3.00mm)
251	132 kV Burla PH - Chiplima PH DC	132	40.000	1979	ACSR Panther(30+7/3.00mm)
252	132 kV Burla PH - HINDALCO DC	132	18.000	1958	ACSR Panther(30+7/3.00mm)
253	132 kV Burla PH - Rajgangpur - Rourkela Ckt (Loc. 294 - 430 - 526, Bamra to Rourkela)	132	66.000	1958	ACSR Panther(30+7/3.00mm)
254	132 kV Burla PH - Rajgangpur - Rourkela Ckt (Loc. 1 - 65)	132	18.730	1958	ACSR Panther(30+7/3.00mm)
255	132 kV Burla PH - Rajgangpur - Rourkela Ckt (Loc. 65 - 171)	132	32.000	1958	ACSR Panther(30+7/3.00mm)
256	132 kV Burla PH - Rajgangpur - Rourkela Ckt (Loc. 171 - 294)	132	42.000	1958	ACSR Panther(30+7/3.00mm)
257	132 kV Chhend - Adhunik Metalics SC (in DC Towers)	132	21.000	2005	ACSR Panther(30+7/3.00mm)
258	132 kV Chhend - Nuagaon TSS SC (in DC Towers)	132	35.000	2004	ACSR Panther(30+7/3.00mm)
259	132 kV Chiplima PH - Bargarh SC	132	29.600	1979	ACSR Panther(30+7/3.00mm)
260	132 kV Hirakud LILO DC (Burla PH - Lapanga Ckt-I)	132	0.418	2022	ACSR Panther(30+7/3.00mm)
261	132 kV Deogaon Road RTSS (from 132/33 kV Tusura S/s)	132	9.991	2020	ACSR Panther(30+7/3.00mm)
262	132 kV RTSS Godabhaga SC on DC	132	10.656	2021	ACSR Panther(30+7/3.00mm)
263	132 kV Jharsuguda - Action Ispat SC (in DC Towers)	132	1.600	2012	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
264	132 kV Jharsuguda - UltraTech DC	132	31.400	1995	ACSR Panther(30+7/3.00mm)
265	132 kV Jharsuguda - Traction SC	132	0.150	1995	ACSR Panther(30+7/3.00mm)
266	132 kV Junagarh - Brundabahal SC line	132	26.820	2024	ACSR Panther, 30+7/3.00, 212.1 sqmm
267	132 kV Kuarnmunda LILO DC (from Chhend- Shree Ganesh Metalics Ltd. SC line)	132	2.736	2024	ACSR Panther(30+7/3.00mm)
268	132 kV Kalunga LILO DC (Budhipadar - Tarkera Ckt - I)	132	5.884	2015	ACSR Panther(30+7/3.00mm)
269	132 kV Kalunga - EIPL SC line	132	2.248	2025	ACSR Panther(30+7/3.00mm)
270	132 kV Kantabanji Traction SC	132	4.000	2018	ACSR Panther(30+7/3.00mm)
271	132 kV Katapali LILO DC (Burla PH – Sambalpur – Boinda Line)	132	16.942	2010	ACSR Panther(30+7/3.00mm)
272	132 kV Katapali LILO DC (Chiplima PH - Bargarh Line)	132	25.320	2007	ACSR Panther(30+7/3.00mm)
273	132 kV Katapali LILO DC (Chiplima PH - Burla PH Tie-I)	132	2.660	2016	ACSR Panther(30+7/3.00mm)
274	132 kV Kesinga - Junagarh SC	132	52.548	2001	ACSR Panther, 30+7/3.00, 212.1 sqmm
275	132 kV Kesinga - Junagarh Ckt II SC (in DC Towers)	132	53.000	2019	ACSR Panther, 30+7/3.00, 212.1 sqmm
276	132 kV Kesinga - Kesinga RTSS	132	4.952	2018	ACSR Panther, 30+7/3.00, 212.1 sqmm
277	132 kV Kesinga - Khariar SC	132	58.500	1995	ACSR Panther, 30+7/3.00, 212.1 sqmm
278	132 kV Kesinga - Powmax (Turla) SC	132	14.532	1982	ACSR Panther, 30+7/3.00, 212.1 sqmm
279	132 kV Kesinga - Saintala SC	132	33.200	1980	ACSR Panther, 30+7/3.00, 212.1 sqmm
280	132 kV Kesinga - Vento 2x40MW Solar DC	132	11.480	2018	ACSR Panther, 30+7/3.00, 212.1 sqmm
281	132 kV Khariar - Kantabanji SC (in DC Towers)	132	33.000	2018	ACSR Panther(30+7/3.00mm)
282	132 kV Khariar - Nuapara SC (in DC Towers)	132	77.232		ACSR Panther(30+7/3.00mm)
283	132 kV Kuchinda LILO DC (Burla PH - Rajgangpur - Rourkela Ckt)	132	58.716	2013	ACSR Panther(30+7/3.00mm)
284	132 kV Lapanga LILO DC (Burla PH - Budhipadar Ckt I)	132	2.099	2015	ACSR Panther(30+7/3.00mm)
285	132 kV Lapanga LILO DC (Burla PH - Budhipadar Ckt II)	132	2.099	2015	ACSR Panther(30+7/3.00mm)
286	132 kV Lapanga LILO DC (Burla PH - Sambalpur - Rajgangpur Ckt)	132	2.092	2015	ACSR Panther(30+7/3.00mm)
287	132 kV Lapanga - Rengali RTSS	132	12.308	2017	ACSR Panther(30+7/3.00mm)
288	132 kV Maneswar LILO DC (Sambalpur - Rairakhol SC)	132	5.740	2021	ACSR Panther(30+7/3.00mm)

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
289	132 kV RTSS Maneswar SC on DC	132	5.260	2021	ACSR Panther(30+7/3.00mm)
290	132 kV New Bolangir LILO DC (Bolangir - Patnagarh Ckt)	132	0.984	2010	ACSR Panther(30+7/3.00mm)
291	132 kV New Bolangir 'T' (Bolangir - Sonepur Ckt)	132	2.011	2020	ACSR Panther(30+7/3.00mm)
292	132 kV Nuapada - Nuapada RTSS	132	4.528	2019	ACSR Panther(30+7/3.00mm)
293	132 kV Padampur - Dakshina Odisha 40MW Solar SC in DC Towers	132	9.700	2018	ACSR Panther(30+7/3.00mm)
294	132 kV Patnagarh - Padampur SC	132	44.636	2016	ACSR Panther(30+7/3.00mm)
295	132 kV Padampur - Nuapada DC	132	136.000	2021	ACSR Panther(30+7/3.00mm)
296	132 kV Rairakhole LILO DC (Burla PH - Sambalpur - Boinda Line)	132	1.000	2001	ACSR Panther(30+7/3.00mm)
297	132 kV Rairakhole RTSS SC in DC Towers	132	3.500	2018	ACSR Panther(30+7/3.00mm)
298	132 kV Rajgangpur - OCL SC	132	0.500	1973	ACSR Panther(30+7/3.00mm)
299	132 kV Rajgangpur - Traction DC	132	4.200	1973	ACSR Panther(30+7/3.00mm)
300	132 kV Rajgangpur LILO DC (Budhipadar - Tarkera Ckt-II)	132	2.400	2006	ACSR Panther(30+7/3.00mm)
301	132 kV Rourkela - Nalda SC (Upto Bhalulata, Loc. No. 1 to 78)	132	24.290	1959	ACSR Panther(30+7/3.00mm)
302	132 kV Sambalpur LILO DC (Burla PH - Rajgangpur - Rourkela Ckt)	132	13.860	1988	ACSR Panther(30+7/3.00mm)
303	132 kV Sambalpur LILO DC (Burla PH - Rairakhole - Boinda Line)	132	0.772	2005	ACSR Panther(30+7/3.00mm)
304	132 kV SHIVA LILO DC from 132 kV Rajgangpur- Kuchinda line	132	0.212	2023	ACSR Panther(30+7/3.00mm)
305	132 kV SHIVA Sw. Stn. to Shiva Cement MRSS SC on DC	132	3.010	2023	ACSR Panther(30+7/3.00mm)
306	132 kV Shree Ganesh Metaliks LILO DC (Chhend - Adhunik Metalics Ckt)	132	3.440	2011	ACSR Panther(30+7/3.00mm)
307	132 kV Shyam DRI LILO DC (Burla PH - Rajgangpur - Rourkela Ckt)	132	3.800	2006	ACSR Panther(30+7/3.00mm)
308	132 kV SMC Power LILO DC (Burla PH - Rajgangpur - Rourkela Ckt)	132	2.460	2013	ACSR Panther(30+7/3.00mm)
309	132 kV Sonepur - Birmaharajpur SC (in DC Towers)	132	24.774	2022	ACSR Panther(30+7/3.00mm)
310	132 kV Sonepur - Boudh SC (in DC Towers)	132	51.050		ACSR Panther(30+7/3.00mm)
311	132 kV Tarkera - Chend DC	132	12.330	1999	ACSR Panther(30+7/3.00mm)
312	132 kV Tarkera - Rourkela Ckt - I SC	132	3.000	1958	ACSR Panther(30+7/3.00mm)
313	132 kV Tarkera - Rourkela Ckt - II SC	132	3.000	1958	ACSR Panther(30+7/3.00mm)
314	132 kV Tarkera - RSP DC	132	22.080	1981	ACSR Panther(30+7/3.00mm)
315	132 kV Therubali - Kesinga SC	132	106.425	1982	ACSR Panther, 30+7/3.00, 212.1sqmm

Sl. No.	Name of EHT Line	kV Level	Ckt. Kms.	Year of commissioning	Conductor/Cable Type
316	132 kV Thuapali LILO DC (from 132 kV Katapali - Bargarh SC line)	132	34.818	2021	ACSR Panther, 30+7/3.00, 212.1sqmm
317	132 kV Tusura LILO DC (132 kV ACME - Saintala Line)	132	25.438	2017	ACSR Panther(30+7/3.00mm)
318	132kV Tusura - Vento 2x40MW Solar DC	132	14.800	2018	ACSR Panther(30+7/3.00mm)
319	132 kV Vedant Alumina LILO DC	132	24.806	2006	ACSR Panther

Annexure-II

Under Implementation Transmission System

S.No.	Name of S/s	MVA	Time frame
1.	400/220kV Ersama	2x500	26-27
2.	132/33kV Athamallik	2x20	25-26
3.	132/33kV Lamtaput	2x20	25-26
4.	132/33kV Agalpur Rampur	2x20	25-26
5.	132/33kV Tarva	2x20	25-26
6.	132/33kV Badagada	2x63	25-26
7.	132/33kV Satya Nagara	2x63	25-26
8.	132/33kV Bijepur	2x20	25-26
9.	132/33kV Raighar	2x20	26-27
10.	132/33kV Jharbandh	2x20	25-26
11.	132/33kV SCB medical	2x63	25-26
12.	132/33kV Manmunda, Chendipada, Kiakata, Baliana	2x50+80+80+126	26-27
13.	220/132/33kV Chendipada	2x160	25-26
14.	220/132/33kV Kiakata	2x160	25-26
15.	220/132/33kV Baliana	2x160	25-26
16.	220/33kV Dasapalla	2x20	25-26
17.	220/33kV Baliguda	2x20	26-27
18.	220/33kV M. Rampur	2x40	26-27
19.	220/33kV Nua Betenda	2x40	26-27
20.	220/33kV Sarasamal	2x40	26-27
21.	220/33kV Parjang	2x40	25-26
22.	220/33kV Hatabasta	2x40	26-27
23.	220/33kV Khalikote	2x40	26-27
24.	220/33kV Angul (AI Park)	2x40	26-27
25.	220/33kV Paradeep Plastic Park	2x40	26-27
26.	220/33kV Mundamba	2x40	26-27
27.	220/33kV Chitalo	2x40	26-27

Annexure-III

Operational Feedback from Odisha SLDC.

- a) Odisha SLDC has observed overloading in following transmission lines in base case scenario.

SI No	Name of Line	Loading (MW)
1	132KV Joda – Polasponga line	79
2	132KV Bolangir New – Sonepur line	85
3	132KV Lapanga – Aryan line	80
4	132KV Meramundali – Khajuriakata line	70
5	132KV Katapali – Thuapali line	80
6	220KV Meramundali – Narasinghpur line	170
7	220KV Meramundali – Bhanjanagar line	170

- b) Overloading observed in following transmission lines Under N-1 Contingency Condition

1	132KV Budhipadar – Kalugaon line	75
2	132KV Tarkera – Kalugaon line	75
3	220KV Budhipadar – Lapanga Circuit – I & II	160
4	220KV Lapanga – Katapali Circuit – I & II	140
5	220KV Katapali – Baragarh New line	135
6	400KV OPGC – Lapanga Circuit – I & II	670
7	400KV Lapanga – Meramundali Circuit – I & II	530
8	400KV Meramundali – Mendhasal Circuit – I & II	530

Annexure-IV

Operational feedback from ERLDC/NLDC

a) Constraints in Transmission Lines in Odisha 220 kV and above system

Sl. No	Corridor	Season/ Antecedent Conditions
1	220 kV Baripada-Balasore D/C	High drawl by Odisha
2	220 kV Budhipadar-Lapanga D/C 220 kV Budhipadar-Vedanta D/C	Observed since last 2 years with high injection from 220 kV Vedanta, Low 220 kV IBTPS generation, High demand, less generation at Rengali Hydro.
3	220 kV Pandiabili – Atri D/C	High demand with low hydro generation in South Odisha
4	220 kV Lapanga – Katapalli D/C 220 kV Bolangir – New Bolangir D/C	Upgradation of 132 kV Kesinga substation to 220/132 kV and its 220 kV interconnection through 400/220 kV Bolangir (PG) and 220/132 kV Sadepalli (OPTCL) has led to increase in load being met through Lapanga area.
5	400 kV OPGC- Lapanga DC	High injection from WR and Drawal of Sterlite
6	400 kV Talcher – Meramundali D/C	High injection from WR, high demand of Odisha and low HVDC Talcher-Kolar export towards SR.
7	400 kV Angul- Bolangir	High demand of Odisha during non-solar hours and when SR drawl is low from Angul point (i.e via Angul-Srikakulam) and high from Jeypore point (i.e via Jeypore-Gazuwaka).

b) ICT constraints in Odisha system

Sl. No	ICT	Season/ Antecedent Conditions
1	400/220 kV 315 MVA ICT at Bolangir -1 & 2	ICTs are not N-1 compliant. During Non-solar hrs due to less injection from WR at Budhipadhar SS and less demand of SR results in higher power availability at Angul SS. These factors result in the loading of ICTs at Bolangir.
2	400/220 kV 315 MVA ICT at Lapanga -1 & 2	During high-demand season
3	400/220 kV 315 MVA ICT at Mendhasal -1 & 2 & 3	During Peak demand in Odisha

c) Low voltage issues in Odisha system

Sl. No	Nodes	Season/ Antecedent Conditions
1	400 kV Mendhasal 400 kV Pandiabili 400 kV Bolangir	Low Voltage was observed during peak hours due to the high loading of lines connected to these SS feeding a high percentage of cooling load which draws a significant amount of reactive power during peak hours, without enough VAR compensation.

Annexure-V

Power Map of Odisha including planned system by 2034-35

