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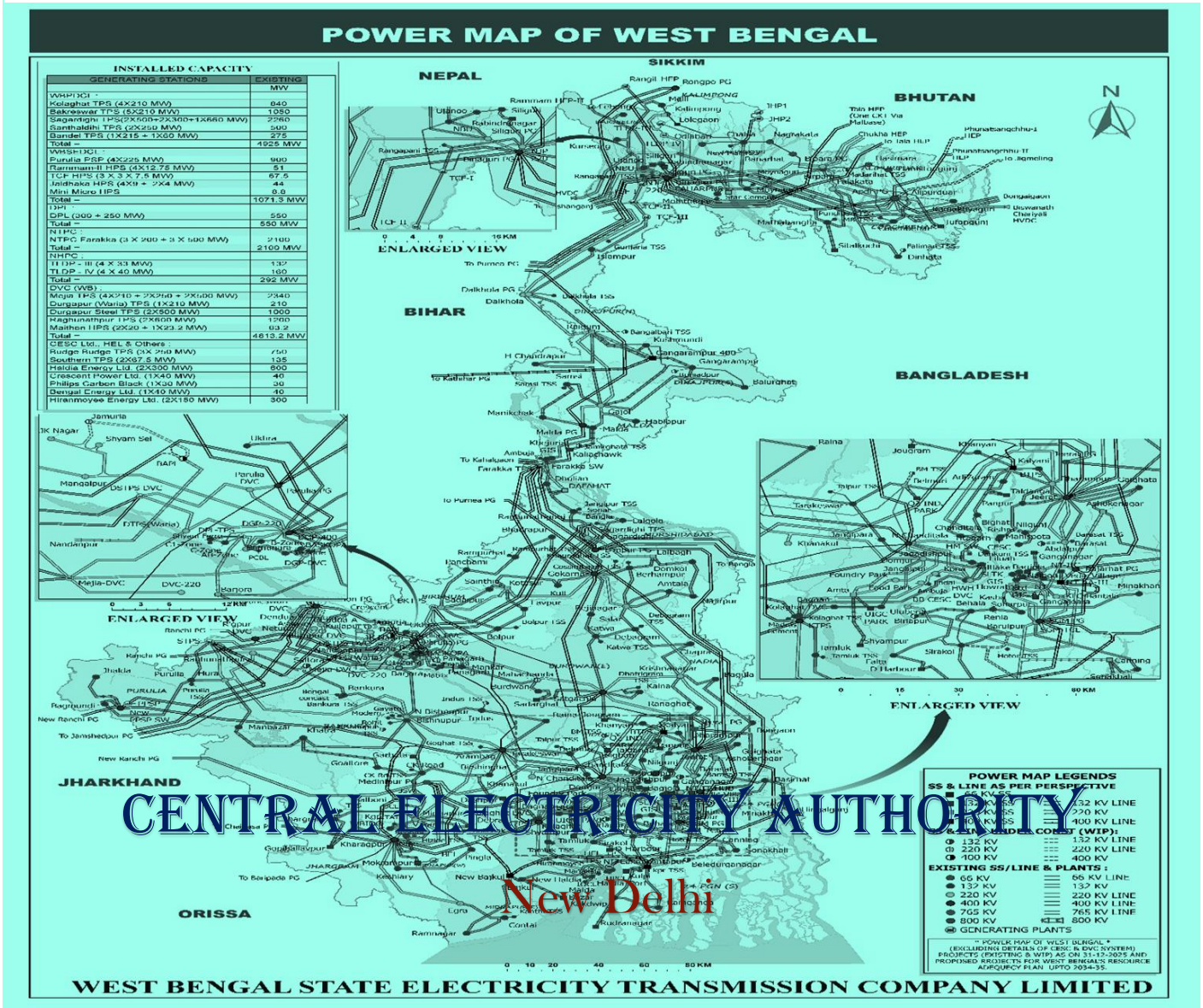
REPORT ON INTRA STATE TRANSMISSION RESOURCE ADEQUACY PLAN FOR WEST BENGAL BY THE YEAR 2034-35



CENTRAL ELECTRICITY AUTHORITY

New Delhi

Disclaimer

This Intra-State Transmission Resource Adequacy Plan for the State has been prepared based on data and inputs provided by the State utilities. The analysis, findings, and conclusions contained herein rely on the accuracy, completeness, and timeliness of the information furnished by the State. Any errors, omissions, or inconsistencies in the data may influence the results of this study.

The Central Electricity Authority (CEA) has facilitated and supported the State in the preparation of this plan to address intra-state transmission requirements. The recommendations of this study—including but not limited to the establishment of new substations, construction of new transmission lines, reconductoring of existing lines, and augmentation of substations— depends upon data furnished by the State utilities. It is suggested to take up new intra-state elements, commensurate to the generation/demand in the area.

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 West Bengal 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 West Bengal, 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 West Bengal in 2024-25 was 12,645 MW, and Projected Peak Demand by 2034-35 is estimated to 21,400 MW, which approximately equal to the Electric Power Survey report. Further, as on October 2025 Contracted Capacity in the state is about 10,730.6 MW including allocation from Central Sector Generation. As on September 2025, the state has total 17,282 ckm transmission lines and 43,581 MVA sub-station MVA capacity which include 333 ckm of 66 kV, 10,221 ckm of 132 kV, 4,235 ckm of 220 kV, 2,493 ckm of 400 kV transmission line and 194 MVA of 66 kV, 18,512 MVA of 132 kV, 17,260 MVA of 220 kV, 7,615 MVA of 400 kV Substation capacity in Intra-state transmission system.

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

A total of 20,063 MVA transformation capacity addition/augmentation and 3,598.16 ckm of new transmission lines/reconductoring at an estimated cost of ₹ 12,081.49 cr. would be required for implementing the intra-state transmission proposals 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)		Estimated Cost (in Rs. Cr.)
	66 kV	132 kV	220 kV	400 kV	66 kV	132 kV	220 kV	400 kV	132 kV	220 kV	
2026-27	-	-	1260	-	-	91.9	53.2	-	-	305.2	351.00
2027-28	63	100	2100	-	2	150	155.8	-	-	-	1230.60

2028-29	-	400	1160	2675	-	341	100	106.5	236.6	-	2657.56
2029-30	-	960	980	-	-	475.5	62	10	-	27.8	1574.06
2030-31	-	1210	1380	1400	-	224	57	320	52	-	3408.90
2031-32	-	160	960	-	-	124	48	-	-	-	758.07
2032-33	-	260	-	-	-	65	-	-	-	-	314.00
2033-34	-	260	-	-	-	83	-	-	-	50	424.70
2034-35	-	320	600	3815	-	62	-	-	395.66	-	1362.60
Total	**63**	**3670**	**8440**	**7890**	**2**	**1616.4**	**476**	**436.5**	**684.26**	**383**	**12081.49**

To ensure reliable and adequate power supply in West Bengal by 2034-35, substantial investments and infrastructure upgrades are essential. With a projected demand of 21,400 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 West Bengal by the year 2034-35

1. Demographics

1.1. West Bengal is a state in Eastern India, with Kolkata as its capital. It is bordered by Bangladesh to the east, Bhutan to the north, Nepal to the northwest, Jharkhand and Bihar to the west, Odisha to the southwest, Assam to the northeast, and Sikkim and the Himalayas to the north. West Bengal covers an area of 88,752 square kilometers (34,267 square miles) and has a population of over 99 million. The state's population is diverse, consisting of various ethnic groups, with Bengali being the predominant community. The main language spoken is Bengali, and the state's culture is deeply influenced by literature, art, and music. West Bengal has a strong economy based on agriculture, industry, and services, with Kolkata being an important commercial, cultural, and educational hub. The state is also known for its rich history, festivals, and significant contributions to Indian cinema and literature.

2. Electricity profile of State

2.1. Power generation-demand scenario of State:

2.1.1. In the FY 2024-25, West Bengal had peak electricity demand of 12645 MW and electrical energy requirement of 71180 MU. As on 31.10.2025, state has Central sector allocation of 1990.74 MW which includes hydro plants (497.30 MW) and thermal plants (1469.34 MW). In addition, installed capacity in state sector is 5917.95 MW and private sector is 2821.93 MW. The per capita consumption of the state was 893 kWh in the year 2023-24.

2.1.2. Peak demand & Energy of State is given at Table 2-1 below

Table 2-1 Peak demand & Energy of West Bengal

West Bengal	Peak Demand(MW)	EPS(MW)	Energy(MU)	EPS(MU)
2018-19	9,130	9621	51,471	52471
2019-20	9,263	9919	52,948	54099
2020-21	8,846	10225	51,644	55782
2021-22	9,089	9090	54,001	54020
2022-23	10,125	10150	60,348	60163
2023-24	11,626	10726	67,576	63564
2024-25	12,645	11395	71,172	67518

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

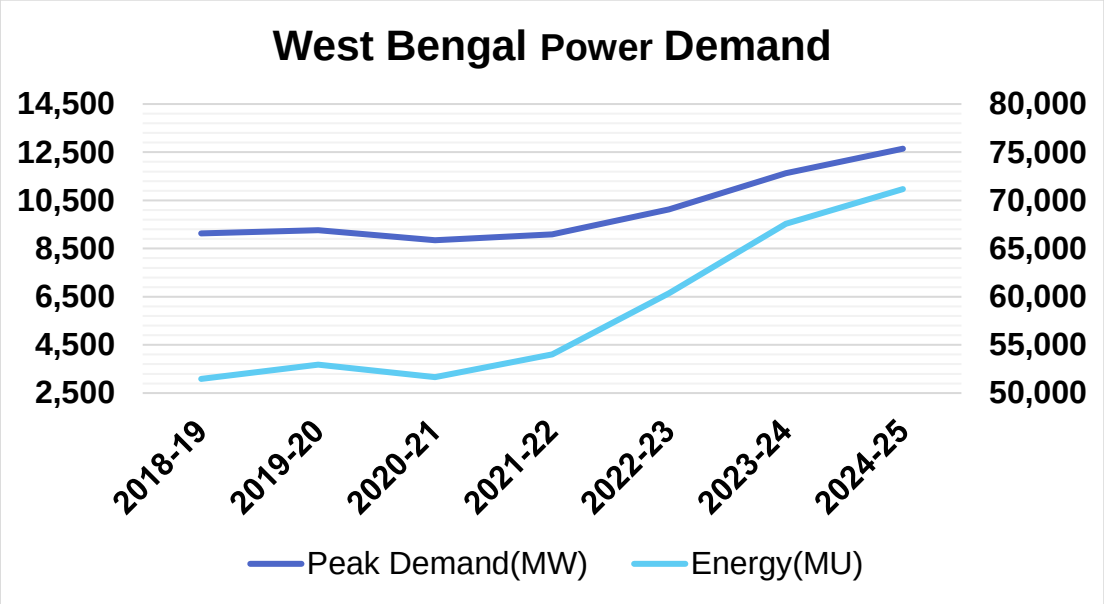


Figure 2-1 Peak Demand and Energy

2.1.4. The peak demand of State occurs in summers and daily peak occurs in the evening and night period. The graph indicating of Seasonal Load variation is given at Figure 2-2 below.

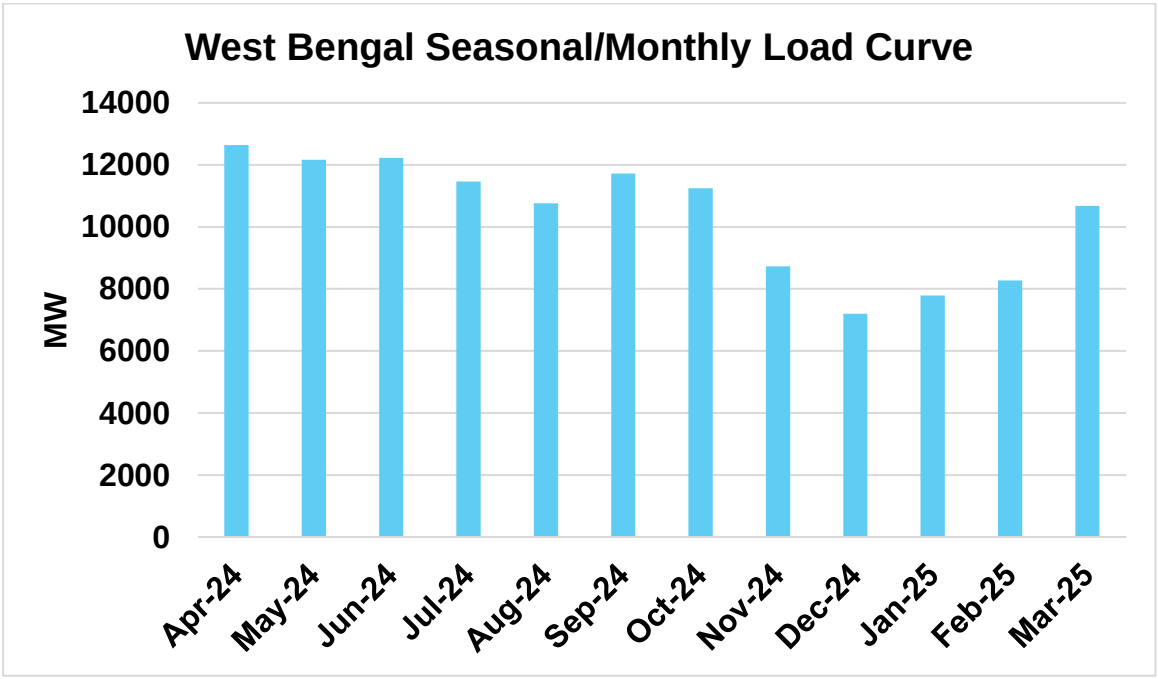


Figure 2-2 Seasonal Load Curve

2.1.5. The graph indicating of Hourly Load variation is given at Figure 2-3 below.

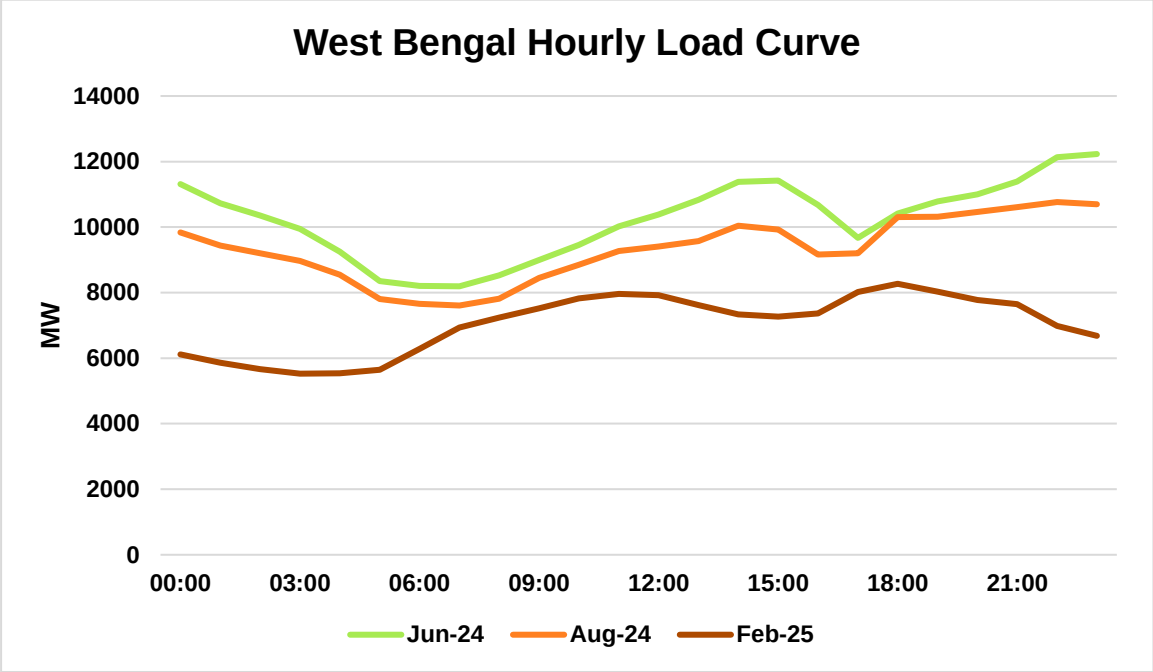


Figure 2-3 Hourly Load Curve

2.1.6. The projected peak electricity demand as per 20th EPS Report is 21,391 MW in the year 2036-37.

2.1.7. Contracted capacity (MW) of generating stations in West Bengal is given at Table 2-2 below:

Table 2-2 Contracted capacity of generating station of West Bengal

Sector	Hydro	Thermal					Nucl-ear	RES (MNRE)	Total
		Coal	Lignite	Gas	Diesel	Total			
State	986	4810	0	0	0	4810	0	121.95	5917.95
Private	0	2197	0	0	0	2197	0	624.93	2821.93
Central allocation	497.3	1469.34	0	0	0	1469.34	0	24.1	1990.74
Total	1483.3	8476.34	0	0	0	8476.34	0	770.98	10730.62
%	13.82	78.99	0.00	0.00	0.00	78.99	0.00	7.18	100.00

Source: Installed Capacity Report, CEA

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

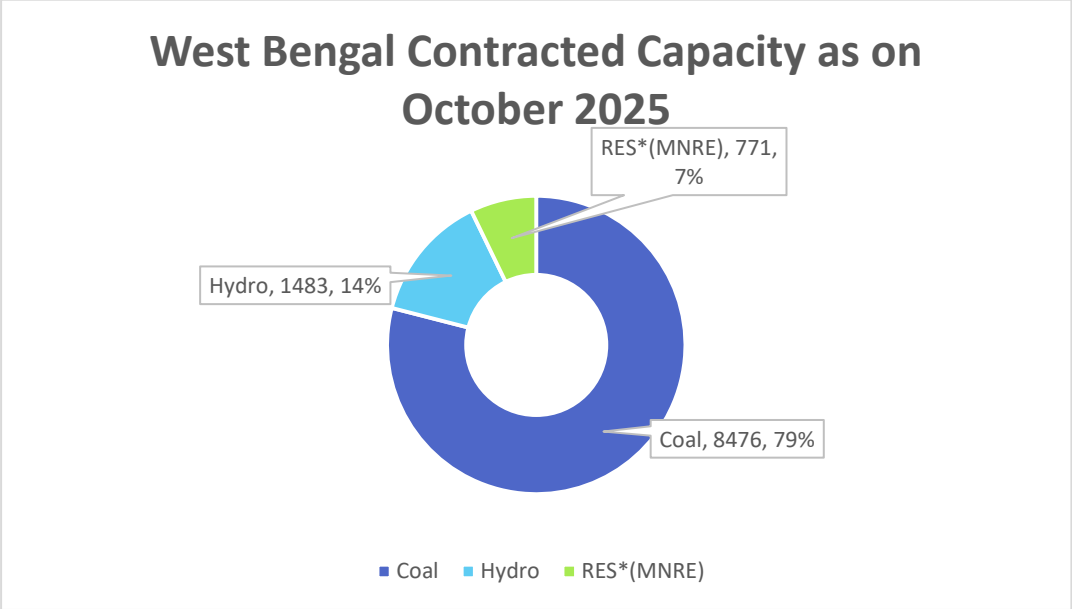


Figure 2-4 Contracted Capacity

2.1.9. As on October 2025, the General Network Access (GNA) quantum for ISTS drawal and Available Transfer Capability (ATC) of the state is 3516 MW and 7578 MW (Import ATC) and 3500 MW (Export ATC) respectively.

3. Existing Transmission System

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

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

3.1.1. Intra State Transmission assets of West Bengal state in past years is given at Table 3-1 below

Table 3-1 Intra State Transmission assets in West Bengal

Financial Year	Voltage (kV)	Transmission lines (ckm)	Substations (MVA)
2018-19	66	333	219
	132	8042	13742
	220	3732	12930
	400	1953	5670
	Total	**14060**	**32561**
2019-20	66	333	210
	132	8604	14663
	220	3747	13730
	400	2049	5670
	Total	**14733**	**34273**
2020-21	66	333	235
	132	9273	14996

	220	3845	13730
	400	2138	5670
	Total	**15589**	**34631**
2021-22	66	333	277
	132	9393	15534
	220	3886	13730
	400	2138	5670
	Total	**15750**	**35211**
2022-23	66	333	266
	132	9583	16431
	220	3902	14410
	400	2493	5670
	Total	**16311**	**36777**
2023-24	66	333	180
	132	9671	17533
	220	4051	15650
	400	2493	6615
	Total	**16548**	**39978**
2024-25	66	333	194
	132	10019	18152
	220	4122	16630
	400	2493	6615
	Total	**16967**	**41591**
2025-26 (Upto Septemb er 2025)	66	333	194
	132	10221	18512
	220	4235	17260
	400	2493	7615
	Total	**17282**	**43581**

3.1.2. As on September 2025, West Bengal state has total 17,282 ckm transmission lines and 43,581 MVA sub-station MVA capacity which include 333 ckm of 66 kV, 10,221 ckm of 132 kV, 4,235 ckm of 220 kV, 2,493 ckm of 400 kV transmission line and 194 MVA of 66 kV, 18,512 MVA of 132 kV, 17,260 MVA of 220 kV, 7,615 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.

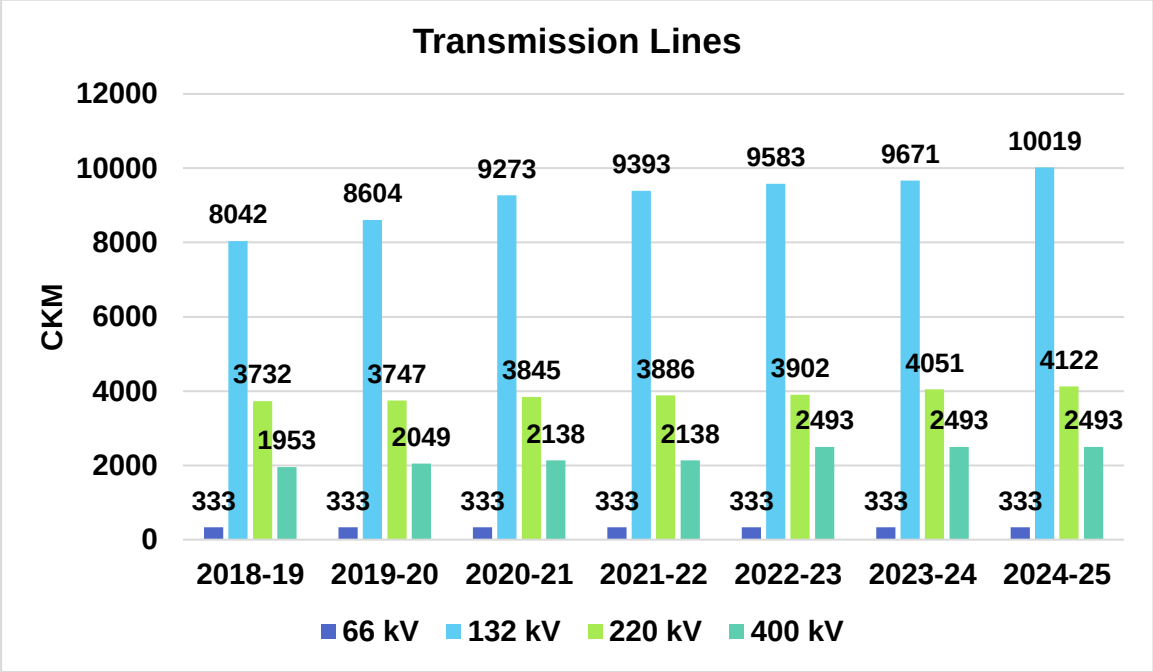


Figure 3-1 Existing Intra-state Transmission Line

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

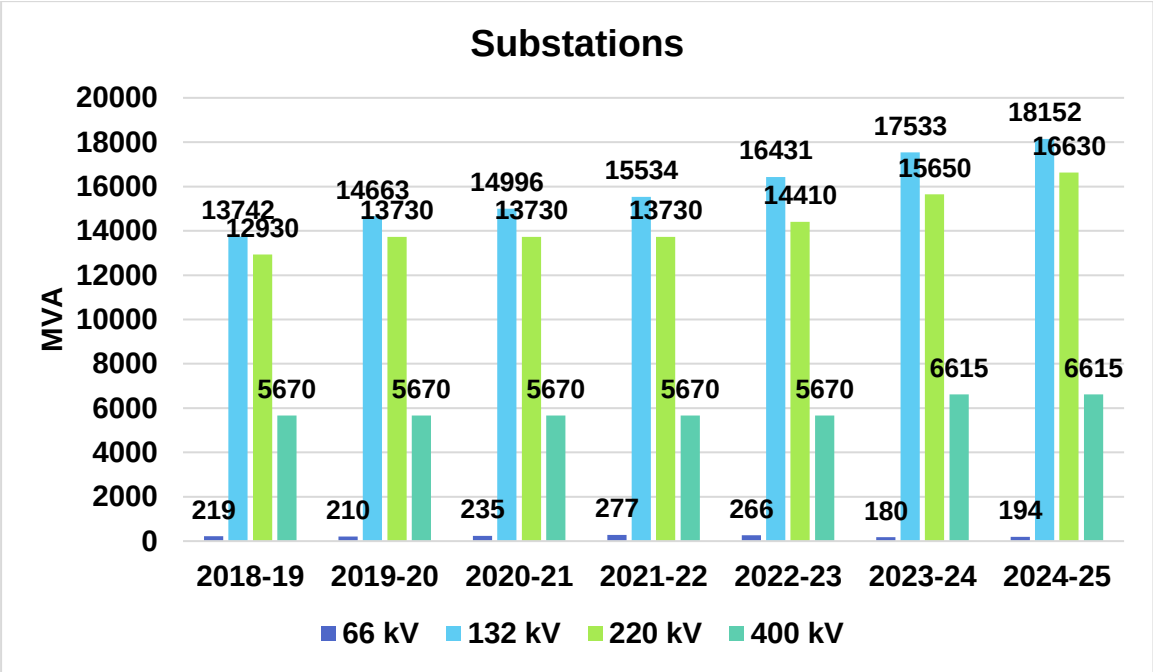


Figure 3-2 Existing Substations

3.2. <u>Existing Inter-State Transmission system in the state:</u>

3.2.1. As on October 2025, the State has 12 nos. (14,900 MVA + 3,000 MW HVDC) existing substation capacity. Further, 1 nos. of 400/220 kV, 500 MVA ISTS substation at Rajarhat and 2 nos. of 765/400 kV, 1,500 MVA ISTS substation at Jeerat-New & 3,000 MVA ISTS substation at Durgapur are under implementation/Planned.

3.2.2. As on October 2025, the State has a total of 12,409 ckm of existing ISTS network and 838 ckm + re-cond. 1,116 ckm of under construction/Planned 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 West Bengal

Transmission lines	**Existing**	**Under Construction/Planned**
132kV	124 ckm	-
220 kV	1,198 ckm	Recond 786 ckm
400 kV	10,187 ckm	18 ckm + Recon 330 ckm
765 kV	876 ckm	820 ckm
HVDC	24 ckm	-
Total	**12,409 ckm**	**838 ckm + Recond 1,116 ckm**
Substations	**Existing**	**Under Construction**
220/132 kV	2 (640 MVA) Birpara, Siliguri	-
400/220 kV	6 (6,150 MVA) Maithon, Alipurduar, New Siliguri, Subhasgram, Rajarhat & Durgapur	1 (500 MVA) Rajarhat
400/220/132 kV	630 MVA – Farakka Swithchyard 1 (1000 MVA + 480 MVA) Malda	-
Switching	2 Dalkhola – 220 kV Baharampur, Durgapur – A, Maithon – A – 400 kV	Bishnupur – 400 kV
765/400 kV	2 (6,000 MVA) Medinipur & Jeerat New	Jeerat-New (1,500 MVA), Durgapur (3,000 MVA)
HVDC	1 (3000 MW) Alipurduar	-
Total	**12 nos. (14,900 MVA + 3,000 MW)**	**1 no. (5,000 MVA)**

4. Under Implementation Transmission System

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

4.1.1. The summary of under implementation Intra-state transmission system as provided by West Bengal as on September 2025 is at Table 4-1. The list of under construction elements provided by the State is attached at **Annexure-II.**

Table 4-1 Under Implementation Intra-State Transmission assets in West Bengal (as on September 2025)

Voltage (kV)	Transmission lines (ckm)	Substations (MVA)
132	178	423
220	317	1122
400	1	730

4.1.2. Summary of under implementation Intra State Transmission assets of West Bengal state is given at Figure 4-1 below

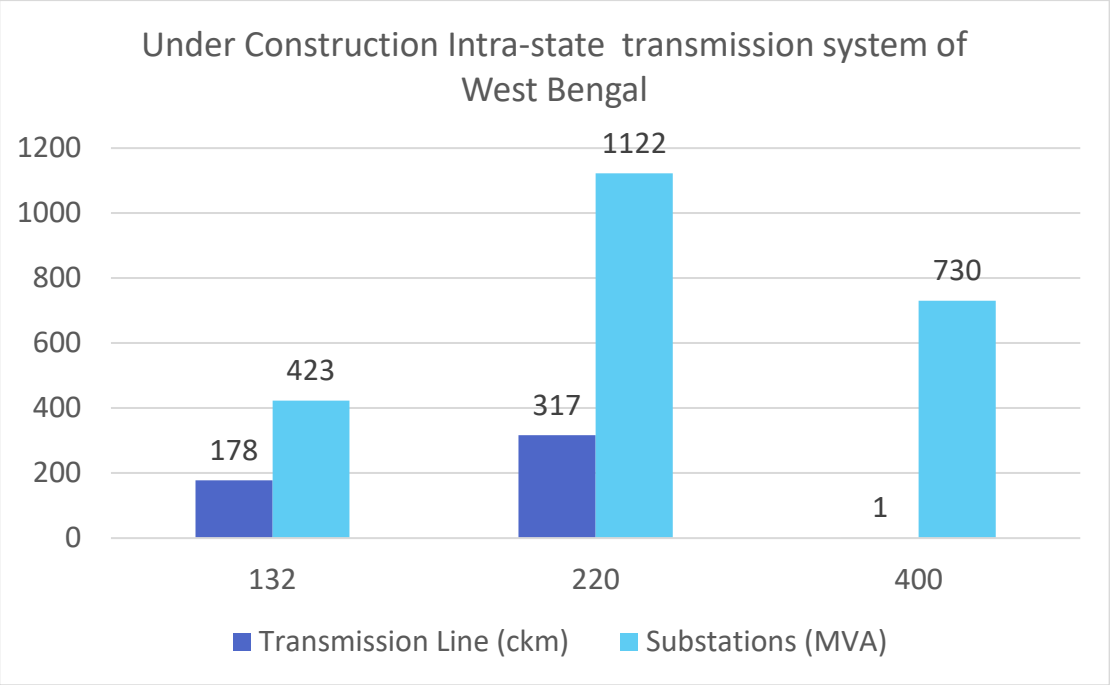


Figure 4-1 Under Construction Intra-state transmission system

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

Detailed of under implementation ISTS network in West Bengal (as on October, 2025) are as given below:

4.2.1. **Under Construction ISTS** (RTM mode)

1. ERES-XXXII: Nov 2025

- Installation of new 420kV, 1x125 MVAr bus reactor along with associated bay at Durgapur (POWERGRID) S/s in split bus section-A (which is not having ICTs)

Note: *The existing 50 MVAr (3x16.67 MVAr) bus reactor at Durgapur S/s in bus section-A may be decommissioned prior to installation of new 420 kV, 1x125 MVAr bus reactor as indicated above.*

2. ERES-XL: Jun 2026

- Replacement of existing 1x63 MVAr fixed line reactor (along with associated 542 ohm NGR) at Malda end installed in each circuit of Purnea – Malda 400 kV D/c line with installation of new 1x63 MVAr switchable line reactor [along with 450 ohm NGR (including NGR bypassing scheme)]

3. ERES-41: Dec 2026

- Installation of 400/220 kV, 1x500 MVA ICT (3rd) along with associated bays at Rajarhat GIS (POWERGRID) 400kV S/s

Note: *In view of GIS substation, complete diameter with three Circuit Breakers (one and half switching scheme) needs to be implemented at 400 kV level for installation of 3rd ICT in one 400 kV bay. Utilisation of other 400 kV bay of the diameter shall be identified in future.*

4. ERES-43: (WB Portion only) Jun 2026

- Reconductoring of Kahalgaon (NTPC) – Farakka (NTPC) 400 kV D/c (Twin Moose) line with Twin HTLS conductor (with ampacity of single HTLS as 1228 A) – 190 ckm
- Upgradation of associated 400 kV bay equipment at Farakka (NTPC)
- Upgradation of associated 400 kV bay equipment at Kahalgaon (NTPC)

Note:

a) NTPC 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 on as is where is basis by the ISTS licensee.

b) NTPC has already awarded R&M works for diameter 19-20-21 and 22-23-24 for some bay equipments at Farakka switchyard. ISTS licensee needs to coordinate with NTPC for replacement of balance equipments at Farakka switchyard as identified from Annexure-VII and Annexure-VIII (comprising of SLD and bay equipment details) respectively of the minutes of the 31st CMETS-ER.

5. ERES-44: Mar 2027

- Reconductoring of ISTS portion of Alipurduar (POWERGRID) – Falakata (WBSETCL) 220 kV D/c line with HTLS conductor of ampacity 1250 A
- Reconductoring of ISTS portion of Falakata (WBSETCL) – Birpara (POWERGRID) 220 kV D/c line with HTLS conductor of ampacity 1250 A
- Reconductoring of Birpara (POWERGRID) – Binaguri (POWERGRID) 220 kV D/c line with HTLS conductor of ampacity 1250 A
- Reconductoring of Binaguri (POWERGRID) – Siliguri (POWERGRID) 220 kV D/c line with HTLS conductor of ampacity 1250 A

- Reconductoring of Siliguri (POWERGRID) – Kishanganj (POWERGRID) 220 kV D/c line with HTLS conductor of ampacity 1250 A
- Reconductoring of Kishanganj (POWERGRID) – Dalkhola (POWERGRID) 220 kV D/c line with HTLS conductor of ampacity 1250 A
- Reconductoring of ISTS portion of Dalkhola (POWERGRID) – Gazole (WBSETCL) 220 kV D/c line with HTLS conductor of ampacity 1250 A
- Reconductoring of ISTS portion of Gazole (WBSETCL) – Malda (POWERGRID) 220 kV D/c line with HTLS conductor of ampacity 1250 A.
- Upgradation of associated 220 kV bay equipment at Alipurduar (POWERGRID)
- Upgradation of associated 220 kV bay equipment at Birpara (POWERGRID)
- Upgradation of associated 220 kV bay equipment at Binaguri (POWERGRID)
- Upgradation of associated 220 kV bay equipment at Siliguri (POWERGRID)
- Upgradation of associated 220 kV bay equipment at Dalkhola (POWERGRID)
- Upgradation of associated 220 kV bay equipment at Malda (POWERGRID)
- Supply and installation of OPGW along with terminal equipment at both ends of Siliguri (POWERGRID) – Kishanganj (POWERGRID) 220 kV D/c (HTLS) line (108 km)

Note:

a) *WBSETCL will reconductor their following lines sections under intra-state scheme matching with completion of ISTS scheme namely ERES-44:*

- *About 4 km intra-state portion of Alipurduar (POWERGRID) – Falakata (WBSETCL) 220 kV D/c line at Falakata end with HTLS conductor of ampacity 1250 A along with necessary upgradation of associated 220 kV bay equipment at Falakata (WBSETCL) end commensurate with rating of HTLS (1250 A).*
- *About 4km intra-state portion of Birpara (POWERGRID) – Falakata (WBSETCL) 220 kV D/c line at Falakata end with HTLS conductor of ampacity 1250 A along with necessary upgradation of associated 220 kV bay equipment at Falakata (WBSETCL) end commensurate with rating of HTLS (1250 A).*
- *About 2 km intra-state portion of Dalkhola (POWERGRID) – Gazole (WBSETCL) 220 kV D/c line at Gazole end with HTLS conductor of ampacity 1250 A along with necessary upgradation of associated 220 kV bay equipment at Gazole (WBSETCL) end commensurate with rating of HTLS (1250 A).*

- *About 2 km intra-state portion of Gazole (WBSETCL) – Malda (POWERGRID) 220kV D/c line at Gazole end with HTLS conductor of ampacity 1250 A along with necessary upgradation of associated 220 kV bay equipment at Gazole (WBSETCL) end commensurate with rating of HTLS (1250 A).*

b) WBSETCL will LILO the Dhalkola – Gazole 220 kV D/c line with 1250 A HTLS under their intra-state scheme for establishment of 220 kV level at their existing 132/33 kV Raiganj (WBSETCL) S/s.

c) *ISTS licensee and WBSETCL shall coordinate for reconductoring of their respective portion of the lines matching with completion schedule of this scheme.*

4.3. Planned ISTS

1. ERGS-IV: 30-04-2029

(a) LILO of one circuit of Chaibasa (POWERGRID) – Kharagpur (WBSETCL) 400 kV D/c ISTS line at OMIPL generation switchyard under ISTS – About 9 km

(b) Supply and installation of 48F OPGW on existing Chaibasa (POWERGRID) – Kharagpur (WBSETCL) 400 kV line (approx. 162 km) alongwith required approach cables, FODP and FOTE (STM-16) at both ends

Note:

i. M/s OMIPL shall provide 2 no. of 400 kV furnished line bays in same diameter at their generation switchyard for termination of LILO of one circuit of Chaibasa (POWERGRID) – Kharagpur (WBSETCL) 400 kV D/c ISTS line at their generation switchyard in matching time-frame of the ISTS scheme namely ERGS-IV for M/s OMIPL.

ii. TSP to provide 96F OPGW alongwith requisite accessories for proposed LILO of one circuit of Chaibasa (POWERGRID) – Kharagpur (WBSETCL) 400 kV D/c ISTS line

2. ERES-47: Nawada – Durgapur – Jeerat (New) 765kV corridor (31-03-2029)

(a) Establishment of Nawada (ISTS) 765/400/220 kV S/s with 2x1500 MVA+2x500 MVA ICTs

(b) LILO of Gaya – Balia 765 kV S/c line at Nawada (ISTS) S/s – (Loop in 82 km and Loop out 82 km)

(c) Establishment of 765kV level in GIS at existing Durgapur (POWERGRID) S/s along with installation of 765/400 kV, 2x1500 MVA ICTs in 400 kV Section-B (the section having 400/220 kV ICTs)

(d) Nawada (ISTS) – Durgapur (POWERGRID) 765kV D/c line along with 1x240 MVAr (3x80 MVAr 1-Ph) switchable line reactor in both ckts at both ends – about 258km

(e) Durgapur (POWERGRID) – Jeerat (New) 765 kV D/c line along with 1x24 0MVAr (3x80 MVAr 1-Ph) switchable line reactor in both ckts at Jeerat (New) end – about 152 km

(f) Extension at Jeerat (New) 765/400 kV S/s

3. ERES-48: Jeerat – Rajarhat – Subhasgram reconductoring (31-03-2028)

(a) Reconductoring of Jeerat (WBSETCL) – Rajarhat (POWERGRID) 400 kV S/c line (Twin ACSR Moose) line with Twin HTLS conductor (with ampacity of single HTLS as 1516 A)- 41 ckm

(b) Reconductoring of Jeerat (WBSETCL) – Subhasgram (POWERGRID) 400 kV S/c line (Twin ACSR Moose) line with Twin HTLS conductor (with ampacity of single HTLS as 1516 A)- 65 ckm

(c) Reconductoring of Rajarhat (POWERGRID) – Subhasgram (POWERGRID) 400 kV S/c line (Twin ACSR Moose) line with Twin HTLS conductor (with ampacity of single HTLS as 151 6A) -34 ckm

(d) Upgradation of 400 kV bay equipment at Jeerat (WBSETCL) S/s

(e) Upgradation of 400 kV bay equipment at Rajarhat (POWERGRID) S/s

(f) Upgradation of 400 kV bay equipment at Subhasgram (POWERGRID) S/s

5. System operator feedback

5.1. The operational constraint faced in the Intra-state transmission network by West Bengal 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 West Bengal according to the 20th EPS Report and as estimated by the state are given at Table 6-1. The demand estimated by the state is higher than the EPS for that the state has given justification of expected high growth and industrial demand. Accordingly, the demand figures provided by the State has been considered.

Table 6-1 Peak electricity demand

Reference↓ / Parameter→	**Year**	**Peak Demand (MW)**	**CAGR**
Actual Peak	2024-25	12,645	
As per 20th EPS	2025-26	12,123	-4.13
	2026-27	12,891	0.97
	2027-28	13,708	2.73
	2028-29	14,530	3.53
	2029-30	15,507	4.16
	2030-31	16,164	4.18
State Estimated Peak electricity demand	2031-32	18,350	5.46
	2034-35	21,400	5.40
As per 20th EPS	2036-37	21,391	4.48

**including upcoming industrial demand with transmission losses.*

6.2. Industrial Demand:

The total additional industrial demand of 2000 MW (approx.) is expected by 2035. Which majorly at Q2 Industrial Park, Dendua, Banskopa (EPIP), Kulpi Port, Sarbari and UGIC area.

6.3. Generation capacity by 2034-35

6.3.1. 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	Time Frame to be commissioned
1.	Thermal	New DPL	660	2029-30
2.	Thermal	JSW (Salboni)	1600	2029-30
3.	Thermal	SANTALDIGHI TPS	1600	2030-31
4.	Thermal	BAKRESWAR TPS	660	2031-32
5.	Solar	Sagardhigihi	25	2027-28
6.	Solar	Bakreshwar	10	2027-28
7.	Solar	Santaldighi	27.5	2027-28
8.	Solar	Goaltore	100	2028-29
9.	Solar	Bakreshwar(Mega)	200	2031-32
10.	PSP	Turga	1000	2030-31
11.	Hydro	Rammam-1	48	2029-30
		Total	**5930.5**	

6.3.2. In addition to above 250 MW (1000 MWh) BESS each at AB zone & Goaltore in the timeframe of 2028-29 additionally 25 MW (100 MWh) BESS at Goaltore in the timeframe of 2028-29 have also been considered.

6.3.3. 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: 16,672 MW (including 2,990 MW RE Power) by 2034-35 has been considered in the study.

b) The Inter-state Generation capacity located in West Bengal has been considered as 2,820 MW.

c) Peak Demand: about 18,350 MW by the year 2031-32 and about 21,400 MW (including 5,867 MW non-scalable industrial demand) by 2034-35.

6.4.1. 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	Battary	PSP
1.	August peak load (Scenario-2)	85%	90%	80%	0%	100%	90%
2.	June Solar Max (Scenario-4)	90%	70%	55%	85%	-100%	-100%
3.	June Peak load (Scenario-5)	100%	80%	90%	0%	100%	100%
4.	February Night Off-peak (Scenario-9)	45%	30%	60%	0%	100%	90%

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 West Bengal 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→	August peak load (Scenario-2)	June Solar Max (Scenario-4)	June Peak load (Scenario-5)	February Night Off-peak (Scenario-9)
Generation despatch (intra-state + ISGS located in state) (in MW)	13978	8519	15492	10810
Total load including losses (in MW)	15603	16516	18352	8259

Net interchange ((-) import / (+)export) at ISTS-STU periphery (in MW)	-1625	-7997	-2861	2551

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→	**August peak load (Scenario-2)**	**June Solar Max (Scenario-4)**	**June Peak load (Scenario-5)**	**February Night Off-peak (Scenario-9)**
Generation despatch (intra-state + ISGS located in state) (in MW)	13978	8519	15492	10810
Total load including losses (in MW)	18123	19261	21403	9634
Net interchange ((-) import / (+)export) at ISTS-STU periphery (in MW)	-4145	-10742	-5911	1175

7.2. 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.

7.3. 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 West Bengal 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.

7.4. According to CEA's generation resource adequacy report for West Bengal (2034-35), West Bengal is likely to witness an energy deficit throughout the study period, i.e. from 2024-25 to 2034-35, with the existing, planned capacity, including the capacity required to meet Renewable Purchase Obligations (RPO). Additional capacity to meet the RPO has been provided from 2026-27 onwards, considering that it might take 2 years to tie up the required capacity to meet the RPO. It was observed that the total unserved energy in the year 2034-35 is likely to be around 8864 MU. Further, it is expected that the shortfall

would be maximum during the non-solar hours in March, April, May, June, July, August, September and October.

7.5. 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 West Bengal 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 West Bengal

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
1.	**i. Creation of 220 kV level at existing Ashokenagar 132/33 kV, 3x50 MVA, with 2x160 MVA ICTs**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 150 MW at 132 kV by 2034-35 Presently, Rajarhat (PG) is connected with Barasat 220 kV D/c line this line will be disconnected from Barasat end and would be connected to Rajarhat (PG) to make Ashokenagar – Rajarhat (PG) 220 kV D/c line. The freed 2 Nos. of bays at Barasat would be utilized to connect Barasat with Jeerat at 220 kV level (3rd and 4th Circuit).	83.04	2027-28
	ii. Rajarhat-PG – Ashokenagar 220 kV D/c Line (24 ckm)		36	
2.	**i. Establishment of new 220/132/33 kV, 2x200 MVA GIS at Nandanpur**	To cater the future industrial load (Bulk consumers at 132 kV level) and to rectify low voltage problem in the surrounding areas. Load: 175 MW at 220 kV by 2034-35	127.16	2027-28
	ii. BAPL – Nandanpur 220 kV D/c Line (32 ckm)		59.77	
3.	**i. Establishment of new 66/33/11 kV, 2x31.5 MVA at Lolegaon**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	39.34	2027-28
	ii. LILO of Chalsa – K'pong 66 kV S/c line at Lolegaon (2 ckm) (1 ckm loop in and 1 ckm loop out)		2.1	

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
4.	**i. Establishment of new 220/132/33 kV, 2x160+ 2x50 MVA GIS at Amta**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 65 MW at 132 kV by 2034-35	147.40	2027-28
	ii. LILO of Foundry Park – Domjur 220 kV D/c Line at Amta 220 kV (24 ckm) (12 ckm loop in and 12 ckm loop out)		36	
	iii. Amta – UIGC Park 132 kV D/c line (28 ckm)		36.4	2034-35
5.	**i. Establishment of new 220/132/33 kV, 2x200+2x80 MVA GIS at Dendua(A)**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 200 MW at 220 kV by 2034-35	142.99	2027-28
	ii. LILO of Maithon – Asansol at 220 kV S/c Line proposed Dendua(A) (20 ckm) (10 ckm loop in and 10 ckm loop out)		134.46	
6.	**i. Establishment of new 132/33 kV, 2x50 MVA S/s at Q2-Industrial Park**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 40 MW at 132 kV by 2034-35	84.90	2027-28
	ii. Belmuri – Q2-Industrial Park 132 kV D/c Line-10 ckm		8.50	
7.	**i. Creation of 220 kV level at existing Barjora 132/33 kV, 2x50 MVA, with 2x200 MVA ICTs**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 300 MW at 132 kV by 2034-35	97.05	2027-28
	ii. DPL Unit#8 – Barjora 220 kV D/c line (38.40 ckm)		54.62	
8.	**i. Establishment of new 132/33 kV, 2x50 MVA S/s at Tufanganj**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 25 MW at 132 kV by 2034-35	90.70	2028-29
	ii. LILO of Alipurduar – Birpara 132 kV S/c line at Tufanganj-50 ckm (25 ckm loop in and 25 ckm loop out)		45	
9.	**i. Creation of 400 kV level at existing New Town AA-3 220/132/33 kV, 3x160+3x50 MVA, with 2x500 MVA ICTs**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	293.40	2028-29
	ii. LILO of Jeerat(WBSETCL) – Subhasgram(PG) 400 kV S/c line at New Town-3 400 kV (6.50 ckm) (3.25 ckm loop in and 3.25 ckm loop out)		23.08	

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
10.	**i. Establishment of new 220/132/33 kV, 2x160+2x50 MVA S/s at Banskopa(EPIP)**	To cater the future load demand and to rectify low voltage problem in the surrounding areas Load: 50 MW at 132 kV by 2034-35	157.50	2028-29
	ii. LILO of DGP – Panagarh 220 kV D/c line at Banskopa (16 ckm) (8 ckm loop in and 8 ckm loop out)		25.60	
	iii. LILO of A Zone – Bamunara 132 kV D/c line at Banskopa (10 ckm) (5 ckm loop in and 5 ckm loop out)		9.00	
11.	**i. Establishment of new 132/33 kV, 2x50 MVA at Hingalganj**	To cater the future load demand and to rectify low voltage problem in the surrounding areas Load: 28 MW at 132 kV by 2034-35	90.70	2028-29
	ii. Basirhat – Hingalganj 132 kV D/c line (32 ckm)		28.80	
12.	**i. Establishment of new 132/33 kV, 2x50 MVA at Rabindranagar**	To cater the future load demand and to rectify low voltage problem in the surrounding areas Load: 50 MW by 2034-35	90.70	2028-29
	ii. LILO of Siliguri (WB) – NJP 132 kV D/c line at RabindraNagar (5 ckm) (2.5 ckm loop in and 2.5 ckm loop out)		4.50	
13.	**i. Establishment of new 400/132/33 kV, 3x315 + 2x50 MVA GIS at BTPS (new)**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. The power evacuation through new BTPS 400/132 kV S/s has been considered after phasing out of 60 MW unit at Bandel TPS.	302.6	2028-29
	ii. LILO of 400 kV Jeerat – N. Chanditala S/c line at BTPS (new) S/s-10 ckm (5 ckm loop in and 5 ckm loop out)		38.00	
	iii. Shifting of BTPS – Khannyan 132 kV D/c line to BTPS (new) with High capacity conductor (2 ckm)		1.80	
	iv. Shifting of BTPS – Dharampur 132 kV D/c line to BTPS (new) with High capacity conductor (2 ckm)		1.80	
	v. Shifting of BTPS – Chanditala 132 kV D/c line to BTPS (new) with High		1.80	

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
	capacity conductor (2 ckm)			
	vi. BTPS(new) – BTPS 132kV 2xD/c line with High capacity conductor (4 ckm)		3.60	
14.	**i. Upgradation of existing Raiganj 220 kV, 2x160 MVA S/s**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 145 MW by 2034-35	91.20	2028-29
	ii. LILO of Gazole – Dalkhola PG 220 kV D/c Line at proposed raiganj-20 ckm (10 ckm loop in and 10 ckm loop out)		32	
	iii. Raiganj – Gangarampur 132 kV D/c Line (140 ckm)		126	
15.	**i. Establishment of new 132/33 kV, 2x50 MVA GIS at Bagjola**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 40 MW by 2034-35	90.5	2028-29
	ii. New Town IIC – Bagjola 132 kV UGC D/c Line (20 ckm)		17.09	
16.	**i. Establishment of new 400/132 kV, 2x315 MVA GIS at New Lakshmikantapur with bus extension of existing Laxmikantapur 132/33 kV S/s**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	275	2028-29
	ii. LILO of one ckt of 400 kV Subhasgram(PG) – Jeerat(PG) D/c Line at New Laksmikantapur - 90 ckm (45 ckm loop in and 45 ckm loop out) (Further New Lakshmikantpur – Subhasgram 400kV S/c line shall be LILO at New Bajkul)		319.50	
	iii. New Laxmikantapur - Sirakol 132 kV D/c line with High capacity conductor - 24 ckm		28.8	
	iv. New Laxmikantapur - Kakdwip132 kV D/c line – (50 ckm)		45	
17.	**i. Establishment of new 220/132/33 kV, 2x160+2x50 MVA GIS at Sarbari/Neturia**	To cater the future Industrial load demand and to rectify low voltage problem in the surrounding areas.	157.50	2028-29
	ii. Dendua B – Sarbari 220 kV D/c line (64 ckm)		76.8	

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
18.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Shyampur/Mugkalyan**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 45 MW by 2034-35	96.90	2029-30
	ii. Shyampur – Amta 132 kV D/c line (80 ckm)		96.00	
19.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Diamond Harbour**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 40 MW by 2034-35	96.90	2029-30
	ii. LILO of Laxmikantapur – Falta 132 kV D/c at Diamond Harbour with high capacity conductor 8 ckm (4 ckm loop in and 4 ckm loop out)		7.60	
20.	**i. Establishment of new 220/132/33 kV, 2x160+2x50 MVA S/s at Paharpur**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 85 MW at 132 kV by 2034-35	168.30	2029-30
	ii. LILO of Mohitnagar – Moynaguri 132 kV D/c line at Paharpur 16 ckm (8 ckm loop in and 8 ckm loop out)		15.20	
	iii. LILO of Birpara(PG) – Binaguri 220 kV D/c line at Paharpur with High Capacity conductor (12 ckm) (6 ckm loop in and 6 ckm loop out)		20.40	
21.	**i. Establishment of new 132 kV, 2x80 MVA GIS at Gangajoara (Kheyada/Bagdoba)**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 42 MW by 2034-35	96.90	2029-30
	ii. Kasba – Gangajoara 132 kV D/c Line –(9 ckm)		8.55	
22.	**i. Establishment of new 220/132/33 kV, 2x200+2x80 MVA GIS at Lalbagh**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 70 MW at 132 kV by 2034-35. The Lalbagh 220/132 kV S/s would be established nearer to Domkol 132/33 kV S/s	168.30	2029-30
	ii. N.Sagardighi – Lalbagh 220 kV D/c line (50 ckm)		85.00	
	iii. LILO of Domkol – Berhampur 132 kV D/c line at Lalbagh 48 ckm (24 ckm loop in and 24 ckm loop out) Lalbagh – Domkol section with high capacity conductor		45.60	
23.	**i. Establishment of new 132/33 kV, 2x80 MVA S/s at Makrampur**	To cater the future load demand and to rectify low	96.90	2029-30

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
	ii. Kharagpur – Makrampur 132 kV D/c (25 ckm)	voltage problem in the surrounding areas. Load: 45 MW by 2034-35 Presently, Hijlee – BEL 132 kV S/c line at S/c tower is existing. The proposed Makrampur 132 kV S/s is near to the route of Hijlee - BEL 132 kV line. This line would be converted to D/c line using the same RoW, thereafter, it would be made LILO at Kharagpur. Subsequently, Makrampur would be connected to Kharagpur and BEL.	24	
	iii. Makrampur – BEL-Egra 132 kV S/c line (6.5 ckm) (existing line only network rearrangement required)		6.2	
24.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Gopiballavpur**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 40 MW by 2034-35	96.90	2029-30
	ii. LILO of Kharagpur – Jhargram 132 kV D/c Line at Gopiballavpur (80 ckm) (40 ckm loop in and 40 ckm loop out)		76.00	
25.	**i. Establishment of new 132/33 kV, 2x80 MVA S/s at Sitalkuchi**	To cater the future load demand and to rectify low voltage problem in the surrounding areas . Load: 40 MW by 2034-35	96.90	2029-30
	ii. Mathabhanga – Sitalkuchi 132 kV D/c line at Sitalkuchi (46 ckm)		43.70	
26.	**i. Establishment of 400/132/33 kV, 2x200 MVA S/s at Bajkul (New)**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	320.20	2030-31
	ii. LILO of Subhasgram PG – Lakshmikantapur (New) 400 kV S/c line at Bajkul 110 ckm (55 ckm loop in and 55 ckm loop out)		445.50	
	iii. LILO of one ckt of Kharagpur – KTPS 400 kV D/c line at New Bajkul 90 ckm (45 ckm loop in and 45 ckm loop out)		364.50	
	iv. LILO of Bajkul – Ramnagar 132 kV D/c line at Bajkul S/s 4 ckm (2 ckm loop in and 2 ckm loop out)		4.00	
27.	**i. Establishment of new 220/132/33 kV,**	To cater the future load demand and to rectify low	180.10	2030-31

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
	2x160+2x50 MVA GIS at Dendua(B)	voltage problem in the surrounding areas. Load: 250 MW at 220 kV by 2034-35		
	ii. Maithon (PG) – Dendua (B) 220 kV D/c line (11 ckm) with high capacity conductor		24.2	
	iii. Dendua A – Dendua B 220 kV D/c line (4 ckm)		8.8	
28.	**i. Creation of 132 kV level at New PPSP (Mod) 400 switching station with 2x315 MVA ICTs**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	170.00	2030-31
	ii. LILO of Jhalda – Bagmundi 132 kV D/c at N.PPSP-2 ckm (1 ckm loop in and 1 ckm loop out)		2.00	
29.	**i. Establishment of new 132 kV, 2x80 MVA GIS at Dashpur/Sultannagar**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load: 45 MW by 2034-35	103.70	2030-31
	ii. LILO of one ckt of Birsingha – CK Road 132 kV D/c Line at Dashpur S/s 40 ckm (20 ckm loop in and 20 ckm loop out)		40	
30.	**i. Establishment of new 220/132 kV, 2x200 MVA GIS at Kotasur**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Originally the lines were Panchami – Kuli 132 kV D/c line and Rampurhat – Sainthia 132 kV D/c line. These lines were reconfigured at cross over points to make Rampurhat – Panchami 132 kV D/c line and Sainthia – Kuli 132 kV D/c line. These lines would be made to original configuration thereafter LILO of Rampurhat – Sainthia 132 kV D/c line would be made at Kotasur.	144.20	2030-31 Reconductoring of Kotasur – Rampurhat 132kV D/c line
	ii. LILO of Sadaipur – Gokarna 220 kV D/c Line at Kotasur 6 ckm (3 ckm loop in and 3 ckm loop out) (Further, Kotasur – Sadaipur 220kV D/c line shall be LILOed at Baklreshwar TPS)		10.80	
	iii. LILO of Sainthia – Rampurhat 132 kV D/c Line at Kotasur 16 ckm (8 ckm loop in and 8 ckm loop out)		16	
	iv. Kotasur – Lavpur 132 kV D/c Line (50 ckm)		50.00	
31.	**i. Establishment of new 220/132/33 kV, 2x200 + 2x80 MVA GIS at Canning**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	180.10	2030-31

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
	ii. LILO of one circuit of Lakshmikantpur – Subasgram (PG) 220 kV D/c line at Canning 36 ckm (18 ckm loop in and 18 ckm loop out)		64.8	
	iii. LILO of Beledurganagar – Sonakhali 132 kV D/c line at Canning 28 ckm (14 ckm loop in and 14 ckm loop out)		28.00	
32.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Vaidic Village**	To cater the future load demand and to rectify low voltage problem in the surrounding areas.	103.70	2030-31
	ii. NT3 – Vaidic Village 132 kV D/c (12 ckm)		12.00	
33.	**i. Establishment of new 132/33 kV, 2x80 MVA at Jougram**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load:40 MW at 132 kV by 2034-35	102.70	2030-31
	ii. LILO of one ckt of Satgachia – Khannan 132 kV D/c line at Jougram 44 ckm (22 ckm Loop in and 22 ckm Loop out)		44.00	
34.	**i. Establishment of new 132/33 kV, 2x50 MVA S/s at Nalbon**	To cater the future load of Saltlake area and to rectify low voltage problem in the surrounding areas. Load: 30 MW at 132 kV by 2034-35	103.70	2030-31
	ii. LILO of Salt Lake – KLC Bantala 132 kV D/c line at Nalbon 16 ckm (8 ckm loop in and 8 ckm loop out)		16.00	
35.	**i. Establishment of new 220/132/33 kV, 2x200 + 2x80 MVA GIS at Jagadishpur**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load:35 MW at 132 kV by 2034-35	190.50	2031-32
	ii. N.Chanditala – Jagadishpur 220 kV D/c- 20 ckm		39.00	
	iii. LILO of Kona – Rishra 132 kV S/c line at Jagadishpur 12 ckm (6 ckm loop in and 6 ckm loop out) with Kona – Jagadishpur section with high capacity conductor		11.40	
	iv. LILO of Kona – Dankuni TSS 132 kV S/c line at Jagadishpur 12 ckm (6 ckm loop in and 6 ckm loop out) with Kona – Jagadishpur section with high capacity conductor		11.40	

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
36.	**i. Establishment of new 132/33 kV, 2x80 MVA at Taldanga/Sugandha**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load:35 MW at 132 kV by 2034-35	109.90	2031-32
	ii. LILO of BTPS (new) – Bighati 132 kV D/c at Taldanga/Sugandha with high capacity conductor 12 ckm (6 ckm loop in and 6 ckm loop out)		12.60	
37.	**i. Establishment of new 132/33 kV, 2x50 MVA GIS at Malda Bazar**	To cater the future load demand and to rectify low voltage problem due to long 33 kV feeders in the surrounding areas. Load:35 MW at 132 kV by 2034-35	117.50	2032-33
	ii. Bajkul – Malda Bazar 132 kV D/c line (45 ckm)		49.50	
38.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Ganganagar**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load:35 MW at 132 kV by 2034-35	117.50	2032-33
	ii. NT AA-IIC – Ganganagar 132 kV D/c through UG Cable (20 ckm)		29.5	
39.	i. **Establishment of new 132 kV, 2x50 MVA S/s at Rudranagar**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load:20 MW at 132 kV by 2034-35	125.80	2033-34
	ii. Kakdwip – Rudranagar 132 kV D/c line (using existing tower) (48 ckm)		57.60	
40.	i. **Establishment of new 132/33 kV, 2x80 MVA S/s at UIGC**	To cater the future load demand and to rectify low voltage problem in the surrounding areas. Load:30 MW at 132 kV by 2034-35	125.80	2033-34
	ii. Amta – UIGC 132 kV D/c line (35 ckm)		43.2	
41.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Garbeta**	To cater the future load demand and to rectify low voltage problem due to long 33 kV feeders in the surrounding areas. Load: 25 MW at 132 kV by 2034-35	134.60	2034-35
	ii. LILO of one ckt of Bishnupur – CK Road 132 kV D/c at Garbeta 8 ckm (Loop In 4 ckm Loop Out 4 ckm)		10.4	
42.	**i. Establishment of new 132/33 kV, 2x80 MVA GIS at Kulpi Port**	To cater the future load demand of port area. Load:30 MW at 132 kV by 2034-35	134.60	2034-35
	ii. New Laxmikantapur – Kulpi Port 132 kV D/c (26 ckm)		33.80	
43.	**i. Establishment of 400 kV level in the existing**		318.73	2030-31

S. No.	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame
	campus of Santaldighi 220/132 kV S/s	Power evacuation of Santaldighi TPS 1600 MW at 400 kV level		
	ii. LILO of PPSP – Bidhannagar 400 kV S/c line at Santaldighi 400kV S/s-60 ckm (30 ckm Loop In and 30 ckm Loop Out)		243.00	
	iii. LILO of BAPL – Bidhannagar 400 kV S/c line at Santaldighi 400kV S/s-60 ckm (30 ckm Loop In and 30 ckm Loop Out)		243.00	
44.	**i. Establishment of Dafahat 220/132 kV S/s with 2x200 MVA ICTs**	To restrict the flow of power in Mald-WB Khejuria 132 kV D/c Tr. Line and to cater future load	140.705	2031-32
	ii. Dafahat – Farakka TPS220 kV D/c line (28CKM)		53.925	
	iii. LILO of Dhulian – Raghunathganj 132 kV D/c at Dafahat 220 kV S/s (24 ckm)(12 ckm Loop in and 12 ckm Loop out)		25.68	
	iv. Reconfiguration in Tr. Line:- 1. Two new 132 kV bays will be used at Malda-PG for establishing Malda-PG Khejuria 132 kV D/c after disconnecting Malda WB- Khejuria 132 kV D/c 2. Vacant two 132 kV bays after disconnecting Khejuria D/c at Malda - WB will be used to establish Malda-WB Kaliachawk 132 kV Tr. Line. (14 ckm Line required)		14.98	
45.	**i. Establishment of Kaliachawk 132 kV S/s**	To restrict the flow of power in Malda-WB Khejuria 132 kV D/c Tr. Line by segregating Khejuria Load and to cater future load.	94.48	2031-32
	ii. Establishment of Malda – WB Kaliachawk 132 kV D/c (50 ckm)		53.5	

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 West Bengal

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
1.	Manbazar – Khatra 132 kV D/c Line (80 ckm)	Due to increased loading and N-1 criteria compliance in the area	76.00	2029-30
2.	Jeerat – Panpur 132 kV D/c Line (26 ckm)	Due to increased loading and N-1 criteria compliance in the area	24.70	2029-30
3.	Behala – Birlapur 132 kV D/c Line (35 ckm)	Due to increased loading and N-1 criteria compliance in the area	33.25	2029-30
4.	Samsi – Manikchak 132 kV D/c (60 ckm)	Due to increased loading and N-1 criteria compliance in the area	55.54	2027-28
5.	Khatra – Goaltore 132 kV D/c line (80 ckm)	Due to increased loading and evacuation of solar power in the area	68.00	2027-28
6.	LILO of SG (PG) – NT AA-III 220 kV Ckt at KLC (10 ckm)	Due to increased loading and N-1 criteria compliance in the area.	8.40	2026-27
7.	Maithon – Asansol 220 kV D/c Line (43.20 ckm)	Due to increased loading and N-1 criteria compliance in the area.	11.36	2026-27
8.	LILO of Satgachia – Dhatrigram 132 kV S/c line at Kalna (2 ckm)	Due to increased loading and N-1 criteria compliance in the area	0.96	2026-27
9.	Establishment of S/c connectivity of Gazole – Kushmundi 132 kV and Gazole – Gangarampur 132 kV (89.90 ckm) by network rearrangement of Gangarampur – Kushmundi 132 kV S/c line	Due to increased loading and N-1 criteria compliance in the area	55.27	2026-27
10.	LILO of BAPL – Bidhan nagar 400 kV S/c Line at New DPL switchyard (10 ckm) (5 ckm Loop in and 5 ckm Loop out)	Power Evacuation of New DPL 660 MW unit	48	2029-30
11.	Rammam-I – Rammam-II 132 kV D/c line (16 ckm)	For Power Evacuation Rammam 1 (new) HEP 3X16MW	15.2	2029-30

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
12.	Ujanoo – NBU 132 kV 2nd ckt through Underground cable (5 ckm)	Due to increased loading and N-1 criteria compliance in the area	7.276	2030-31
13.	Silicon Valley – NTAA1 132 kV 2nd ckt through Underground cable (7 ckm)	Due to increased loading and N-1 criteria compliance in the area	10.186	2030-31

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 West Bengal

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
1.	New Town-III – Subhasgram 220 kV S/c Line (23 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra • Year of commissioning – 2010 • Ampacity of HTLS – 1200 A	18.08	2026-27
2.	KTPP – Food Park 220 kV D/c Transmission Line (104 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra Year of commissioning- (previously KTPP-Howrah) Age old • Ampacity of HTLS – 1200 A	46.82	2026-27
3.	Food Park – Jangalpur 220 kV D/c Transmission Line (12 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra • Year of commissioning – (previously KTPP-Howrah) Age Old • Ampacity of HTLS – 1200 A	5.4	2026-27
4.	Barasat – Kasba 220 kV D/c Transmission Line (78.2 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra • Year of commissioning –	35.2	2026-27

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
		(previously Jeerat Kasba) Age Old • Ampacity of HTLS – 1200 A		
5.	Subhasgram – Kasba 220 kV D/c Transmission Line (46 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra • Year of commissioning – 2009 • Ampacity of HTLS – 1200 A	20.71	2026-27
6.	Jeerat – Barasat 220 kV D/c Transmission Line (42 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra Year of commissioning – (previously Jeerat Kasba) Age Old • Ampacity of HTLS – 1200 A	18.91	2026-27
7.	Kotasur – Rampurhat 132 kV D/c line (52 ckm)	High drawal from this line after implementation of Lalbagh 220/132 kV S/s • Existing conductor – Panther • Year of commissioning – (previously Saithia Rampurhat) Age Old • Ampacity of HTLS – 800 A	47.70	2030-31
8.	Sagardighi – New Sagardighi 220 kV D/c line (27.8 ckm)	High drawal from this line after implementation of Lalbagh 220/132 kV S/s • Existing conductor – Zebra • Year of commissioning – 2018 • Ampacity of HTLS – 1200 A	30.66	2029-30
9.	New Laksmikantapur – Sirakol 132 kV D/c line (46.4 ckm)	High drawal from this line after implementation of Kulpi Port 132/33 kV S/s • Existing conductor – Panther • Year of commissioning – 2014 • Ampacity of HTLS – 800 A	55.82	2034-35

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
10.	BTPS(TPS) – Adisaptgram 132 kV D/c line (20 ckm)	High drawal from this line after implementation of BTPS 400/132 kV S/s kV S/s • Existing conductor – Panther • Year of commissioning – Age Old • Ampacity of HTLS – 800 A	16.03	2028-29
11.	BTPS(TPS) – Kalyani 132 kV D/c line (44 ckm)	High drawal from this line after implementation of BTPS 400/132 kV S/s kV S/s • Existing conductor – Panther • Year of commissioning – Age Old • Ampacity of HTLS – 800 A	35.26	2028-29
12.	BTPS – Khannyan 132 kV D/c line (34.6 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 1200 A	27.73	2028-29
13.	BTPS – Dharampur 132 kV D/c line (52 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 1200 A	41.67	2028-29
14.	BTPS – Chanditala 132 kV D/c line (74 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 1200 A	59.29	2028-29
15.	Risra – Chanditala 132 kV D/c line (12 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old	9.62	2028-29

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
		• Ampacity of HTLS – 1200 A		
16.	HURA – Manbazar 132 kV D/c line (75 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 1200 A	90.23	2034-35
17.	Santaldighi – Raghunathpur 220 kV D/c line (50 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Zebra • Year of commissioning – Age old • Ampacity of HTLS – 1200 A	72.30	2033-34
18.	Debgram – Rejinagar new 132 kV D/c line (40 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 800 A	48.12	2034-35
19.	Islampur – TCF-3 132 kV D/c line (64 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 800 A	77	2034-35
20.	Lebong – Ramam-II 132 S/c line (20 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 800 A	24.06	2034-35
21.	NBU – Ramam-II 132 S/c line (69 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old	83	2034-35

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time frame
		• Ampacity of HTLS – 800 A		
22.	NBU – Siliguri-PG 132 D/c line (Ckt-1 11 ckm) (Ckt-2 10.26 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 800 A	25.58	2034-35
23.	TCF-1 – TCF-2 132 kV D/c line Ckt -1 (16 ckm) Ckt -2 (17 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 800 A	39.70	2034-35
24.	TCF-2 – TCF-3 132 kV D/c line Ckt -1 (12 ckm) Ckt -2 (15 ckm)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – Panther • Year of commissioning – Age old • Ampacity of HTLS – 800 A	32.48	2034-35

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

8.4. Augmentation of Substations which are required by 2034-35 are listed at Table 8-4 below

Table 8-4 Augmentation of Substations of West Bengal

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Remarks
1.	Augmentation of transformer capacity by Replacement of 2x160 MVA ICT with 2x200 MVA at 220/132 kV at **Barasat 220 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2x160 MVA	26.61	Time frame: 2026-27 Total capacity after Augmentation: 2x200MVA
2.	Augmentation of transformer capacity by Replacement of 2x160 MVA ICT with 2x200 MVA at 220/132 kV at **Dharampur 220 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required.	26.78	Time frame: 2026-27

		Existing transformer capacity:2x160 MVA		Total capacity after Augmentation: 2x200 MVA
3.	Augmentation of transformer capacity by addition of 1x100 MVA ICT at 220/33 kV at **Mongalpur 220 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2x100 MVA	19.57	Time frame: 2026-27 Total capacity after Augmentation: 3x100 MVA
4.	Augmentation of transformer capacity by addition of 1x200 MVA ICT at 220/132 kV at **Durgapur 220 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 3x200 MVA	18.79	Time frame: 2026-27 Total capacity after Augmentation: 4x200 MVA
5.	Augmentation of transformer capacity by addition of 1x160 MVA ICT at **Rishra 220/132 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity: 3x160 MVA	38.14	Time frame: 2026-27 Total capacity after Augmentation: 4x160 MVA
6.	Augmentation of transformer capacity by addition of 1x315 MVA at **KTPS 400/220 kV** S/s	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2X315 MVA	42.10	Time frame: 2034-35 Total capacity after Augmentation: 3x315 MVA
7.	Augmentation of transformer capacity by addition of 1x500 MVA at **Satgachia 400/220 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2X500 MVA	60.26	Time frame: 2034-35 Total capacity after Augmentation: 3x500 MVA

8.	Augmentation of transformer capacity by replacement of 2x160 MVA to 2x200 MVA ICTs at 220/132 kV **Alipurduar S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2X160 MVA	48.6	Time frame: 2034-35 Total capacity after Augmentation: 2x200 MVA
9.	Augmentation of transformer capacity by replacement of 3x315 MVA to 3x500 MVA and addition of 1x500 MVA ICT at **Bidanagar 400/220 kV**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:3X315 MVA	241.04	Time frame: 2034-35 Total capacity after Augmentation: 4x500 MVA
10.	Augmentation of transformer capacity by addition of 400/220 kV, 1x500 MVA (3rd ICT) at **Sagardighi 400/220 kV**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2X500 MVA	60.26	Time frame: 2034-35 Total capacity after Augmentation: 3x500 MVA
11.	Augmentation of transformer capacity by addition of 220/132 kV, 1x200 MVA (3rd ICT) at **Sagardighi (New) 220/132 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:2X200 MVA	24.30	Time frame: 2034-35 Total capacity after Augmentation: 3x200 MVA
12.	Augmentation of transformer capacity by addition of 400/220 kV, 1x500MVA (4th ICT) at **Kharagpur 400/220 kV S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required. Existing transformer capacity:3X500 MVA	60.26	Time frame: 2034-35 Total capacity after Augmentation: 4x500 MVA

8.5. In spite of the above planning, overloading of certain intra-state substations and transmission lines has been observed. The state is advised to plan additional system strengthening in the affected areas or consider load redistribution among the substations.

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

i. **Establishment of 400/220/132 kV, 2x500 MVA + 3x200 MVA at Gangarampur (ISTS)**
ii. Gangarampur (ISTS) – Katihar (ISTS) 400 kV D/c Line (220 ckm)
iii. Gangarampur (ISTS) – Raiganj (WB) 220 kV D/c Line (72 ckm)
iv. Gangarampur (ISTS) – Gangarampur (WB) 132 kV D/c Line 40 ckm) with high capacity conductor

9.2. The existing ISTS system in West Bengal seems sufficient to draw required power from outside the state. However, the additional requirement of Inter-state transmission system (ISTS) in West Bengal would be identified after the study of complete transmission system including neighbouring states and GNA quantum indicated by the state.

10. Reactive compensation:

10.1. The system studies of the State has identified the Reactive power compensation requirement by 2034-35 at distribution level (33 kV or 11 kV).

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	Compensation requirement at downstream Distribution level (in MVAr)
1.	Bagjola 132 kV	50 MVAr Capacitor
2.	Dashpur 132 kV	25 MVAr Capacitor
3.	Gopiballavpr 132 kV	50 MVAr Capacitor
4.	Hingalganj 132 kV	50 MVAr Capacitor
5.	NJP1(W) 132 kV	25 MVAr Capacitor
6.	Raigunj 132 kV	50 MVAr Capacitor
7.	Burdwan Maha 132 kV	50 MVAr Capacitor
8.	Paharpur 132 kV	50 MVAr Capacitor
9.	Laxmikantapur 220 kV	50 MVAr Capacitor at 132 kV
10.	Sirakol 132 kV	50 MVAr Capacitor
11.	Subhasgram 220 kV	50 MVAr Capacitor at 132 kV

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

11.1. A total of 20,063 MVA transformation capacity addition/augmentation and 3,598.16 ckm of new transmission lines/reconductoring of old lines at an estimated cost of Rs 12,081.49 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:

400 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	5	-	4075	1509.93
2.	Augmentation of existing substation	5	-	3815	463.92
3.	New transmission line including LILO and 2nd Ckt Stringing	8	436.5	-	1724.58
4.	Reconductoring of transmission line	-	-	-	-

220 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	15	-	6580	2176.05
2.	Augmentation of existing substation	7	-	1860	202.79
3.	New transmission line including LILO and 2nd Ckt Stringing	18	476	-	835.67
4.	Reconductoring of transmission line	8	383	-	248.08

132 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	24	-	3670	2572.88
2.	Augmentation of existing substation	-	-	-	-
3.	New transmission line including LILO and 2nd Ckt Stringing	54	1616.4	-	1592.88
4.	Reconductoring of transmission line	16	684.26	-	713.27

66 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (in MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	1	-	63	39.34
2.	Augmentation of existing substation	-	-	-	-

3.	New transmission line including LILO and 2nd Ckt Stringing	1	2	-	2.1
4.	Reconductoring of transmission line	-	-	-	-

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)		Estimated Cost (in Rs. Cr.)
	66 kV	132 kV	220 kV	400 kV	66 kV	132 kV	220 kV	400 kV	132 kV	220 kV	
2026-27	-	-	1260	-	-	91.9	53.2	-	-	305.2	351.00
2027-28	63	100	2100	-	2	150	155.8	-	-	-	1230.60
2028-29	-	400	1160	2675	-	341	100	106.5	236.6	-	2657.56
2029-30	-	960	980	-	-	475.5	62	10	-	27.8	1574.06
2030-31	-	1210	1380	1400	-	224	57	320	52	-	3408.90
2031-32	-	160	960	-	-	124	48	-	-	-	758.07
2032-33	-	260	-	-	-	65	-	-	-	-	314.00
2033-34	-	260	-	-	-	83	-	-	-	50	424.70
2034-35	-	320	600	3815	-	62	-	-	395.66	-	1362.60
Total	**63**	**3670**	**8440**	**7890**	**2**	**1616.4**	**476**	**436.5**	**684.26**	**383**	**12081.49**

12. Conclusion

12.1. By the year 2034-35, the power demand of West Bengal would be increasing significantly. Total expected demand of West Bengal by the year 2034-35 is around 21,400 MW. This anticipated increase in demand includes the expected industrial load coming progressively from 2024-25 to 2034-35.

12.2. About 4 Nos. of Thermal power projects and 5 Nos. of 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 thermal generation and for drawal of power from ISTS in accordance with GNA requirement of West Bengal 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 West Bengal 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 West Bengal 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 West Bengal 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 14,808 MVA transformation capacity addition/augmentation and 2,942.05 ckm of new transmission lines/reconductoring at an estimated cost of ₹ 9,980.18 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 20,063 MVA transformation capacity addition/augmentation and 3,598.16 ckm of new transmission lines/reconductoring at an estimated cost of ₹ 12,081.49 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. As loading on some existing/under implementation elements expected to quite low, the state may examine the possibility of load shifting and taking up new elements commensurate to the demand in the area.

12.11. To ensure reliable and adequate power supply in West Bengal 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) Sub-Station Details

S.No	Sub-Station Name	Total MVA Capacity
1.	Arambag 400/220/132/33 kV, 4x315+3x160+4x50 MVA	1940
2.	Durgapur 400/220 kV, 3x315 MVA	945
3.	Gokarna 400/220 kV, 3x315 MVA	945
4.	Jeerat 400/220/132 kV , 5x315+4x160 MVA	2215
5.	Kharagpur 400/220/132 kV , 3x315+2x160 MVA	1265
6.	New Chanditala 400/220 kV , 5x315 MVA	1575
7.	New PPSP 400KV S/W. GIS,	
8.	Alipurduar 220/132/66/33 kV , 2x160+2x20+2x50 MVA	460
9.	Asansol 220/132/33 kV , 2x160+6x50 MVA	620
10.	Barasat 220/132/33/11 kV GIS , 2x160+4x80+3x10 MVA	670
11.	Dalkhola 220/132/33/11 kV, 2x160+2x31.5+1x20+3x6.3 MVA	421.9
12.	Dharampur 220/132/33 kV GIS, 2x160+3x50 MVA	470
13.	Domjur 220/132/33/11 kV, 3x160+3x50+3x10 MVA	660
14.	Durgapur 220/132 kV, 3x200 MVA	600
15.	Egra 220/132/33/11 kV GIS, 2x160+3x50+3x10 MVA	500
16.	Foundry Park 220/33 kV, 3x50MVA	150
17.	Gazol 220/132/33/11 kV GIS, 3x160+2x50+2x10 MVA	600
18.	Gokarna 220/132/33 kV , 4x160+3x50 MVA	790
19.	Howrah 220/132/33/25 kV, 3x160+2x200+1x31.5+2x20 MVA	751.5
20.	Hura 220/132/33 kV, 2x160+2x20 MVA	360
21.	Kasba 220/132 kV, 2x150+2x160 MVA	620
22.	KLC 220/132/33/11 kV, 2x200+3x50+3x6.3 MVA	568.9
23.	Krishnanagar 220/132/33/11 kV, 3x160+3x50+1x31.5+2x10+1x6.3 MVA	687.8
24.	Laxmikantapur 220/132/33/11 kV, 3x160+3x50+2x6.3+1x5 MVA	647.6
25.	Midnapur 220/132/33 kV, 3x160+3x50 MVA	630
26.	New Bishnupur 220/132/33/11 kV, 3x160+3x31.5+3x6.3 MVA	593.4
27.	New Haldia 220/132/33 kV, 3x160+2x50 MVA	580
28.	New Jalpaiguri 220/132/33/11 kV, 3x160+1x50+1x31.5+2x20+2x6.3+1x5 MVA	619.1
29.	New Town AA-III 220/132/33/11 kV, 3x160+3x50+2x10 MVA	650
30.	Rejinagar 220/132/33 kV, 2x160+2x50 MVA	420
31.	Rishra 220/132/33/11 kV, 4x160+4x50+1x31.5+4x10 MVA	911.5
32.	Sadaipur 220/132/33 kV,3x160+3x50 MVA	630
33.	Sagardighi 220/132/33 Kv, 2x160+2x50 MVA	420
34.	Satgachia 400/220/132/33/11 kV, 2x500+3x160+3x50+2x10+1x6.3 MVA	1656.3
35.	Subhasgram 220/132/33/11 kV, 2x160+3x50+2x10 MVA	490
36.	Vidyasagar Park 220/132/33 kV,2x160+2x50 MVA	420
37.	Baruipur 220/132/33 Kv , 2x160+2x50 MVA	420
38.	Belmuri 220/132/33/25/11 kV ,2x160+2x50+1x12.5+3x6.3 MVA	451.4
39.	Mangalpur 220/33 KV GIS , 2X100 MVA	200
40.	Jangalpur 220/132 kV GIS , 2X160+2X50 MVA	420
41.	New Town AA-IIC 220/132/33 kV GIS , 2x160+2x100 MVA	520
42.	Adisaptagram 132/33/25/11 kV, 3x50+2x20+3x6.3 MVA	208.9
43.	Amtala 132/33/11 kV, 2x50+3x10 MVA	130
44.	Ashokenagar 132/33/25 kV, 3x50+2x7.5 MVA	165

S.No	Sub-Station Name	Total MVA Capacity
45.	Bagmundi 132/33 kV , 2x20 MVA	40
46.	Bagnan 132/33 kV GIS , 2x50 MVA	100
47.	Bajkul 132/33 kV GIS , 3x50 MVA	150
48.	Balurghat 132/33/11 kV, 3x31.5+2x12.5+2x10+1x6.3 MVA	145.8
49.	Bamunara 132/33/11 kV, 4x50+2x6.3 MVA	212.6
50.	Bankura 132/33/11 Kv, 2x50+2x10+1x6.3 MVA	126.3
51.	Barjora 132/33/11 kV , 2x50+2x31.5+2x6.3 MVA	175.6
52.	Basirhat 132/33/11 kV, 2x50+1x80+1x31.5+3x10 MVA	241.5
53.	Behala 132/33/11 kV, 3x50+3x10 MVA	180
54.	Berhampur 132/33 Kv, 3x50 MVA	150
55.	Bhadrapur 132/33 kV GIS , 2x50 MVA	100
56.	Bighati 132/33 kV , 2x50+1x31.5 MVA	131.5
57.	Birpara 132/66/33/11 Kv, 2x31.5+2x50+3x6.3 MVA	181.9
58.	Birshingha 132/33/11 kV, 3x50+1x10+2x6.3 MVA	172.6
59.	Bishnupur 132/33/11 kV, 2x50+2x10+1x6.3 MVA	126.3
60.	Bolpur 132/33/11 kV , 3x50+2x10 MVA	170
61.	Bongaon 132/33/11 kV , 3x50+3x10 MVA	180
62.	Chalsa 132/66/33/11 kV, 2x31.5+2x31.5+2x10+1x6.3 MVA	152.3
63.	Chanditala 132/33/11 kV,3x50+3x10 MVA	180
64.	Chandrakona Road 132/33 kV, 3x50MVA	150
65.	Contai 132/33/11 kV, 3x50+4x10 MVA	190
66.	Coochbehar 132/33 kV, 3x50 MVA	150
67.	Darjeeling 132/33 kV, 3x20 MVA	60
68.	Debagram 132/33/11 kV, 2x50+1x31.5+2x6.3+2x10 MVA	164.1
69.	Dhulian 132/33 kV, 3x31.5 MVA	94.5
70.	Dinhata 132/33 kV , 2x50 MVA	100
71.	Domkal 132/33 kV, 2x50 MVA	100
72.	DPL A Zone 132/33/11 kV, 3x50+1x31.5+2x6.3 MVA	194.1
73.	DPL B Zone 132/33/11 kV , 2x31.5+3x31.5 MVA	157.5
74.	DPL AB Zone 220/132/33 kV , 2x160+2x80 MVA	480
75.	DPL C Zone 132/33 kV, 2x50 MVA	100
76.	DPL C1 Zone 132/33/11 kV, 2x31.5+2x6.3MVA	75.6
77.	Falakata 220/132/33 kV, 2x160+2x50MVA	420
78.	Falta 132/33/11 kV, 3x50+2x6.3 MVA	162.6
79.	Food Park 220/132/33 kV,2x160+2x50 MVA	420
80.	Gangarampur 132/33/11 kV, 3x31.5+3x10MVA	124.5
81.	Habibpur 132/33KV, 2x50 MVA	100
82.	Haldia 132/33/25/11 kV , 2x50+2x30.24+3x6.3 MVA	179.38
83.	Haldia NIZ 132/33/11 kV, 2x31.5+2x6.3 MVA	75.6
84.	Hizlee 132/33/11 kV, 2x50+1x31.5+3x10 MVA	161.5
85.	Indus 132/33 kV,2x80 MVA	160
86.	Islampur 132/33 kV, 2x50 MVA	100
87.	Jhalda 132/33 kV, 2x31.5 MVA	63
88.	Jangipara 132/33/11 kV, 2x50+3x6.3 MVA	118.9
89.	Jhargram 132/33/11 kV, 2x50+1x31.5+2x5 MVA	141.5
90.	Kakdwip 132/33 kV, 3x31.5 MVA	94.5
91.	Kalna 132/33 kV, 1x31.5+2x50+2x6.3 MVA	144.1
92.	Kalyani 132/33/11 kV, 3x50+3x10 MVA	180
93.	Katwa 132/33/11 kV, 3x50+3x10 MVA	180
94.	Keshiary 132/33 kV, 2x50 MVA	100
95.	Khanyan 132/33/11 kV, 2x50+2x6.3 MVA	112.6

S.No	Sub-Station Name	Total MVA Capacity
96.	Kharagpur WBIDC 132/33/11 kV, 3x31.5+1x6.3+1x5 MVA	105.8
97.	Khatra 132/33 kV, 2x50 MVA	100
98.	Khejuria 132/33 kV GIS, 2x50 MVA	100
99.	Kolaghat 132/33 kV, 3x50+3x10 MVA	180
100.	Kuli 132/33 kV GIS,2x50 MVA	100
101.	Kurseong 132/33 kV, 3x10 MVA	30
102.	Lalgola 132/33 kV, 2x50+1x31.5 MVA	131.5
103.	Liluah 132/33/25 kV, 3x50+2x30.24 MVA	210.48
104.	Mahachanda 132/33/11 kV, 3x50+1x6.3+2x10 MVA	176.3
105.	Mahispota 132/33/11 kV, 3x50+2x6.3 MVA	162.6
106.	Malda 132/33/11 kV, 3x50+1x31.5+2x10MVA	201.5
107.	Mankar 132/33/11 kV, 4x31.5+3x6.3 MVA	144.9
108.	Mathabhanga 132/33 kV GIS, 2x50 MVA	100
109.	Mohitnagar 132/33 kV GIS , 2x50 MVA	100
110.	Moynaguri 132/33/11 kV, 2x50+1x31.5+3x10 MVA	161.5
111.	Najirpur 132/33 kV GIS , 2x50 MVA	100
112.	NBU 132/33/11 kV, 4x31.5+2x10+2x6.3 MVA	158.6
113.	New Town AA-I 132/3/11 kV, 3x50+2x10 MVA	170
114.	Panagarh 132/33 kV GIS , 2x50 MVA	100
115.	Pingla 132/33/11 kV , 3x50+3x6.3MVA	168.9
116.	Purulia 132/33/11 kV, 3x31.5+3x6.3 MVA	113.4
117.	Raghunathgunj 132/33 kV, 3x50 MVA	150
118.	Raghunathpur 220/132/33/11 kV, 1x160+1x150+2x50+2x6.3 MVA	422.6
119.	Raigunj 132/33/11 kV , 3x50+2x10+1x6.3 MVA	176.3
120.	Raina 132/33/11 kV, 3x50+2x10+1x6.3 MVA	176.3
121.	Rampurhat 132/33/11 kV,3x50+3x10 MVA	180
122.	Ranaghat 132/33/25/11 kV,3x50+1x31.5+2x12.5+3x10 MVA	236.5
123.	Sainthia 132/33/11 kV, 3x50+3x10 MVA	180
124.	Salt Lake 132/33 kV, 3x50 MVA	150
125.	Salt Lake 132/33 kV GIS, 2x50 MVA	100
126.	Salt Lake Stadium 132/33/11 kV GIS , 2x80+2x10+1x6.3 MVA	186.3
127.	Samsi 132/33/11 kV, 2x50+1x31.5+3x10 MVA	161.5
128.	Serakol 132/33 kV, 2x50 MVA	100
129.	Silicon Valley 132/33/11 kV, 2x80+4x10 MVA	200
130.	Siliguri 132/33 kV, 2x50 MVA	100
131.	Sonakhali 132/33 kV, 2x50 MVA	100
132.	Sonarpur 132/33/25 kV, 3x50+2x20 MVA	190
133.	Tamluk 132/33/11 kV, 3x50+2x10+1x6.3 MVA	176.3
134.	Tarakeswar 132/33/11 kV, 1x31.5+2x50+2x10+1x6.3 MVA	157.8
135.	Titagarh 132/33/25 kV, 3x50+2x20 MVA	190
136.	Ujanoo 132/33 kV, 2x50 MVA	100
137.	Ukhra 132/33/11 kV, 3x50+3x6.3 MVA	168.9
138.	Uluberia 132/33/11 kV, 4x50+3x6.3 MVA	218.9
139.	Harischandrapur 132/33 kV, 2x50 MVA	100
140.	Salar 132/33 kV GIS , 2x50 MVA	100
141.	Debra 132/33 kV GIS , 2x50 MVA	100
142.	Burdwan 132/33 kV GIS, 3x50 MVA	150
143.	Manbazar 132/33 kV GIS , 2x20 MVA	40
144.	Kona 132/33 kV GIS , 3x50 MVA	150
145.	Renia 132/33 kV , 2x50 MVA	100
146.	Minakhan 132/33 kV GIS , 2x50 MVA	100

S.No	Sub-Station Name	Total MVA Capacity
147.	Ramnagar 132/33 kV , 2x50 MVA	100
148.	Lavpur 132/33 kV , 2x50 MVA	100
149.	Kushmundi 132/33 kV GIS , 2x20 MVA	40
150.	Ramganga 132/33/11 kV GIS , 2x31.5+2x6.3 MVA	75.6
151.	Panpur 132/33 kV GIS , 2x80 MVA	160
152.	Panchami 132 kV GIS , 2x50 MVA	100
153.	Bagula 132/33/11 kV , 2x50+3x10+1x6.3 MVA	136.3
154.	Kamakhyaguri 132/33/33 kV, 2x31.5+2x10MVA	83
155.	Chapra 132/33 kV, 2x50MVA	100
156.	Goaltore 132/33 kV, 3x50MVA	150
157.	Kusmundi 132/33 kV, 2x50MVA	100
158.	Labpur 132/33 kV, 2x50 MVA	100
159.	Nilganj 132/33 kV, 2x50 MVA	100
160.	Farakka 132KV S/W	
161.	Banarhat 66/11 kV , 3x5+1x6.3 MVA	21.3
162.	Hamiltongunj 66/11 kV , 2x10+1x6.3 MVA	26.3
163.	Hasimara 66/33/11 kV , 3x10+2x5 MVA	40
164.	Kalimpong 66/33/11 kV , 2x10+2x10+1x6.3 MVA	46.3
165.	Nagrakata 66/11 kV , 1x6.3+2x5 MVA	16.3
166.	Odlabari 66/33/11 kV , 1x5+3x6.3+2x10 MVA	43.9

b) Line details

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
1.	Kharagpur–Baripada 400 kV S/c Line	400	50.1
2.	Arambag–New Chanditala 400 kV S/c Line	400	59.4
3.	New Chanditala–KTPP 400 kV S/c Line	400	64.7
4.	KTPS–Arambag 400 kV S/c Line	400	78
5.	Jeerat –New Chanditala 400 kV S/c Line	400	79.8
6.	KTPS–Kharagpur 400 kV S/c Line	400	90.6
7.	KTPS–Kharagpur 400 kV S/c Line	400	95
8.	BkTPP–Arambag 400 kV S/c Line	400	130
9.	Durgapur–New Chanditala 400 kV S/c Line	400	152.4
10.	BkTPP–Jeerat 400 kV S/c Line	400	163
11.	New PPSP–PPSP 400 kV D/c Line	400	1
12.	Parulia (PG)–Durgapur 400 kV D/c Line	400	21.4
13.	Kharagpur –New Chanditala 400 kV D/c Line	400	277.04
14.	PPSP–Durgapur 400 kV D/c Line	400	367
15.	Arambagh–New PPSP 400 kV D/c Line	400	420
16.	Gokarna–Sagardighi 400 kV D/c Line	400	88.45
17.	Gokarna–New Chanditala 400 kV D/c Line	400	354.622
18.	Arambag–Belmuri 220 kV S/c Line	220	62.47
19.	Belmuri–New Chanditala 220 kV S/c Line	220	45.7
20.	New Town-IIC–Rajarhat 400 (PGCIL) 220 kV D/c Line	220	23.3
21.	New Chanditala–Rishra 220 kV S/c Line	220	31.44
22.	Durgapur–Mongalpur 220 kV S/c Line	220	31.369
23.	Mongalpur–Asansol 220 kV S/c Line	220	87.929

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
24.	Durgapur–JK Nagar 220 kV S/c Line	220	40
25.	STPS–Asansol 220 kV D/c Line	220	140.978
26.	Asansol–JK Nagar 220 kV S/c Line	220	85
27.	New Town AA-III –KLC 220 kV S/c Line	220	20
28.	Subhasgram (PG)–New Town AA-III 220 kV S/c Line	220	24
29.	Subhasgram (PG)–KLC 220 kV S/c Line	220	20
30.	NJP–TLDP-III 220 kV S/c Line	220	80.8
31.	STPS–Asansol 220 kV S/c Line	220	68
32.	STPS–Chandil 220 kV S/c Line	220	72
33.	STPS–New Bishnupur 220 kV S/c Line	220	110
34.	Hura–STPS 220 kV S/c Line	220	47.8
35.	Hura–New Bishnupur 220 kV S/c Line	220	93.8
36.	TLDP-III–TLDP-IV 220 kV S/c Line	220	21.1
37.	Arambagh–Midnapore 220 kV D/c Line	220	142
38.	Arambag–New Bishnupur 220 kV D/c Line	220	98
39.	BkTPP–Durgapur 220 kV D/c Line	220	80
40.	BkTPP–Satgachia 220 kV D/c Line	220	264
41.	Domjur–Arambagh 220 kV D/c Line	220	116
42.	Domjur–Foundary Park 220 kV D/c Line	220	30
43.	Foundary Park–New Chanditala 220 kV D/c Line	220	49.8
44.	New Chanditala –Howrah 220 kV D/c Line	220	50
45.	Durgapur–AB Zone 220 kV D/c Line	220	4.919
46.	AB Zone- DPL (Unit-8) 220KV D/C Line	220	20.699
47.	Gokarno–Sadaipur 220 kV D/c Line	220	166.46
48.	BKTPP–Sadaipur 220 kV D/c Line	220	9.2
49.	Jeerat–New Town AA- III 220 kV D/c Line	220	80
50.	Jeerat–Barasat 220 kV D/c Line	220	46.6
51.	Barasat–Kasba 220 kV D/c Line	220	82.6
52.	Kasba–Subhasgram 220 kV D/c Line	220	44
53.	Krishnanagar–Satgachia 220 kV D/c Line	220	104
54.	KTPP–Food park 220 kV D/c Line	220	107.268
55.	Food Park-jangalpur 220KV D/C Line	220	12.028
56.	Jangalpur–Howrah 220 kV D/c Line	220	26.568
57.	TLDP VI–NJP 220 kV D/c Line	220	145
58.	New Haldia–KTPP 220 kV D/c Line	220	112
59.	Subhasgram–Lakshmikantapur 220 kV D/c Line	220	86
60.	Subhasgram –Subhasgram (PG) 220 kV D/c Line	220	1.2
61.	Kharagpur– Midnapur 220 kV D/c Line	220	91.2
62.	Dalkhola–Dalkhola (PG) 220 kV D/c Line	220	1.5
63.	Gokarna–Rejinagar 220 kV D/c Line	220	68.5
64.	Krishnanagar–Rejinagar 220 kV D/c Line	220	150.5
65.	Kharagpur–Vidyasagar Park 220 kV D/c Line	220	61.8
66.	Jeerat–Dharampur 220 kV D/c Line	220	34
67.	Dharampur–Rishra 220 kV S/c Line	220	56
68.	Kharagpur–Egra 220 kV D/c Line	220	134
69.	Sagardighi TPS–Sagardighi 220 kV D/c Line	220	27.8
70.	Jeerat-Satgachia idle portion– 220 kV D/c Line	220	63.43
71.	Jeerat–Krishnanagar 220 kV D/c Line	220	114.178
72.	Satgachia –Rishra 220 kV S/c Line	220	89.76
73.	Satgachia –Dharampur 220 kV S/c Line	220	66.5
74.	Hura–Raghunathpur 220 kV D/c Line	220	67

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
75.	Alipurduar–Alipurduar (PG) 220 kV D/c Line	220	12.8
76.	New Chanditala–Domjur 220 kV D/c Line	220	16.7
77.	Sagardighi–Gokarna 220 kV D/c Line	220	64.2
78.	D/C LILO of PGCIL Line at Gazol– 220 kV D/c Line	220	6.06
79.	Subhasgram (PG)–Baruipur 220 kV D/c Line	220	64.06
80.	Rajarhat (PG)–Barasat 220 kV D/c Line	220	15.752
81.	STPS- Raghunathpur 220KV D/C Line	220	46
82.	Bagnan–Uluberia 132 kV S/c Line	132	21
83.	Bajkul–MC Point(Ramnagar) 132 kV D/c Line	132	62
84.	Egra–MC Point(Ramnagar) 132 kV S/c Line	132	21.64
85.	Contai–MC Point(Ramnagar) 132 kV S/c Line	132	2.55
86.	Ramnagar–MC Point(Ramnagar) 132 kV F/C Line	132	118.16
87.	Balichak TSS–Pingla 132 kV S/c Line	132	18
88.	Bankura–Bankura TSS 132 kV S/c Line	132	0.6
89.	Bankura–Bengal Concast (Bulk) 132 kV S/c Line	132	3.82
90.	Barasat–Barasat TSS 132 kV S/c Line	132	3
91.	Behala–Falta 132 kV S/c Line	132	28.9
92.	Behala–Sirakol 132 kV S/c Line	132	23.8
93.	Sirakol–Falta 132 kV S/c Line	132	24.6
94.	Behala–Sirakol 132 kV S/c Line	132	17
95.	Behala–Renia 132 kV D/c Line	132	13.8
96.	Renia–Sonarpur 132 kV D/c Line	132	21
97.	Bengal Energy–Hizli 132 kV S/c Line	132	22.7
98.	Bengal Energy –Egra 132 kV S/c Line	132	50
99.	Berhampore–Cossimbazar TSS 132 kV S/c Line	132	13
100.	Birpara –Alipurduar 132 kV S/c Line	132	54
101.	Birpara–Kamakhyaguri 132 kV S/c Line	132	75.795
102.	Alipurduar–Coochbehar 132 kV D/c Line	132	38
103.	Bishnupur–CK Road 132 kV D/c Line	132	99.671
104.	Midnapur CK road 132 kV S/C Line	132	46
105.	Midnapur Ck road (via OCL, JSW) 132 kV S/C Line	132	78.561
106.	Bishnupur–Modern/ Gaytri (Bulk) 132 kV S/c Line	132	4
107.	Bishnupur–Rohit Ferro (Bulk) 132 kV S/c Line	132	2.8
108.	Bishnupur –New Bishnupur 132 kV S/c Line	132	3
109.	BTPS–Dharampur 132 kV S/c Line	132	21
110.	BTPS–Kalyani 132 kV S/c Line	132	22
111.	BTPS–Chanditala 132 kV D/c Line	132	74
112.	Liliuah- Domjur 132 kV D/c Line	132	106
113.	CK Road–CK Road TSS 132 kV S/c Line	132	5
114.	Contai–Egra 132 kV S/c Line	132	32
115.	Coochbehar–Dinhata 132 kV S/c Line	132	73
116.	Coochbehar–Mathabanga 132 kV S/c Line	132	47
117.	Dankuni TSS–Hind Motor Sw. Stn. 132 kV S/c Line	132	7
118.	Liluah–Kona 132 kV D/c Line	132	5.86
119.	Kona–Dankuni TSS 132 kV S/c Line	132	5.07
120.	Kona–Rishra 132 kV S/c Line	132	16.57
121.	Darjeeling–Rammam II 132 kV S/c Line	132	20
122.	Debagram–Debagram TSS 132 kV S/c Line	132	6
123.	Dharampur–Kalyani 132 kV S/c Line	132	11
124.	Dhulian–Farakka Sw. Stn. 132 kV S/c Line	132	22
125.	DPL AB Zone–DPL B Zone 132 kV D/c Line	132	4.3

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
126.	DPL A Zone–Bamunara 132 kV D/c Line	132	7.6
127.	DPL A Zone–DPL AB Zone 132 kV S/c Line	132	6.8
128.	Durgapur – DPL B Zone 132kV S/C Line	132	9.5
129.	DPL B Zone–DPL A Zone 132 kV S/c Line	132	4.85
130.	DPLGen Stn.–DPL AB Zone 132 kV S/c Line	132	1.6
131.	DPLGen Stn.–DPL C Zone 132 kV S/c Line	132	4.8
132.	DPL Gen – DPL C1 Zone 132 kV D/C Line	132	11.2
133.	DPL C Zone(Cable) – DPL C1 Zone 132kV S/C Line	132	1.2
134.	Durgapur 220kV – DPL C Zone 132 kV S/C line	132	7.5
135.	Gangarampur–Balurghat 132 kV S/c Line	132	35
136.	Gokarna–Lalgola 132 kV S/c Line	132	46.8
137.	Gokarna–Sonar Bangla (Bulk) 132 kV S/c Line	132	47.2
138.	Sadaipur–Panchami 132 kV D/c Line	132	77.2
139.	Rampurhat–Panchami 132 kV D/c Line	132	98.26
140.	Sainthia–Kuli 132 kV D/c Line	132	80
141.	Gokarna–Kuli 132 kV D/c Line	132	40.132
142.	Haldia–New Haldia 132 kV S/c Line	132	2
143.	Haldia NIZ–Maniksia (Bulk) 132 kV S/c Line	132	1
144.	Hijli–Vidyasagar Park 132 kV S/c Line	132	15.9
145.	Hijli–Vidyasagar Park (Via TSS) 132 kV S/c Line	132	16.55
146.	Hind Motor–Rishra 132 kV S/c Line	132	13
147.	Howrah–Liluah Ckt - III 132 kV S/c Line	132	18
148.	Howrah–Liluah Ckt - IV 132 kV S/c Line	132	18
149.	HPCL (Bulk)–Haldia 132 kV S/c Line	132	3
150.	HPCL (Bulk)–New Haldia 132 kV S/c Line	132	2
151.	JSW (Bulk)–OCL (Bulk) 132 kV S/c Line	132	23.3
152.	Kasba–Behala 132 kV S/c Line	132	27
153.	Kasba–Sonarpur 132 kV S/c Line	132	12
154.	Kasba- Salt Lake Tap –KLC 132 kV S/c Line	132	2.8
155.	Kasba–Saltlake-Stadium 132 kV D/c Line	132	13.84
156.	Katwa–Katwa TSS 132 kV S/c Line	132	2.4
157.	Kharagpur (WBIDC)–Ramsharup 132 kV S/c Line	132	1
158.	Khargapur WBIDC–Midnapur 132 kV S/c Line	132	15.94
159.	Khargapur WBIDC–TATA Metalic (Bulk) 132 kV S/c Line	132	5
160.	KLC –TL 50 132 kV S/c Line	132	5
161.	Kolaghat–Madras Cement (Bulk) 132 kV S/c Line	132	5
162.	KTPS–Bagnan 132 kV S/c Line	132	16
163.	KTPS –Uluberia 132 kV S/c Line	132	29.1
164.	Lalgola–Raghunathgaunj 132 kV S/c Line	132	28
165.	Mathabanga–Dinhata 132 kV S/c Line	132	68
166.	Debra–Midnapur 132 kV S/c Line	132	28.49
167.	Balichak TSS–Debra 132 kV S/c Line	132	4.9
168.	Midnapur–CK Road 132 kV S/c Line	132	46
169.	Midnapur–Pingla 132 kV S/c Line	132	41
170.	Mohitnagar–Chalsa 132 kV S/c Line	132	62.6
171.	Mohitnagar–Moynaguri 132 kV S/c Line	132	24.56
172.	Birpara–Moynaguri (1st CKT) 132 kV D/c Line	132	90
173.	Moynaguri–Chalsa 132 kV S/c Line	132	43
174.	Moynaguri–LILO point of Mohitnagar-Moynaguri for establishment of Moynaguri-Chalsa & Moynaguri-Mohitnagar D/C connectivity 132 kV D/c Line	132	7.82

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
175.	Moynaguri–Mathabanga 132 kV D/c Line	132	106.4
176.	NBU–Darjeeling 132 kV S/c Line	132	66
177.	NBU–NJP 132 kV S/c Line	132	15
178.	NBU–PGCIL 132 kV S/c Line	132	10
179.	NBU–Rammam II 132 kV S/c Line	132	69
180.	NBU–TCF PS - I 132 kV S/c Line	132	18
181.	NBU–Ujanu 132 kV S/c Line	132	5.33
182.	New Bishnupur–Vasabi Steel (Bulk) 132 kV S/c Line	132	3.7
183.	NJP–Mohitnagar 132 kV S/c Line	132	30.4
184.	NJP–Mohitnagar 132 kV S/c Line	132	29.23
185.	NJP–PGCIL 132 kV S/c Line	132	10
186.	NJP–TCF PS - I 132 kV S/c Line	132	16
187.	OCL (Bulk)–Midnapur 132 kV S/c Line	132	17.6
188.	Raghunathganj - FKK Tap–Ambuja Cement (Bulk) 132 kV S/c Line	132	2.35
189.	Raghunathgaunj–Dhulian 132 kV S/c Line	132	22
190.	Raghunathgaunj–Farakka Sw. Stn. 132 kV S/c Line	132	44
191.	Raiganj–Kushmundi 132 kV S/c Line	132	33.44
192.	Kushmundi–Gangarampur 132 kV S/c Line	132	42.96
193.	Reshmi (Bulk)–TATA Metalic (Bulk) 132 kV S/c Line	132	6
194.	Reshmi (Bulk)–Vidyasagar Park 132 kV S/c Line	132	5.9
195.	Rishra–Jayshree (Bulk) 132 kV S/c Line	132	5
196.	Sagardighi–Lalgola 132 kV S/c Line	132	48.9
197.	Sagardighi–Raghunathgaunj 132 kV S/c Line	132	26.8
198.	Salt Lake AIS–Salt Lake Stadium 132 kV S/c Line	132	4.7
199.	Salt Lake GIS–Salt Lake Stadium 132 kV S/c Line	132	4
200.	Satgachia –Datrigram TSS 132 kV S/c Line	132	18
201.	Sonar Bangla (Bulk)–Lalgola 132 kV S/c Line	132	28.4
202.	TCF PS - I–TCF PS - II 132 kV S/c Line	132	16
203.	TCF PS - I–TCF PS - III 132 kV S/c Line	132	34
204.	TCF PS - II–TCF PS - III 132 kV S/c Line	132	20
205.	Ujanu–Siliguri 133 kV S/c Line	133	4.83
206.	Vidyasagar Park–Midnapur 132 kV S/c Line	132	9.5
207.	Idle portion of Balurghat Line– 132 kV S/c Line	132	8.1
208.	Adisaptagram–Belmuri 132 kV D/c Line	132	64
209.	Adisaptagram–BTPS 132 kV D/c Line	132	20
210.	Amtala–Najirpur 132 kV D/c Line	132	26.7
211.	Amtala–Rejinagar 132 kV D/c Line	132	61.2
212.	Arambag–Birsingha 132 kV D/c Line	132	48
213.	Arambag–Raina 132 kV D/c Line	132	64
214.	Arambag–Tarakeswar 132 kV D/c Line	132	68
215.	Ashoknagar–Basirhat 132 kV D/c Line	132	78
216.	Bagmundi–Jhalda 132 kV D/c Line	132	101.12
217.	Bagmundi–Purulia 132 kV D/c Line	132	138
218.	Bankura–Bishnupur 132 kV D/c Line	132	72.42
219.	Bankura–Raghunathpur 132 kV D/c Line	132	119.2
220.	Basirhat–New Town AA-III 132 kV D/c Line	132	94.76
221.	Behala–Gardenreach (Out of service) 132 kV D/c Line	132	26.2
222.	Amtala–Rejinagar 132 kV D/c Line	132	59.764
223.	Berhampur–Rejinagar 132 kV D/c Line	132	76.34
224.	Bhadrapur–Rampurhat 132 kV D/c Line	132	48

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
225.	Bighati–Rishra 132 kV D/c Line	132	20
226.	Birpara –Birpara (PG) 132 kV D/c Line	132	1
227.	Birsingha–CK Road 132 kV D/c Line	132	68
228.	CK Road Goaltore 132kV D/C line	132	57.888
229.	Bishnupur –New Bishnupur 132 kV D/c Line	132	11
230.	Bolpur–Durgapur 132 kV D/c Line	132	142
231.	Bolpur–Sadaipur 132 kV D/c Line	132	79.182
232.	Borjora–New Bishnupur 132 kV D/c Line	132	89
233.	Borjora –Durgapur 132 kV D/c Line	132	54
234.	BTPS–Bighati 132 kV D/c Line	132	50
235.	BTPS–Khanyan 132 kV D/c Line	132	34.6
236.	BTPS –Dharampur 132 kV D/c Line	132	52
237.	Chanditala–Rishra 132 kV D/c Line	132	12
238.	Dalkhola–Islampur 132 kV D/c Line	132	110.2
239.	Dalkhola–Raigaunj 132 kV D/c Line	132	102
240.	Debagram–Katwa 132 kV D/c Line	132	70
241.	Debagram–Rejinagar 132 kV D/c Line	132	36.2
242.	Dharampur–Ranaghat 132 kV D/c Line	132	52
243.	Dharampur–Panpur 132 kV D/c Line	132	26.84
244.	Panpur–Titagarh 132 kV D/c Line	132	32.44
245.	Domjur–Chanditala 132 kV D/c Line	132	52
246.	Domjur –Jangipara 132 kV D/c Line	132	34
247.	Domjur –Uluberia 132 kV D/c Line	132	54
248.	Domkal–Najirpur 132 kV D/c Line	132	62.054
249.	Durgapur–Mankar 132 kV D/c Line	132	60
250.	Durgapur–Ukrah 132 kV D/c Line	132	45
251.	Gazol–Balurghat 132 kV S/c Line	132	90.3
252.	Gazol–Gangarampur 132 kV S/c Line	132	60.4
253.	Gangarampur–Balurghat 132 kV S/c Line	132	35.44
254.	Gazol–Harischandrapur 132 kV D/c Line	132	150.654
255.	Harischandrapur–Raiganj 132 kV D/c Line	132	96.734
256.	Idle portion of Gazol - Raigunj 132 kV D/C Line– 132 kV D/c Line	132	10.476
257.	Gazol–Samsi 132 kV D/c Line	132	56
258.	Gokarna–Bhadrapur 132 kV D/c Line	132	77
259.	Gokarna–Salar 132 kV D/c Line	132	67.728
260.	Katwa–Salar 132 kV D/c Line	132	52.572
261.	Gokarno–Berhampore 132 kV D/c Line	132	36
262.	Haldia–Haldia NIZ 132 kV D/c Line	132	44
263.	Haldia–TATA Power 132 kV D/c Line	132	13
264.	Haldia NIZ–Rohit Ferro (Bulk) 132 kV D/c Line	132	4
265.	Haldia NIZ–Mitsubishi (Bulk) 132 kV D/c Line	132	4.7
266.	Howrah–Liluah Ckt - I & II 132 kV D/c Line	132	28
267.	Hura–Purulia 132 kV D/c Line	132	31.7
268.	Indus–New Bishnupur 132 kV D/c Line	132	75.72
269.	Indus–Raina 132 kV D/c Line	132	62.2
270.	Indus-Raina LILO at Indus TSS–LILO Portion 132 kV D/c Line	132	0.5
271.	Islampur–TCF PS - III 132 kV D/c Line	132	80.2
272.	Jeerat–Gaighata 132 kV D/c Line	132	42.305
273.	Gaighata-Ashoknagar 132kV D/C Line	132	40.705

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
274.	Jeerat–Barasat 132 kV D/c Line	132	49
275.	Jeerat–Bongaon 132 kV D/c Line	132	72
276.	Jeerat–Dharampur 132 kV D/c Line	132	28
277.	Jeerat–Nilganj 132 kV D/c Line	132	51.315
278.	Nilganj- Mohishpota 132kV D/C	132	11.015
279.	Kakdwip–Lot 8 (Chd. at 33 kV) 132 kV D/c Line	132	12.4
280.	Kalna–Satgachia 132 kV D/c Line	132	37.5
281.	Kasba–Salt Lake 132 kV D/c Line	132	42
282.	Katwa–Satgachia 132 kV D/c Line	132	90
283.	Keshiary–Kharagpur 132 kV D/c Line	132	47.2
284.	Keshiary–Pingla 132 kV D/c Line	132	80.6
285.	Khanyan–Satgachia 132 kV D/c Line	132	82.8
286.	Khatra–New Bishnupur 132 kV D/c Line	132	133
287.	Khejuriaghat–Farakka Sw. Stn. 132 kV D/c Line	132	6
288.	Kolagat–KTPS 132 kV D/c Line	132	8
289.	Kolaghat - Howrah (DVC)–Food Park 132 kV D/c Line	132	2.5
290.	Krishnanagar–Bagula 132 kV D/c Line	132	40.54
291.	Bagula–Bongaon 132 kV D/c Line	132	109.06
292.	Krishnanagar–Chapra 132 kV D/c Line	132	55.860
293.	Chapra -Debagram132kV D/C line	132	107.828
294.	Krishnanagar–Ranaghat 132 kV D/c Line	132	66.8
295.	KTPS–Tamluk 132 kV D/c Line	132	38
296.	Laxmikantapur–Falta 132 kV D/c Line	132	68
297.	Laxmikantapur–Kakdwip 132 kV D/c Line	132	107
298.	Laxmikantapur –Sirakol 132 kV D/c Line	132	46.4
299.	Laxmikantapur–Ramganga 132 kV D/c Line	132	70.944
300.	Kakdwip–Ramganga 132 kV D/c Line	132	47.622
301.	Lot 8 (Chd. at 33 kV)–Muri Ganga River X-ing 132 kV D/c Line	132	7.4
302.	Mahachanda–Mankar 132 kV D/c Line	132	86
303.	Burdwan–Mahachanda 132 kV D/c Line	132	23.74
304.	Burdwan–Satgachia 132 kV D/c Line	132	86.056
305.	Malda–Gazol 132 kV D/c Line	132	51.22
306.	Malda–Khejuriaghat 132 kV D/c Line	132	70
307.	Malda–Malda (PG) 132 kV D/c Line	132	14
308.	Malda(pg)- Manikchak 132D/C Line	132	47.998
309.	Malda–Jamirghata TSS 132 kV S/c Line	132	1.32
310.	Mankar–Panagarh 132 kV D/c Line	132	11
311.	Midnapur–Jhargram 132 kV D/c Line	132	96
312.	Kharagpur 400KV- Jhargram 132KV D/C Line	132	78.184
313.	Midnapur– Debra 132 kV D/c Line	132	62.56
314.	New Haldia–Bajkul 132 kV D/c Line	132	93
315.	New Town AA-I–Salt Lake GIS 132 kV D/c Line	132	22.2
316.	New Town AA-III–New Town AA-I 132 kV D/c Line	132	16.6
317.	Purulia–STPS 132 kV D/c Line	132	70
318.	Sadaipur–Sainthia 132 kV D/c Line	132	60.642
319.	Siliguri–NJP 132 kV D/c Line	132	32
320.	Siliguri (PG) - Rangit–Kurseong 132 kV D/c Line	132	16
321.	Subhasgram–Sonakhali 132 kV D/c Line	132	82
322.	Tamluk–Haldia NIZ 132 kV D/c Line	132	92
323.	Tarakeswar–Belmuri 132 kV D/c Line	132	36

S.No	Line Name	Voltage Level (kV)	Line Length (CKM)
324.	Idle portion of Gok-Rgi Line– 132 kV D/c Line	132	6.68
325.	Idle portion of Malda-Raigunj Line– 132 kV D/c Line	132	2
326.	Idle portion of NT - Barasat Line– 132 kV D/c Line	132	46
327.	Idle portion of Samsi Line– 132 kV D/c Line	132	1
328.	Vidyasagar Park–M/C point 132 kV F/C Line	132	10
329.	Vidyasagar Park- Kharagpur WBIIDC 132kV D/C Line	132	24.974
330.	Durgapur–Panagarh 132 kV D/c Line	132	59.76
331.	Midnapur–Drbra 132 kV D/C (From TL 21) 132 kV D/c Line	132	50.97
332.	Hura–Manbazar 132 kV D/c Line	132	76
333.	Tarakeswar–Jangipara 132 kV D/c Line	132	39.368
334.	Subhasgram–Minakhan 132 kV D/c Line	132	70.39
335.	Bolpur–Lavpur 132 kV D/c Line	132	39.608
336.	Baruipur–Serakol 132 kV D/c Line	132	32.154
337.	Gazole-Habibpur 132KV D/C line	132	53
338.	Chalsa–Jaldhaka 66 kV D/c Line	66	58
339.	Chalsa–Kalimpong 66 kV S/c Line	66	52
340.	Chalsa–Nagrakata 66 kV S/c Line	66	13
341.	Chalsa–Odlabari 66 kV S/c Line	66	19
342.	Kalimpong –Melli 66 kV D/c Line	66	17
343.	Alipurduar–Kamkshyaguri 66 kV S/c Line	66	26
344.	Alipurduar–Hamiltongaunj 66 kV S/c Line	66	28
345.	Hamiltongaunj–Hashimara 66 kV S/c Line	66	10
346.	Hashimara –Birpara 66 kV S/c Line	66	25
347.	Birpara –Banarhat 66 kV S/c Line	66	19
348.	Banarhat–Nagrakata 66 kV S/c Line	66	14
349.	Ranaghat–Bogula 66 kV S/c Line	66	25
350.	Alipurduar–Coochbehar (Chd. at 33 kV) 66 kV S/c Line	66	18
351.	Banarhat–Binaguri (Bulk) 66 kV S/c Line	66	9

c) Capacitor Bank details

S. No.	Substation	Voltage Level(kV)	Installed Capacity(MVAr)
1	Adisaptagram 132 KV SS - WBSETCL	33	10
2	Adisaptagram 132 KV SS - WBSETCL	33	10
3	Adisaptagram 132 KV SS - WBSETCL	33	10
4	Amtala 132 KV SS - WBSETCL	33	10
5	Arambag 400 KV SS - WBSETCL	33	10
6	Arambag 400 KV SS - WBSETCL	33	20
7	Asansol 220 KV SS - WBSETCL	33	10
8	Asansol 220 KV SS - WBSETCL	33	10
9	Ashokenagar 132 KV SS - WBSETCL	33	10
10	Ashokenagar 132 KV SS - WBSETCL	33	20
11	Balurghat 132 KV SS - WBSETCL	33	10
12	Bankura 132 KV SS - WBSETCL	33	10
13	Bankura 132 KV SS - WBSETCL	33	5
14	Bankura 132 KV SS - WBSETCL	33	10
15	Barasat 132 KV SS - WBSETCL	33	10
16	Barasat 132 KV SS - WBSETCL	33	10
17	Barasat 132 KV SS - WBSETCL	33	20

S. No.	Substation	Voltage Level(kV)	Installed Capacity(MVAr)
18	Baruipur 220 KV SS - WBSETCL	33	10
19	Basirhat 132 KV SS - WBSETCL	33	5
20	Basirhat 132 KV SS - WBSETCL	33	5
21	Behala 132 KV SS - WBSETCL	33	10
22	Behala 132 KV SS - WBSETCL	33	14.4
23	Berhampur 132 KV SS - WBSETCL	33	20
24	Berhampur 132 KV SS - WBSETCL	33	20
25	Bighati 132 KV SS - WBSETCL	33	10
26	Birshingha 132 KV SS - WBSETCL	33	5
27	Birshingha 132 KV SS - WBSETCL	33	10
28	Birshingha 132 KV SS - WBSETCL	33	10
29	Bishnupur 132 KV SS - WBSETCL	33	10
30	Bishnupur 132 KV SS - WBSETCL	33	10
31	Bishnupur 132 KV SS - WBSETCL	33	10
32	Bolpur 132 KV SS - WBSETCL	33	10.8
33	Bolpur 132 KV SS - WBSETCL	33	10.8
34	Bongaon 132 KV SS - WBSETCL	33	10
35	Chanditala 132 KV SS - WBSETCL	33	10
36	CK Road 132 KV SS - WBSETCL	33	10
37	CK Road 132 KV SS - WBSETCL	33	10
38	Contai 132 KV SS - WBSETCL	33	10
39	Contai 132 KV SS - WBSETCL	33	10
40	Coochbehar 132 KV SS - WBSETCL	33	5
41	Coochbehar 132 KV SS - WBSETCL	33	10
42	Coochbehar 132 KV SS - WBSETCL	33	10
43	Dalkhola 220 KV SS - WBSETCL	33	10
44	Debagram 132 KV SS - WBSETCL	33	10.8
45	Debagram 132 KV SS - WBSETCL	33	10.8
46	Dharampur 132 KV SS - WBSETCL	33	10
47	Dharampur 132 KV SS - WBSETCL	33	20
48	Dharampur 132 KV SS - WBSETCL	33	10
49	Dhulian 132 KV SS - WBSETCL	33	5
50	Domjur 220 KV SS - WBSETCL	33	10
51	Domjur 220 KV SS - WBSETCL	33	20
52	Egra 220 KV SS - WBSETCL	33	10
53	Egra 220 KV SS - WBSETCL	33	20
54	Falta 132 KV SS - WBSETCL	33	14.4
55	Falta 132 KV SS - WBSETCL	33	14.4
56	Gangarampur 132 KV SS - WBSETCL	33	14.4
57	Gokarna 220 KV SS - WBSETCL	33	10
58	Gokarna 220 KV SS - WBSETCL	33	20
59	Gokarna 220 KV SS - WBSETCL	33	10
60	Haldia 132 KV SS - WBSETCL	33	5
61	Hizlee 132 KV SS - WBSETCL	33	10
62	Hizlee 132 KV SS - WBSETCL	33	10
63	Hizlee 132 KV SS - WBSETCL	33	15
64	Jangipara 132 KV SS - WBSETCL	33	5
65	Jhargram 132 KV SS - WBSETCL	33	10
66	Kakdwip 132 KV SS - WBSETCL	33	10
67	Kakdwip 132 KV SS - WBSETCL	33	10
68	Kalna 132 KV SS - WBSETCL	33	10

S. No.	Substation	Voltage Level(kV)	Installed Capacity(MVAr)
69	Kalyani 132 KV SS - WBSETCL	33	10
70	Kalyani 132 KV SS - WBSETCL	33	5
71	Kalyani 132 KV SS - WBSETCL	33	10
72	Katwa 132 KV SS - WBSETCL	33	10.8
73	Khanyan 132 KV SS - WBSETCL	33	5
74	Kharagpur 132 KV SS - WBSETCL	33	10
75	KLC Bantala 220 KV SS - WBSETCL	33	10
76	KLC Bantala 220 KV SS - WBSETCL	33	20
77	Kolaghat 132 KV SS - WBSETCL	33	10
78	Kolaghat 132 KV SS - WBSETCL	33	5
79	Krishnanagar 220 KV SS - WBSETCL	33	10
80	Krishnanagar 220 KV SS - WBSETCL	33	10
81	Laxmikantapur 220 KV SS - WBSETCL	33	10
82	Laxmikantapur 220 KV SS - WBSETCL	33	5
83	Laxmikantapur 220 KV SS - WBSETCL	33	10
84	Liluah 132 KV SS - WBSETCL	33	10
85	Liluah 132 KV SS - WBSETCL	33	10
86	Mahachanda 132 KV SS - WBSETCL	33	10
87	Mahispota 132 KV SS - WBSETCL	33	20
88	Malda 132 KV SS - WBSETCL	33	10
89	Mankar 132 KV SS - WBSETCL	33	10
90	Mankar 132 KV SS - WBSETCL	33	10
91	Midnapur 220 KV SS - WBSETCL	33	10
92	Midnapur 220 KV SS - WBSETCL	33	5
93	Midnapur 220 KV SS - WBSETCL	33	10
94	Moynaguri 132 KV SS - WBSETCL	33	10
95	New Bishnupur 220 KV SS - WBSETCL	33	10
96	New Haldia 220 KV SS - WBSETCL	33	10
97	New Jalpaiguri 220 KV SS - WBSETCL	33	5
98	New Town AA-III 220 KV SS - WBSETCL	33	10
99	New Town AA-III 220 KV SS - WBSETCL	33	10
100	Pingla 132 KV SS - WBSETCL	33	10
101	Pingla 132 KV SS - WBSETCL	33	20
102	Purulia 132 KV SS - WBSETCL	33	10
103	Raghunathgunj 132 KV SS - WBSETCL	33	10
104	Raigunj 132 KV SS - WBSETCL	33	10
105	Raina 132 KV SS - WBSETCL	33	20
106	Raina 132 KV SS - WBSETCL	33	10
107	Rampurhat 132 KV SS - WBSETCL	33	10
108	Rampurhat 132 KV SS - WBSETCL	33	10
109	Ranaghat 132 KV SS - WBSETCL	33	10
110	Rishra 220 KV SS - WBSETCL	33	10
111	Rishra 220 KV SS - WBSETCL	33	10
112	Rishra 220 KV SS - WBSETCL	33	10
113	Salt Lake 132 KV SS - WBSETCL	33	10
114	Salt Lake 132 KV SS - WBSETCL	33	12.5
115	Salt Lake 132 KV SS - WBSETCL	33	12.5
116	Samsi 132 KV SS - WBSETCL	33	10
117	Samsi 132 KV SS - WBSETCL	33	20
118	Samsi 132 KV SS - WBSETCL	33	5
119	Satgachia 220 KV SS - WBSETCL	33	10

S. No.	Substation	Voltage Level(kV)	Installed Capacity(MVAr)
120	Satgachia 220 KV SS - WBSETCL	33	20
121	Satgachia 220 KV SS - WBSETCL	33	10
122	Siliguri 132 KV SS - WBSETCL	33	10
123	Sirakol 132 KV SS - WBSETCL	33	10
124	Sirakol 132 KV SS - WBSETCL	33	10
125	Sonarpur 132 KV SS - WBSETCL	33	10
126	Sonarpur 132 KV SS - WBSETCL	33	10
127	Subhasgram 220 KV SS - WBSETCL	33	20
128	Subhasgram 220 KV SS - WBSETCL	33	20
129	Tamluk 132 KV SS - WBSETCL	33	10
130	Tarakeswar 132 KV SS - WBSETCL	33	5
131	Titagarh 132 KV SS - WBSETCL	33	10
132	Titagarh 132 KV SS - WBSETCL	33	12.5
133	Titagarh 132 KV SS - WBSETCL	33	12.5
134	Ukhra 132 KV SS - WBSETCL	33	10
135	Uluberia 132 KV SS - WBSETCL	33	10
136	Uluberia 132 KV SS - WBSETCL	33	20
137	Katwa 132 KV SS - WBSETCL	33	10.8
138	Liluah 132 KV SS - WBSETCL	33	10
139	Sainthia 132 KV SS - WBSETCL	33	10
140	Salt Lake 132 KV SS - WBSETCL	33	10

d) Capacitor Bank details

S. No.	Substation	Voltage Level(kV)	Installed Capacity (MVAr)
1	Durgapur 400 KV SS - WBSETCL	400	50(BR)+125(BR)
2	Kharagpur 400KV SS- WBSETCL	400	80(BR)+125(BR)
3	New Chanditala 400KV SS- WBSETCL	400	80(BR)+125(BR)
4	Gokarna 400KV SS- WBSETCL	400	80(BR)+125(BR)
5	New PPSP(GIS) 400KV SS- WBSETCL	400	80(BR)+125(BR)
6	Arambagh 400KV SS- WBSETCL	400	50(BR)+125(BR)
7	Jeerat 400KV SS- WBSETCL	400	2x50(BR)+63(LR)
8	BKTPS 400KV SS-WBPDCL	400	50(BR)+50(LR)
9	KTPS 400KV SS- WBPDCL	400	50(BR)
10	Sagardighi TPS 400KV SS- WBPCL	400	63(LR)
11	Satgachia 400KV SS- WBSETCL	400	125(BR)

Annexure-II

Under Construction List as on FY 2025-26

Transmission Line Under Construction List:

Sr No.	Transmission Line Element	Length Under Construction (Ckm)
1.	Baruipur- Birlapur 132 kV D/c line	71.05
2.	132 kV M/C TRANSMISSION LINE FOR D/c LILO OF DHARAMPUR - TITAGARH 132 kV D/c LINE (WITH HTLS CONDUCTOR) AT PROPOSED NILGANJ 132 kV GIS	19.268
3.	132 kV Transmission Line for establishing connectivity between Lalgola and Raghunathganj Sub Station	6.4
4.	Construction of 132 kV D/c line from Sonakhali 132 kV substation to proposed Beledurganagar 132 kV substation	67.4
5.	Construction of 132 kV D/c under ground cable line from Barasat 220 kV substation to proposed Abdalpur 132 kV substation	13.9
	Total (132 kV)	**178.018**
1.	Single circuit LILO of 220 kV Domjur – Arambagh Line at proposed Khanakul 220 kV GIS	22.826
2.	Establishment of 220 kV S/C connectivity between (1) New Bishnupur 220 kV substation and Raghunathpur 220 kV Substation (2) New Bishnupur 220 kV substation and Hura 220 kV substation, (3) Hura 220 kV substation and Raghunathpur 220 kV substation and (4) Establishment of 220 kV D/c connectivity between STPS and Hura 220 kV substation	0.65
3.	Construction of D/C LILO of STPS- Asansol 220 kV D/c line at proposed Kuilapur 220 kV GIS substation	3.72
4.	Construction of 220 kV D/c Transmission Line from Maithon 400 kV Sub-Station (PGCIL) to Asansol 220 kV Sub-Station	39.2
5.	Construction of 220 kV D/c LILO of existing BKTPS- Satgachia D/c line at proposed Mahachanda 220 kV substation	21
6.	Construction of 220 kV D/c Transmission Line from BAPL 400 kV GIS to Jamuria 220 kV GIS	56
7.	Construction of 220 kV D/c and M/C Transmission line for Double circuit LILO of existing 220 kV Durgapur-BKTPS Line at Panagarh 220 kV GIS	85.6
8.	Construction of 220 kV D/c Transmission line for S/c LILO of existing 220 kV Durgapur-JK Nagar line at proposed Jamuria 220 kV GIS	24
9.	Reconductoring of KLC Bantala –Subhasgram PGCIL 220 kV S/c line (19 ckm)	19
10.	Reconductoring of KLC Bantala – New Town AA-III 220 kV S/c line (13 ckm) along with upgradation of requisite bay equipment	13
11.	Reconductoring of Jeerat – Dharampur 220 kV D/c Line (32 ckm)	32
	Total (220 kV)	**317**
1.	Construction of LILO of 400 KV PPSP-Durgapur line at BAPL 400 KV GIS	1.06

Substation Under Construction List:

Sr No.	Substation	Voltage Level	MVA Capacity
1.	Birlapur 132/33 kV GIS substation	**132 kV**	**100**
2.	Saltora 132/33 kV GIS	**132 kV**	**63**
3.	Beledurganagar 132/33/11 kV GIS	**132 kV**	**100**
4.	Abdalpur 132/33/11 kV GIS	**132 kV**	**160**
		Total	**423**
5.	Khanakul 220 kV GIS	**220 kV**	**100**
6.	Kuilapur 220 kV GIS	**220 kV**	**160**
7.	Mahachanda 220/132 kV GIS	**220 kV(upgradation)**	**400**
8.	Panagarh 220 kV GIS	**200 kV**	**420**
9.	Jamuria 220 kV GIS	**200 kV**	**42**
		Total	**1122**
10.	BAPL 400 kV GIS	**400 kV**	**730**

Annexure-III

Operational Feedback from West Bengal SLDC.

Real-time operational constraints are seasonal in nature and primarily depend on load-generation parameters and the availability of critical grid elements. However, in general, the availability of the 765 kV corridor, i.e., New Ranchi–Midnapur – New Jeerat, along with its associated 400 kV evacuation system (constructed under the same project), is considered crucially important during the summer peak months, particularly during solar hours.

Annexure-IV

Operational feedback from ERLDC/NLDC

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
a) Line & ICT Constraints: A number of lines and ICTs which are not satisfying N-1 security criteria are detailed below:			
1	400 kV New PPSP – New Ranchi D/C (PKTCL) & 400 kV New PPSP-PPSP D/C	High demand of West Bengal & when Purulia pump storage is running in pump mode and high Injection from WR.	**Constraints:** During pump mode operation of PPSP and high demand of West Bengal, loading of these lines cross 1200 MW combined. Situation further aggravates when WR injection is high. **Remedial Action:** **Short term Measure:** • Pump Drawl can be restricted to control the loading on these lines. **Long term Measure**: • LILO of 400kV N. Ranchi- N. PPSP D/C is approved at 765/400kV New Jamshedpur S/S in 32nd NCT meeting held on 12 Aug 25. • Further Reconductoring of 400kV N. Ranchi-N. PPSP D/C from LILO point of N. Jamshedpur to N. PPSP (27Km) has been approved in in 32nd NCT.
2	400 kV Kahalgaon–Farakka D/C (NTPC) & 400 kV Sagadighi–Farakka D/C (PG+WBPDCL)	High injection from NR during solar hours, high demand of WB coupled with low generation in Farakka or Sagardighi power plant.	**Constraints:** • During high injection from NR in solar hours, high demand of WB coupled with low generation in Farakka or Sagardighi power plant, these lines loading is crossing N-1 safe loading limit. **Remedial Action-** **Short Term Measure:** • Bypass of 400 kV Farakka-Sagardighi D/C at Sagardighi power plant leading to formation of 400 kV Farakka-Sagardighi-Jeerat and Farakka-Sagardighi-Baharampur line • Maximisation of generation at Farakka • Reduction of generation at Kahalgaon **Long Term Measure:** • Reconductoring of 400 kV Kahalgaon-Farakka D/C with HTLS approved in 22nd NCT meeting held on 23.08.2024. Work planned to start in Nov'25.

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
			• Loading in 400kV FSTPP-Sagardighi is expected to reduce with commissioning of Sagardighi Unit-5.
3	220 kV Gokarno - Rejinagar D/C (WBSETCL)	High Drawl in West Bengal	**Constraints:** These lines are not N-1 compliant. **Remedial Action:** Satgachia 400 kV S/S has been commissioned on 09.05.2025, along with 2x500 MVA transformation capacity. After that also, Krishnagar bus is kept split to keep Rejinagar radial on Gokarna. This has resulted in reduced loading in respect of the mentioned CKTs. SLDC WB to plan for long term measures for making system N-1 compliant.
4	i) 220 kV Subhasgram (WB)-Lakshmikantpur D/C (WBSETCL) ii)220 kV Subhasgram (PG) – Subhasgram (WB) D/C, (WBSETCL) iii)220 kV Subhasgram (PG) – EMSS(WB) D/C (CESC)	Peak demand in South Bengal Area	**Constraints:** These lines are not N-1 compliant. **Remedial Action:** • Establishment of New Laxmikantpur 400/132kV SS by LILO of N. Jeerat – Subhasgram line has been approved in 47th ER-CMETS meeting. WB has planned to upgrade the present 220/132kV sub-station to 400kV level. • Baruipur 220kV was planned and commissioned which has reduced loading of the lines. Load Rejection Scheme is implemented at WB end to safeguard line in case of N-1 contingency. SPS has been implemented by CESC for (N-1) contingency on 220 kV Subhasgram-EMSS D/C. • 220kV Subhasgram EMSS D/C: - CESC has confirmed that its lines are capable to deliver transfer 1050 MW power through D/C. As, it's the radial load, so CESC maintains it within that limit. WBSETCL has advised CESC for introduction of additional drawl points in view of future load growth.
5	220 kV Malda-Gazole D/C (WBSETCL)	High demand season in North Bengal	**Constraints:** These lines are not N-1 compliant. **Remedial Action:** Reconductoring already approved in 51st TCC meeting of ERPC, 24th NCT held on dated 23.10.2024 meeting. WBSETCL to reconductor about 2 km of their intra state

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
			LILO portion along with necessary upgradation of associated 220kV bay equipment.
6	220 kV Jeerat - Barasat D/C & 220 kV Barasat – Kasba D/C (BOTH LINES WBSETCL)	High demand of West Bengal specially Kolkata and Sub urban areas near Kolkata	**Constraints:** During high demand of Kolkata and South-24-Pargana area, high power flows from Jeerat to Barasat and then from Barasat to Kasba takes place leading to N-1 non-compliance. At Barasat 220 kV, Buses are kept segregated. In one bus only Jeerat D/C and Kasba D/C lines are there. In other bus Rajarhat D/C and local load are kept. If Bus is run in coupled mode at Barasat, the loading of 220 kV Barasat-Kasba may violate thermal loading and sometimes even without any contingency. **Remedial Action-** **Short term measure:** SPS is present at Kasba to avoid overloading of any line in case of a N-1 contingency. Load re-arrangement/ Network reconfiguration of 220kV Network is done, if required **Long term measure:** As per WBSLDC, to convert to HTLS, for these circuits, PSDF funding application was submitted earlier however PSDF approval not yet granted. In 229th OCC WBSETCL was advised to explore other funding sources in case PSDF grant is not possible.
7	220 kV DPL - Bidhannagar SC and (WBSETCL) 220kV DPL-Bidhannagar - AB Zone	High generation and low demand at DPL lead to N-1 violation. High demand and unit outage of DPL of DPL may lead to N-1 violation.	**Constraints:** Installed capacity of DPL is 550 MW (250 MW+300 MW) and load around 450- 480 MW. During full generation of DPL and low demand the above line get loaded beyond its N-1 safe limit and flow towards Bidhnanagar. Sometimes when DPL units are not running and high demand is there in DPL area, power is drawn from Bidhnanagar, and these lines may get beyond its N-1 safe limit. **Remedial Action-** Currently one circuit of 220 kV DPL-Bidhnanagar has been LILOed at AB zone SS with upgraded capacity of 350 MW on 30.12. 2024. LILO work in other line is also planned. 220 kV AB Zone- Bidhnanagar is planned for reconductoring using HTLS.

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
8	220 kV Jeerat – Dharampur D/C (WBSETCL)	High demand of West Bengal in the Hooghly, Howrah, Nadia, Bardhhaman district etc.	**Constraints:** High demand in the area mentioned above coupled with low generation at Bandel power plant causes N-1 loading limit violation in the above line. **Remedial Action:** 1. Another 220 kV Jeerat-Dharampur D/C line is under discussion stage. 2. Satgachia 400 kV commissioned on 9th May 2025.
9	220 kV Binaguri – Siliguri D/C (PG)	High Hydro generation in Sikkim, Bhutan and WB, Multi terminal HVDC carrying less power towards NR.	**Constraints:** High Hydro generation in Sikkim, and Bhutan and WB, Multi terminal HVDC carrying less power towards NR, or its power flow is reverse that time the above line's N-1 limit is violated. **Remedial Action:** Reconductoring of the lines within India under Chukha transmission system approved in 24th NCT held on 23.10.2024. As communicated by POWERGRID in 229th OCC, it is under bid evaluation,
10	220 kV Bakreshwar-Sadaipur D/C (WBSETCL)	High demand of West Bengal	**Constraints:** These lines are not N-1 compliant. **Remedial Action-** WB to plan for long term measures for making system N-1 compliant.
11	220 kV Rajarhat-New Town AA III D/C	High demand of West Bengal	**Constraints:** These lines are not N-1 compliant. **Remedial Action:** Reconductoring for 220kV Rajarhat-New Town AA III D/C ckt-1 & 2 completed on 26.09.2022, although with rising WB demand these lines have become N-1 non-complaint again. 400kV level is planned at existing 220kV N. Town AAIII with LILO of 400kV Jeerat-Subhasgram. Scheme agreed in 47th ER-CMETS meeting.
12	4 X 315 MVA ICTs & 2 X 500	Due to high loading of South	**Constraint:** 400/220 kV Subhasgram (PG) substation is feeding to the major load centres in south Bengal. At present 6 numbers

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
	MVA ICTs 400/220 kV Subhasgram (PG)	Bengal and CESC	of 400/220 kV ICTs (4x315 MVA+2x500 MVA) having a total transformation capacity of 2260 MVA are installed at Subhsagram. With the installation of the new interim ICT, the N-1 security criteria for ICTs has increased to 1870 MW. However, with the rapid increase in demand during peak summertime, in the south Bengal area the system may become vulnerable.
13	400/220 kV 500 MVA ICT 3 & 5 at Malda (PG)	During high demand season of West Bengal, the constraint is observed.	**Constraint:** ICTs are not N-1 compliant during high demand season of West Bengal. **Remedial Actions:** The loading of the ICT is within limits in 2028-29-time frame as observed from CTU base cases. Higher injection from Bhutan in future is expected to reduce ICT drawl as per the base case.
14	400/220 kV 500 MVA ICT at Rajarhat -1 & 2 (PG)	Due to high demand in Kolkata area.	**Constraint:** ICTs are not N-1 compliant. **Remedial Actions:** **Short Term: -** As a short-term measure SPS has been implemented. **Long Term: -** As a long-term measure, 500 MVA Rajarhat ICT 3 has been approved in 21st ER CMETS on 28.07.23. As updated by POWERGRID, in 230th OCCM, they need to place fresh bids for GIS package tender as only one bid is received. ICT dispatched from factory and commissioning is expected by Dec 2026. Further establishment of 400/220kV N. Town AAIII will also relieve loading.
15	400/220 kV 500 MVA ICT at Sagardighi	High demand of WB coupled with high Sagardighi power plant.	**Remedial Actions:** 2nd ICT at Sagardighi is under construction, ICT expected by Jan 2026.

b) Nodes experiencing high voltage:

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
			High voltage is experienced in N. PPSP bus during the period when PPSP is not running either in pump or generation mode. The connected lines become very lightly loaded and generate VAR which results in high voltage problem at New PPSP. Currently, lightly loaded lines are being opened to control over voltage.

c) Substations with High Fault level:

400 kV Farakka S/s with fault level of 43kA is found to be over designed fault level of 40kA. As per decision taken in 2nd Eastern Region Standing Committee on Transmission (ERSCT) Meeting, both circuits of Durgapur – Farakka 400 kV D/c and Farakka – Kahalgaon 400 kV D/c (ckt-3 & 4) lines have been bypassed outside the Farakka switchyard to form Durgapur – Kahalgaon 400 kV D/c line as ISTS scheme for limiting fault level at Farakka 400 kV generation switchyard. However, fault level is still higher than the equipment rating of 40 kA.

d) Constraint in meeting capital city demand of Kolkata and adjoining areas

i) System Constraints:

Significant challenges have been observed in West Bengal system in current scenario with the increased demand which are described below.

- Low voltage scenario in South Bengal system with voltage of 400 kV substations going below 385 kV (Even after taking all measures for improving voltages)
- Running South Bengal Transmission system requires multiple SPS schemes implementation indicating severity of scenario.
- Planning for CESC system (West Bengal DISCOM) for meeting the future load growth from various Radial drawl points.

A number of N-1 violation is observed in the 220kV system which have been detailed in above section.

ii) Forced outage led constraints:

Subhasgram (PG) S/S with a current transformation capacity of 2260 MVA with a 500MVA upcoming capacity thus with a total transformation capacity of 2760MVA is having only four number of 400kV infeed transmission lines:

- 400kV New Jeerat (PG)-Subhasgram (PG) D/C
- 400kV Jeerat (WB)-Subhasgram (PG) S/C
- 400kV Rajarhat (PG)-Subhasgram (PG) S/C

In the recent past it was observed that multiple long outages took place in the circuits from New Jeerat to Subhasgram. This resulted in a critical scenario where a major area of Kolkata and nearby area loads were totally relying on the remaining two lines. Any further contingency might have led to potential cascading effect in this area. With the rapidly increasing demand, such forced outages will lead to further depletion of reliability of Kolkata power supply.

Sl. No	Corridor	Season/ Antecedent Conditions	Description of the constraints

iii) Voltage related constraints

Nearly 30% of West Bengal's demand is concentrated in Kolkata and adjoining areas, supplied mainly through the 765 kV New Ranchi–Medinipur–New Jeerat D/C, 400 kV New Ranchi–New PPSP D/C, and 400 kV Kahalgaon–Farakka D/C corridors. In the last summer, these corridors carried ~4500 MW (~60–70% of WB's total import). Even with all lines in service, voltages in the capital pocket remain below 385 kV during peak summer, and the outage of any one corridor could lead to severe low-voltage stress. An N-2 contingency of 765 kV Medinipur–New Jeerat D/C may result in complete voltage collapse in Kolkata region.

Review of Reactive power planning to meet the anticipated demand with adequate static and dynamic reactive compensation needs to be planned as a long-term measure in this area to ensure voltage stability with the increasing demand.

To address reliability and security of this area additional 765kV Nawada-Durgapur-New Jeerat has been agreed in 47th ER-CMETS meeting.

e) Operation of buses in split mode:

- **ISTS:**

  Presently Dalkhola 220kV ISTS bus is operational in bus split mode due to high flow in 220kV N. Purnea- Purnea D/C, 220kV Malda-Gazole D/C.

- **Intra-state system:**

  Presently Gazole 220kV and 132kV buses are operational in bus split mode due to N-1 violation in 220kV Malda-Gazole D/C. This constraint may be relaxed after reconductoring of 220kV Malda-Gazole D/C which is approved under reconductoring of Chukha transmission corridor.

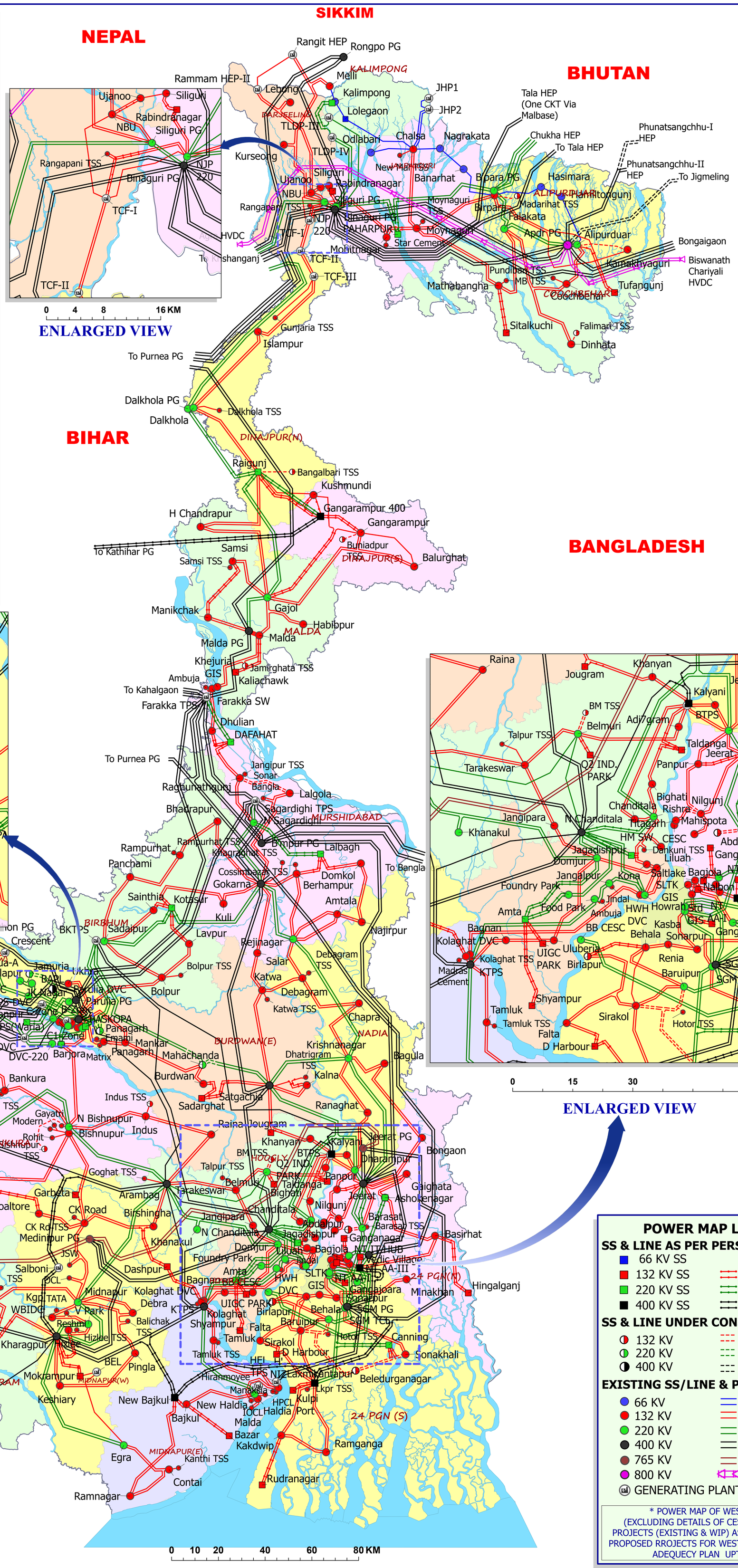
  Similarly, a number of intra-state 220kV buses at New Town AAIII, Barasat, Krishnanagar are operated in split mode.

  Planning may be done so as to operate the buses in coupled mode increasing reliability and security of the network.

POWER MAP OF WEST BENGAL

INSTALLED CAPACITY

GENERATING STATIONS	EXISTING
	MW
WBPDCL :	
Kolaghat TPS (4X210 MW)	840
Bakreswar TPS (5X210 MW)	1050
Sagardighi TPS(2X500+2X300+1X660 MW)	2260
Santhaldihi TPS (2X250 MW)	500
Bandel TPS (1X215 + 1X60 MW)	275
Total =	4925 MW
WBSEDCL :	
Purulia PSP (4X225 MW)	900
Rammam-II HPS (4X12.75 MW)	51
TCF HPS (3 X 3 X 7.5 MW)	67.5
Jaldhaka HPS (4X9 + 2X4 MW)	44
Mini-Micro HPS	8.8
Total =	1071.3 MW
DPL :	
DPL (300 + 250 MW)	550
Total =	550 MW
NTPC :	
NTPC Farakka (3 X 200 + 3 X 500 MW)	2100
Total =	2100 MW
NHPC :	
TLDP - III (4 X 33 MW)	132
TLDP - IV (4 X 40 MW)	160
Total =	292 MW
DVC (WB) :	
Mejia TPS (4X210 + 2X250 + 2X500 MW)	2340
Durgapur (Waria) TPS (1X210 MW)	210
Durgapur Steel TPS (2X500 MW)	1000
Raghunathpur TPS (2X600 MW)	1200
Maithon HPS (2X20 + 1X23.2 MW)	63.2
Total =	4813.2 MW
CESC Ltd., HEL & Others :	
Budge Budge TPS (3X 250 MW)	750
Southern TPS (2X67.5 MW)	135
Haldia Energy Ltd. (2X300 MW)	600
Crescent Power Ltd. (1X40 MW)	40
Philips Carbon Black (1X30 MW)	30
Bengal Energy Ltd. (1X40 MW)	40
Hiranmoyee Energy Ltd. (2X150 MW)	300



POWER MAP LEGENDS

SS & LINE AS PER PERSPECTIVE

66 KV SS	
132 KV SS	132 KV LINE
220 KV SS	220 KV
400 KV SS	400 KV LINE

SS & LINE UNDER CONST (WIP):

132 KV	132 KV LINE
220 KV	220 KV LINE
400 KV	400 KV

EXISTING SS/LINE & PLANTS :

66 KV	66 KV LINE
132 KV	132 KV
220 KV	220 KV LINE
400 KV	400 KV LINE
765 KV	765 KV LINE
800 KV	800 KV
GENERATING PLANTS	

* POWER MAP OF WEST BENGAL *
(EXCLUDING DETAILS OF CESC & DVC SYSTEM)
PROJECTS (EXISTING & WIP) AS ON 31-12-2025 AND PROPOSED RROJECTS FOR WEST BENGAL'S RESOURCE ADEQUECY PLAN UPTO 2034-35.

WEST BENGAL STATE ELECTRICITY TRANSMISSION COMPANY LIMITED