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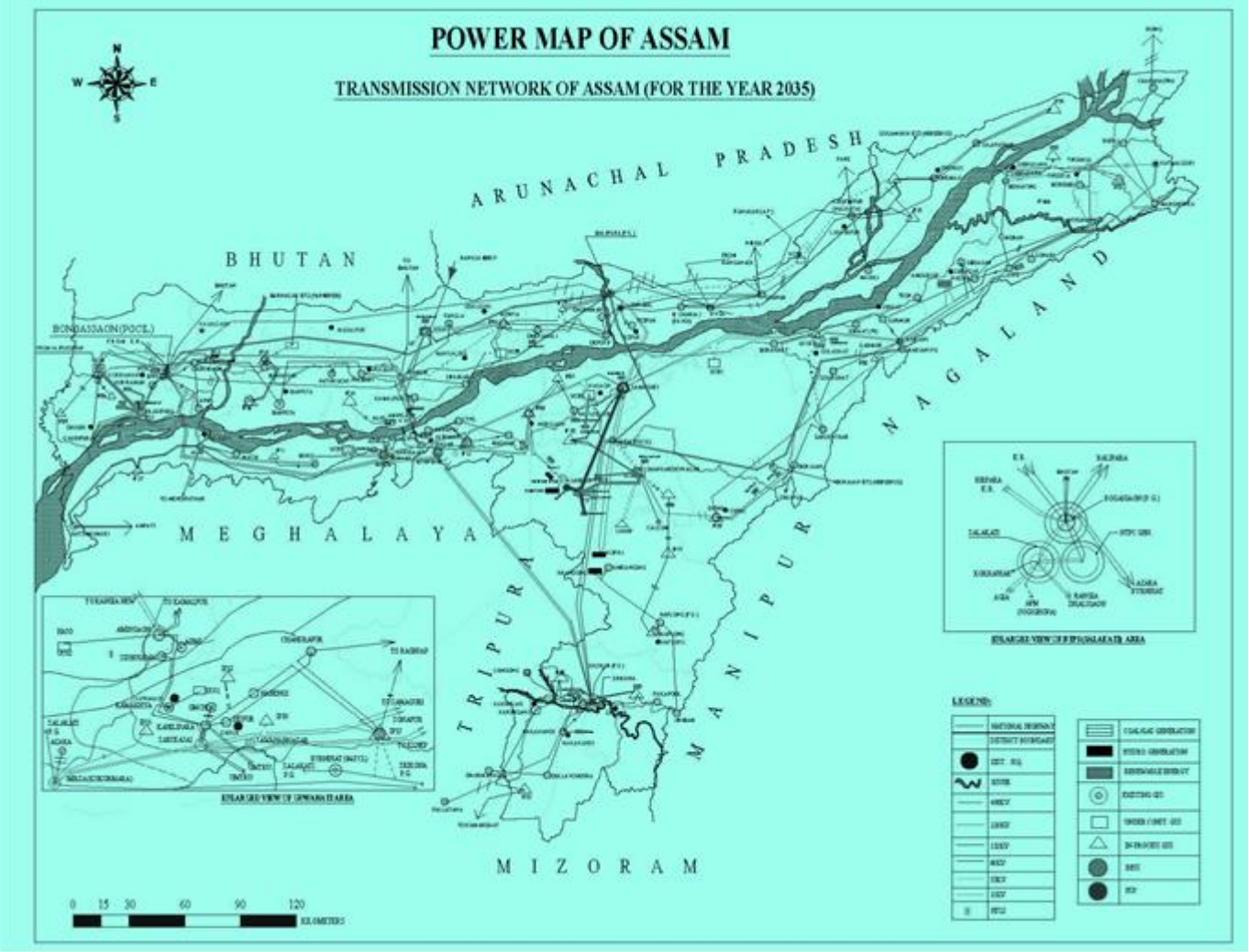
REPORT ON INTRA STATE TRANSMISSION RESOURCE ADEQUACY PLAN FOR ASSAM BY THE YEAR 2034-35



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 Assam 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 Assam, 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 Assam in 2024-25 was 2687 MW, and Projected Peak Demand by 2034-35 is estimated to 6363, which is higher than the Electric Power Survey report. The peak demand is estimated considering the railway traction and major industrial load of refinery and Tata Semiconductor manufacturing units. Further, existing Intra-state Installed generation Capacity in the state is about 531.58 MW and state has planned 166.5 MW of hydro plant, 3200 MW of Thermal plant , 4070 MW of Solar plant and 2920 MW of Pumped Storage Plant by 2034-35. Presently, the state has total 3470 ckm of 132 kV, 1941 ckm of 220 kV, 6.46 ckm of 400 kV transmission lines. It has transformation capacity of 5520 MVA at 132 kV, 3880 MVA at 220 kV, and 630 MVA at 400 kV level.

Considering the anticipated demand, generation capacity, demand pattern, operational feedback from NERLDC and SLDC, system studies have been conducted for Peak Demand, Low Hydro and Maximum Solar scenarios for the timeframe 2031-32 & 2034-35 in consultation with Assam, CTUIL and Grid-India. Based on the studies, the requirement of transmission system by the year 2034-35 has been identified.

A total of 15280 MVA transformation capacity addition/augmentation and 4720 ckm of new transmission lines/reconductoring of old lines at an estimated cost of ₹ 14202.05 Crs. 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:

Financial Year	MVA Capacity Addition			ckm Addition			Reconductoring (ckm)			Estimated Cost (in ₹ Cr.)
	132 kV	220 kV	400 kV	132 kV	220 kV	400 kV	132 kV	220 kV	400 kV	
2026-27	1890	1080	-	64	10	-	-	-	-	748.81
2027-28	260	1200	-	246	306	-	519	-	-	1813.36
2028-29	320	1800	2750	349	836	702	-	-	-	5757.79
2029-30	260	600	-	170	280	-	26	-	-	1518.27
2030-31	320	480	-	230	20	-	8	-	-	706.89
2031-32	200	1200	-	140	192	-	70	-	-	1465.3
2032-33	260	-	2500	210	02	310	-	-	-	2121.08
2033-34	160	-	-	30	-	-	-	-	-	70.55
Total	**3670**	**6360**	**5250**	**1439**	**1646**	**1012**	**623**	**-**	**-**	**14202.05**

To ensure reliable and adequate power supply in Assam by 2034-35, substantial investments and infrastructure upgrades are essential. With a projected demand of 6363 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 Assam by the year 2034-35

1. Demographics

Assam is a state in North Eastern India, South of the Eastern Himalayas along the Brahmaputra and Barak River valleys. Assam covers an area of 78,438 sq km (30,285 sq mi). The state is bordered by Bhutan and Arunachal Pradesh to the North; Nagaland and Manipur in the East; Meghalaya, Tripura, Mizoram and Bangladesh in the South; and West Bengal in the West. Assamese and Bodo are the official languages of Assam, while Bengali is official language in the Barak Valley.

2. Electricity profile of state

2.1. Power generation-demand scenario of state:

2.1.1. In the FY 2024-25, Assam had peak electricity demand of 2812 MW and total electrical energy requirement of 12843 MU. As on 31.07.2024, state has central sector allocation of 1757.16 MW which includes hydro plants (422.08 MW), thermal plants (1310.08 MW) and R.E.S plants (25 MW). In addition, state sector installed capacity is 411.37 MW and private sector installed capacity is 198.44 MW. The per capita consumption of the state was 398 kWh in the year 2022-23.

2.1.2. Peak demand & Energy of Assam state is given at Table 2-1 below:

Table 2-1 Peak demand & Energy of Assam

Financial Year	Peak Demand(MW)	Peak Demand Met (MW)	Energy(MU)
2018-19	1865	1809	9566
2019-20	2193	1956	9804
2020-21	2072	1987	10192
2021-22	2126	2121	10844
2022-23	2379	2376	11465
2023-24	2413	2413	12445
2024-25	2812	2687	12843

Source: Power Supply Position Report, CEA

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

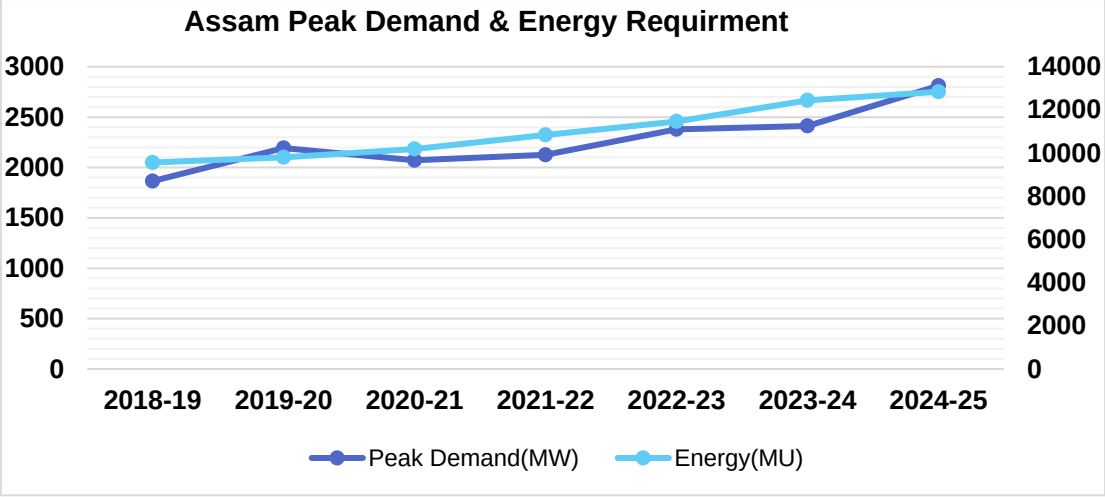

Figure 2-1 Peak Demand & Energy Requirement

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

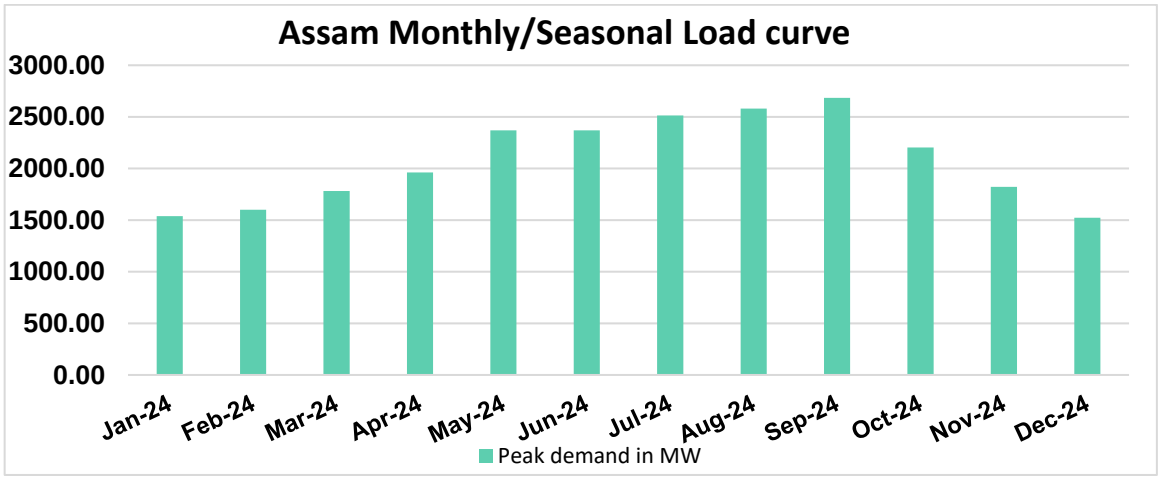

Figure 2-2 Seasonal Load Curve

2.1.5. Daily peak generally occurs in the evening period. The graph indicating of Hourly Load variation in the year 2024 is given at Figure 2-3 below:

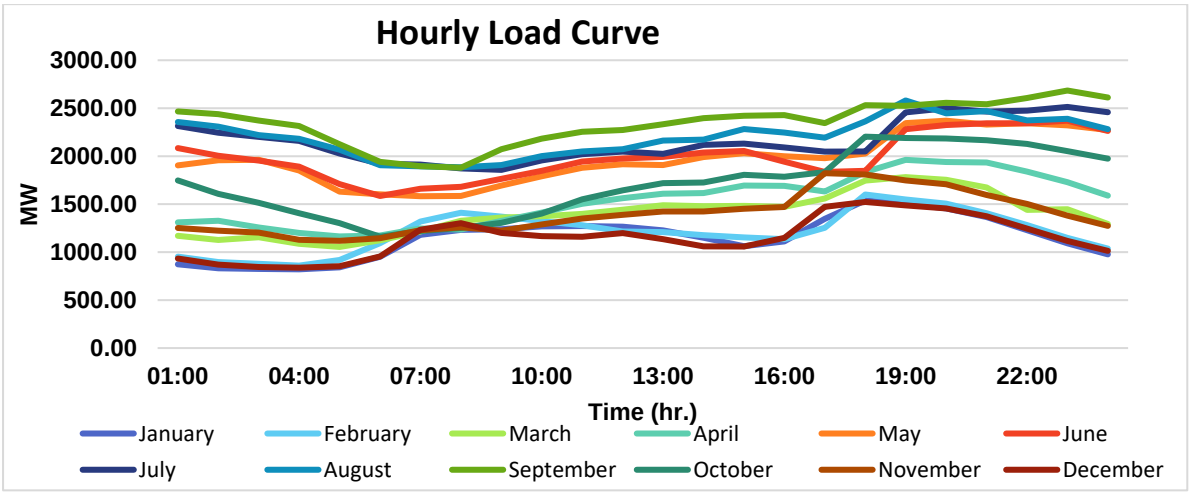

Figure 2-3 Hourly Load Curve

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

Table 2-2 Contracted capacity by Assam

(all fig. in MW)

SECTOR	HYDRO		THERMAL				NUC LEAR	R.E.S. (MNRE)	TOTAL
		COAL	LIGNITE	GAS	DIESEL	TOTAL			
State	100.00	0	0	306.36	0	306.36	0	5.01	411.37
Private	0	0	0	0	0	0	0	198.44	198.44
Central allocation	422.08	874.52	0	435.56	0	1310.08	0	25.00	1757.16
Total	522.08	874.52	0	741.92	0	1616.44	0	228.45	2366.97
%	22.05	36.94	0	31.34	0	68.29	0	9.65	100.00

Source: Installed Capacity Report, CEA

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

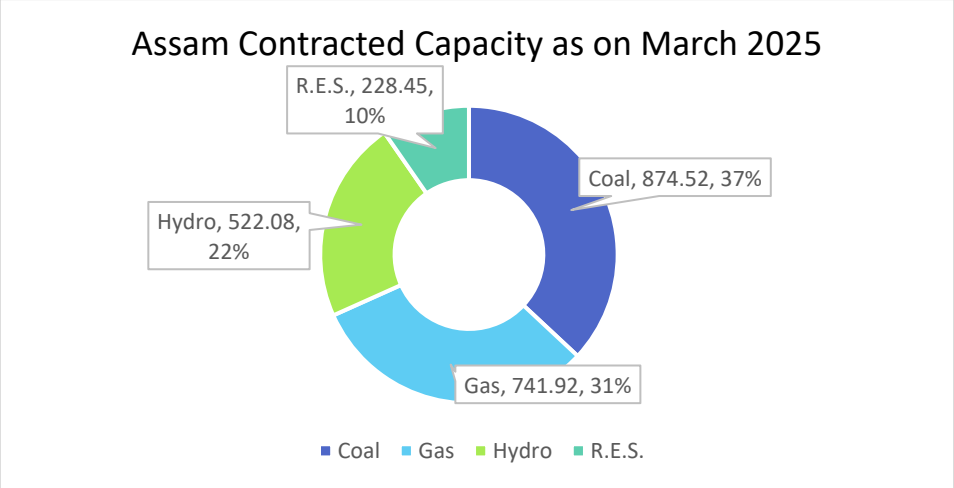

Figure 2-4 Contracted Capacity

2.1.8. As on March 2025, the General Network Access (GNA) quantum for ISTS drawal of the state is 1900 MW and Available Transfer Capability (ATC) for FY 2024-25 is 1900 MW.

3. Existing Transmission System

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

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

3.1.1. Intra State Transmission assets of Assam state in past four years is given at Table 3-1 below:

Table 3-1 Intra State Transmission assets in Assam

Financial Year	Voltage (kV)	Transmission lines (ckm)	Substation (MVA)
2020-21	132	2909	3717
	220	1775	2730

Financial Year	Voltage (kV)	Transmission lines (ckm)	Substation (MVA)
	400	6.46	630
	Total	**4690.46**	**7077**
2021-22	132	3032	3938
	220	1775	2940
	400	6.46	630
	Total	**4813.46**	**7508**
2022-23	132	3194	4484
	220	1775	2940
	400	6.46	630
	Total	**4975.46**	**8054**
2023-24	132	3371	5190
	220	1884	3520
	400	6.46	630
	Total	**5261.46**	**9340**
2024-25	132	3470	5520
	220	1941	3880
	400	6.46	630
	Total	**5417.46**	**10030**

Assam state has total 3470 ckm of 132 kV, 1941 ckm of 220 kV, 6.46 ckm of 400 kV transmission line and 5520 MVA of 132 kV, 3880 MVA of 220 kV, 630 MVA of 400 kV Substation capacity in Intra-state transmission system.

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

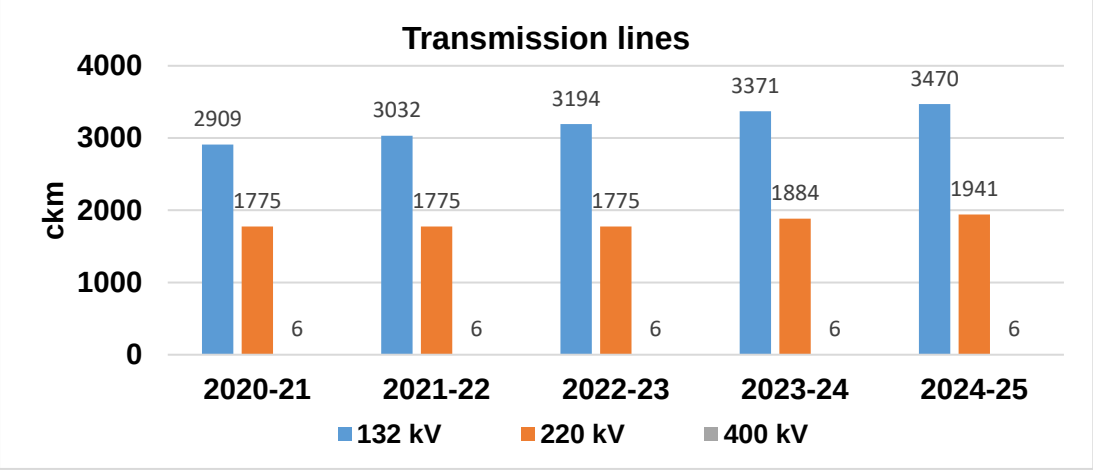

Figure 3-1 Existing Transmission Line

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

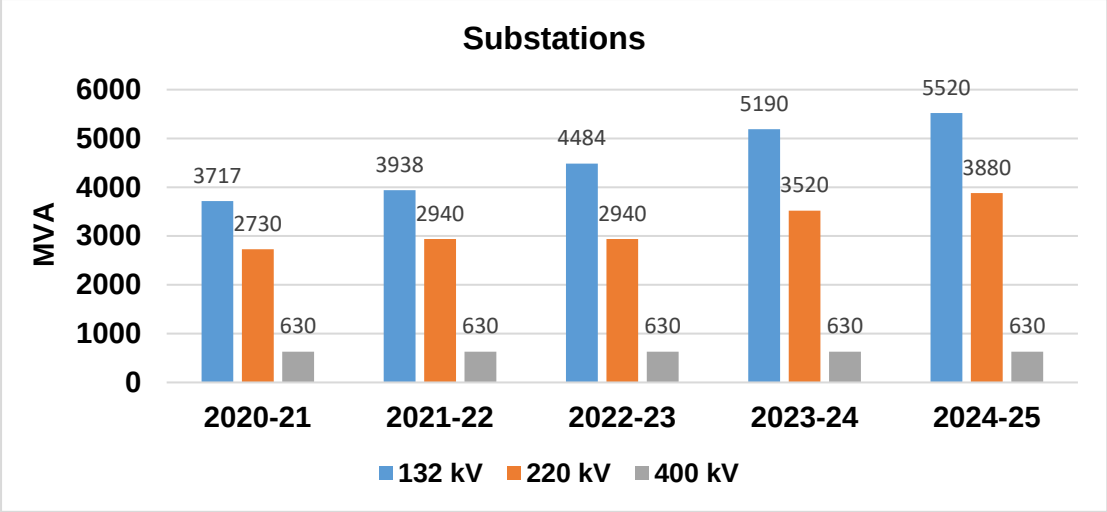

Figure 3-2 Existing Substations

3.2. Existing Inter State Transmission system in the state:

3.2.1. The state has four Nos. of 400/220 kV ISTS substations, having total capacity of 3575 MVA at Misa, Balipara, Mariani and Bongaigaon. The state also has two Nos. of 400/132 kV ISTS substations, having total capacity of 1115 MVA at Silchar and Biswanath Chariali. Further, the state has a 220/132 kV ISTS substation, having total capacity of 840 MVA ISTS substation at Salakati, Balipara & Kopili (NEEPCO). The state has a 220 kV ISTS switching substations at Mariani (New) and two Nos. of 132 kV ISTS switching substations at Haflong & Badarpur.

3.2.2. The state has 3000 MW, ± 800 kV HVDC converter station at Biswanath Chariali.

3.2.3. State has total 12680 ckm of existing ISTS network ISTS network. Brief details of the ISTS network (including ISTS lines owned by states) are given at Table 3-2:

Table 3-2 Existing ISTS in Assam

Voltage level	Existing
132 kV	1154 ckm + 309 ckm (ISTS line owned by state)
220 kV	791 ckm
400 kV	6966 ckm
765 kV	-
HVDC	3460 ckm
Total	**12680 ckm** (including 309 ckm ISTS line owned by state)

4. Under implementation Transmission System

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

The summary of under implementation Intra-state transmission system in Assam are given at Table 4-1 below:

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

Voltage (kV)	Transmission lines (ckm)	Substations (MVA)
132	99.54	330.5
220	56.67	360

4.2. Detailed of under implementation and planned ISTS system in Assam (as on March, 2025) are as given below:

4.2.1. **Under Construction ISTS: RTM Mode**

i. NER-NR/WR Interconnector-I: Major portion of the scheme has been commissioned

- Lower Subansiri – Biswanath Chariyali 400kV 2 x D/c (Twin Lapwing) line: Matching with Lower Subansiri (2000MW) HEP.

  One no. D/c line-I Commissioned in 31-03-2023. The 2nd D/c line is completed and antitheft charged on 24-03-2024.

ii. NERES-XXII: (July-2026)

- Decommissioning of existing 420 kV, 2x50 MVAr bus reactors at Bongaigaon (POWERGRID) S/s
- Installation of a new 420 kV, 1x125 MVAr bus reactor at Bongaigaon (POWERGRID) S/s in one of the vacated bays after decommissioning of above mention 420kV, 2x50 MVAr bus reactors.
- One of the existing 2x80 MVAr bus reactors (presently installed in parallel in same bay) may be installed at Bongaigaon (POWERGRID) S/s in other vacated bay after decommissioning of above mentioned 420 kV, 2x50 MVAr bus reactors.

iii. NERES-XXIV: (Sep-2025)

- Reconductoring of Khandong (NEEPCO) – Halflong (POWERGRID) 132 kV S/c line [excluding the LILO portion of this line at Umrangshu (AEGCL) S/s, which is owned by AEGCL] with Single HTLS conductor of ampacity 600A (at nominal voltage level) (63.06 km)
- Reconductoring of Halflong (POWERGRID) – Jiribam (POWERGRID) 132 kV S/c line with Single HTLS conductor of ampacity 600 A (at nominal voltage level) (100.63 km)

iv. NERES-XXV(Part B) : (Aug-2027)

- Conversion of existing 420 kV, 1x63 MVAr fixed line reactor at Bongaigaon (POWERGRID) end in each circuit of Bongaigaon (POWERGRID) – Borngar (ISTS) 400 kV D/c line formed after LILO of both circuits of existing Bongaigaon (POWERGRID) – Balipara (POWERGRID) 400 kV D/c (Quad) line at Bornagar (ISTS) to

Switchable Line Reactor along with implementation of NGR bypass arrangement

v. NERES-XXVI: (Dec-2025)

- Decommissioning of existing 420 kV, 50 MVAr (bus reactor-1) and installation of new 420 kV, 125 MVAr bus reactor in its place along with replacement of associated main and tie bay equipment at Balipara (POWERGRID) S/s.

vi. NERES-XXVIII: (Mar-2026)

- Installation of new 420 kV, 1x125 MVAr, 3-Ph Variable Shunt Reactor (VSR) having variable range from 63 MVAr to 125 MVAr (with at least 25 tap positions) along with associated GIS bay at Misa (POWERGRID) S/s

vii. NERES-XXIX (Part-B): (Apr-2026)

- Installation of new 420 kV, 125 MVAr Bus Reactor at Biswanath Chariali (POWERGRID) S/s along with associated bays

4.2.2. **Under Construction ISTS: TBCB Mode**

i. Establishment of new 220/132 kV, 2x160MVA substation at Nangalbibra (Nangalbibra Bongaigaon Transmission Limited, a subsidiary of Sterlite) (only Assam portion): (**Oct-2025)**

- Bongaigaon – Nangalbibra 400 kV D/c line (initially operated at 220 kV) alongwith associated bays at both ends – 245 ckm
- Hatsinghmari (Assam) – Ampati (Meghalaya) 132kV D/c line alongwith associated bays – 37 ckm
- Extension at Bongaigaon (POWERGRID) S/s:
  - 2 Nos. of 220 kV line bays for termination of Bongaigaon (POWERGRID) – Nangalbibra 400 kV D/c line (initiated operated at 220 kV)
- Extension at Hatsinghmari (Assam) S/s:
  - 2 Nos. of 132 kV line bays for termination of Hatsinghmari (Assam) – Ampati (Meghalaya) 132 kV D/c line.

ii. NERSS-XV: by ER NER Transmission Limited (ENTL) (subsidiary of POWERGRID)- *(only Assam Portion)* (**Oct-2025)**

- Kathalguri (NEEPCO) – Namsai (POWERGRID) 220 kV D/c line (150 ckm)
- Extension at Kathalguri (NEEPCO) switchyard: 2 Nos. of GIS line bays for termination of Kathalguri (NEEPCO) – Namsai 220 kV D/c line

iii. NERES-XVI: (M/s NERES XVI Power Transmission Limited, a subsidiary of M/s Techno Electric and Engineering Company Limited) – (Nov-2026)

- Establishment of Gogamukh 400/220/132 kV substation
- 400/220 kV, 2x500 MVA ICTs alongwith associated ICT bays at both levels
- 220/132 kV, 2x200 MVA ICTs alongwith associated ICT bays at both levels
- 420 kV, 2x125 MVAr bus reactor along with associated bays
- 400 kV line bays
  - 4 Nos. for termination of LILO of one D/c line (ckt-1 & ckt-2 of line-1) of Lower Subansiri – Biswanath Chariali 400 kV (Twin Lapwing) 2xD/c lines
- 220 kV line bays
  - 2 Nos. for termination of Bihpuria – Gogamukh 220 kV D/c line (line to be implemented by AEGCL)
- 132 kV line bays
  - 2 Nos. for termination of LILO of one circuit of North Lakhimpur – Dhemaji 132 kV new D/c line (LILO to be implemented by AEGCL)
  - 2 Nos. for termination of Gogamukh (ISTS) – Gerukamukh (Arunachal Pradesh) 132 kV D/c line
- Extension works at Gerukamukh (Arunachal Pradesh) 132 kV S/s
  - 2 Nos. of 132 kV line bays for termination of Gogamukh (ISTS) – Gerukamukh (Arunachal Pradesh) 132 kV D/c line
- Gogamukh (ISTS) – Gerukamukh (Arunachal Pradesh) 132 kV ACSR Zebra D/c line (20km)
- LILO of one D/c (ckt-1 & ckt-2 of line-1) of Lower Subansiri – Biswanath Chariali 400 kV (Twin Lapwing) 2xD/c lines at Gogamukh S/s

Note:

a. *DoP, Arunachal Pradesh to provide space at Gerukamukh (Arunachal Pradesh) S/s for implementation of 2 Nos. 132 kV line bays. TSP to provide Rs. 39.36 Lakhs to DoP, Arunachal Pradesh pertaining to additional land acquisition at Gerukamukh (Arunachal Pradesh) S/s and dismantling and erection of already installed structures with the associated civil works in Gerukamukh (Arunachal Pradesh) S/s.*

b. *Bihupuria (AEGCL) – Gogamukh (ISTS) 220 kV D/c line is to be implemented by AEGCL.*

c. *LILO of one ckt of North Lakhimpur (AEGCL) – Dhemaji (AEGCL) 132 kV new D/c line is to be implemented by AEGCL.*

iv. NERGS-I: (M/s NERGS-I Power Transmission Limited, a subsidiary of M/s Techno Electric and Engineering Company Limited) - (Dec-2026)

- Establishment of new 400 kV switching station (to be upgraded to 400/220kV level in future) at Bokajan in Assam
- LILO of both circuits of Misa (POWERGRID) – New Mariani (POWERGRID) 400 kV D/c line at Bokajan.

5. System operator feedback

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

6. Assumptions for study

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

Table 6-1 Peak elecricity Demand

Reference↓ / Parameter→	**Year**	**Peak Demand (MW)**	**CAGR**
Actual Peak	2024-25	2812	
As per 20th EPS	2025-26	2861	1.74
	2026-27	3045	4.06
	2027-28	3240	4.84
	2028-29	3449	5.24
	2029-30	3683	5.54
	2030-31	3905	5.63
State Estimated Peak electricity demand	2031-32	5058*	8.75
	2034-35	6363*	8.51

*including upcoming industrial demand.

6.2. **Industrial Demand:**

The details of upcoming heavy industy are as under.

6.2.1. IOCL-Digboi requested for 220 kV connectivity for 25 MW load demand. AEGCL proposed from 220 kV Digboi GSS.

6.2.2. IOCL-Guwahati Refinery requested for 220 kV connectivity for 47-50 MW load demand. AEGCL proposed connectivity from upcoming 220 kV Panjabari GSS.

6.2.3. IOCL-Bongaigaon Refinery requested for 220 kV connectivity for 138 MW load demand. AEGCL proposed connectivity from upcoming 220 kV Dhaligaon GSS.

6.2.4. Numaligarh Refinery Limited requested for connectivity for 420 MW load demand. AEGCL proposed 220 kV D/c connectivity from upcoming 400 kV Khumtai GSS.

6.2.5. Calcom Cements India Ltd clinker-II plant is coming up at Umrangsho, Dima Hasao. AEGCL proposed connectivity of 21.75 MW load from 132 kV Umrangsho GSS.

6.2.6. Tata Electronic Semi-Conductor Plant with a load of 170 MW is coming up at Jagiroad area and connectivity has been finalized at Morigaon (AEGCL) 220 kV S/s through 220 kV D/c line.

6.2.7. In addition to above Assam has envisaged 445 MW additional traction load demand in the time frame of 2031-32.

6.3. The following Parameters were considered during the study

6.3.1. The total intra state generation installed capacity is 7688 MW by the year 2031-32 and 10888 MW by the year 2034-35 (including private generation). The details of existing and upcoming generation is given at Table 6-2 and Table 6-3 respectively below:

Table 6-2 Existing Intra-state generation

S.No.	Name of generating plant	Type	Installed Capacity	Location
1.	LRPP	Thermal (Gas)	67.825	Lakwa, Assam
2.	NTPS	Thermal (Gas)	41	Namrup, Assam
3.	KLHEP	Hydro	100	Karbi Anglong, Assam
4.	LTPS	Thermal (Gas)	97.2	Lakwa, Assam
5.	Myntreng Stage 1	Hydro	9	Karbi Anglong, Assam
6.	Myntreng Stage 2	Hydro	4.5	Karbi Anglong, Assam
7.	Hayen Hydel Private Limited, Champavati	Hydro	4.05	Dhaligaon, Assam
8.	Suryataap Solar , Ghoramari	Solar	5	Ghoramari, Assam
9.	Azure Solar , Rowta	Solar	25	Rowta, Assam
10.	Azure Solar, Boko	Solar	25	Boko, Assam
11.	Azure Solar, Nagaon	Solar	15	Nagaon, Assam
12.	Azure Solar, Pailapool	Solar	25	Pailapool, Assam

13.	Maheshwari Mining Solar, Samaguri	Solar	10	Samaguri, Assam
14.	Patanjali Ayurved Solar	Solar	4	Ghoramari, Assam
15.	Jakson Power Solar (Amguri SP)	Solar	70	Amguri, Assam
16.	Calcom Solar (DCNEL Lanka)	Solar	24+5	Lanka, Assam

Table 6-3 upcoming intra-state generation

Sl. No.	**Name of generating plant**	**Installed capacity**	**Location**	**Time frame considered for the study**
1.	Tharakunji PSP	900	West Karbi Anglong, Assam	2028-29
2.	Ouguri PSP	900	West Karbi Anglong, Assam	2028-29
3.	Karbi Langpi PSP	800	Karbi Anglong, Assam	2028-29
4.	Rupsi thermal plant	1600	Dhubri, Assam	2032-33
5.	Chapar thermal plant	1600	Chapar, Assam	2032-33
6.	Rongpangbong Solar	1000	Karbi Anglong, Assam	2028-29
7.	Solar Charuwa Bakra Jungle Block-200MW	200	Bilasipara, Assam	2027-28
8.	Makoiram Solar	300	Karbi Anglong, Assam	2028-29
9.	Solar Nayekgaon, Kokrajhar District near NTPC Salakathi-200MW	200	Salakati, Assam	2027-28
10	Solar Dhudnath Hill-100MW	100	Bilasipara, Assam	2027-28
11	Karbi Langpi Middle stage- I & II	(24+22.5)	Karbi Anglong, Assam	2027-28
12	Lankaijan Solar	150	Diphu, Assam	2028-29
13	Margherita Solar (Ledo SP)	200	Margherita, Assam	2027-28
14	Lower Kopili Solar Project	50	Longku, Assam	2026-27
15	Modertoli Solar	200	Nagaon, Assam	2027-28
16	Khaloigaon Solar	50	Nagaon, Assam	2027-28
17	Samaguri Solar	100	Nagaon, Assam	2027-28
18	Chandubi Solar	100	Mirza, Assam	2027-28

19	Golaghat Solar (Jamuguri SP)	200	Golaghat, Assam	2027-28
20	Danguapara Solar	200	Nalbari, Assam	2027-28
21	Lower Kopili Hydro Project	120	Karbi Anglong, Assam	2025-26
22	Khudigaon SP	70	Bilasipara, Assam	2026-27
23	West Karbi Anglong SP	70	Karbi Anglong, Assam	2027-28
24	East KA SP	60	Karbi Anglong, Assam	2027-28
25	Lahorijan SP (APDCL)	750	Karbi Anglong, Assam	2027-28
26	Borsola SP	50	Dhekiajuli,Assam	2026-27
27	Sonbeel solar	20	Hailakandi, Assam	2027-28
28	Kopili PSP (Umrangso)	320	Umrangso, Assam	2030-31

6.3.2. Peak Demand: 5058 MW (including 1313 MW non-scalable industrial demand) by the year 2031-32 and 6363 MW (including 1313 MW non-scalable industrial demand) by 2034-35.

6.3.3. Scenario of Study:

S.No.	Scenario	Demand Factor	Dispatch Factors				Remark
			Hydro	Solar	Gas Based Plant	PSP	
1.	Peak Demand (Scenerio -2)	100%	90%	0%	40%	90%	BESS at Mirza (25 MW) in discharging mode (power delivery mode) PSP in generation mode
2.	Max Solar (Scenerio -7)	80%	30%	100%	40%	0%	BESS at Mirza (25 MW) in charging mode (power absorption mode) PSP in power absorption mode
3.	Low Hydro (Scenerio -8)	70%	30%	0%	40%	90%	BESS at Mirza (25 MW) in discharging mode (power delivery mode). PSP in generation mode

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 the operational feedback from Assam SLDC and NERLDC, as well as the provisions in the Manual on Transmission Planning Criteria, 2025, studies were conducted to identify the state's transmission system requirements. New elements/ augmentations detailed in Paragraph 8 are proposed to keep the system parameters with in limits during base case and contingency scenarios.

Taking in account of identified system and related assumptions the import/export on tie lines by the year 2031-32 are presented at Table 7-1 below:

Table 7-1 study results for the timeframe of 2031-32

Parameter↓ / Scenario→	**Peak Demand**	**Max Solar**	**Low Hydro**
Generation despatch (intra-state + ISGS located in state) (in MW)	3950 (ISTS: 920 MW + In-STS: 3030 MW)	2230 (ISTS: 1510 MW + In-STS: 720 MW)	3735 (ISTS: 875 MW + In-STS: 2860 MW)
Demand (in MW)	5050	4050	3530
Net interchange ((-)import / (+)export) at ISTS-STU periphery (in MW)	-2220	-3425	+160

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 timeframe of 2034-35

Parameter↓ / Scenario→	**Peak Demand**	**Max Solar**	**Low Hydro**
Generation despatch (intra-state + ISGS located in state) (in MW)	5874 (ISTS: 920 MW + In-STS: 4954 MW)	4470 (ISTS: 1510 MW + In-STS: 2960 MW)	6450 (ISTS: 870 MW + In-STS: 5580 MW)
Demand (in MW)	6360	5862	4350
Net interchange ((-)import / (+)export) at ISTS-STU periphery (in MW)	-1450	-1430	+1155

7.2. The peak demand with high hydro scenario was found to be critical scenario during the system studies.

7.3. The line flows and voltage were in permissible limit as mentioned in the Manual on Transmission Planning Criteria, 2025 in the critical as well as other scenario after modelling the required additional transmission system by 2031-32 & 2034-35.

7.4. The planned transmission system of the state is N-1 contingency criteria compliant. The planned system addresses all the constraints in the Intra-state

transmission as mentioned by Assam SLDC and NERLDC listed at **Annexure-I** and **Annexure-II** respectively.

7.5. According to CEA's generation recourse adequacy report for Assam (2034-35), Assam is likely to have unserved energy in coming years and may need to contract capacities for meeting energy requirements other than the planned capacities. Additional coal based capacities of about 2,829 MW have to be tied-up by the year 2235-36. In addition to this, the state shall have a likely requirement of MToA/ SToA ranging from around 837 to 952 MW.

7.6. The agreed system by the year 2031-32 & 2034-35 was modelled and studied considering the N-1 contingency criteria and no constraints were observed in transmission system of Assam taking into account additional contracted capacity requirement as mentioned in para above. Hence, the transmission system as planned by 2031-32 & 2034-35 (including new schemes identified in this report) ensures Transmission Resource Adequacy.

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 Assam

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
1.	**i) Creation of 400 kV level by installation of 400 kV GIS, 2x500 MVA, 400/220 kV at under construction 220/132/33 kV Khumtai GIS substation**	In the 01st NERPC-TP meeting the upgradation of existing 220/132 kV substation to 400/220 kV GIS substation at Khumtai with BNC (PGCIL) – Khumtai 400 kV D/c (Twin Moose) line had been agreed.	505.10	**Time frame: 2028-29** **Note:** Khumtai 220/132/33 kV S/s is under construction,
	ii) BNC (PGCIL) – Khumtai 400 kV D/c (Twin Moose) Line (238 ckm) alongwith 2 Nos. of 400 kV line bays at BNC (PGCIL) S/s		632.87	
	iii) Extension of 220 kV GIS Bus at under construction Khumtai (220/132/33 kV) GSS for interconnection of 2 x 500 MVA, 400/220 kV ICT bays at 220 kV level.		22.97	
2.	i. **Establishment of New 400/220 kV, 2x 500 MVA S/s at Makoiram**	400/220kV, 2x500MVA S/s at Makoiram is required to evacuvate power from	623.27	**Time frame: 2028-29**

	ii. 420 kV, 2x125 MVAr Bus reactor along with associated bays	following upcoming generation : • Solar Project at Makoiram village (APDCL) (NLC)-100MW • Solar Project at Makoiram village (APDCL) (NLC)-200MW • Solar Project at Rongpangbong, Khanduli village (APDCL) (NLC)-1000MW • Pumped storage plant at Karbi Anglong-800MW • Pumped storage Palnt at Ouguri (900 MW) • Tharakunjhi PSP (900MW)	50	
	iii. LILO of Silchar-Misa 400 kV D/c line at Makoiram (40 km loop in and 40 km loop out)		480	
	iv. Makoiram – Rongpangbong 400 kV D/c line with Twin ACSR moose conductor (80 ckm)		240	
	v. Karbi Anglong PSP - Makoiram 400 kV D/c line with Twin ACSR Moose conductor (60 ckm)		180	
	vi. Ouguri PSP - Maikoram 400 kV D/c line with Twin Moose conductor (80 ckm)		240	
	vii. Tharakunjhi PSP - Maikoram 400 kV D/c line with Twin Moose conductor (84 ckm)		252	
	viii. Makoiram - Shankardevnagar 220 kV D/c line with twin zebra conductor (120 ckm)		210	
	ix. Makoiram Solar - Makoiram S/s 220 kV S/c line (15 ckm)		51	
	x. Makoiram Solar - Makoiram S/s 220 kV S/c line (15 ckm)		51	
3.	i. **Creation of 400 kV level at Bilasipara 220/132 kV, 2x200 MVA S/s with 400/220 kV, 2x500 MVA transformation capacity**	The substation is required to evacuvate power from 1600 MW Thermal plant at Rupsi	348	**Time frame: 2032-33**
	ii. 420 kV, 2x125 MVAr Bus reactor along with associated bays		50	
	iii. Rupsi Thermal Plant - Bilasipara 400kV D/c line with Quad Moose conductor (100 ckm)		300	
	iv. Bilasipara - Bornagar (PGCIL) 400kV D/c line with Twin Moose conductor (160 ckm)		480	

4.	i. **Establishment of 400/220 kV, 2x500 MVA S/s at Salakati**	The substation is required to evacuvate power from 1600MW Thermal plant at Chapar	348	**Time frame: 2032-33**
	ii. 420 kV, 2x125 MVAr Bus reactor along with associated bays		50	
	iii. Chapar Thermal Plant - Salakati 400 kV D/c line with Quad Moose conductor (40 ckm)		120	
	iv. Salakati-Bongaigaon (PG) 400 kV D/c line with Quad Moose conductor (10 ckm)		30	
	v. Salakati (exiting)-Salakati (new) D/c 220 kV line (2 ckm)		3.5	
5.	**i) Establishment of new 220/33 kV, 2x 100 MVA GIS Substation at Boragaon (Jalukbari)**	In the 01st NERSCT the proposal had already been agreed.	130	**Time frame: 2031-32**
	ii) Boragaon (Jalukbari) (New) – Mirza 220 kV D/c Line (Single zebra) (42 ckm) alongwith 2 Nos. of 220 kV line bays at Mirza S/s		120.30	
6.	**i) Establishment of new 220/33 kV, 2x 100 MVA GIS Substation at Panjabari**	In the 01st NERSCT the proposal had already been agreed. Industrial load of IOCL load upto 47 MW will be connected at this S/s.	130	**Time frame: 2027-28**
	ii) LILO of Sonapur-Sarusajai 220 kV S/c Line at Panjabari (New) (Single zebra) – (3 km loop in and 3 km loop out)		4.19	
7.	**i) Establishment of new 220/132 kV, 2 x200 MVA and 132/33 kV, 2x80 MVA GIS Substation at existing 132/33kV Barnagar GIS Substation**	North Bank of Lower Assam (132 kV Rangia-Barnagar-Dhaligaon Section) is already overloaded condition. This part of the system is more than 50 years old. Also two new substations i.e., Barpeta and Nathkuchi are also coming up in the section. According to load flow studies requirement of this S/s has	215	**Time frame: 2028-29**
	ii) Barnagar (ISTS)-Barnagar (New) 220kV D/c Line (Twin Moose) (60 ckm) alongwith 2 Nos. of		105	

	220kV line bays at Barnagar (ISTS) S/s	been identified to cater the future loading.		
	iii) Barnagar (New) - Barnagar (Existing) 132 kV D/c line (Twin Moose conductor) (1 ckm) alongwith 2 Nos. of 132 kV line bays at Barnagar (ISTS)		20	
8.	**i) Establishment of new 220/132 kV 2x160 MVA and 132/33 kV, 2x80 MVA GIS Substation at New Dhaligaon**	In the 03rd NERPC-TP the proposal had already been agreed	227	**Time frame: 2028-29**
	ii) LILO of both circuits of Rangia – BTPS 220 kV D/c Line at New Dhaligaon (2 km loop in and 2 km loop out) with Single AAAC Zebra		25	
	iii) New Dhaligaon-Dhaligaon (Existing) 132 kV D/c Line (Twin Zebra or equivalent HTLS conductor of 1400 Amps) (2 ckm) alongwith 2 Nos. 132 kV line bays at Dhaligaon (Existing) S/s		25	
9.	i. **Establishment of new 220/132kV, 2x160 MVA; 132/33kV, 2x80 MVA GIS Substation at Digboi**	To meet up the high load growth of Digboi area and the IOC-Digboi which presently depends on 33 kV supply from Margherita.	200	**Time frame: 2030-31**
	ii. LILO of both ckt of Margherita Solar – Tinsukia 220 kV D/c Line at Digboi (5km loop in + 5km loop out)		35	
10.	i. **Establishment of 220/132 kV, 2x200 MVA S/s at Bilasipara**	220/132 kV, 2x200 MVA S/s at Bilasipara is required to evacuvate power from following upcoming generation : • Solar Charuwa Bakra Jungle Block-200MW • Solar Dhudnath Hill-100MW	96.16	**Time frame: 2027-28** **Note:** space for future expansion to upgrade the substation at 400kV level shall be kept
	ii. Agomoni (Existing) - Bilasipara (New) 220kV D/c line with twin zebra conductor (100 ckm)		175	
	iii. 2nd circuit stringing of Bilasipara -		4.89	

	Gauripur 132kV line (37.6 ckm)	• Solar Nayekgaon, Kokrajhar District near NTPC Salakathi-200MW		
	iv. 2nd circuit stringing of Salakati - Kokrajhar line with HTLS conductor (10.27 ckm)		7.19	
	v. Bilasipara (existing)- Bilasipara (new) 132 kV D/c line with Twin Zebra conductor (20 ckm)		70	
11.	i. **Creation of 220 kV level at existing 132/33 kV Gauripur S/s with 2x200 MVA, 220/132kV ICTs.**	The existing Gauripur 132kV substation is unable to meet the upcoming demand and also there are low voltage issues within that area. Hence, upgradation of Gauripur 132 kV to 220kV is proposed.	150	**TimeFrame: 2031-32** **Note:** (Existing RoW of Gossaiagaon - Gauripur 132 kV S/c line will be utilised)
	ii. Gauripur – Agomoni (existing) 220 kV D/c line with Single AAAC Zebra (130 ckm) alongwith 2 Nos. of 220 kV bays at Agomoni S/s		290	
12.	i. **Establishment of 220/132 kV, 2x200 MVA and 132/33 kV, 2x80 MVA S/s at Amguri**	The substation is required to mitigate the overloading scenarios within the Jorhat Garmur and Teok area and helps relieve the 132kV network of that area.	220	**Time Frame: 2031-32**
	ii. LILO of Namrup – Mariani 220 kV 2nd ckt at Amguri with Single AAAC Zebra (10 ckm loop in +10 ckm loop out)		50	
	iii. Amguri – Teok 132 kV D/c with Single AAAC Panther (40 ckm) alongwith 2 Nos. of 132 kV bays at Teok S/s.		60	
13.	i. **Creation of 220 kV level at existing 132/33 kV Umrangso S/s with 220/132 kV, 2x200 MVA ICTs**	This substation is required to mitigate the upcoming industrial loads within the area and also for evacuation of 320 MW Kopili PSP.	160	**Time Frame: 2029-30**
	ii. Lower Kopili – Umrangso 220 kV D/c line with AAAC Twin Zebra (60 ckm) alongwith 2 Nos. of 220 kV bays at Lower Kopili S/s.		280	
14.	i. **Creation of 220 kV level at 132/33 kV Diphu existing**		98.78	**Time frame: 2028-29**

	substation with 2x160 MVA ICT	In the 3rd NERPC-TP following transmission line was agreed: i. New Mariani (PGCIL-existing) – Diphu (New) 220 kV D/c Line ii. Sankardevnagar (AEGCL-New)-Diphu (AEGCL-New) 220kV D/c Line iii. Diphu – Bokajan 132kV **S/c** line		
	ii. New Mariani (PGCIL-existing) – Diphu (New) 220 kV D/c Line (Single zebra) (310 ckm) alongwith 1 No. 220kV line bays at New Mariani (1 bay already available at New Mariani)		542.50	
	iii. Sankardevnagar (AEGCL-New)-Diphu (AEGCL-New) 220kV D/c Line (Single zebra) (162 ckm) along with 2 Nos. of 220 kV bays at Sankardevnagar (AEGCL-New) S/s		283.50	
	iv. Diphu – Bokajan 132kV D/c (Single panther) (one ckt via. East Karbi) (90 ckm) alongwith 2 Nos. of 132 kV bays at Bokajan S/s		97.50	
15.	i. **Establishment of 220/132 kV, 2x160 MVA & 132/33 kV, 2x80 MVA (GIS) substation at Morigaon**	In the 01st NERSCT, establishment of 132/33 kV, 2x50 MVA (GIS) substation at Morigaon had been agreed with following connectivity: i. Baghjhap(Existing)-Morigaon(New) D/c Line This substation is required for industrial demand of TATA Semiconductor 85 MW load at 220 kV level.	171.20	**Time frame: 2026-27**
	ii. LILO of 220 kV Sonapur New – Karbi Langpi D/c line (Formed after LILO of Sarusajai-Karbi Langpi D/c at Sonapur New) at Morigaon (AEGCL-New) (Single zebra) (2 km loop in and 2 km loop out)		16.90	
	iii. Marigaon (AEGCL-New) – Dhing 132 kV D/c Line (Single panther) (64 ckm) along with 2 Nos. of 132 kV bays at Dhing S/s		72	
16.	**i. Establishment of new 132/33kV, 2x50 MVA Substation at Lower Haflong**	Halflong is presently connected with one S/c line from Halflong (PG). However, to satisfy 'N-1' criteria at 132 kV level, and enhanced reliability & redundancy the	75	**Time frame: 2032-33** **Note:** Capacitor bank at 33 kV Lower Halflong bus is also required.
	ii. Lower Haflong-Haflong (Existing) 132 kV S/c Line		28.56	

		(Single panther)(40 ckm) alongwith 1 No. 132 kV line bays at Haflong (Existing)	transmission system is proposed.		
	iii.	Lumding – Lower Haflong 132 kV D/c Line (Single panther)(100 ckm) alongwith 2 Nos. 132 kV line bays at Lumding		157.08	
17.	**i.**	**Establishment of new 132/33 kV, 2x80 MVA Substation at Silcoorie**	The substation is required to meet the demand in Ghungur, Udarbond and Silcoorie area.	83	**Time frame: 2028-29**
	ii.	Silchar (PGCIL) – Silcoorie 132 kV D/c Line (Single panther) (40 ckm) alongwith 2 Nos. 132 kV line bays at Silchar (POWERGRID)		50.08	
18.	**i.**	**Establishment of new 132/33 kV, 2x 50 MVA GIS Substation at Lumding**	In the 01st NERSCT the, establishment of 132/33 kV, 2x 50 MVA GIS Substation at Lumding had been agreed with following connectivity: i. LILO of Shakardevnagar (AEGCL- Existing) Line – Diphu (AEGCL-Existing) S/c Line at Lumding (AEGCL-New)	110	**Time frame: 2027-28**
	ii.	Sankardevnagar – Lumding (New) 132 kV D/c Line (Single panther) (80 ckm) along with 2 Nos. of 132 kV bays at Sankardevnagar		80	
19.	**i.**	**Establishment of new 132/33 kV, 2x50 MVA Substation at Udarbond**	To meet the demand in Ghungur, Udarbond and Silcoorie area.	119	**Time frame: 2029-30**
	ii.	Silchar (PGCIL) – Udarbond 132 kV D/c Line (Single Moose or equivalent (800A)) (30 ckm) along with 2 Nos. of 132 kV bays at Silchar (PGCIL) S/s		37.5	
20.	**i.**	**Establishment of new 132/33 kV (2x50 MVA) AIS substation at Amayapur**	In the 01st NERSCT the proposal had already been agreed.	75	**Time frame: 2031-32**

	ii. Amayapur (AEGCL-New) – Hajo (AEGCL-Existing) 132 kV D/c Line (Single Panther) (50 ckm) along with 2 Nos. of 132 kV bays at Hajo (AEGCL-Existing) S/s		62.5	
21.	**i. Establishment of new 132/33kV (2x50 MVA) AIS substation at Dhupdhara**	In the 01st NERSCT the proposal had already been agreed.	75	**Time frame: 2031-32**
	ii. Dhupdhara (AEGCL-New) – Boko (AEGCL-Existing) D/c Line (Single Panther)-(50 ckm) along with 2 Nos. of 132 kV bays at Boko (AEGCL-Existing) S/s		62.5	
22.	**i. Establishment of new 132/33kV (2x80 MVA) AIS substation at Ishabheel**	To meet the future demand and improved voltage regulation in the area the substation is required.	75	**Time frame: 2030-31** **Note:** The reconductoring of LILO portion at Isabeel substation by HTLS has to be in accordance to the HTLS conductor used by CTU for complete reconductoring of line 132 kV Badapur – Kumarghat Line. LILO portion of Karimganj GSS shall also have to be reconductored with same capacity.
	ii. LILO of Karimganj - Kumarghat 132 kV S/c Line with HTLS (1000 A) at Ishabheel S/s (15 km loop in and 15 km loop out)		37.5	
23.	**i. Establishment of new 132/33 kV 2x80 MVA AIS substation at Jonai**	The Jonai 33 kV S/s of APDCL caters to the load of eastern most parts of Dhemaji district. Jonai 132/33 kV S/s, once commissioned shall be able to cater to the load of eastern part of Dhemaji district as well as the border	70	**Time frame: 2028-29**
	ii. Silapathar – Dhemaji 2nd Ckt Stringing (Single Panther) (36 ckm) alongwith associated bay at both end		37.58	

	iii. Silapathar – Jonai 132 kV D/c line (Single Panther) (150 ckm) along with 2 Nos. of 132 kV bays at Silapathar S/s	area of Assam and Arunachal Pradesh.	187.5	
24.	**i. Establishment of new 132/33 kV 2x80 MVA AIS substation at Ghilamora**	In the 03rd NERPC-TP establishment of new 132/33 kV 2x80 MVA AIS substation at Ghilamora had been agreed with following connectivity: **(i).** LILO of 132 kV North Lakhimpur - Dhemaji S/c line at Ghilamora S/s.	61	**Time frame: 2030-31**
	ii. North Lakhimpur – Gogamukh 132 kV D/c line alongwith LILO of one circuit at Ghilamora (Single Panther) (72 km + 12.5 km Loop in + 12.5 km Loop out) (2 Nos. on 132 kV bays at North Lakhimpur S/s)		122	
	iii. Majuli – Ghilamora 132 kV S/c on D/c tower (Single panther) (60 ckm) along with 1 No. of 132 kV bays at Majuli S/s		91.39	
	iv. Gogamukh – Dhemaji 132 kV D/c (Single Moose-800A) (60 ckm) alongwith associated bays at both end		75	
25.	**i. Establishment of new 132/33 kV, 2x80 MVA substation at Bartari**	To meet the increasing demand and address the Low voltage issues. For enhanced reliability and redundancy	43.44	**Time frame: 2032-33**
	ii. Barnagar (New) – Bartari 132 kV D/c Line (Single panther) (70 ckm) along with 2 Nos. of 132 kV bays at Barnagar(New) S/s		87.5	
26.	**i. Establishment of new 132/33 kV, 2x80 MVA substation at Tikrikilla**	In the 03rd NERPC-TP, the establishment of new 132/33 kV, 2x80 MVA substation at Tikrikilla had been agreed with following connectivity: i. LILO of Agia – Hatsingimari D/c	51.29	**Time frame: 2029-30**
	ii. 2nd Circuit stringing of Agia – Hatsingimari 132 kV S/c on D/c tower		60	

		(Single panther)-(110 ckm) along with 132 kV bay at both end	line at Tikrikilla (Single panther)		
	iii.	LILO of Agia – Hatsingimari D/c line at Tikrikilla (Single panther) (7.5 km loop in and 7.5 km loop out)		37.98	
27.	**i.**	**Establishment of new 220/33 kV, 2x100 MVA substation at Modertoli**	To meet the upcoming industrial demand in the area and address the Low voltage issues.	150	**Time frame: 2029-30**
	ii.	Misa – Modertolli 220 kV D/c line with Single AAAC Zebra (50 ckm) alongwith 2 Nos. of 220 kV bays at Misa S/s		120	
28.	**i.**	**Establishment of new 132/33 kV, 2x80 MVA GSS at Missamari**	Currently, Power Supply to Missamari area is through a dedicated 33 kV feeder from Depota GSS. The feeder from Depota GSS is approximately 34 km long and it traverses through dense bamboo plantation (for approx. 16 km) which results in frequent power disruptions. The power requirement of the station will increase at this area. Thus, a proposal has been made for establishment of a new 132/33kV GSS at Missamari to enhance the power supply scenario to critical load centre in the area.	60	**Time frame: 2027-28**
	ii.	Balipara – Missamari 132 kV D/c line (HTLS 800A) (40 ckm) along with 2 nos of 132 kV bays at Balipara S/s		75	
	iii.	LILO of Rowta – Depota 132 kV S/c line at Missamari (Single panther) (5 km loop in and 5 km loop out)		14.76	
	iv.	LILO of S/c of Balipara – Missamari 132kV D/c line at Ghoramari (7 ckm loop in + 7 ckm loop out) with HTLS (800 A) alongwith 2 Nos. of 132 kV bays at Ghoramari S/s.		35	
29.	**i.**	**Establishment of new 132/33 kV, 2x80 MVA substation at Kalain (AIS)**	To meet the industrial demand in this area.	43.44	**Time frame: 2033-34**
	ii.	LILO of Lumshnong – Panchgram S/c line at Kalain with HTLS 800 A (15 km loop in and 15 km loop out)		27.11	

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 Assam

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
1.	2nd Ckt Stringing of Namrup – Mariani 220 kV S/c line on D/c tower (146 ckm) along with associated bays at both ends.	2nd ckt of 220 kV Namrup-Mariani Line is required for Grid security and reliability. Moreover, Namrup Replacement Power Plant (NRPP) (100 MW) is coming up along with 70 MW Solar plant at Amguri between Mariani and Namrup. 2nd ckt is of urgent necessity for Grid operation.	60	**Time frame: 2028-29**
2.	LILO of Lakwa – Mariani 132 kV at Sivasagar S/s (15 km loop in and 15 km loop out)	LILO is required for Grid security and reliability.	45	**Time frame: 2028-29**
3.	Rearrangement of Mariani PG – Mariani Assam and Kathalguri link as below: • Mariani (PG) – Kathalguri 220 kV D/c line • Mariani (PG) – Mariani Assam 220 kV D/c line (2nd circuit with Twin Moose capacity) alongwith 2 Nos. of 220 kV bays at Mariani PG	This arrangement is required to fulfil N-1 criteria of Mariani PG – Mariani Assam connectivity.	50	**Time Frame: 2027-28**
4.	Rowta – Sonabil 220 kV D/c (110 ckm) alongwith 2 Nos. of 220 kV bays at Sonabil end	This line is required to balance the power flow at the downstream network.	242.5	**Time Frame: 2029-30**

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 Assam

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
1.	Sonabil – Depota 132 kV S/c line (17.73 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required.	24.83	**Time frame: 2027-28**

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
		• Existing conductor - ACSR Panther • Year of commissioning- 2016 • Ampacity of HTLS-1000 A		
2.	Sonabil – Ghoramari 132 kV S/c line (8.73 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor - ACSR Panther • Year of commissioning- 2016 • Ampacity of HTLS-1000 A	8.87	**Time frame: 2027-28**
3.	Kamakhya – Sishugram 132 kV S/c line (6 ckm) along with upgradation of requisite bay equipment	Combined load of Kamakhya GSS, Kamakhya Traction and a portion of Sishugram GSS crosses 80 MW. The loading of the line will further increase after charging of the 132 kV Paltan Bazar GIS. Sishugram will have to be shifted towards Amingaon & Rangia GSS which will again result in voltage drop & load shedding due to saturation of the ICT's at Rangia. Reconductoring/ampacity enhancement of the line will enable loading of Sishugram, Kamakhya & Kamakhya Traction from Amingaon GSS increase in shutdown of 132kV Sarusajai-Kamakhya transmission line thereby increasing the reliability of the Capital area of Assam. • Existing conductor - ACSR Panther • Year of commissioning- 1965 (Main line) • Ampacity of HTLS-1000 A	4.82	**Time frame: 2027-28**
4.	Sishugram – Amingaon S/c 132 kV line (20 ckm) along with upgradation of requisite bay equipment	The total load of the Sishugram GSS is above 80 MW, presently, being feed from both Kamakhya and Rangia end. Charging of 220 kV Amingaon GSS will help in feeding Sishugram from Amingaon. However, to feed the entire load of Sishugram from Amingaon, capacity enhancement of the transmission line is required.	15.57	**Time frame: 2027-28**

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
		• Existing conductor - ACSR Panther • Year of commissioning- 1965 (Main line) • Ampacity of HTLS-1000 A		
5.	Kahilipara – AIIMS 132 kV S/c line (20 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor - ACSR Panther • Year of commissioning- 1965(Main line) • Ampacity of HTLS-1000 A	15.67	**Time frame: 2027-28**
6.	AIIMS – Amingaon 132 kV S/c line (14 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – ACSR Panther • Year of commissioning- 1965 (Main line) • Ampacity of HTLS-1000 A	11.20	**Time frame: 2027-28**
7.	Rangia – Kamalpur 132 kV D/c line (28 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor -ACSR Panther • Year of commissioning- 1965(Main line) • Ampacity of HTLS-1000 A	22.40	**Time frame: 2027-28**
8.	Barnagar – Nathkuchi 132 kV S/c line (43 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – ACSR Panther • Year of commissioning- 1982 (Main line) • Ampacity of HTLS-1000 A	38.00	**Time frame: 2027-28**
9.	Dhaligaon – Barpeta 132 kV S/c line (75.69 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor - ACSR Panther • Year of commissioning- 1982(Main line) • Ampacity of HTLS-1000 A	68.40	**Time frame: 2027-28**
10	Salakati – Kokrajhar 2nd Circuit 132 kV S/c line (10.27 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required.	6.33	**Time frame: 2027-28**

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
		• Existing conductor - ACSR Panther • Year of commissioning- 2016 • Ampacity of HTLS-800 A		
11	Tinsukia – Rupai 132 kV S/c lin (40 ckm) along with upgradation of requisite bay equipment	It is experienced that whenever any disruption occurs or shutdown is taken at any element, in between Panyor (Ranganadi) Hydro-Electric Plant and Pasighat node, quantum of power to Arunachal Pradesh is restricted to mere 10-15 MW through the Roing-Chapakhowa corridor despite its adequate transmission capacity, thereby forcing unabated load-shedding in Arunachal Pradesh. The reason of this constraint is reported to system inadequacies in the upstream systems at Chapakhowa Rupai-Tinsukia and Rupai-Margherita and Rupai-Tinsukia networks. The above TLs are more than 45 years old and can carry only upto 50 MW. Many instances of grid disturbances have been reported in the past few months due to conductor snapping of the lines. • Existing conductor – ACSR Panther • Year of commissioning- 1996 (Main line) • Ampacity of HTLS-1000 A	33.23	**Time frame: 2027-28**
12	Rupai – Ledo (Margherita) 132 kV S/c line (72 ckm) along with upgradation of requisite bay equipment		55.92	
13	Tinsukia – Ledo (Margherita) 132 kV line(52.8 ckm) along with upgradation of requisite bay equipment		40.44	
14	Dibrugarh – Behiating 132 kV S/c line (9.3 ckm) along with upgradation of requisite bay equipment	Due to increased loading in the area reconductoring of this line is required. • Existing conductor – ACSR Panther • Year of commissioning- 2013 • Ampacity of HTLS-1000 A	20.00	**Time frame: 2027-28**
15	Reconductoring of LILO portion of Badarpur – Kumarghat at Karimganj 132kV S/c line with HTLS (1000 A) (4 km loop in & 4 km loop out)	Due to increased loading in the area reconductoring of this line is required. • Existing conductor - ACSR Panther	10.00	**Time frame: 2030-31**

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
	along with upgradation of requisite bay equipment	• Year of commissioning-2021 • Ampacity of HTLS-1000 A		
16	Restringing of Dharamnagar (Tripura) – Durlavchera (Assam) 132 S/c line (26 ckm) with panther conductor along with upgradation of requisite bay equipment	• Existing conductor - ACSR Panther • Year of commissioning-1974 • Restringing with Panther	20.00	**Time frame: 2029-30** Matching time frame with Tripura **Note**: Only AEGCL portion (26 ckm)
17	Restringing of Srikona – Pailapol 132 kV S/c line (35 ckm) with panther conductor along with upgradation of requisite bay equipment	• Existing conductor - ACSR Panther • Year of commissioning-1984 • Restringing with Panther	27.48	**Time frame: 2027-28**
18	Restringing of Panchgram – Hailakandi 132kV S/c line (23 ckm) along with upgradation of requisite bay equipment	• Existing conductor - ACSR Panther • Year of commissioning-1984 • Restringing with Panther	17.71	**Time frame: 2027-28**
19	Restringing of Hailakandi – Durlavchera 132 kV S/c line (31.4 ckm) with panther conductor along with upgradation of requisite bay equipment	• Existing conductor - ACSR Panther • Year of commissioning-1988 • Restringing with Panther	23.22	**Time frame: 2027-28**
20	Reconductoring of Depota – Ghoramari 132 kV S/c line with 800A HTLS (12 ckm)	• Existing conductor -AAAC Panther • Year of commissioning – • Ampacity of HTLS – 800A	18	**Time Frame: 2027-28**
21	Reconductoring of Samaguri -Khaloigaon 132 kV D/c with 800A HTLS (40 ckm)	• Existing conductor – AAAC Panther • Year of commissioning: • Ampacity of HTLS – 800A	60	**Time Frame: 2031-32**
22	Reconductoring of 132 kV Sonapur – Narengi S/c line with HTLS 1000A (30.43 ckm)	• Existing conductor – AAAC Panther • Year of commissioning: • Ampacity of HTLS – 1000A	50	**Time Frame: 2031-32**

Note: - Before taking up the reconductoring, state shall ensure the tower healthiness and communsurate 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 Assam

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
1.	Augmentation of transformer capacity by Replacement of 1x100 MVA ICT with 1x200 MVA at 220/132 kV **Rangia S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required Existing ICT capacity: 1x100+ 1x200 MVA	**23.57**	**Time frame: 2026-27** 1x200 MVA transformer is being installed by Assam. Total capacity after augmentation: 2x200 MVA
2.	Augmentation of transformer capacity by Replacement of 2x100 MVA ICT with 2x200 MVA at 220/132 kV **Tinsukia S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required Existing ICT capacity: 2x100 MVA	**47.14**	**Time frame: 2026-27** Total capacity after augmentation**:** 2x200 MVA
3.	Augmentation of transformer capacity by Replacement of 2x100 MVA ICT with 2x200 MVA at 220/132 kV **Sonapur S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required Existing ICT capacity: 2x100 MVA	**47.14**	**Time frame: 2028-29** Total capacity after augmentation**:** 2x200 MVA
4.	Augmentation of transformer capacity by Installation of 3rd ICT of rating of 1x160 MVA at 220/132 kV **Salakati S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required Existing ICT capacity: 2x160 MVA	**22.27**	**Time frame: 2027-28** Total capacity after augmentation**:** 3x160 MVA
5.	Augmentation of transformer capacity by Installation of 3rd ICT of rating of 1x200 MVA at 220/132 kV **Mariani S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required Existing ICT capacity: 2x100 MVA	**23.57**	**Time frame: 2027-28** Total capacity after augmentation**:** 2x100+1x200 MVA
6.	Augmentation of 220/33 kV transformation capacity by replacement of 1x25 MVA ICT with 2x100 MVA at 220/33 kV at **Karbi Langpi S/s**	To cater the future load demand and to satisfy N-1 contingency criteria the Augmentation is required Existing ICT capacity: 1x25 MVA	**30**	**Time frame: 2027-28** Total capacity after augmentation**:** 2x100 MVA
7.	Augmentation of 220/132 kV transformation capacity by installation of 3rd ICT of	To cater the future load demand and to satisfy N-1	**60**	**Time Frame: 2031-32**

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
	200 MVA at **Shankardevnagar S/s**	contingency criteria the Augmentation is required Existing ICT capacity: 2 x 160 MVA		Total capacity after augmentation**:** 2x160 MVA + 1x200 MVA
8.	Augmentation of 132/33 KV Transformation capacity of **APM S/s** from 1x16+1x25 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x16 + 1x25 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
9.	Augmentation of 132/33 KV Transformation capacity of **Bilasipara S/s** from 2x16 MVA to 1x50+1x16 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 16 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x50 + 1x16 MVA
10	Augmentation of 132/33 kV Transformation capacity of **Bokakhat S/s** from 2x16 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 16 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
11	Augmentation of 132/33 kV Transformation capacity of **Barpeta S/s** from 2x25 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 25 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
12	Augmentation of 132/33 kV Transformation capacity of **Baghjap S/s** from 2x25 MVA to 1x50+1x25 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 25 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x50 + 1x25 MVA
13	Augmentation of 132/33 kV Transformation capacity of **Hatsingimari S/s** from 1x25+1x16 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x25 + 1x16 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
14	Augmentation of 132/33 kV Transformation capacity of **Dhemaji S/s** from 1x50+1x16 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x50 + 1x16 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
15	Augmentation of 132/33 kV Transformation capacity of **Diphu S/s** from 2x16 MVA to 1x50+1x16 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x16 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x50 + 1x16 MVA
16	Augmentation of 132/33 kV Transformation capacity of **Durlavcherra S/s f**rom 1x10+1x25 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x25 + 1x10 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
17	Augmentation of 132/33kV Transformation capacity of **Gossaigaon S/s** from 1x25+1x16 MVA to 1x25+1x80 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x25 + 1x16 MVA	**18**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x25 + 1x80 MVA
18	Augmentation of 132/33 kV Transformation capacity of **Jorhat S/s** from 3x25 MVA to 1x50+2x25 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 3x25 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x50 + 2x25 MVA
19	Augmentation of 132/33 kV Transformation capacity of **Karimganj S/s** from 2x25 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x25 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
20	Augmentation of 132/33 kV Transformation capacity of **Mariani S/s** from 2x25 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x25 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
21	Augmentation of 132/33 kV Transformation capacity of **Magherita(Ledo) S/s** from 2x25 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x25 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
22	Augmentation of 132/33 kV Transformation capacity of **Nalkata S/s** from 1x25+1x50 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x25 + 1x50 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
23	Augmentation of 132/33kV Transformation capacity of **Nazira S/s** from 1x25+1x40 MVA to 1x50+1x40 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x25 + 1x40 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x50 + 1x40 MVA
24	Augmentation of 132/33 kV Transformation capacity of **Rupai S/s** from 2x25 MVA to 1x50+1x25 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x25 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 1x50 + 1x25 MVA
25	Augmentation of 132/33 kV Transformation capacity of **Sankardevnagar S/s** from 2x40 MVA to **2x80 MVA** Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 40 MVA	**30**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x80 MVA
26	Augmentation of 132/33 kV Transformation capacity of **Sarusajai S/s** from 2x31.5+1x50 MVA to 3x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 31.5 + 1 X 50 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 3x50 MVA
27	Augmentation of 132/33kV Transformation capacity of **Samaguri S/s** from 2x50+1x25 MVA to 3x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x50 + 1x25 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 3x50 MVA
28	Augmentation of 132/33 kV Transformation capacity of **Sivsagar S/s** from 2x16 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x16 MVA	**20**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA

S.No	Transmission System	Justification	Estimated Cost (in Rs. Cr.)	Time Frame & Remarks
29	Augmentation of 132/33 kV Transformation capacity of **Srikona S/s** from 1x40+1x50 MVA to 2x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 1x 40+ 1x50 MVA	**10**	**Time Frame: 2026-27** Total capacity after augmentation**:** 2x50 MVA
30	Augmentation of 132/33 kV Transformation capacity of **Tinsukia S/s** from 2x40 MVA to 3x50 MVA Power Transformer along with terminal equipment	To fulfil N-1 criteria for catering the present load demand. Existing ICT capacity: 2x 40 MVA	**60**	**Time Frame: 2026-27** Total capacity after augmentation**:** 3x50 MVA

8.5. Evacuation system for upcoming Solar & Hydro projects which are required by 2034-35 are listed at Table 8-5:

Table 8-5 Evacuation system for upcoming hydro projects of Assam

S.No	Transmission System	Justification	Estimated Cost (in₹ Cr.)	Time Frame
1.	LILO of one ckt of Lower Kopili – Shankardevnagar 220kV D/c line at Longku Solar (1 km loop in and 1 km loop out)	To evacuvate power from Longku Solar plant (50MW)	10	**Time frame:2026-27**
2.	Lankaijan Solar Plant- New Diphu 220 kV D/c line (40 ckm)	To evacuvate power from Lankaijan Karbi Anglong (APDCL) (NLC) Solar Project (150 MW)	70	**Time frame: 2028-29**
3.	Margherita Solar plant- Tinsukia 220 kV D/c along with 2 no. GIS bay at Tinsukia. (100 ckm)	To evacuvate power from Margherita Solar Project (APGCL), Margherita, Tinsukia (200MW)	180	**Time frame: 2027-28**
4.	Karbi Langpi Middle I - Karabi Langpi HEP (Existing) 33 kV D/c line on 132 kV Tower (20 ckm)	To evacuvate power from Karbi Langpi Middle I Hydro Power Project (APGCL) (West Karbi Anglong,) (22.5 MW)	15	**Time frame:2027-28**
5.	Karbi Langpi Middle II - Karabi Langpi HEP (Existing) 33 kV D/c line on 132 kV Tower (24 ckm)	To evacuvate power from Karbi Langpi Middle II Hydro Power Project (APGCL) (West Karbi Anglong) (24 MW)	18	**Time frame:2027-28**

6.	Kopli PSP (320 MW) – Umrangso 220 kV D/c line with AAAC Twin Zebra (60 ckm)	To evacuvate power from Kopli PSP (Umrangso) (320 MW)	240	**Time frame:2029-30**

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

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

i. 765 kV D/c Katihar (India) – Parbotipur (Bangladesh) – Bornagar (India) cross border transmission link (*Only NER portion)* – by POWERGRID*(scheme is under review by JWG & JSC of both countries)*

- Upgradation of Bornagar s/s with 765/400 kV, 2x1500 MVA*
- Bornagar (Assam, India) – Parbotipur (Bangladesh) 765 kV D/c line *(Indian portion – 165 km)*
  - *Indian portion: 165 km*
  - *Bangladesh portion: 104 km*

Note: **Bornagar 400 kV Switching substation has been taken up separately in NERES-XXV scheme with completion timeframe of 30 months from date of award.*

ii. NERGS-II: *(Expected by 2031)*

- Dibang – Gogamukh 400 kV 2xD/c (Quad) line
- Extension works at Gogamukh S/s at 400kV level
  - 4 Nos. of 400 kV line bays for termination of Dibang – Gogamukh 2xD/c lines
  - 4x63 MVAr switchable line reactors at Gogamukh end of Dibang – Gogamukh 400 kV 2xD/c lines, one in each circuit
- Gogamukh – Biswanath Chariali 400 kV D/c (Quad) line
- Extension works at Biswanath Chariali (POWERGRID) S/s at 400 kV level
  - 2 Nos. of 400 kV line bays for termination of Gogamukh – Biswanath Chariali 400 kV D/c (Quad) line
- Extension works at Gogamukh S/s at 400 kV level
  - 2 Nos. of 400 kV line bays for termination of Gogamukh – Biswanath Chariali 400 kV D/c (Quad) line
  - 2x80 MVAr switchable line reactors at Gogamukh end of Gogamukh –Biswanath Chariali 400 kV D/c line, one in each circuit

Note: *4x63 MVAr switchable line reactors at Dibang end of Dibang –Gogamukh 400 kV 2xD/c lines, one in each circuit to be installed by NHPC Ltd.*

iii. NERES-XXI Part-B:

- Upgradation of Single Main and Transfer Bus to Double Bus arrangement with Green GIS at 132 kV Badarpur (POWERGRID) switching station

Note: *As the Green GIS is being introduced for first time in ISTS in the Indian network, the ISTS transmission licensee shall involve CTU officials at various stages of implementation such as detailed engineering, design, testing, commissioning etc., and also after commissioning, so as to assess the environmental impact, operational performance, ageing characteristics etc. of the Green GIS.*

iv. NERES-XXV Part- A: *Approved in 21st NCT. (Bidding is under process by PFCCL)*

- Establishment of new 400 kV Bornagar (ISTS) switching station in Assam (765 kV and 220 kV levels to be established in future)
- LILO of both circuits of existing Bongaigaon (POWERGRID) – Balipara (POWERGRID) 400 kV D/c (Quad) line at Bornagar (ISTS)
- Disconnection of Alipurduar (POWERGRID) – Bongaigaon (POWERGRID) 400 kV D/c (Quad) line from Bongaigaon (POWERGRID) end and extension of the line for termination at Bornagar (ISTS) S/s so as to form Alipurduar (POWERGRID) – Bornagar (ISTS) 400 kV D/c (Quad) line
- Installation of 420 kV, 1x80 MVAr switchable line reactor (along with 500ohm NGR and NGR bypass arrangement) at Bornagar (ISTS) end in each circuit of Alipurduar (POWERGRID) – Bornagar 400 kV D/c (Quad) line formed after shifting of Alipurduar (POWERGRID) – Bongaigaon (POWERGRID) 400 kV D/c (Quad) line from Bongaigaon (POWERGRID) end to Bornagar (ISTS) S/s
- Installation of 420 kV, 1x63 MVAr switchable line reactor (along with 400ohm NGR and NGR bypass arrangement) at Bornagar (ISTS) end in each circuit of Bornagar (ISTS) – Balipara (POWERGRID) 400 kV D/c (Quad) line formed after LILO of both circuits of existing Bongaigaon (POWERGRID) – Balipara (POWERGRID) 400 kV D/c (Quad) line

v. NERES-XXX: (24 months from award)

- Reconductoring of ISTS portion of Balipara (POWERGRID) – Sonabil (POWERGRID) ckt-I 220 kV line owned by POWERGRID with HTLS conductor of ampacity 1050 A (at nominal voltage level) (8.623 ckm)
- Reconductoring of ISTS portion of Balipara (POWERGRID) – Sonabil (POWERGRID) ckt-II 220 kV line owned by POWERGRID with HTLS conductor of ampacity 1050 A (at nominal voltage level) (9.205 ckm)
- Reconductoring of Silchar (POWERGRID) – Srikona (AEGCL) 132 kV D/c line owned by POWERGRID with HTLS conductor of ampacity 900A (at nominal voltage level) (1.119 ckm)

- Reconductoring of Ranganadi (NEEPCO) – Ziro (POWERGRID) 132 kV S/c line owned by POWERGRID with HTLS conductor of ampacity 900 A (at nominal voltage level) (44.52 ckm)

10. Reactive Power Compensation

10.1. The following reactive power compensation requirement has been identified to be implemented alongwith implementation of above recommended Intra-state transmission system:

S.No.	Name of the Substation/Node	Reactor
1.	400/220 kV, 2x 500 MVA S/s at **Makoiram**	420 kV, 2x125 MVAr Bus reactor along with associated bays
2.	400/220 kV, 2x500 MVA S/s at **Bilasipara**	420 kV, 2x125 MVAr Bus reactor along with associated bays
3.	400/220 kV, 2x500 MVA S/s at **Salakati**	420 kV, 2x125 MVAr Bus reactor along with associated bays

10.2. The states to install capacitor banks around the below listed locations at lower voltage levels so as to maintain minimum reactive power exchange with the grid and maintain the voltage within permission levels:

Sl. No.	Name of Substation (132 kV Level)	Capacitor requirement at downstream Distribution level (in MVAr)
1.	Agamoni	3x15
2.	Agia	3x15
3.	AIIMS	3x15
4.	Amayapur	2x15
5.	Amingaon	3x15
6.	Azara	15
7.	Bagjhap	15
8.	Barpeta	4x15
9.	Bilasipara	3x15
10.	Bokakhat	15
11.	Boko	3x15
12.	Bornagar Ex	15
13.	Bornagar New	15
14.	BTPS	3x15
15.	Burhigaon	2x15
16.	Depota	15
17.	Dhaligaon	2x15
18.	Dhekiajuli	15
19.	Dhupdhara	3x15
20.	Dibrugarh	15
21.	Diphu	15
22.	Dispur	15
23.	Gauripur	3x15
24.	Guwahati Medical College (GMC)	15
25.	Golaghat	3x15
26.	Gossaigaon	2x15
27.	Gossaigaon-N	3x15

Sl. No.	Name of Substation (132 kV Level)	Capacitor requirement at downstream Distribution level (in MVAr)
28.	Hajo	15
29.	Halflong	2x15
30.	Isabheel	15
31.	Jogigopa APM	2x15
32.	Jorhat	2x15
33.	Kahilipara	3x15
34.	Kamakhya	15
35.	Kamalpur	2x15
36.	Karimganj	15
37.	Kokrajhar	15
38.	Margherita	2x15
39.	Mariani-Assm	15
40.	Matia	2x15
41.	Nalbari	3x15
42.	Narengi	3x15
43.	Nathkuchi	2x15
44.	North lakhimpur	15
45.	Pailapol	2x15
46.	Paltan Bazar	2x15
47.	Rangia	2x15
48.	Rangia New	2x15
49.	Rowta	15
50.	Rupai	2x15
51.	Salakati	4x15
52.	Sankar D Nagar	15
53.	Sarusajai	15
54.	Shishugram	15
55.	Silapathar	15
56.	Sipajhar	3x15
57.	Tangla	15
58.	Teok	15
59.	Titabor	2x15
60.	Zoo road	2x15

11. Summary of identified transmission system by 2034-35

11.1. A total of 15280 MVA transformation capacity addition/augmentation and 4720 ckm of new transmission lines/reconductoring of old lines at an estimated cost of ₹ 14202.05 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 brief 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 (MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	4	-	4500	1824.37

2.	Augmentation of existing substation	-	-	-	-
3.	New transmission line including LILO and 2nd Ckt Stringing	10	1012	-	2954.87
4.	Reconductoring of transmission line	-	-	-	-
5.	Bus Reactor	6	-	750	150

220 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	12	-	4560	1948.14
2.	Augmentation of existing substation	7	-	1800	253.69
3.	New transmission line including LILO and 2nd Ckt Stringing	24	1646	-	3343.36
4.	Reconductoring of transmission line	-	-	-	-

132 kV Transmission system

S.No	Transmission system	No.	Length (in ckm)	Capacity (MVA)	Estimated Cost (Rs. Cr.)*
1.	New substation	13	-	1780	941.17
2.	Augmentation of existing substation	23	-	1890	408
3.	New transmission line including LILO and 2nd Ckt Stringing	30	1439	-	1786.36
4.	Reconductoring of transmission line	22	623	-	592.09

**Note: The estimated cost of the above transmission system is based on recently awarded works with a 5% escalation factor per annum from AIIB and NERPSIP-funded projects in Assam.*

11.2. Summary of year-wise MVA capacity, ckm addition and tentative expenditure required for implementation of above recommended proposals is given Table 11-1 at below:

Table 11-1 Yearwise implementation summuryof proposed transmission system

Financial Year	**MVA Capacity Addition**			**ckm Addition**			**Reconductoring (ckm)**			**Estimated Cost (in ₹ Cr.)**
	132 kV	**220 kV**	**400 kV**	**132 kV**	**220 kV**	**400 kV**	**132 kV**	**220 kV**	**400 kV**	

2026-27	1890	1080	-	64	10	-	-	-	-	748.81
2027-28	260	1200	-	246	306	-	519	-	-	1813.36
2028-29	320	1800	2750	349	836	702	-	-	-	5757.79
2029-30	260	600	-	170	280	-	26	-	-	1518.27
2030-31	320	480	-	230	20	-	8	-	-	706.89
2031-32	200	1200	-	140	192	-	70	-	-	1465.3
2032-33	260	-	2500	210	02	310	-	-	-	2121.08
2033-34	160	-	-	30	-	-	-	-	-	70.55
Total	**3670**	**6360**	**5250**	**1439**	**1646**	**1012**	**623**	**-**	**-**	**14202.05**

12. Conclusion

12.1. By the year 2034-35, the power demand of Assam would be increasing significantly. Total expected demand of Assam by the year 2034-35 is around 6363 MW. This anticipated increase in demand includes the expected industrial load coming progressively from 2024-25 to 2034-35.

12.2. State has planned 166.5 MW of hydro plant, 3200 MW of Thermal plant , 4070 MW of Solar plant and 2920 MW of Pumped Storage Plant by 2034-35.

12.3. In order to meet this growing load demand, evacuation of power from Thermal, Solar, PSP & Hydro generation and for drawal of power from ISTS in accordance with GNA requirement of Assam by 2034-35, the intra-state as well as inter-state transmission system of Assam need to be strengthened. It has been observed that the transmission system infrastructure in Assam 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 Para-10 above in this report.

12.6. It is recommended that Assam 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 Assam 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 15280 MVA transformation capacity addition/augmentation and 4720 ckm of new transmission lines/reconductoring of old lines at an estimated cost of ₹ 14202.05 Crs. would be required for implementing the intra-state transmission proposals for meeting the electricity demand of the state by the year 2034-35.

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Annexure-I

Operational Feedback from Assam SLDC

S. No.	Element	Constraint/Observation
1	2x160 MVA, 220/132 kV ICT's at BTPS S/s, AEGCL	The load in the 2x160 MVA ICT's have crossed 300 MW during summer peak i.e. the ICT are loaded upto 94% of their capacity thereby violating N-1 criteria. If any one of the transformer trips, the other transformer will also trip on overload. This will lead to blackout of a large area of Lower Assam encompassing Salakati, Dhaligaon, APM, Barpeta, portion of Barnagar, Kokrajhar, Bilasipara, Gauripur & Gossaigaon. Moreover, increase in load of the above-mentioned areas beyond 320 MW will also lead to load shedding. As such, capacity enhancement of 220/132kV Transformers at BTPS GSS is required.
2	Salakati - Kokrajhar (ckt-2) 132 kV line	The combined loading of Salakati – Kokrajhar 132kV D/c lines have crossed 110 MW. In the event of Tripping of one circuit, the other circuit will overload and result in blackout at Kokrajhar, Bilasipara and Gauripur sections. Therefore, ampacity enhancement of the 2nd ckt of Salakati - Kokrajhar 132 kV may be required.
3	Dhaligaon – Barpeta 132 kV line , Barpeta – Nalbari 132 kV line and Nalbari – Rangia 132 kV line	The transmission lines in this section are very old and are running on overload condition. The combined loading of Barpeta, Nalbari & Nalbari traction goes above 120 MW, which cannot be fed from either Dhaligaon or Rangia alone. The Nalbari – Barpeta 132 kV line needs to be kept open due to inability of the Dhaligaon – Barpeta 132 kV section to draw more than 40 MW. Additionally, whenever there is a shutdown or tripping of any of the lines during summer peak, load shedding needs to be imposed to avoid overloading of the other line. In view of the above, ampacity enhancement of the entire section of the Dhaligaon – Barpeta – Nalbari – Ragia 132 kV line is required.
4	Dhaligaon – Barnagar 132 kV line & Barnagar – Nathkuchi 132 kV line	The maximum loading of Barnagar GSS is around 85 MW. As the full load cannot be fed from Dhaligaon GSS alone due to lower ampacity of the 132kV Dhaligaon – Barnagar Line, it is currently being fed from both Rangia GSS and Dhaligaon GSS by splitting the bus and associated transformers. In case of Shutdown or Tripping of Dhaligaon – Barnagar 132 kV line during summer peak, load shedding needs to be imposed due to inability of Rangia – Nathkuchi – Barnagar 132 kV line to feed the full load of Barnagar GSS due to overloading. Hence, capacity augmentation of the entire section of the 132kV Dhaligaon – Barnagar – Nathkuchi section is suggested.
5	220/132 kV ICT's at 220 kV Rangia S/s	One transformer at 220/132kV Rangia GSS is being augmented to 200 MVA, the present 100 MVA may also be augmented to higher capacity.
6	Sishugram – Amingaon 132 kV line and Sishugram – Kamakhya 132 kV line	The total load of Sishugram GSS is above 80MW and is presently being fed from both Kamakhya GSS and Amingaon GSS by splitting the bus and associated transformers. Therefore, to feed the entire load of Sishugram either from Kamakhya or Amingaon GSS, capacity enhancement of the Kamakhya – Sishugram and Sishugram – Amingaon 132 kV line is required.

7	132 kV Bus at Kahilipara S/s	The load of 132 kV Kahilipara S/s has increased to 140 MW, thereby leading to overload of the 132 kV bus beyond 190 MW which has exceeded the thermal capacity of the bus. Load shedding is required at times to control the bus loading. Also, manual opening of Kahilipara - Narengi 132 kV line in real time is resorted to which in turn leads to low voltage issues at Narengi S/s and IOCL, Ghy. Therefore, anticipating further load growth in the capital area of Assam it is imperative that the augmentation of 132 kV bus at Kahilipara S/s is to be taken up on priority.
8	Terminal Equipment enhancement of Sarusajai - Kahilipara (2, 3, 4) 132 kV line and Sarusajai - Kamakhya 132 kV line	Although the HTLS reconductoring of the transmission lines have been undertaken, the terminal equipments have not been upgraded to equivalent capacity. Hence, for full utilization of the capacity of HTLS conductors, the terminal equipments at both the ends are to be upgraded to equivalent capacity.
9	Balipara - Sonabil 220 kV D/c line	The maximum loading of the transmission lines has crossed 440 MW and are not N-1 compliant. This has not only restricted the TTC/ATC of the state but is also posing threat to the reliability of Sonabil – Depota – Rowta sections. Ampacity enhancement of Balipara - Sonabil 220 kV D/c line is required urgently along with early construction of 132 kV Missamari S/s and it's with associated transmission lines is expected to relieve this congestion.
10	Samaguri - Misa 220 kV D/c line	The Transmission Lines are not N-1 compliant and affects the reliability of capital area of Assam. Early commissioning of 400/220 kV Sonapur S/s is expected to relieve this constraint.
11	Sonabil – Depota 132 kV line, Sonabil – Ghoramari 132 kV line and Ghoramari – Depota 132 kV line	Due to poor condition of the transmission lines, the loading is limited to 65MW only. As such, during summer peak load shedding at Depota, Rowta, Dhekiajulee, Ghoramari, Sipajhar and Tangla are imposed when the combined loading of 132kV Sonabil - Depota, and Sonabil - Ghoramari 132 kV line increases beyond 130 MW. Ampacity enhancement of the above lines is to be done with higher ampacity conductors.
12	Hailakandi – Dullavcherra 132 kV line, Panchgram – Hailakandi 132 kV line and Srikona – Pailapool 132 kV line	The transmission lines are over 50 years old and are unable to carry the rated current. The power flow in the lines is restricted to around 40MW only leading to load restriction in the area. The above lines are to be reconductored with higher ampacity conductors.
13	Tinsukia – Dibrugarh 132 kV line and Moran – LTPS 132 kV line	The transmission lines are more than 45 years old and can carry only up to 50 MW. In the event of outage of LTPS-Moran 132 kV line, the said line is unable to cater the combined load of Dibrugarh, Behiating & Moran. In the event of outage of Tinsukia-Dibrugarh 132 kV line and LTPS-Moran 132 kV line is unable to carry the load of Moran, Behiating & Dibrugarh. The transmission lines need to be upgraded to higher capacity.
14	Tinsukia – Rupai 132 kV line, Tinsukia – Ledo 132 kV line and Rupai – Ledo 132 kV line	The transmission lines are more than 45 years old and can carry only up to 50 MW. Many instances of grid disturbances have been reported in the past few months due to conductor snapping of the lines. Moreover, whenever AP draws more than 20 MW during summer, load shedding is to be imposed in Rupai and Ledo section. As such, ampacity enhancement of the transmission lines is utmost necessary to ensure reliable supply to Assam and AP via Chapakhowa – Roing link.

15	Samaguri - Mariani (ckt 1) 220 kV line	Samaguri - Mariani 220 kV ckt-2 is the only link connecting Upper Assam with the Central Assam Grid. The Generation in Upper Assam is higher than Demand during winter season. As such during that period, in the event of outage of any links, generation curtailment of APGCL & NEEPCO generators needs to be done due to unavailability of sufficient number of evacuation paths. Revival of Samaguri - Mariani 220 kV ckt-1 is of utmost importance for generation evacuation in the Upper Assam region and reliability of Upper Assam Grid.
16	2nd ckt Stringing of Namrup – Mariani 220 kV line	Availability of the second circuit of Namrup - Mariani transmission line will enhance the reliability of Upper Assam.
17	Mariani - Golaghat - Sarupathar – Bokajan - Dimapur 132 kV lines	The transmission lines are very old and cannot be loaded beyond 60 MW. In the event of shutdown of Mariani-Golaghat or Bokajan-Dimapur 132 kV section, load restriction needs to be imposed to control the loading of the circuit. The above lines are to be reconductored with higher ampacity conductors.

Annexure-II

Operational feedback from NERLDC/NLDC

a) ICT constraints in Assam system

Sl. No	ICT	Season/ Antecedent Conditions
1.	2x160 MVA ICTs at 220/132 kV BTPS	ICTs are not N-1 compliant. Due to High demand in Bongaigaon, Kokrajhar, Gauripur, Gosssaigaon, Bilasipara, Dhaligaon, Rangia, and Capital areas areas majors load are fed radially and thus tripping of any 132 kV lines lead to grid diturbance in Assam system.
2.	2x160 MVA ICTs at 220/132 kV, Sonabil	ICTs are not N-1 compliant. Due to High demand in Sonabil (Tezpur) area, majors load are fed radially
3.	2x100 MVA ICTs at 220/132 kV Rangia	ICTs are not N-1 compliant. Due to High demand in Bongaigaon, Kokrajhar, Gauripur, Gosssaigaon, Bilasipara, Dhaligaon, Rangia, and Capital areas areas majors load are fed radially and thus tripping of any 132 kV lines lead to grid diturbance in Assam system.

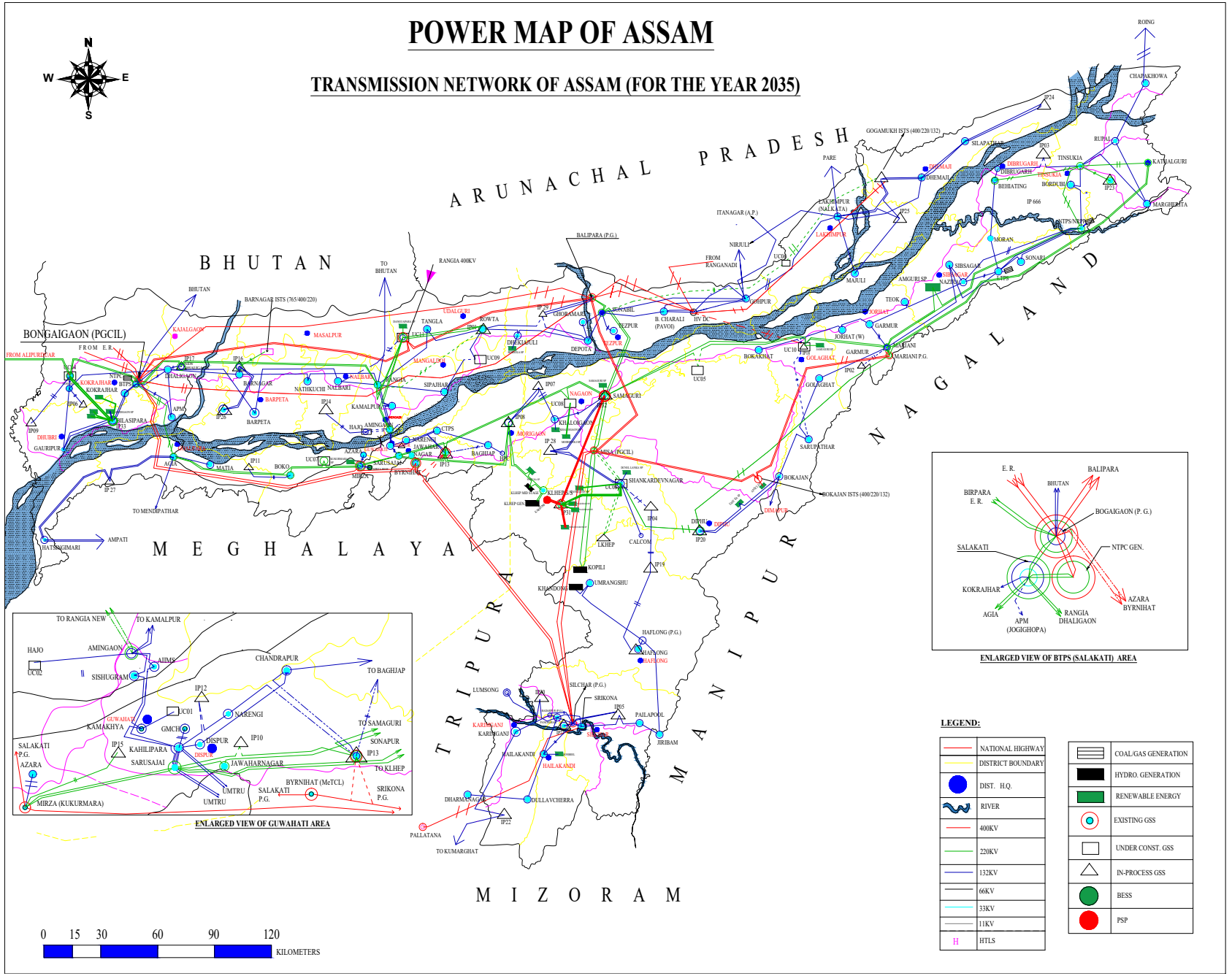
b) Constraint in Transmission line in Assam system

Sl. No	Corridor	Season/ Antecedent Conditions
1.	Tinsukia-Ledo-Rupai - Chapakhowa-Roing-Pasighat-Along-Basar-Daporijo-Ziro-Panyor HEP 132 kV link	132 kV Tinsukia-Ledo-Rupai link are having very old conductor, the links is not able to sustain more then 60 MW load for longer period, thus grid disturbance occured on tripping of link from the farthest end i.e. 132 kV Tinsukia-Ledo or 132 kV Tinsukia -Rupai or 132 kV Panyor HEP-Ziro line
2.	Sarusajai-Kahelipara 132 kV tripple circuit	Due to High demand in capital area during peak hours, major load are fed radially and may lead to grid disturbance in capital area of Assam.

Annexure-III

POWER MAP OF ASSAM

TRANSMISSION NETWORK OF ASSAM (FOR THE YEAR 2035)



Annexure-III

EXISTING SUB-STATION:

SL. NO.	NAME OF THE SUB-STATION	VOLTAGE LEVEL	TRANSFORMER DETAILS	CAPACITY IN MVA
A01	KUKURMARA (MIRZA) GSS	400/220KV	2X315MVA	630
		220/132KV	2X50MVA	100
		132/33KV	2X50MVA	100
B01	SONABIL GSS	220/132KV	2X100MVA	200
B02	TINSUKIA GSS	220/132KV	2X100MVA	200
		132/33KV	2X40MVA	80
B03	NAMRUP GSS (NTPS)	220/132KV	1X50MVA + 1X100MVA	150
		132/66KV	2X20MVA	40
		132/33KV	1X31.5MVA	31.5
B04	MARANI GSS	220/132KV	2X100MVA	200
		132/33KV	2X25MVA	50
B05	SAMAGURI GSS	220/132KV	2X160MVA	320
		132/33KV	2X25MVA + 2X50MVA	150
B06	SARUSAJAI GSS	220/132KV	2X100MVA + 2X200MVA	600
		132/33KV	2X31.5MVA + 1X50MVA	113
B07	BOKO GSS	220/132KV	1X100MVA + 1X50MVA	150
		132/33KV	2X40MVA	80
B08	AGIA GSS	220/132KV	2X100MVA + 1X160MVA	360
		132/33KV	1X16MVA + 1X40MVA	56
B09	BTPS (SALAKATI) GSS	220/132KV	2X160MVA	320
		132/33KV	1X16MVA	16
B10	SONAPUR (GIS) GSS	220/132KV	2X100MVA	200
		132/33KV	2X25MVA	50
B11	JWAHARNAGAR (KHANAPARA) (GIS) GSS	220/33KV	2X50MVA	100
B12	RANGIA-2 GSS	220/132KV	2X100MVA	200
B13	AMINGAON (GIS) GSS	220/132KV	2X160MVA	320
B14	BIHIATING-2 GSS	220/132KV	2X100MVA	200
C01	NAZIRA GSS	132/33KV	1X25MVA + 1X40MVA	65
		66/33KV	2X16MVA	NOT IN OPERATION
C02	BOKAJAN GSS	132/33KV	2X25MVA	32
C03	PAILAPOOL GSS	132/33KV	1X10MVA + 2X25MVA	60
C04	SRIKONA GSS	132/33KV	1X40MVA + 1X50MVA	90
C05	PANCHGRAM GSS	132/33KV	(1X50+1X25+1X16)MVA	91
C06	HAILAKANDI GSS	132/33KV	1X16MVA + 1X50MVA	66
C07	DULLAVCHERRA GSS	132/33KV	1X25MVA + 1X10MVA	35
C08	HAFLONG GSS	132/33KV	1X16MVA + 1X10MVA	26
C09	UMRANGSU GSS	132/33KV	2X25MVA	50
C10	MARGHERITA GSS	132/33KV	2X25MVA	50
C11	BORDUBI GSS	132/33KV	2X25MVA	50
C12	RUPAI GSS	132/33KV	2X25MVA	50
C13	DIBRUGARH GSS	132/33KV	1X31.5MVA + 1X50MVA	81.5
C14	BEHATING GSS	132/33KV	1X40MVA + 1X25MVA	65
C15	MORAN GSS	132/33KV	1X50MVA + 1X31.5MVA	81.5
C16	LAKWA (LTPS) GSS	132/33KV	1X7.5MVA + 1X16MVA	23.5
C17	BOKAKHAT GSS	132/33KV	2X16MVA	32
C18	SIBSAGAR (BETBARI) GSS	132/33KV	2X16MVA	32
C19	SONARI GSS	132/33KV	1X16MVA + 1X25MVA	41
C20	MAJULI GSS	132/33KV	3X5.5MVA + 1X16MVA	32.5
C21	JORHAT (GARMUR) GSS	132/33KV	3X25MVA	75
C22	GOLAGHAT GSS	132/33KV	2X50MVA	100
C23	DHEMAJI GSS	132/33KV	1X16MVA + 1X50MVA	66
C24	N. LAKHIMPUR (NALKATA) GSS	132/33KV	1X25MVA + 1X50MVA	75
C25	BISWANATH CHARALI (PAVOI) GSS	132/33KV	1X40MVA + 1X25MVA	65
C26	GOHPUR GSS	132/33KV	2X25MVA	50
C27	DEPOTA GSS	132/33KV	2X50MVA	100
C28	ROWTA GSS	132/33KV	2X50MVA	100
C29	SIPAJHAR GSS	132/33KV	1X40MVA + 1X50MVA	90
C30	DIPHU GSS	132/33KV	2X16MVA	32
C31	SANKARDEV NAGAR (LANKA) GSS	132/33KV	2X40MVA	80
C32	BAGHJAP GSS	132/33KV	2X25MVA	50
C33	CHANDRAPUR (CTPS) GSS	132/33KV	1X31.5MVA + 1X25MVA	56.5
C34	NARENGI GSS	132/33KV	1X50MVA + 1X40MVA	90
C35	KAHILIPARA GSS	132/33KV	(2X40+2X50+1X31.5)MVA	211.5
C36	SISHUGRAM GSS	132/33KV	(1X31.5+1X40+1X50)MVA	121.5
C37	JOYMA (GOSSAIGAON) GSS	132/33KV	1X16MVA + 1X25MVA	41
C38	GAURIPUR GSS	132/33KV	2X50MVA	100
C39	BILASIPARA GSS	132/33KV	2X16MVA	32
C40	APM (JOGIGHOPA) GSS	132/33KV	1X16MVA + 1X25MVA	41
C41	DHALIGAON GSS	132/33KV	2X50MVA	100
C42	BARNAGAR GSS	132/33KV	2X50MVA + 1X25MVA	125
C43	NALBARI GSS	132/33KV	2X50MVA	100
C44	RANGIA-1 GSS	132/33KV	1X25MVA + 1X50MVA	75
C45	KOKRAJHAR GSS	132/33KV	2X25MVA	50
C46	MATIA GSS	132/33KV	2X25MVA	50
C47	JORHAT WEST (PANICHOKWA)GSS	132/33KV	1X40MVA + 1X25MVA	65

EXISTING SUB-STATION:

SL. NO.	NAME OF THE SUB-STATION	VOLTAGE LEVEL	TRANSFORMER DETAILS	CAPACITY IN MVA
C48	KHALOIGAON (NAGAON) GSS	132/33KV	2X50MVA	100
C49	KAMALPUR GSS	132/33KV	2X40MVA	80
C50	GHORAMARI (TEZPUR AIDC) GSS	132/33KV	2X31.5MVA	63
C51	KAMAKHYA (GIS) GSS	132/33KV	2X40MVA	80
C52	DHEKIAJULI GSS	132/33KV	2X25MVA	50
C53	CAPITAL (DISPUR) GSS	132/11KV	2X16MVA	32
C54	AZARA GSS	132/33KV	1X40MVA + 1X50MVA	90
C55	KARIMGANJ GSS	132/33KV	2X25MVA	50
C56	BARPETA GSS	132/33KV	2X25MVA	50
C57	HATSINGIMARI GSS	132/33KV	1X25MVA + 1X16MVA	41
C58	NATHKUCHI GSS	132/33KV	2X50MVA	100
C59	AIIMS GSS	132/33KV	1X25MVA	25
C60	GMCH (GIS) GSS	132/33KV	2X50MVA	100
C61	SARUPATHAR GSS	132/33KV	2X31.5MVA	63
C62	CHAPAKHOWA GSS	132/33KV	2X31.5MVA	63
C63	TANGLA GSS	132/33KV	2X31.5MVA	63
C64	TEZPUR GSS	132/33KV	2X50MVA	100
C65	TEOK GSS	132/33KV	2X31.5MVA	63
C66	SILAPATHAR GSS	132/33KV	2X31.5MVA	63
			TOTAL =	9388 MVA

UNDER CONSTRUCTION SUB-STATION:

SL. NO.	NAME OF THE SUB-STATION	VOLTAGE LEVEL	TRANSFORMER DETAILS	CAPACITY IN MVA	SCHEME
UC01	PALTANBAZAR (GIS) GSS	132/33KV	2X50MVA	100	NERPSIP
UC02	HAJO GSS	132/33KV	2X31.5MVA	63	
UC03	SANKARDEV NAGAR (GIS) GSS	220/132KV	2X160MVA	320	AIIB PHASE-I
UC04	AGAMONI (GOSSAIGAON NEW)(GIS)GSS	220/132KV	2X160MVA	320	
UC05	JAKHALABANDHA (GIS) GSS	220/33KV	2X100MVA	200	
UC06	BIHPURIA (GIS) GSS	220/33KV	2X100MVA	200	
UC07	CHAYGAON (GIS) GSS	220/33KV	2X100MVA	200	
UC08	NAGAON-2 GSS	220/33KV	2X100MVA	200	
UC09	BUHRIGAON (GIS) GSS	132/33KV	2X50MVA	100	
UC10	KHUMTAI (GIS) GSS	220/132KV	2X160MVA	320	
		132/33KV	2X50MVA	100	
UC11	RANGIA (GIS) GSS	400/220KV	2X500MVA	1000	
		220/132KV	2X160MVA	320	
		132/33KV	2X50MVA	100	
			TOTAL =	3543 MVA	

IN PROCESS SUB-STATION:

SL. NO.	NAME OF THE SUB-STATION	VOLTAGE LEVEL	TRANSFORMER DETAILS	CAPACITY IN MVA	SCHEME
IP01	ROWTA (GIS) GSS	220/132KV	2X160MVA	320	AIIB PHASE-II
IP02	TITABOR (GIS) GSS	132/33KV	2X50MVA	100	
IP03	CHABUA GSS	132/33KV	2X50MVA	100	
IP04	LUMDING GSS	132/33KV	2X50MVA	100	
IP05	UDARBAND (GIS) GSS	132/33KV	2X50MVA	100	
IP06	SERFANGURI GSS	132/33KV	2X50MVA	100	
IP07	DHING (GIS) GSS	132/33KV	2X50MVA	100	
IP08	MORIGAON GSS	220/132KV	2X160MVA	320	
		132/33KV	2X80MVA	160	
IP09	AGAMONI (GIS) GSS	132/33KV	2X50MVA	100	
IP10	PANJABARI (GIS) GSS	220/33KV	2X100MVA	200	
IP11	DHUPDHARA GSS	132/33KV	2X50MVA	100	
IP12	ZOO ROAD (GIS) GSS	132/33KV	2X50MVA	100	
IP13	SONAPUR (GIS) GSS	400/220KV	2X500MVA	1000	
IP14	AMAYAPUR GSS	132/33KV	2X50MVA	100	
IP15	BORAGAON (GIS) GSS	220/33KV	2X100MVA	200	
IP16	BARNAGAR (GIS) GSS	220/132KV	2X200MVA	400	NA
		132/33KV	2X80MVA	160	
IP17	NEW DHALIGAON (GIS) GSS	220/132KV	2X200MVA	400	
		132/33KV	2X80MVA	160	
IP18	KHUMTAI (GIS) GSS	400/220KV	3X500MVA	1500	
IP19	LOWER HAFLONG GSS	132/33KV	2X50MVA	100	
IP20	DIPHU GSS	220/132KV	2X160MVA	320	
IP21	SILCOORIE GSS	132/33KV	2X80MVA	160	
IP22	ISHABHEEL GSS	132/33KV	2X80MVA	160	
IP23	DIGBOI GSS	220/132KV	2X160MVA	320	
		132/33KV	2X80MVA	160	
IP24	JONAI GSS	132/33KV	2X80MVA	160	
IP25	GHILAMORA GSS	132/33KV	2X80MVA	160	
IP26	BARTARI GSS	132/33KV	2X80MVA	160	
IP27	TIKRIKILLA GSS	132/33KV	2X80MVA	160	
IP28	MODERTOLI GSS	132/33KV	2X80MVA	160	
IP29	MISSAMARI GSS	132/33KV	2X50MVA	100	
IP30	KALAIN GSS	132/33KV	2X80MVA	160	
IP31	MAKOIRAM GSS	400/220KV	2X500MVA	1000	
IP32	SAMAGURI GSS	400/220KV	4X500MVA	2000	
IP33	BILASIPARA GSS	220/132KV	3X200MVA	600	
			TOTAL =	11700 MVA	