सत्यमेव जयते

भारत सरकार **Government of India**

विद्युत मंत्रालय **Ministry of Power**

उत्तर पूर्वी क्षेत्रीय विद्युत समिति

North Eastern Regional Power Committee

शिलांग **Shillong**

वार्षिक रिपोर्ट

ANNUAL REPORT 2022-23

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उत्तर पूर्वी क्षेत्रीय विद्युत समिति के सदस्य

MEMBERS OF

NORTH EASTERN REGIONAL POWER COMMITTEE

Shri Neiphiu Rio,
Hon'ble Chief Minister &
Minster of Power, Govt. of Nagaland
(1st Apr 2022-1st July 2022)

Shri Jishnu Dev Varma
Hon'ble Dy.Chief Minister &
Minster of Power, Govt. of Tripura
(1st July 2022-30th March 2023)

Chairman, North Eastern Regional Power Committee

Shri Chowna Mein Hon'ble Dy. CM & Minister of Power, Govt. of Arunachal Pradesh

Smt. Nandita Gorlosa Hon'ble Minister of Power, Govt. of Assam

Shri Th. Biswajit Singh, Hon'ble Minister of Power, Govt. of Manipur

Shri R. Lalzirliana, Hon'ble Minster of Power, Govt. of Mizoram

1.

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केन्द्रीय विद्युत प्राधिकरण **Shri B. K. Arya, IES** Member (GO&D), Central Electricity Authority	**श्री के. तायेंग, आईएएस** आयुक्त (विद्युत), अरुणाचल प्रदेश सरकार **Shri K. Tayeng, IAS** Commissioner & Secretray (Power), Govt. of Ar. Pradesh	**श्री निरज वर्मा , आईएएस** प्रधान सचिव (विद्युत), असम सरकार **Shri Niraj Verma, IAS** Principal Secretary (Power), Govt. of Assam

Shri Sailesh Kr. Chourasia, IAS Secretary (Power), Govt. of Manipur	**Dr. Shakil P. Ahammed, IAS** Principal Secretary (Power), Govt. of Meghalaya	**Shri K. D. Vizo, ITS** Principal Secretary (Power), Govt. of Nagaland

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N.H.P.C.

श्रीमती सीमा गुप्ता,
निदेशक (ऑपरेशन), पावरग्रिड
Smt. Seema Gupta
Director (Operation),
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1.

अध्याय / CHAPTER 1

उत्तर पूर्वी क्षेत्रीय विद्युत समिति का परिचय, संविधान, कार्य और संगठनात्मक स्थापना

Introduction, Constitution, Functions and Organizational setup of North-Eastern Regional Power Committee

1.1 Introduction:

During the early sixties, a decision was taken by the Government of India to plan the Power System in the country on regional basis. The technological considerations strongly supported the decision to promote a coordinated operation of the entire generation and transmission system of the region through inter-connection of State Grids into Regional Grid for various benefits in terms of:

1. Optimum utilization of energy resources
2. Improved stability of the system,
3. Improved reliability,
4. Improved availability
5. Improved operation both from technical and economical considerations,
6. Improved quality of supply,
7. Improved grid discipline,
8. Improved service to an electricity-deficit area from an electricity-surplus area.
9. Coordinated planning for both maintenance & future growth of the system
10. Sharing of experience of large pool of personnel through regular interaction.

Therefore, Government of India, with the concurrence of concerned State Governments, established five **Regional Electricity Boards (REBs)** viz., Eastern, North-Eastern, Northern, Southern and Western REBs with their Headquarters at Kolkata, Shillong, Delhi, Bangalore and Mumbai respectively, in the year 1964 through an executive resolution. These REBs with representatives of the States as members were responsible for the promotion of the concept of regional operation.

Later on, with the advent of the Central Sector Generating Companies and Central Transmission Company during the seventies alongside the State Sector Generating Companies, the representatives of these PSUs were also included as members in the REBs. The five REBs thus cover the entire Power Sector of the country. The Chairman of an SEB functions as Chairman of an REB by rotation for a period of one year, except for the North-Eastern Region where Power Ministers of the Constituent States are members of the Board and hence functions as Chairman of NEREB by rotation for a period of one year.

Thereafter, Government of India enacted the Electricity Act, 2003 through Gazette notification no. 23/24/99-R&R (vol XV), dated 10th June, 2003**. The Electricity Act 2003** envisages establishment of

Regional Power Committee(s) (RPCs) by a resolution of the Central Government for a specified region for facilitating the integrated operation of the power system in that region. Further, the act provides that the Regional Power Committee may, from time to time, agree on matters concerning the smooth operation of the integrated grid and economy and efficiency in the operation of the power system of that region. In pursuance of the aforesaid provision Government of India vide their resolution dated 25th May, 2005 established the North Eastern Regional Power Committee.

1.2 Constitution of NERPC:

The various power sector agencies in the North-Eastern Region e.g. AEGCL, APGCL, APDCL, MePTCL, MePGCL, MePDCL, MSPCL, MSPDCL, TSECL, TPGL, Power Departments of the other three State Governments i.e. Arunachal Pradesh, Mizoram, Nagaland and Central Sector Power Utilities, namely North Eastern Electric Power Corporation Ltd.(NEEPCO), National Hydroelectric Power Corporation(NHPC), National Thermal Power Corporation (NTPC), ONGC Tripura Power Corporation (OTPC), Power Grid Corporation of India Ltd. (PGCIL), North Eastern Regional Load Dispatch Centre (NERLDC) and representatives of Power Trading Cos. and IPPs are members of NERPC. In the recent resolution issued by MoP dated 03.12.2021, Central Transmission Utility (CTU) and a representative of a Pvt Transmission Licensees have also been included as member of the NERPC.
Chairmanship of NERPC is held by Hon'ble Ministers of Power of the constituent States for a period of one year by rotation in alphabetical order of the name of the State of the Region. The Chairman of NERPC for 2022-23 is Shri Neiphiu Rio, Hon'ble Chief Minister & I/C Power, Govt. of Nagaland. He held the post till July 2022. From 1st July 2022 onwards, Shri Jishnu Dev Varma, Hon'ble Deputy Chief Minister & Minister of Power, Govt. of Tripura held the post of Chairman NERPC for FY 2022-23.Members of the NERPC as on 31.03.2023 are given at **Annexure-I.**

The Secretariat of NERPC is located at Shillong and is headed by Member Secretary, who is appointed by Central Electricity Authority, Ministry of Power, Govt. of India and he is an officer of Central Power Engineering (Group-A) Services. Member Secretary is the administrative and technical head of NERPC Secretariat with the powers of the Head of Department. As on 31.03.2023 Shri B. Lyngkhoi is Member Secretary of NERPC. The other Personnel of the Secretariat as on 31.03.2023 are given in **Annexure-II** whereas **Annexure-III** shows posts sanctioned and filled as on 31.03.2023.

1.3 Functions of NERPC:

Different functions performed by NERPC can be broadly categorized as:

- Commercial
- Operational
- Protection
- Telemetry and
- Monitoring and Data Management

1.3.1 Commercial:

1. Preparation of Agenda notes and Minutes of Commercial Sub-committee meetings and follow up action.
2. Issue of Weekly DSM, RRAS, AGC and Reactive Energy Accounts etc

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3. Preparation and Issue of Monthly Regional Energy Account, SCED Account etc
4. Preparation and issue of monthly Regional Transmission Account (RTA) and Regional Transmission Deviation Account (RTDA)
5. Preparation of Monthly progress Reports
6. Works relating to the commercial issues of intra-regional and inter-regional power transfer.
7. Settling of the issues arising out of revision and fixation of tariff for the Central Sector power.
8. Coordinating the Task Forces and Committees on Techno-commercial problems of the Regional Power System.

1.3.2 Operational:

1. Operational Planning.
2. Formulation of general policy for safe and economic operation of the Regional Grid by optimizing resource utilization.
3. Preparation of agenda notes and minutes of OCC meetings and follow up actions.
4. Coordination with RLDC regarding day-to-day Grid Operation.
5. Working as Regional Electric Power System Information Center to provide information to CEA.
1. Coordinating the task forces of operational issues that arose in day-to-day operation of the grid.
2. Preparation of agenda notes, Minutes and follow-up action on the decisions of TCC/RPC meetings.
3. Carrying out system studies and analysis of Grid disturbance.
4. Study and finalization of protective scheme for Transmission line, equipment at substations and generating station for the Region.
5. Study and finalization of Black Start Procedure, Operating Procedure, Islanding Schemes for the Region
6. Transmission Availability Certification of CTU

1.3.3 Protection:

1. Analysis of system disturbances in the region.
2. Review of protective relaying schemes.
3. Relay co-ordination schemes.
4. Islanding schemes.
5. Automatic under frequency load shedding schemes.
6. Review of the implementation of recommendations made by the Inquiry Committee of the grid disturbance in the region concerning the above matters.
7. Studies for assessment of the quantum of capacitors required in the region taking into account the expected additions in the generation and transmission systems and the low voltage conditions in the system.
8. Studies for review of reactive compensation requirement.
9. Operational load flow studies, as and when required, for peak conditions off peak conditions etc.
10. Short-circuit studies as and when required.
11. Transient stability studies for major events like grid disturbances or other issues as and when necessary.
12. Identification of requirement of reactors as and when required.

1.

1.3.4 Monitoring and Data Management:

1. To prepare annual reports, Load Generaion Balance Report (LGBR) etc.
2. To collect data, analysis thereof & documentation.
3. To monitor progress of construction of Generating units and Transmission lines in the region.
4. Monitoring the performance of Hydro & Thermal power stations of North-Eastern Region, daily, monthly and yearly basis based on their generation, PLF, auxiliary consumption and availability, etc.
5. Investigating the reasons for low performance of Thermal power stations and Performance analysis of thermal units in the region.
6. To associate with power survey works as and when necessary;
7. To prepare coordinated maintenance schedule for transmission system elements and generating units of the region with the help of operation coordinating committee;
8. Load forecasting.

Further, as per **Para (6) of the MoP Resolution dated 25.05.2005**; NERPC shall discharge the following functions:

I. To undertake Regional Level operation analysis for improving grid performance.
II. To facilitate inter-state/inter-regional transfer of power.
III. To facilitate all functions of planning relating to inter-state/intra-state transmission system with CTU/STU.
V. To coordinate planning of maintenance of Generating Machines of various Generating Companies supplying electricity to the Region on annual basis and also to undertake review of maintenance programme on monthly basis. To undertake operational planning studies including protection studies for stable operation of the grid.
VI. To undertake planning of outage of Transmission System on monthly basis.
VII. To undertake planning for maintaining proper voltages through review of Reactive Compensation requirement through System Study Committee and monitoring of installed capacitors.
VIII. To evolve consensus on all issues relating to economy and efficiency in the operation of power system in the region.

1.3.5 Telemetry:

1. Upgradation and implementation of SCADA system for SLDC's of NER.
2. Monitoring telemetry status of various grid elements of NER and working for the improvement of the same.
3. Monitoring of existing communication network.
4. Monitoring of various OPGW project in NER.
5. Planning for upgradation and strengthening of communication network.
6. Exploring and implementing various other communication mode such as VSAT for strengthening communication system in NER.

1.

अध्याय / CHAPTER – 2

क्षेत्रीय ग्रिड प्रदर्शन
Regional Grid Performance

2.1 Installed Capacity:

Total installed capacity of the power generating stations in North Eastern Region (NER) connected to the Regional Grid is 5018 MW as on 31st March, 2023 out of which 2595 MW, 2197 MW, and 226 MW are contributed by thermal, hydel, and solar stations respectively. Apart from this, there is around 130 MW of isolated capacity in the region consisting of hydel 74 (MW), GT/ Diesel 52 (MW) and 4 (MW) Solar and the rest is covered by solar and biomass. So, total installed capacity of the region as on 31st March, 2023 is 5147.75 MW (including isolated generation in all states).

INSTALLED GENERATION CAPACITY OF NER (AS ON 31.03.23)

Summary of Grid Connected Installed Capacity (as on 31.03.2023)

Name of State/ Utility	Type				Total
	Hydro	Thermal	Gas	Solar	
State Sector					
DoP (Arunachal Pradesh)	24	0	0	0	24
APGCL (Assam)	118	0	331	199	648
MSPCL (Manipur)	0	0	0	0	0
MePGCL (Meghalaya)	356	91	0	0	447
P&E Dept. (Mizoram)	90	0	0	22	112
DoP (Nagaland)	24	0	0	0	24
TPGL (Tripura)	15	0	271	5	291
Total State Sector	627	91	602	226	1546
Central Sector					
NHPC	105	0	0	0	105
NEEPCO (excl. Monarchak & Tuirial))	1465	0	426	0	1891
OTPC	0	0	727	0	727
NTPC	0	750	0	0	750
Total Central Sector	1570	750	1153	0	3473
Total Grid Connected Generation Capacity	2197	841	1754	226	5018

Isolated Installed Capacity

1	Arunachal Pradesh	Micro Hydel	69.71
		Diesel	16
		Total	85.71
2	Manipur	Diesel	36
		Micro Hydel	1.05
		Solar	3.11
		Wind	0.14
		Biomass	0.60
		Total	40.9
3	Nagaland	Micro Hydel	3.14
		Total	3.14
		Total Isolated Capacity	129.75

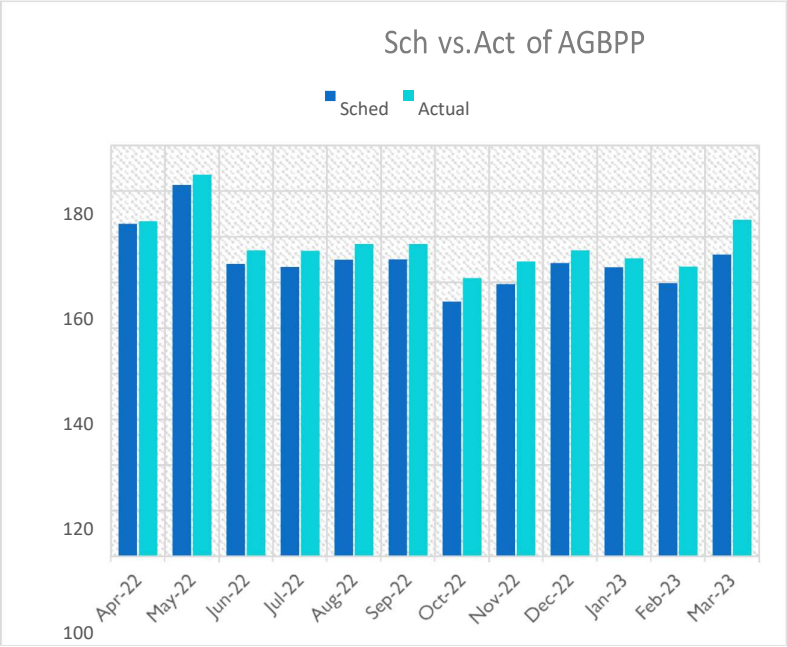
2.2 Generation:

Energy generation by the constituents of NER during last 2022-23 is given below:

SCHEDULED VS. ACTUAL INJECTION OF NER ISGS (SEM DATA)

AGBPP:

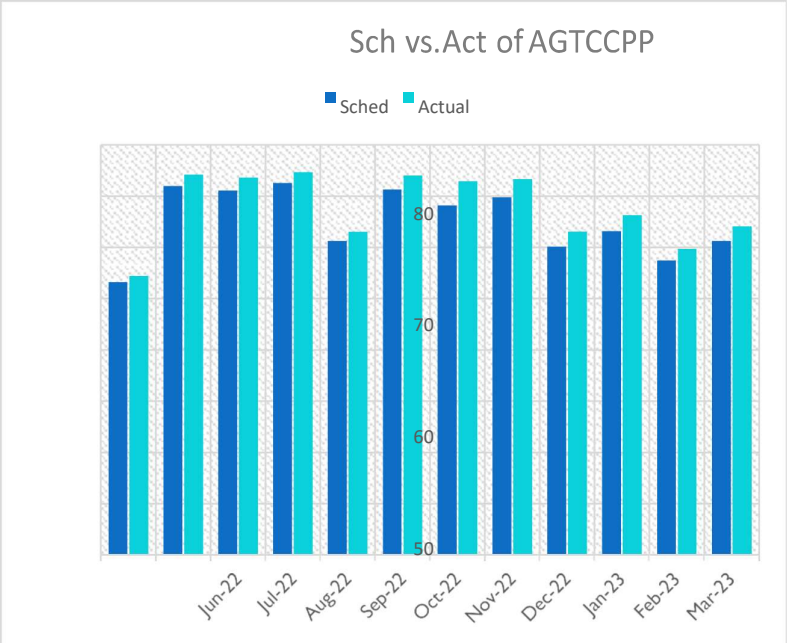
Month	(MU)	
	Sched	Actual
Apr-22	145.67	146.89
May-22	162.63	167.15
Jun-22	128.11	133.96
Jul-22	126.82	133.91
Aug-22	129.89	136.82
Sep-22	130.05	136.83
Oct-22	111.57	121.93
Nov-22	119.25	129.13
Dec-22	128.45	134.03
Jan-23	126.69	130.62
Feb-23	119.67	126.85
Mar-23	132.13	147.56
2022-23	***1560.92***	***1645.69***
2021-22	***1714.10***	***1747.78***



1.

AGTCCPP:

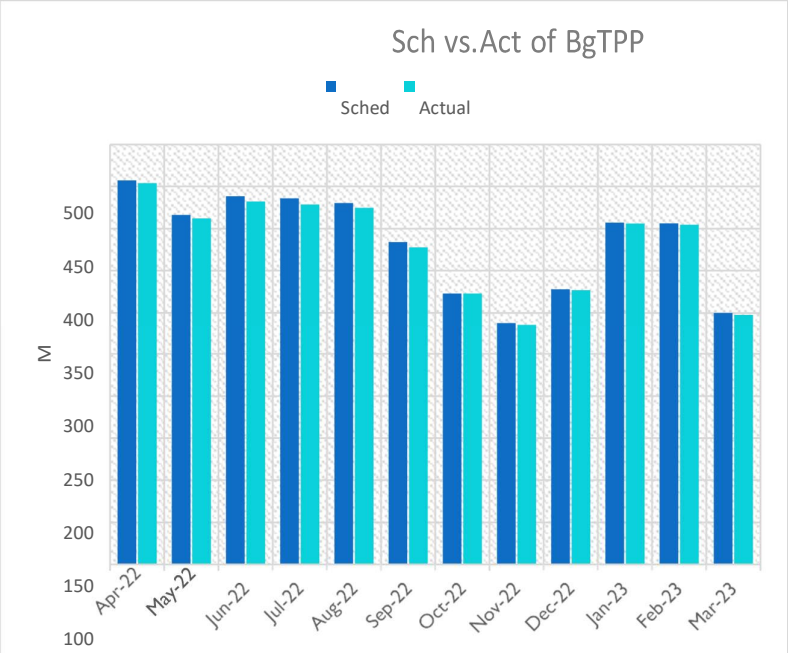
Month	(MU)	
	Sched	Actual
Apr-22	53.23	54.40
May-22	71.99	74.19
Jun-22	71.11	73.62
Jul-22	72.56	74.68
Aug-22	61.27	63.09
Sep-22	71.35	74.03
Oct-22	68.20	72.94
Nov-22	69.79	73.32
Dec-22	60.19	63.14
Jan-23	63.15	66.30
Feb-23	57.46	59.70
Mar-23	61.32	64.13
2022-23	***781.63***	***813.53***
2021-22	***877.30***	***891.20***



1.

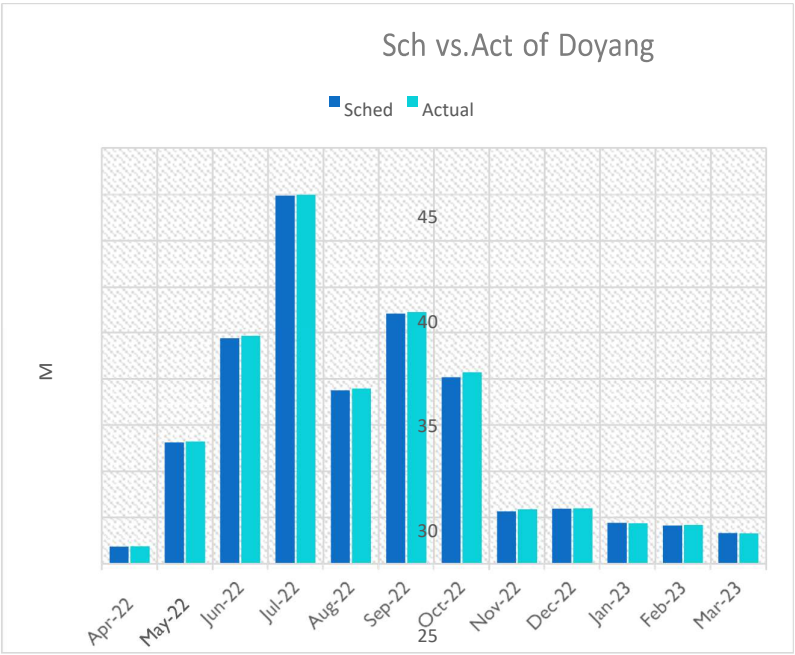
BgTPP:

Month	(MU)	
	Sched	Actual
Apr-22	457.43	454.12
May-22	416.36	412.19
Jun-22	438.75	432.39
Jul-22	436.11	428.62
Aug-22	430.31	424.59
Sep-22	384.23	377.87
Oct-22	322.84	322.71
Nov-22	287.65	285.71
Dec-22	327.71	326.90
Jan-23	407.22	406.04
Feb-23	406.31	404.52
Mar-23	299.74	297.51
2022-23	***4614.66***	***4573.18***
2021-22	***3875.73***	***3815.29***



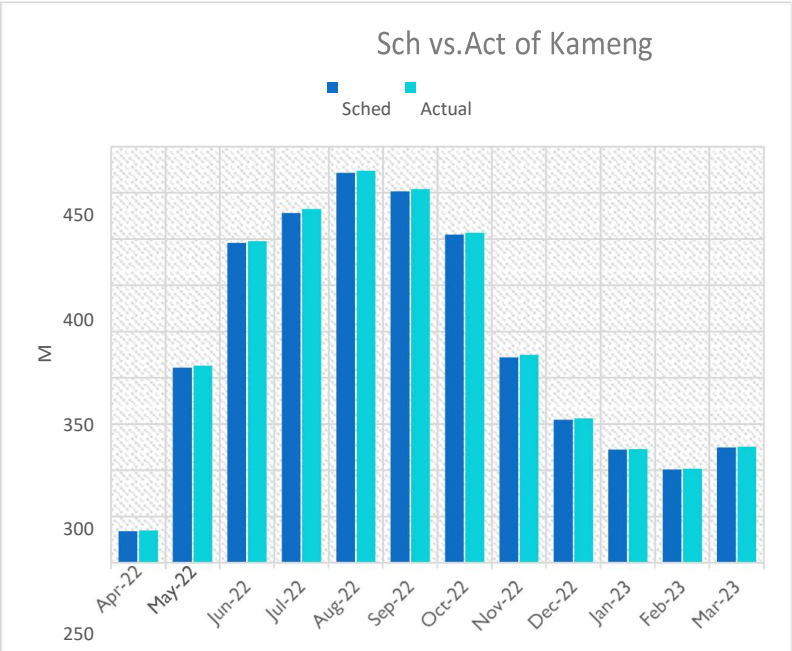
Doyang:

Month	(MU)	
	Sched	Actual
Apr-22	1.85	1.87
May-22	13.13	13.23
Jun-22	24.38	24.66
Jul-22	39.87	39.96
Aug-22	18.77	18.94
Sep-22	27.14	27.33
Oct-22	20.20	20.70
Nov-22	5.66	5.90
Dec-22	5.97	5.99
Jan-23	4.44	4.40
Feb-23	4.15	4.18
Mar-23	3.33	3.28
2022-23	***168.87***	***170.45***
2021-22	***94.58***	***96.17***



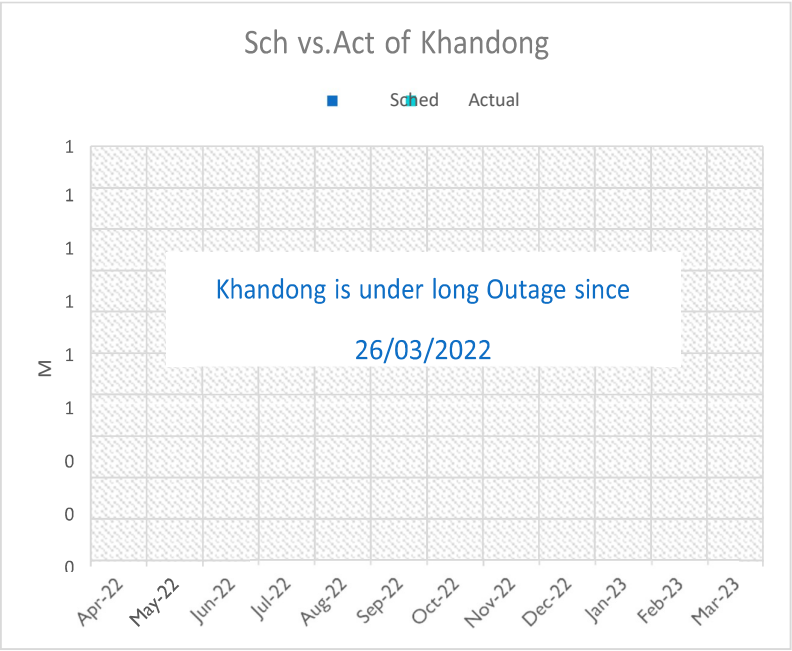
Kameng:

Month	(MU)	
	Sched	Actual
Apr-22	34.30	34.87
May-22	211.12	213.18
Jun-22	345.89	347.43
Jul-22	378.24	382.33
Aug-22	421.59	423.80
Sep-22	401.77	403.89
Oct-22	354.80	356.58
Nov-22	222.14	224.73
Dec-22	154.74	156.19
Jan-23	122.46	122.80
Feb-23	101.11	101.65
Mar-23	124.97	125.46
2022-23	***2873.13***	***2892.91***
2021-22	***2536.57***	***2570.92***



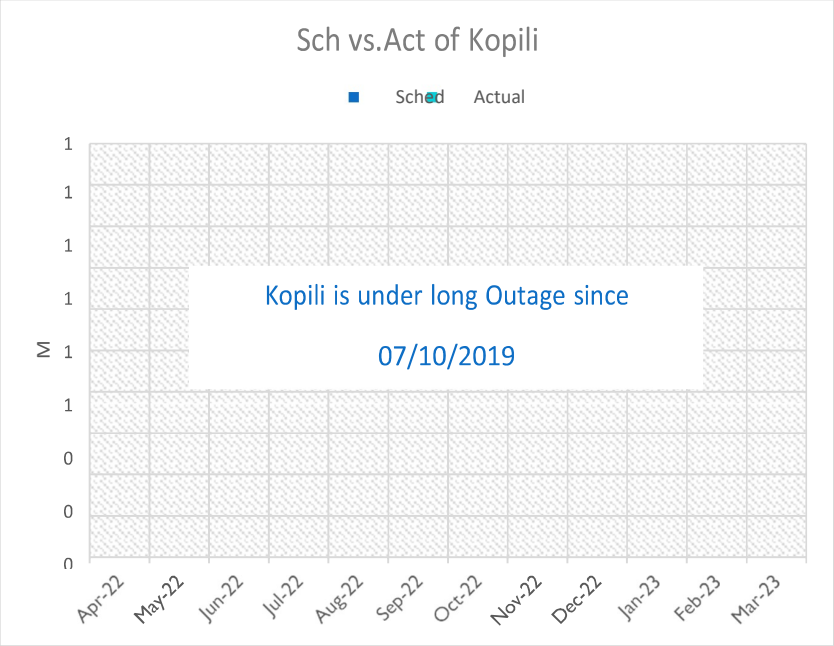
Khandong:

Month	(MU)	
	Sched	Actual
Apr-22	0.00	0.00
May-22	0.00	0.00
Jun-22	0.00	0.00
Jul-22	0.00	0.00
Aug-22	0.00	0.00
Sep-22	0.00	0.00
Oct-22	0.00	0.00
Nov-22	0.00	0.00
Dec-22	0.00	0.00
Jan-23	0.00	0.00
Feb-23	0.00	0.00
Mar-23	0.00	0.00
2022-23	***0.00***	***0.00***
2021-22	***267.01***	***265.51***



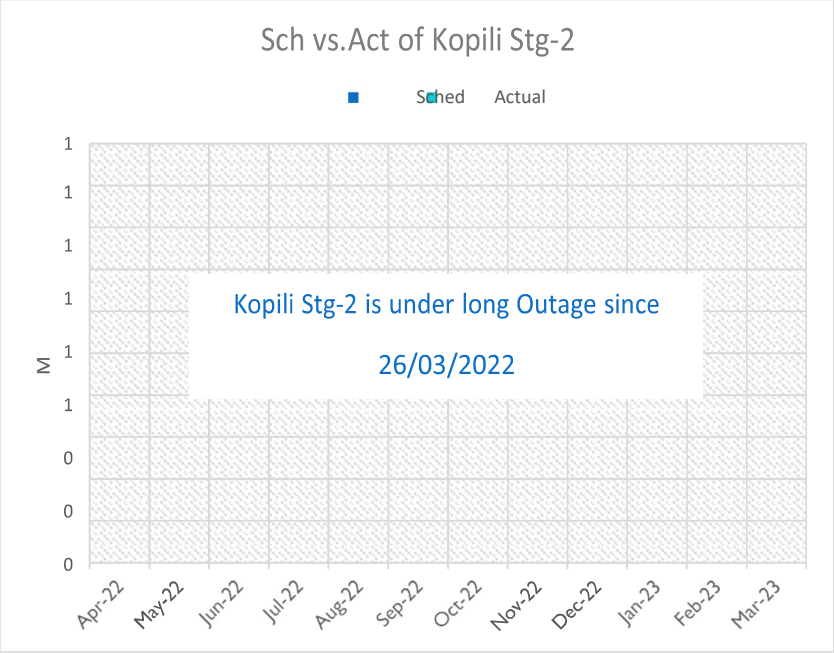
Kopili:

Month	(MU)	
	Sched	Actual
Apr-22	0.00	0.00
May-22	0.00	0.00
Jun-22	0.00	0.00
Jul-22	0.00	0.00
Aug-22	0.00	0.00
Sep-22	0.00	0.00
Oct-22	0.00	0.00
Nov-22	0.00	0.00
Dec-22	0.00	0.00
Jan-23	0.00	0.00
Feb-23	0.00	0.00
Mar-23	0.00	0.00
2022-23	***0.00***	***0.00***
2021-22	***0.00***	***0.00***



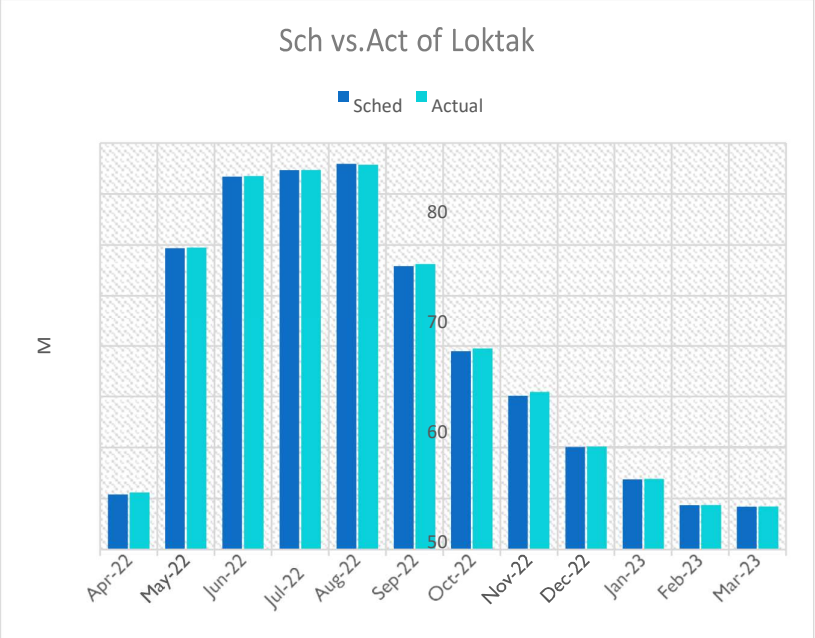
Kopili Stg-2:

Month	(MU)	
	Sched	Actual
Apr-22	0.00	0.00
May-22	0.00	0.00
Jun-22	0.00	0.00
Jul-22	0.00	0.00
Aug-22	0.00	0.00
Sep-22	0.00	0.00
Oct-22	0.00	0.00
Nov-22	0.00	0.00
Dec-22	0.00	0.00
Jan-23	0.00	0.00
Feb-23	0.00	0.00
Mar-23	0.00	0.00
2022-23	***0.00***	***0.00***
2021-22	***11.14***	***10.46***



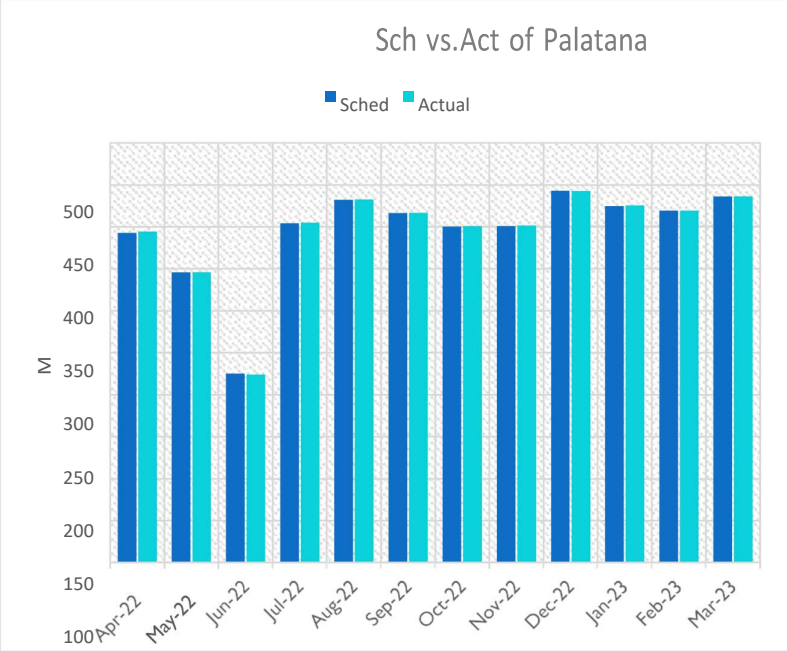
Loktak:

Month	(MU)	
	Sched	Actual
Apr-22	10.84	11.16
May-22	59.37	59.47
Jun-22	73.46	73.55
Jul-22	74.69	74.74
Aug-22	75.91	75.75
Sep-22	55.88	56.29
Oct-22	38.94	39.46
Nov-22	30.19	30.90
Dec-22	20.12	20.19
Jan-23	13.79	13.87
Feb-23	8.71	8.76
Mar-23	8.43	8.45
2022-23	***470.33***	***472.59***
2021-22	***388.72***	***392.28***



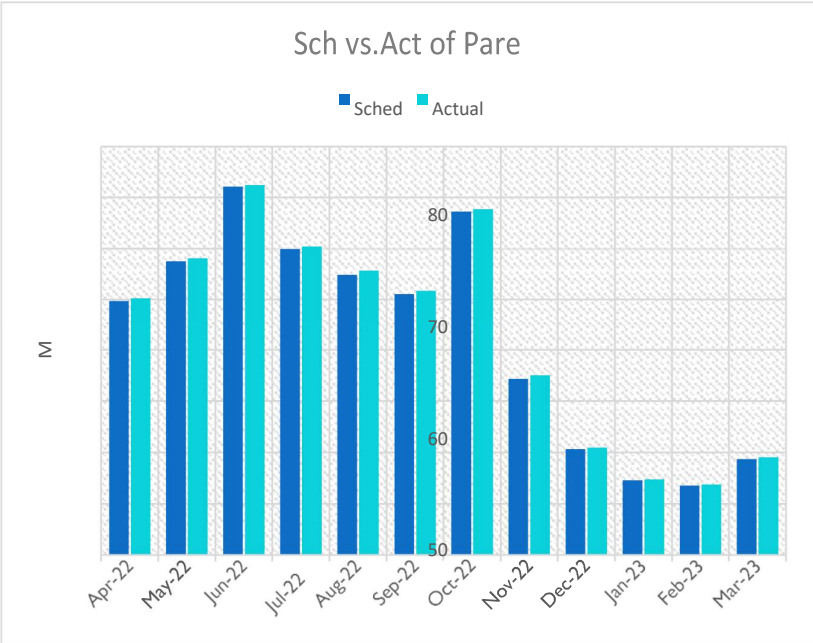
Palatana:

Month	(MU)	
	Sched	Actual
Apr-22	392.89	394.59
May-22	345.86	346.22
Jun-22	225.44	224.40
Jul-22	404.43	405.07
Aug-22	432.12	432.74
Sep-22	416.52	416.92
Oct-22	400.51	401.01
Nov-22	400.94	401.71
Dec-22	443.03	442.59
Jan-23	424.94	425.74
Feb-23	419.56	419.28
Mar-23	436.33	436.53
2022-23	***4742.57***	***4746.79***
2021-22	***3950.89***	***3951.88***



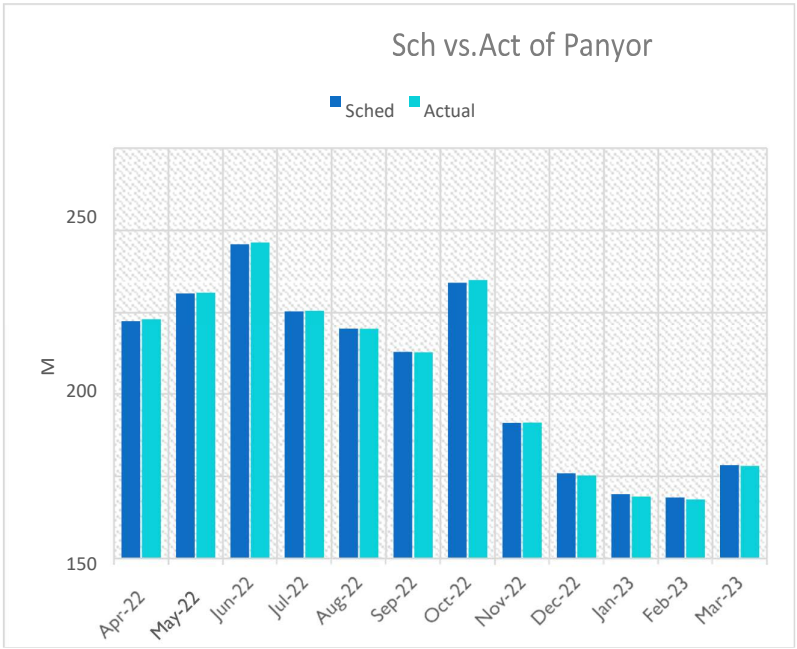
Pare:

Month	(MU)	
	Sched	Actual
Apr-22	49.73	50.27
May-22	57.50	58.12
Jun-22	72.16	72.40
Jul-22	59.94	60.37
Aug-22	54.87	55.66
Sep-22	51.07	51.74
Oct-22	67.23	67.71
Nov-22	34.34	35.05
Dec-22	20.65	20.96
Jan-23	14.59	14.77
Feb-23	13.50	13.78
Mar-23	18.71	19.06
2022-23	***514.29***	***519.89***
2021-22	***422.18***	***426.99***



Panyor (Ranganadi):

Month	(MU)	
	Sched	Actual
Apr-22	144.73	146.13
May-22	161.63	162.24
Jun-22	191.55	192.58
Jul-22	150.80	151.25
Aug-22	139.60	139.63
Sep-22	125.50	125.39
Oct-22	168.31	169.91
Nov-22	82.49	82.71
Dec-22	51.80	50.53
Jan-23	39.20	37.64
Feb-23	37.10	36.06
Mar-23	56.76	56.33
2022-23	***1349.48***	***1350.39***
2021-22	***1141.93***	***1146.64***



2.3 Demand:

The Peak Demand Vs Demand met in NER during 2022-23 and the statewise data for the FY 2022-23 is furnished as follows:

वित्तीय वर्ष 2021 -22 के दौरान, उत्तर पूर्वी क्षेत्र की उच्चतम माँग और माँग पूर्ति/Peak Demand and Peak Demand met during 2022 -23. (in MW)													
States	Particulars	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
अरु. प्रदेश Ar. Pradesh	Peak Demand	133	142	158	143	155	144	121	125	145	166	159	167
	Demand Met	133	137	137	143	155	144	121	125	145	166	159	167
असम Assam	Peak Demand	1796	2146	2140	2231	2376	2342	2312	1714	1556	1643	1572	1670
	Demand Met	1759	2082	2059	2231	2376	2308	2275	1714	1556	1643	1572	1670
मणिपुर Manipur	Peak Demand	202	197	201	206	207	203	202	219	247	248	225	212
	Demand Met	202	195	198	206	207	203	202	219	247	248	225	212
मेघालय Meghalaya	Peak Demand	359	343	342	336	349	354	356	381	395	404	394	374
	Demand Met	359	343	342	336	349	354	356	381	395	404	394	374
मिजोरम Mizoram	Peak Demand	118	117	118	119	119	127	127	135	143	159	139	129
	Demand Met	118	117	118	119	119	127	127	135	143	159	139	129
नागालैंड Nagaland	Peak Demand	138	145	150	159	162	161	167	165	152	139	148	156
	Demand Met	138	145	150	159	162	161	167	165	152	139	148	156
त्रिपुरा Tripura	Peak Demand	472	434	464	481	495	490	481	447	364	368	395	416
	Demand Met	472	434	464	481	495	490	481	447	364	368	395	416
उ.पू.क्षेत्र NER	Peak Demand	3044	3342	3329	3675	3863	3648	3509	3068	3023	2986	2936	3065
	Demand Met	3044	3342	3329	3675	3863	3648	3509	3068	3023	2986	2936	3065

2.4 Energy Requirement vs Availability:

The energy requirement Vs availability in NER during 2022-23 and the statewise data for the FY 2022-23 is furnished in the following table:

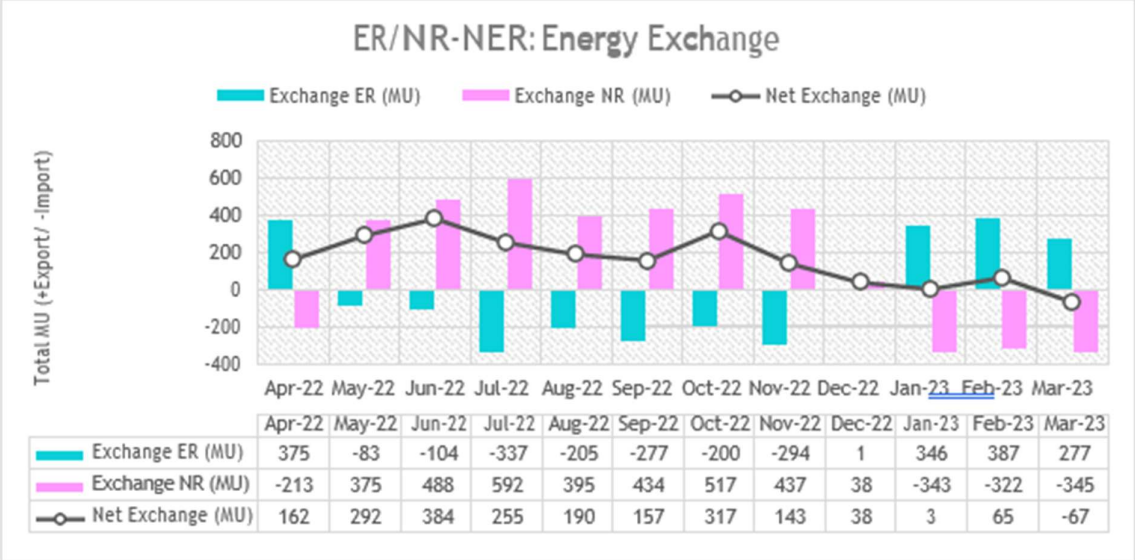
वित्तीय वर्ष 2021 -22 के दौरान, उत्तर पूर्वी क्षेत्र में ऊर्जा की आवश्यकता बनाम उपलब्धता/Energy Requirement vs availability during 2022 -23. (in MU)													
States	Particulars	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-22	Mar-23
अरु. प्रदेश Ar. Pradesh	Energy Req.	66.28	73.32	76.5	82.03	79.7	72.12	88.53	69.1	72.53	75.01	78.0	75.4
	Availability	66.28	73.32	76.5	82.03	79.7	72.12	88.53	69.1	72.53	75.01	78.0	75.4
असम Assam	Energy Req.	733.03	950.239	995.94	1249.06	1320.51	1211.63	1006.8	811.61	792.09	814.32	691.9	808.7
	Availability	728.30	949.989	995.60	1248.89	1320.19	1211.37	1006.8	811.61	791.79	811.04	691.9	808.7
मणिपुर Manipur	Energy Req.	73.88	74.74	76.95	82.37	83.09	79.7	77.21	77.12	98.14	104.6	94.4	83.1
	Availability	73.32	74.68	76.81	82.23	82.97	79.09	77.21	77.10	98.14	104.17	94.4	83.1
मेघालय Meghalaya	Energy Req.	168.38	170.41	164.79	183.22	185.32	176.96	186.79	199.43	217.15	223.25	201.6	200.0
	Availability	166.64	167.4	156.81	176.22	185.32	176.96	186.79	199.43	217.15	222.97	201.6	200.0
मिजोरम Mizoram	Energy Req.	51.68	53.86	52.2	55.82	55.5	51.58	53.17	51.76	59.92	65.33	51.5	59.9
	Availability	51.68	53.86	52.2	55.82	55.5	51.58	53.12	51.76	59.92	65.33	51.5	59.7
नागालैंड Nagaland	Energy Req.	67.03	73.43	79.18	84.48	86.18	82.69	76.44	64.31	71.41	65.81	63.5	69.6
	Availability	66.56	73.43	79.18	84.48	86.18	82.69	76.44	64.31	71.41	65.81	63.5	69.6
त्रिपुरा Tripura	Energy Req.	245.58	214.12	218.36	257.12	274.346	251.93	248.31	198.30	181.639	191.272	96.6	123.8
	Availability	245.53	214.11	218.36	257.02	274.346	251.93	248.31	198.28	181.639	191.272	96.6	123.8
उ.पू.क्षेत्र NER	Energy Req.	1406.439	1610.78	1663.92	1994.96	2085.389	1927.38	1737.25	1471.63	1492.879	1539.592	1277.7	1420.3
	Availability	1398.889	1607.45	1655.46	1987.55	2084.949	1926.52	1737.20	1471.59	1492.579	1535.602	1277.7	1420.3

2.5 Inter Regional Energy Exchange:

During the year 2022-23 inter regional energy exchanges in MU between NER and ER as well as between NER and NR are as given below:

Month	ER-NER	ER-NER	NR-NER	Net Export / Import	Net Deviation
	Schedule	Actual	Actual	Actual	
Apr-22	120.22	375.34	-213.09	162.26	42.04
May-22	272.91	-83.46	375.16	291.70	18.79
Jun-22	392.72	-104.24	488.15	383.90	-8.82
Jul-22	240.55	-336.75	592.07	255.32	14.77
Aug-22	168.73	-204.65	395.01	190.36	21.63
Sep-22	199.63	-277.09	434.27	157.17	-42.46
Oct-22	381.42	-199.91	517.31	317.40	-64.02
Nov-22	165.19	-294.24	436.75	142.51	-22.68
Dec-22	-1.74	0.63	37.62	38.25	39.99
Jan-23	-4.51	345.97	-343.03	2.95	7.46
Feb-23	58.52	386.86	-322.25	64.61	6.09
Mar-23	-51.38	277.14	-344.52	-67.38	-16.00
Total	1942.27	-114.41	2053.45	1939.04	-3.22

Note: (+) Export to ER/NR / (-) Import from ER/NR



	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
Exchange ER (MU)	375	-83	-104	-337	-205	-277	-200	-294	1	346	387	277
Exchange NR (MU)	-213	375	488	592	395	434	517	437	38	-343	-322	-345
Net Exchange (MU)	162	292	384	255	190	157	317	143	38	3	65	-67

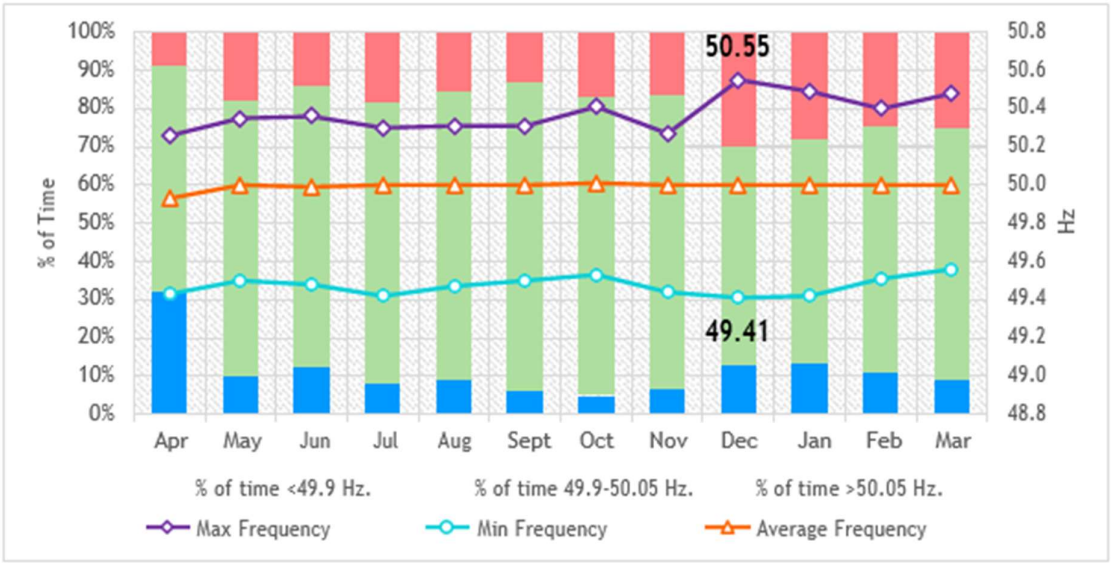
Net Energy Exchange for the period Apr'22 to Mar'23 is 1939 MU (Export).

2.6 Frequency:

Frequency profile of NER grid during 2022-23 is as mentioned below. It has been observed that frequency profile has improved considerably during last couple of years in comparison with previous years.

Month	% of time <49.9 Hz.	% of time 49.9-50.05 Hz.	% of time >50.05 Hz.	Max Frequency	Min Frequency	Average Frequency
Apr	31.98	59.25	8.77	50.26	49.43	49.93
May	9.83	72.23	17.94	50.35	49.50	50.00
Jun	12.45	73.38	14.17	50.36	49.48	49.99
Jul	7.83	73.45	18.72	50.30	49.42	50.00
Aug	8.77	75.77	15.45	50.31	49.47	50.00
Sept	5.94	80.77	13.29	50.31	49.50	50.00
Oct	4.88	78.27	16.86	50.41	49.53	50.01
Nov	6.70	77.00	16.31	50.27	49.44	50.00
Dec	12.78	57.39	29.83	50.55	49.41	50.00
Jan	13.30	58.70	28.00	50.49	49.42	50.00
Feb	10.75	64.68	24.57	50.40	49.51	50.00
Mar	9.00	65.43	25.57	50.48	49.56	50.00
2022-23	11.15	69.70	19.14	50.55	49.41	49.99

Frequency Duration graph based on Operational Data



Maximum frequency was 50.55 Hz at 06:08 Hrs on 26.12.22, Minimum frequency was 49.41 Hz at 09:31 Hrs on 20.12.22 and 09:08 Hrs on 25.12.22. Average Frequency was 49.99 Hz.

2.7 Voltage Profile:

The IEGC norms of voltage profile is enlisted in the Table-(i) below.

IEGC मानदण्ड Norms:

System Voltage	kV	PU
400 kV	380-420	0.95-1.05
220 kV	198-245	0.90-1.11
132 kV	122-145	0.92-1.10

Table-(i)

Voltage profile at major grid sub-stations of NER during **2022-23** are given below:

Maximum Voltage of each month attained by each 400kV Substations in NER in FY 2022-23

Month	400 kV Azara	400 kV Balipara	400 kV BNC	400 kV Bongaigaon	400 kV Byrnihat	400 kV BgTPP	400 kV Imphal	400 kV Kameng
Apr	419	418	419	416	419	417	421	418
May	412	418	418	418	420	421	419	414
Jun	412	414	418	415	419	419	417	413
Jul	412	414	418	414	420	418	419	414
Aug	409	414	417	413	419	417	419	412
Sep	413	413	415	413	419	416	417	411
Oct	414	416	416	418	419	422	419	412
Nov	419	414	417	421	420	424	418	414
Dec	415	414	419	419	420	422	423	414
Jan	414	417	418	419	420	421	418	416
Feb	413	418	413	418	421	420	420	416
Mar	411	416	415	417	420	420	420	415

Month	400 kV New Mariani	400 kV Misa	400 kV New Kohima	400 kV Palatana	400 kV PK Bari	400 kV Ranganadi	400 kV Silchar	400 kV SM Nagar
Apr	419	417	421	411	418	421	418	418
May	416	415	419	416	415	420	419	413
Jun	415	413	418	416	415	415	419	414
Jul	416	417	418	413	415	416	419	413
Aug	416	415	419	413	412	421	417	411
Sep	418	413	420	412	411	425	417	410
Oct	416	417	419	416	418	424	418	412
Nov	416	415	418	411	411	425	418	408
Dec	419	415	423	415	415	425	421	413
Jan	417	416	420	414	413	425	419	411
Feb	417	418	420	414	414	423	421	412
Mar	418	414	421	414	415	422	417	413

Minimum Voltage of each month attained by each 400kV Substations in NER in FY 2022-23

Month	400 kV Azara	400 kV Balipara	400 kV BNC	400 kV Bongaigaon	400 kV Byrnihat	400 kV BgTPP	400 kV Imphal	400 kV Kameng
Apr	399	396	393	399	401	403	396	394
May	392	397	391	401	398	404	394	390
Jun	400	397	396	398	396	405	396	396
Jul	398	397	397	399	399	402	389	392
Aug	397	397	397	395	397	404	395	391
Sep	399	395	390	393	398	403	389	396
Oct	400	394	396	398	402	393	386	392
Nov	392	396	396	395	402	401	397	393
Dec	399	395	395	401	398	390	393	394
Jan	396	397	391	400	396	398	396	396
Feb	392	393	385	398	393	401	396	393
Mar	392	393	384	392	393	402	389	393

Month	400 kV New Mariani	400 kV Misa	400 kV New Kohima	400 kV Palatana	400 kV PK Bari	400 kV Ranganadi	400 kV Silchar	400 kV SM Nagar
Apr	393	396	390	398	394	400	396	393
May	394	393	394	393	395	400	398	390
Jun	395	395	394	395	392	395	398	392
Jul	389	397	394	396	386	388	394	394
Aug	395	396	395	400	391	390	395	392
Sep	388	395	391	400	389	399	396	389
Oct	395	391	395	399	395	401	394	392
Nov	396	396	393	398	393	404	398	393
Dec	394	395	391	389	393	398	399	392
Jan	394	397	394	396	392	403	397	393
Feb	396	393	395	399	387	397	395	393
Mar	394	388	394	398	392	395	392	386

2.8 Synchronous Operation:

NER grid is connected to ER in AC synchronous mode via:

1. 400kV New Siliguri-Bongaigaon feeders I & II.
2. 400kV Alipurduar-Bongaigaon feeders I & II.
3. 220kV Alipurduar-Salakati feeder I & II.

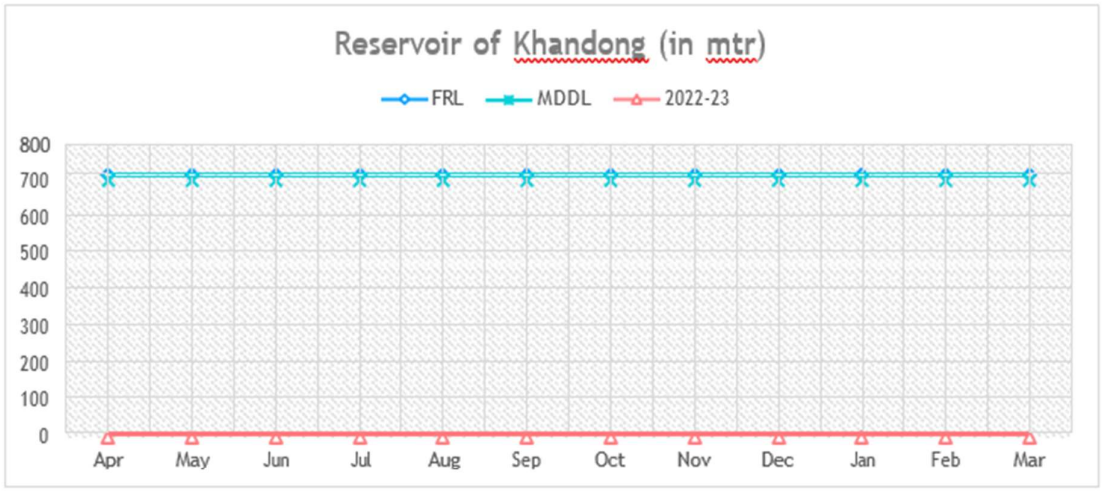
NER grid is connected in DC asynchronous mode with ER/NR grid via:

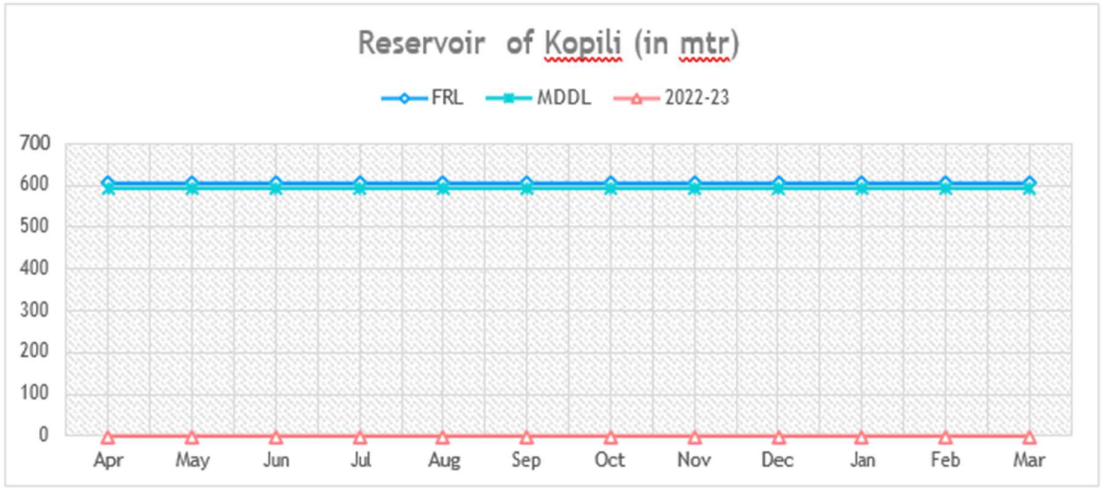
1. +/- 800 kV Biswanath Chariali – Alipurduar – Agra Bipole.

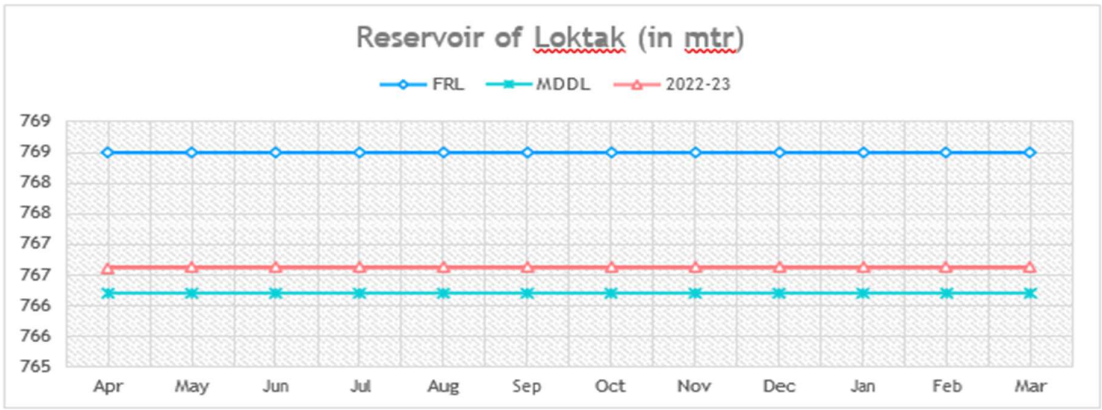
2.9 Reservoir Levels:

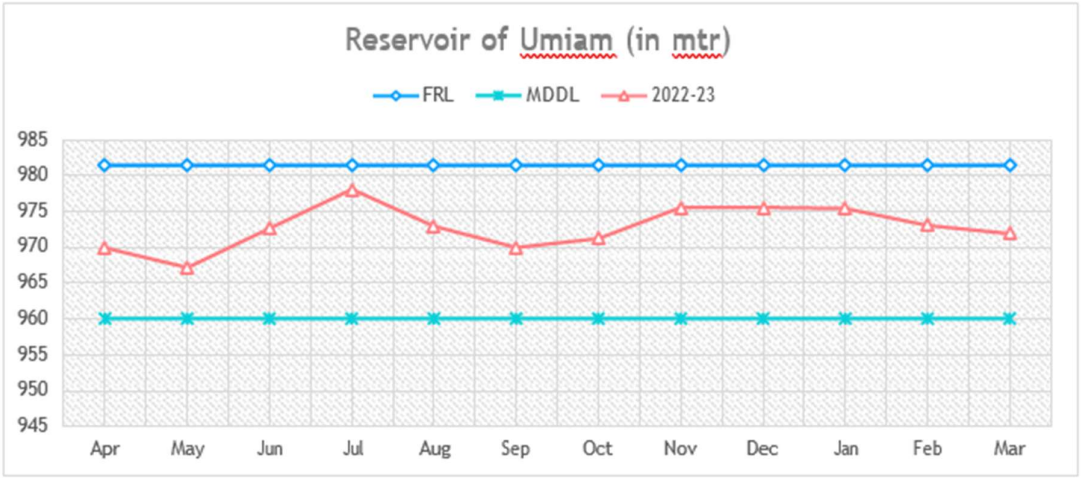
Water levels of major reservoirs of NER for the year 2022-23 of each month are furnished in below.

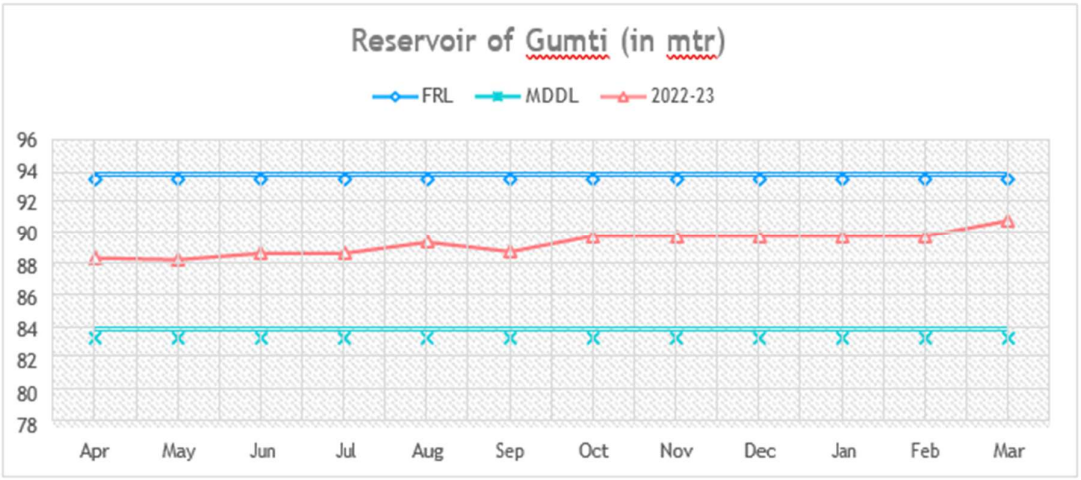
RESERVOIR LEVELS OF NER HYDROS IN MTRS.

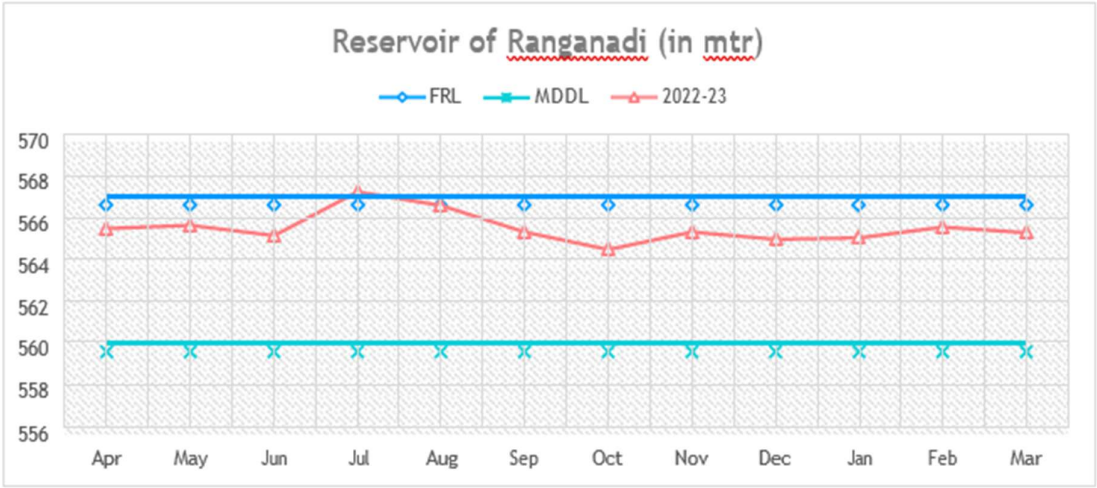


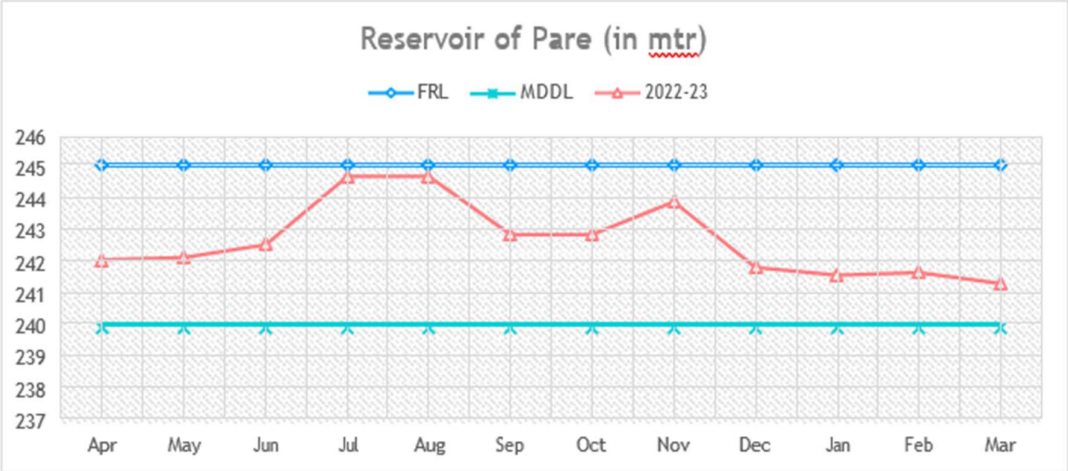


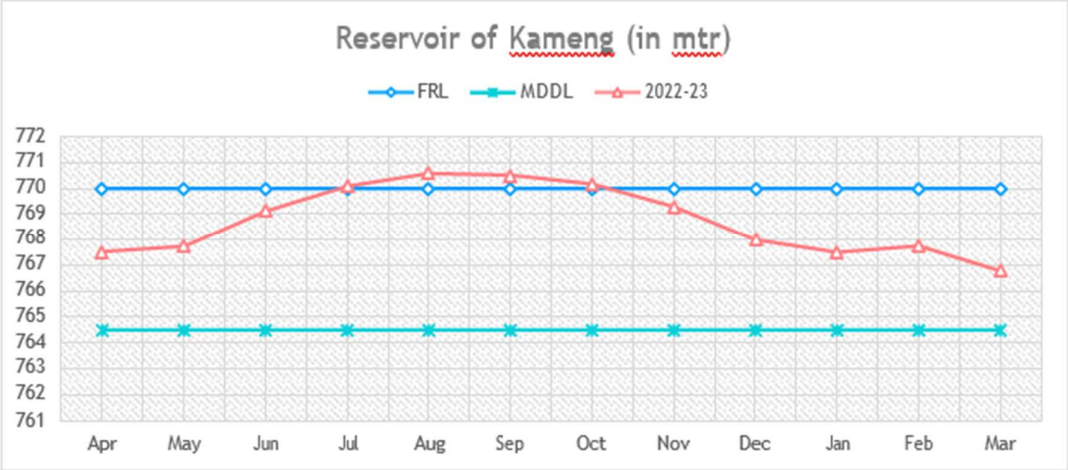



Reservoir of Umiam (in mtr)
FRL
MDDL
2022-23
985
980
975
970
965
960
955
950
945
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar


Reservoir of Gumti (in mtr)
FRL
MDDL
2022-23
96
94
92
90
88
86
84
82
80
78
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar


Reservoir of Ranganadi (in mtr)
FRL
MDDL
2022-23
570
568
566
564
562
560
558
556
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar

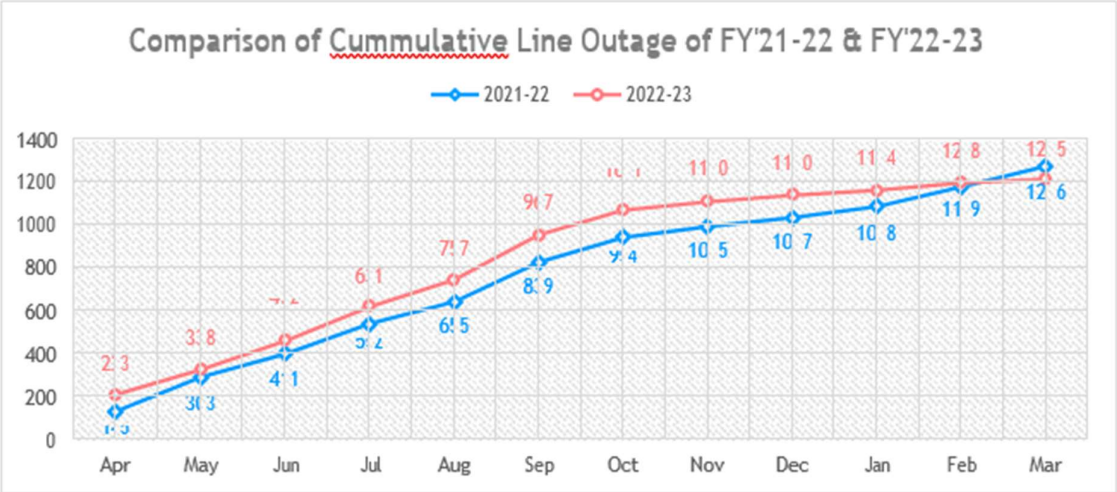




2.10 Transmission line outages:

Total Outage of Transmission lines in NER for FY 2022-23 is 1225 Nos. (400 kV: 98 Nos.,220 kV: 159 Nos. & 132 kV: 968 Nos.). The details of the outages in each month is summarized below along with a comparative analysis of line outages in FY 2021-22 and FY 2022-23.

Month	400 kV	220 kV	132 kV	Total
Apr-22	20	20	183	223
May-22	11	9	95	115
Jun-22	10	17	107	134
Jul-22	1	15	143	159
Aug-22	7	23	96	126
Sep-22	23	36	151	210
Oct-22	12	16	86	114
Nov-22	5	8	26	39
Dec-22	3	3	24	30
Jan-23	2	4	18	24
Feb-23	3	8	23	34
Mar-23	1	0	16	17



2.11 Grid disturbances and Grid Incidents:

Total Grid Disturbances occurred in NER in FY 2022-23 is 180 Nos. and all fall in GD-1 category. Total GridIncidents occurred in NER in FY 2022-23 is 75 Nos. (GI-1: 18 Nos. & GI-2: 57 Nos.).

Month	GD 1	GD 2	GD 3	GD 4	GD 5	TOTAL	GI 1	GI 2	TOTAL
Apr-22	30	0	0	0	0	30	1	5	6
May-22	10	0	0	0	0	10	0	9	9
Jun-22	26	0	0	0	0	26	2	7	9
Jul-22	28	0	0	0	0	28	0	6	6
Aug-22	20	0	0	0	0	20	3	3	6
Sep-22	26	0	0	0	0	26	1	6	7
Oct-22	18	0	0	0	0	18	1	3	4
Nov-22	3	0	0	0	0	3	3	4	7
Dec-22	5	0	0	0	0	5	1	5	6
Jan-23	1	0	0	0	0	1	2	2	4
Feb-23	4	0	0	0	0	4	2	2	4
Mar-23	9	0	0	0	0	9	2	5	7

2.12 New Elements Commissioned :

The details of Generation ,Transmission lines, Transformers, Bays and Reactors which are commissioned in NER during 2022-23 are given below:

S.N	Name of Element	Name of the Owner	Date of FTC
1. Transmission Lines			
1	220 kV Mariani (AEGCL) - Amguri Solar	AEGCL	22.04.2022
2	220 kV Namrup (AEGCL) - Amguri Solar	AEGCL	22.04.2022
3	132 kV Dhaligaon - Barpeta	AEGCL	27.04.2022
4	132 kV Nalbari - Barpeta	AEGCL	27.04.2022
5	132 kV Kamakhya - Railway Traction Line	AEGCL	02.04.2022
6	132 kV Golaghat - Sarupathar	AEGCL	02.05.2022
7	132 kV Bokajan - Sarupthar	AEGCL	02.05.2022
8	132 kV Rangia - Tangla	AEGCL	08.06.2022
9	132 kV Tangla - Rowta	AEGCL	08.06.2022
10	132 kV Wokha - Chiepebozou	DoP, Nagaland	03.07.2022
11	132 kV Kohima - Chiepebozou	DoP, Nagaland	03.07.2022
12	132 kV Sonabil - Tezpur line 1 & 2	AEGCL	06.08.2022
13	132 kV Dimapur - Imphal line (reconductored with HTLS Panther)	POWERGRID	12.10.2022
14	132 kV Kahilipara - AIIMS	AEGCL	27.12.2022
15	132 kV AIIMS - Kamalpur	AEGCL	27.12.2022
16	132 kV Dhemaji - Silapathar line	AEGCL	25.01.2023
17	132 kV Saitual - Vankal line	P&ED, MIZORAM	16.02.2023
18	132 kV Vankal - Khawzawl line	P&ED, MIZORAM	16.02.2023
19	400 kV BNC - Lower Subansiri 1 & 2	POWERGRID	30.03.2023
20	132 kV Jiribam (PG) - Loktak Line (reconductored with HTLS conductor)	POWERGRID	30.03.2023
21	220 kV Alipurduar-Salakati line 1 & 2 (reconductored with HTLS conductor)	POWERGRID	30.03.2023
22	132 kV Bagjhap traction line (Jagiroad to Dharmatul (132 /25 kV) Traction S/S)	AEGCL	24.03.2023
S.N	Name of Element	Name of the Owner	Date of FTC
2.Transformers			
1	220/132 kV, 3x10 MVA ICT 3 at Mokokchung	POWERGRID	05.03.2022
2	50 MVA, 220/33 kV ICT 2 at Amguri	AEGCL	23.04.2022
3	25 MVA, 132/33 kV Transformer at Barpeta	AEGCL	27.04.2022
4	28.5 MVA, 132/11 kV GT 3 at Doyang HEP	NEEPCO	29.04.2022
5	20 MVA, 66/11 kV Transformer at Mon Power House	DoP, Nagaland	29.04.2022
6	3x4.16 MVA, 132/33 kV Transfomer 2 at Rengpang	MSPCL	30.04.2022
7	31.5 MVA, 132/33 kV Transformer 2 at Sarupathar	AEGCL	02.05.2022
8	31.5 MVA, 132/33 kV Transformer 1 at Sarupathar	AEGCL	04.05.2022
9	50 MVA, 132/33 kV Transformer at Udaipur	TSECL	25.05.2022
10	10 MVA, 33/11 kV Transformer at Udaipur	TSECL	20.05.2022
11	31.5 MVA, 132/33 kV Transformer 1 & 2 at Tangla	AEGCL	08.06.2022

12	31.5 MVA, 132/33 kV Transformer at Ambassa	TSECL	21.06.2022
13	50 MVA, 132/33 kV Transformer at Sishugram	AEGCL	23.07.2022
14	50 MVA, 132/33 kV Transformer at Rowta	AEGCL	29.08.2022
15	50 MVA, 132/33 kV ICT 1 at Golaghat	AEGCL	06.09.2022
16	50 MVA, 132/33 kV ICT 1 at Gauripur	AEGCL	16.09.2022
17	50 MVA, 132/33 kV ICT 1 at Tezpur	AEGCL	22.09.2022
18	50 MVA, 132/33 kV ICT 2 at Golaghat	AEGCL	29.09.2022
19	16 MVA, 132/33 kV ICT 2 at Dukumpani (Tenga)	DoP, AP	28.10.2022
20	50 MVA, 132/33 kV ICT 1 at Panchgram	AEGCL	30.11.2022
21	25 MVA, 132/33 kV ICT 1 at APM	AEGCL	02.12.2022
22	25 MVA, 132/33 kV ICT 1 at Umrangshu	AEGCL	06.12.2022
23	25 MVA, 132/33 kV ICT 1 at AIIMS	AEGCL	28.12.2022
24	50 MVA, 132/33 kV ICT 1 at Sarusajai	AEGCL	30.12.2022
25	31.5 MVA, 132/33 kV ICT 1 & 2 at Silapathar	AEGCL	25.01.2023
26	50 MVA, 132/33 kV Transformer at Barnagar	AEGCL	08.02.2023
27	50 MVA, 132/33 kV Transformer at Moran	AEGCL	23.02.2023
28	132/33 kV, 12.5 MVA transformer at Tipaimukh	MSPCL	01.03.2023
29	13.8/420 kV, 63 MVA, R-ph GT of Unit 3 at Kameng	NEEPCO	30.03.2023
30	31.5 MVA, 132/33 kV ICT at CTPS	AEGCL	01.03.2023
31	25 MVA, 132/33 kV ICT 2 at Bokajan	AEGCL	23.03.2023
32	50 MVA, 132/33 kV ICT 2 at Gauripur	AEGCL	24.03.2023
3.Reactors			
1	420 kV, 63 MVAR Lower Subansri 2 line Reactor (to be used as Bus Reactor) at BNC	POWERGRID	10.08.2022
2	420 kV, 63 MVAR Silchar 1 & 2 line reactor at Imphal	POWERGRID	30.03.2023
S.N	Name of Element	Name of the Owner	Date of FTC
4.Bays			
1	HV Side Bay (208) of 3X10 MVA ICT 3 at Mokokchung	POWERGRID	05.03.2022
2	LV Side Bay (105) of 3X10 MVA ICT 3 at Mokokchung	POWERGRID	06.03.2022
3	HV side Bay of (3x4.16) MVA, 132/33 kV ICT 2 at Rengpang	MSPCL	30.04.2022
4	132 kV Mokokchung Bay at Longnak	DoP, Nagaland	16.07.2022
5	132 kV Holongi Bay at Chimpu S/S	DoP, AP	02.10.2022
6	132 kV Itanagar-Gohpur Bay at Gohpur	AEGCL	10.11.2022
7	132kV BNC -Gohpur Bay at Gohpur	AEGCL	11.11.2022
8	132 kV Miao Bay at Namsai (PG) S/S	DoP, AP	18.11.2022
9	220 kV Mariani 1 Bay (207) at Mokokchung	DoP, Nagaland	20.12.2022
10	132 kV Daporijo Bay at Basar	DoP, AP	31.01.2023
11	132 kV Along Bay at Basar	DoP, AP	31.01.2023
12	220kV Sonabil-2 Main Bay at Balipara	AEGCL	20.02.2023
13	132kV Lekhi GIS Bay (104) at Nirjuli	POWERGRID	30.03.2023

14	132 kV GIS Bay (108) 50 MVA ICT -2 at Nirjuli	POWERGRID	30.03.2023
15	132 kV Pare GIS Bay (102) at Nirjuli	POWERGRID	30.03.2023
16	132 kV North Lakhimpur GIS Bay (103) at Nirjuli	POWERGRID	30.03.2023
5.Generating Units			
1	Amguri_Solar	Jakson	26.04.2022
2	Vankal_Solar	SUNFREE, ATA	16.02.2023

2.13 Total number of assets in NER:

The total number of generation and transmission assets during 2022-23 is given below:

Description		FY 2022-23
1. Substations		
+/- 800kV		1
400 kV		16
220 kV		22
132 kV		177
2. Transformers		
400/220/33 kV	in MVA	6465
	Total no. of Transformers	17
400/132/33 kV	in MVA	4620
	Total no. of Transformers	19
220/132 kV	in MVA	4470
	Total no. of Transformers	44
220/33 kV	in MVA	100
	Total no. of Transformers	2
132/33 kV	in MVA	7057
	Total no. of Transformers	290
132/66 kV	in MVA	373
	Total no. of Transformers	15
132/11 kV	in MVA	157
	Total no. of Transformers	15
3. Generators		
Thermal Units	Total Installed Capacity	2595
	Total No. of Units	65
Hydel Units	Total Installed Capacity	2197
	Total No. of Units	88
Solar	Total Installed Capacity	226
	Total No. of Units	13
4. Transmission Lines		
+/- 800kV	in kms	3456
	Total no. of Lines	2
400 kV	in kms	6061
	Total no. of Lines	42
220 kV	in kms	3090

	Total no. of Lines	47
132 kV	in kms	9174
	Total no. of Lines	318
5. Line Reactors		
420 kV	in MVAR	1555
	Total no. of Reactors	28
245 kV	in MVAR	120
	Total no. of Reactors	3
6. Bus Reactors		
420 kV	in MVAR	2672
	Total no. of Reactors	29
245 kV	in MVAR	44
	Total no. of Reactors	2
145 kV	in MVAR	179
	Total no. of Reactors	11
7. Shunt Capacitor		
145 kV	in MVAR	52.5
	Total no. of Capacitors	3
36 kV	in MVAR	322
	Total no. of Capacitors	42

अध्याय CHAPTER 3

वाणिज्य और उर्जा लेखा क्रियाएं
Commercial and Energy Accounting Activities

3.1 Introduction:

Commercial and Energy Accounting activities of NERPC involves weekly, monthly and yearly accounts related to NER grid. The following are the main accounts and records issued by NERPC:

1. Ancillary Services
2. DSM accounting
3. Open Cycle Accounting
4. Reactive Energy Accounting
5. Regional Energy Account
6. Regional Transmission Account
7. RTDA
8. Share Allocation
9. Compensation
10. Ramp up certification

3.2 Ancillary Services:

Ancillary Services is a monthly statement issued by NERPC in AS3 format certifying several relevant information about RRAS provider. There are 4 RRAS providers in NER as follows:

1. Agartala Gas Based Power Plant (AgGBPS, NEEPCO,Tripura)
2. Assam Gas Based Power Plant (AGBP,NEEPCO,Assam)
3. Loktak Power Station (NHPC, Manipur)
4. Bongaigaon Thermal Power Station (BgTPP,NTPC,Assam)

The following information is available in AS3 format for each of the RRAS providers:

1. Number of generating units
2. Total installed capacity
3. Maximum possible Ex-Bus injection
4. Technical Minimum
5. Type of fuel
6. Region
7. Bid Area
8. Fixed Cost
9. Variable Cost

10. Ramp up rate
11. Ramp down rate
12. Start up time from cold start
13. Other specific information.

As on March 2023, the following Ancillary Services statement is issued by NERPC:

Format AS3: RRAS Provider Parameters by RPC

From:NERPC **To:** Nodal Agency (NLDC,Delhi)
(Name of RRAS Provider Generating Station) **Assam Gas Based Power Station(Kathalguri)**
(Name of Owner Organization) **North Eastern Electric Power Corporation Limited(NEEPCO)**

Validity oftheInformation **From:**16/02/2023 **To:** 15/03/2023

Date: 15/02/2023

S.No.	Title/Parameters	Values/Data
a)	Number of Generating Units	6x33.5MW+3x30 MW
b)	Total Installed Capacity (MW)	291
c)	Maximum possible Ex-bus injection (MW) (including overload if any)	110%
d)	Technical Minimum (MW)	152
e)	Type of Fuel	Natural Gas
f)	Region	N.E.R
g)	Bid area	N.E.R
h)	Fixed Cost (Paise/kWh up to one decimal place)	**206.40**
i)	Variable Cost (Paise/kWh up to one decimal place)	**607.70**
j)	Ramp-Up Rate (MW/Min) for each unit	GTG 1-4: 2.27MW/min GTG 5&6: 4.28 MW/min STG 1-3: 3.00MW/min
k)	Ramp- Down Rate (MW/Min) for each unit	GTG 1-4: 2.27 MW/min GTG 5&6: 4.28 MW/min STG 1-3: 3.00 MW/min
l)	Start-up Time (in Min) from Cold Start & Warm Start of each unit	Cold Start GTG 1-4: 28 min GTG 5&6: 22 min STG 1-3: 180 min
		Warm Start GTG 1-4: 13min GTG 5&6: 7 min STG 1-3: 30min
m)	Any other information	NIL

***Fixed cost & Variable cost are for the month of January 2023**

Signature of Authorized Signatory (With Stamp)

Format AS3: RRAS Provider Parameters by RPC

From:NERPC **To:** Nodal Agency (NLDC,Delhi)

(Name of RRAS Provider Generating Station)**Agartala Gas Based Power Station**
(NameofOwnerOrganization)**North Eastern Electric Power Corporation Limited (NEEPCO)**

Validity oftheInformation **From:**16/02/2023 **To:** 15/03/2023

Date: 15/02/2023

S.No.	Title/Parameters	Values/Data
a)	Number of Generating Units	4x21MW+2x25.5MW
b)	Total Installed Capacity (MW)	135
c)	Maximum possible Ex-bus injection (MW) (including overload if any)	126
d)	Technical Minimum (MW)	98 MW (in Combined Cycle) with all HRGs in service
e)	Type of Fuel	Natural Gas
f)	Region	N.E.R
g)	Bid area	Tripura
h)	Fixed Cost (Paise/kWh up to one decimal place)	**Rs. 1.871/Kwh (for January,2023)**
i)	Variable Cost (Paise/kWh up to one decimal place)	**Rs. 5.753/Kwh (for January,2023)**
j)	Ramp-Up Rate (MW/Min) for each unit	GTG 1-4: 2 MW/min STG1-2: 0.5 MW/min
k)	Ramp- Down Rate (MW/Min) for each unit	GTG 1-4: 2 MW/min STG1-2: 0.5 MW/min
l)	Start-up Time from Cold Start (in Min) & Warm Start of each unit	Cold Start GTG 1-4: 25 min STG1-2: 480-600 min
		Warm Start GTG 1-4: 25min STG1-2: 240min
m)	Any other information	Minimum Loading of Gas Turbines must be at least 18 MW each for taking individual HRSG into service

Signature of Authorized Signatory (With Stamp)

Format AS3: RRAS Provider Parameters by RPC

From: NERPC
(Name of RRAS Provider Generating Station) **LOKTAK HEP**
(Name of Owner Organization) **NHPC Limited**

To: Nodal Agency (NLDC,Delhi)

Validity oftheInformation **From:** 16/02/2023 **To:** 15/03/2023

Date: 15/02/2023

S.No.	Title/Parameters	Values/Data
a)	Number of Generating Units	3x35
b)	Total Installed Capacity (MW)	105
c)	Maximum possible Ex-bus injection (MW) (including overload if any)	105 MW*
d)	Technical Minimum (MW)	N.A
e)	Type of Fuel	WATER
f)	Region	N.E.R
g)	Bid area	A1
h)	Fixed Cost (Paise/kWh up to one decimal place)	**194.6**
i)	Variable Cost (Paise/kWh up to one decimal place)	**120.0**
j)	Ramp-Up Rate (MW/Min) for each unit	30 MW per min
k)	Ramp- Down Rate (MW/Min) for each unit	30 MW per min
l)	Start-up Time from Cold Start (in Min) / Warm Start/Hot Start of each unit	15 min
m)	Any other information	

* As per water availability

Signature of Authorized Signatory (With Stamp)

Format AS3: RRAS Provider Parameters by RPC

From:NERPC **To:** Nodal Agency (NLDC,Delhi)
(Name of RRAS Provider Generating Station) **Bongaigaon Thermal Power Plant** (Name of Owner Organization) **NTPC Limited**

Validity oftheInformation **From:**16/02/2023 **To:** 15/03/2023

Date: 15/02/2023

S.No.	Title/Parameters	Values/Data
a)	Number of Generating Units	3x250 MW
b)	Total Installed Capacity (MW)	750
c)	Maximum possible Ex-bus injection (MW) (including overload if any)	239.06 MW per unit
d)	Technical Minimum (MW)	137.5 MW per unit
e)	Type of Fuel	Coal
f)	Region	N.E.R
g)	Bid area	N.E.R.
h)	Fixed Cost (Paise/kWh up to one decimal place)	**240.63**
i)	Variable Cost (Paise/kWh up to one decimal place)	**351.90**
j)	Ramp-Up Rate (MW/Min) for each unit	2.28 MW per min (ex Bus)
k)	Ramp- Down Rate (MW/Min) for each unit	2.28 MW per min (ex Bus)
l)	Start-up Time from Cold Start (in Min) / Warm Start/Hot Start of each unit	Cold Start: 600 min Warm Start: 360 min Hot Start: 66 Min
m)	Any other information	Warm start up time: 10 hr. if RSD>12 hr. Cold start up time: 23 hr. if RSD>4 days as boiler will be kept under preservation

Signature of Authorized Signatory (With Stamp)

3.3 DSM Accounting:

DSM Accounting is done to calculate the actual injection/drawal from the scheduled injection/drawal to instill grid frequency discipline It is a weekly statement issued by NERPC**. The DSM regulation 2022 is attached as Annexure-IV.**

Summary of DSM Balance Sheet in NER during FY 2022-23 (Period: Week-01 to Week-52) is as follows:

Constituents	DSM Payable	Addl. DSM Payable	DSM Receivable	Net Payment
	(a)	(b)	(c)	(c)-{(a)+(b)}
Ar. Pradesh	28.12	4.40	5.21	-27.31
Assam	37.14	10.47	27.12	-20.49
Manipur	8.01	1.11	3.44	-5.68
Meghalaya	5.45	1.45	16.96	10.06
Mizoram	0.00	0.83	29.17	28.34
Nagaland	0.90	0.41	11.03	9.72
Tripura	10.31	4.13	19.02	4.58
NHPC	0.10	0.06	0.85	0.68
NEEPCO	4.66	1.72	39.86	33.49
ER(NERPC)	949.52	0.00	1524.23	574.72
OTPC	3.47	0.48	2.46	-1.49
NTPC	13.71	1.45	0.40	-14.76
NR(NERPC)	1592.61	0.00	894.79	-697.82
BNC	0.06	0.02	0.50	0.41
Total	**2654.05**	**26.53**	**2575.04**	**-105.54**

Note: Figures in Crores of ₹. All figures are as per weekly Deviation Accounting issued by NERPC Secretariat. Net Payment: (+) receivable from pool/ (-) payable to pool.

3.4 Reactive Energy Accounting

Reactive Energy Accounting is a weekly statement issued by NERPC to keep the voltage profile of NER grid in check. The IEGC 2020 reactive energy accounting procedure is as follows:

A. REACTIVE POWER COMPENSATION

(1) Reactive power compensation should ideally be provided locally, by generating reactive power as close to the reactive power consumption as possible. The regional entities except generating stations are therefore expected to provide local VAr compensation/generation such that they do not draw VArs from the EHV grid, particularly under low-voltage condition. To discourage VAr drawals by regional entities except generating stations, VAr exchanges with ISTS shall be priced as follows:

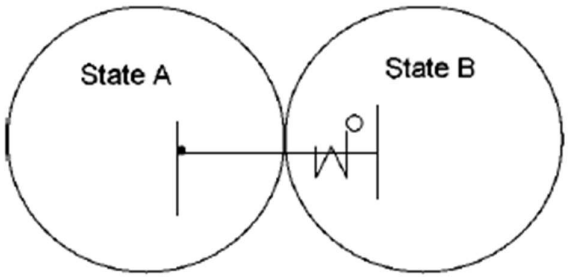
- The regional entity except generating stations pays for VAr drawal when voltage at the metering point is below 97%
- The regional entity except generating stations gets paid for VAr return when voltage is below 97%
- The regional entity except generating stations gets paid for VAr drawal when voltage is above103%
- The regional entity except generating stations pays for VAr return when voltage is above 103%

Provided that there shall be no charge/payment for VAr drawal/return by a regional entity except generating stations on its own line emanating directly from an ISGS.

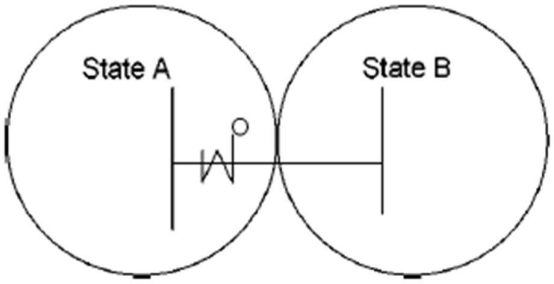
(2) The charge for VArh shall be at the rate of 12.61 paise/kVArh and this will be applicable between the regional entity, except generating stations, and the regional pool account for VAr interchanges. This rate shall be escalated at 0.6paise/kVArh per year thereafter, unless otherwise revised by the Commission.

B. PAYMENT FOR REACTIVE ENERGY EXCHANGES ON STATE-OWNED LINES

Case – 1: Interconnecting line owned by State-A Metering Point: Substation of State-B

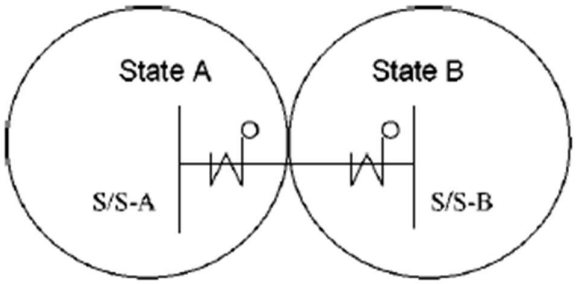


Case - 2: Interconnecting line owned by State-B Metering point: Substation of State-A



Note: Net VArh and net payment may be positive or negative

Case – 3: Interconnecting line is jointly owned by States-A and –B. Metering points: Substations of State-A and State-B



Net VArh exported from S/S-A, while voltage < 97% = X_1 Net VArh exported from S/S-A, while voltage > 103% = X_2 Net VArh imported at S/S-B, while voltage < 97% = X_3 Net VArh imported at S/S-B, while voltage > 103% = X_4

(i) State-B pays to State-A for X_1 or X_3, whichever is smaller in magnitude, and
(ii) State-A pays to State-B for X_2 or X_4, whichever is smaller in magnitude.

Note:

I. Net VArh and net payment may be positive or negative.
II. In case X_1 is positive and X_3 is negative, or vice-versa, there would be no payment under (i) above.
III. In case X_2 is positive and X_4 is negative, or vice-versa, there would be no payment under (ii) above.

अध्याय CHAPTER 4

सुरक्षा, संचार
Protection, Communication

4.1 <u>UFR Scheme:</u>

Based on the recommendations of the National Power Committee (NPC) that in view of high shortfall conditions that prevail throughout the region in lean hydro conditions, UFRs may be installed under defense mechanism to provide total load relief of 400 MW (Stage-I: 100 MW, Stage-II: 100 MW, Stage-III: 100 MW & Stage-IV: 100MW). The State wise load relief through UFR shall be as given below:

List of UFR in NER							
SL.No	**Name of State**	**Total Quantum of Load Shedding required (MW)**	**Location of UFR installed (Feeder's Name)**	**Stage**	**Load shedding required (MW)**	**Load in each feeder (MW)**	**Remarks**
1	Ar. Pradesh	40	33kV Holongi feeder of 132/33kV Chimpu	Stage - I(49.4 Hz)	10	3.5	Commissioned
2			33kV Yupia feeder of 132/33kV Lekhi			3	
3			33kV Dumporijo Feeder of 132/33kV Daporijo			1.5	
4			33kV Sippi feeder of 132/33kV Daporijo			1.8	
5			At SMS Smelters (33 KV Lekhi feeders - 3 Nos)	Stage - I (49.2 Hz)	10	10	Commissioned
6			At Platinum Alloys (11 KV Lekhi feeders - 3 Nos)	Stage - II (49.0 Hz)	10	10	
7			At Satyam Ispat Ltd. (33 KV Lekhi feeders - 3 Nos)	Stage - III (48.8 Hz)	10	10	

1	**Assam**	**360**	132kV Samaguri-Khaloigaon Line at Samaguri	**Stage - I(49.4 Hz)**	**90**	**50**	**Commissioned**
2			132kV Sankardevnagar-Diphu Line at Sankardevnagar			**20**	
3			132kV Mirza-Azara Line at Mirza			**20**	
4			132kV Tinsukia-Ledo Line at Tinsukia	**Stage - II (49.2 HZ)**	**90**	**30**	
5			132kV Tinsukia-Rupai Line at Tinsukia			**40**	
6			132kV Panisokuwa-Bokakhat Line at Panisokuwa			**20**	
7			132kV CTPS-Baghjap Line at CTPS	**Stage - III (49.0 Hz)**	**90**	**35**	
8			132kV Nalkata-Dhemaji Line at Nalkata			**35**	
9			132kV Garmur-Panisokuwa Line at Garmur			**20**	
10			132kV Dhaligaon-Gossaigaon Line at Dhaligaon	**Stage - IV (48.8 Hz)**	**90**	**28**	
11			132kV Bilasipara-Gauripur Line at Bilasipara			**50**	
12			132kV Dhaligaon-APM Line at Dhaligaon			**25**	

1	**Manipur (MSPCL)**	**20**	At Yurembam (33 KV Yurembam - Mantripukhri)	**Stage - I (49.4 Hz)**			**ADMS and UFR segregation for stage I to be done**
2			At Yaingangpokpi (33 KV Yaingangpokpi - Napetpalli)	**Stage - II (49.2Hz)**			
3			At Kongba (33 KV Kongba - Mongsangei)	**Stage - III (48.8Hz)**			
4			At Kakching (33 KV Kakching - Wangjing)	**Stage - IV (48.8Hz)**			
1	**Meghalaya**	**100**	33kV Ampati & Garobada at 132/33kV Ampati S/S	**Stage - I (49.4 Hz)**	**25**	**19**	**Commissioned**
2			33kV Williamnagar & Baghmara at 132/33kV Nangalbibra			**6**	
3			33kV Nangalbibra & 33kV Rongieng at 132/33kV Nangalbibra	**Stage - II (49.2 Hz)**	**25**	**6**	
4			33kV Bajengdoba at 132/33kV Mendipathar			**5**	
5			33kV Mendipathar at 132/33kV Mendipathar			**8**	
6			33kV Mawjrong at 132/33kV Mawphlang			**6**	
7			33kV Khliehriat feeder at 132/33kV Khliehriat Substation	**Stage - III (49 Hz)**	**25**	**10**	
8			33kV Nongstoin & 33kV Mawshynrut feeder at 132/33kV Nongstoin			**8**	
9			33kV Mawsynram feeder at 132/33kV Mawphlang			**6**	

10			33kV Dakopgre & 33kV Tura-I feeder at 132/33kV Rongkhon	**Stage - IV (48.8 Hz)**	**25**	**12**	
11			33/11kV MES feeder at 132/33kV Mawlyndep			**1**	
12			33kV Jowai at 132/33kV Mustem			**12**	
1	**Mizoram**	**20**	At 132 KV Khawiva (33 KV Khawiva - Sazaikawn)	**Stage - I (49.4 Hz)**		2.38	**Commissioned**
2			At Bukpui (33 KV Bukpui - Chhingchhip)			2.71	
3			At Zuangtui (6.3 MVA, 33/11 KV Transformer - I)	**Stage - II (49.2 Hz)**		5.31	
4							
5			At Zuangtui (6.3 MVA, 33/11 KV Transformer - II)	**Stage - III (49.0 Hz)**		4	
6			At Tlangnuam (33 KV Tlangnuam - Aibawk)			1.1	
7			At Chawnpui (6.3 MVA, 33/11 KV Transformer - I)	**Stage - III (48.8 Hz)**		3	
8			At Zuangtui (11 KV Zuangtui - Chaltlang)			2.2	
1	**Nagaland**	**20**	11KV Veterinary at Nagarjan	**Stage-I (49.4Hz)**	**10**	**2**	**Commissioned**
2			11KV Purana Bazar at Nagarjan			**3.3**	
3			11KV Dhobinalla at Nagarjan			**3.5**	
4			11KV RKM at Nagarjan			**1.8**	
5			At Mokokchung (66 KV Mokokchung - Tuli)	**Stage - II (49.2 Hz)**	**10**	**10**	**Commissioned**
6			33kV Kohima-I at Kohima	**Stage - III (49.0 Hz)**	**10**	**2.5**	
7			66kV Ganeshnagar at Nagarjan			**7.5**	
8			33/11kV Transformer I at Kohima	**Stage - IV (48.8 Hz)**	**10**	**10**	
1	**Tripura**	**80**	33kV Gandacherra at 132/33/11kV Ambassa	**Stage-I (49.4Hz)**	**20**	**3.24**	**Commissioned**
2			33kV Salema at 132/33/11kV Ambassa			**1.95**	
3			33kV Manu at 132/33/11kV Ambassa			**5.85**	
4			7.5MVA Transformer 132/33/11kV at 132/33/11kV Ambassa			**2.5**	
5			33kV Kalyanpur at 132/33/11kV Dhalabil			**1.365**	
6			33kV Tulashikar at 132/33/11kV Dhalabil			**2.45**	
7			33kV Ampura at 132/33/11kV Dhalabil			**1.22**	
8			15MVA 132/11kV Transformer at 132/33/11kV Dhalabil			**4.1**	
9			66kV Bagafa at 132/66/33/11kV Udaipur	**Stage-II (49.2Hz)**	**20**	**7.55**	

10			33kV Udaipur town at 132/66/33/11kV Udaipur			**3.8**	
11			33kV Rani at 132/66/33/11kV Udaipur			**5.95**	
12			33kV Killa at 132/66/33/11kV Udaipur			**0.725**	
13			66kV Badarghat at 132/66/11kV Rokhia	**Stage-III (49.0Hz)**	**20**	**4.9**	
14			66kV Rabindranagar at 132/66/11kV Rokhia			**17**	
15			66kV Boxnagar at 132/66/11kV Rokhia			**2.9**	
16			33kV Kanchanpur at 132/33/11kV P.K.Bari	**Stage-IV (48.8 Hz)**	**20**	**3.6**	**Commissioned**
17			33kV Pechartal at 132/33/11kV P.K.Bari			**2.05**	
18			33kV Manu at 132/33/11kV P.K.Bari			**5.4**	
19			11kV Fatikroy at 132/33/11kV P.K.Bari			**1.51**	
20			11kV Kumarghat at 132/33/11kV P.K.Bari			**1.8**	
21			11kV Kanchanbari at 132/33/11kV P.K.Bari			**1.28**	

4.2 Special Protection Scheme:

The complexities of the Indian electric power system operation are increasing day by day. The size of the Grid has expanded manifold and is on a high growth phase with All India Demand Met crossing about 211 GW. The need of System Protection Schemes (SPS) also known as System Integrity Protection Schemes (SIPS) or Remedial Action Schemes (RAS) is spelt due to long haulage of power. Due to heavy flow of power through these long corridors, any outage usually results in congestion in this part of the network. This results into reduction in transfer capability across this corridor. Subsequently disturbance in a large area of the Grid resulting into loss of load and generation. SPS- System Protection scheme is a scheme in addition to the normal protection system to take care of some special contingencies like tripping of important corridor/flow gates etc. to avoid the voltage collapse, cascade tripping, load generation mismatch and finally blackouts in the system.

System Protection Schemes are used during rare contingencies, when focus for the protection is on the power system supply capability rather than on specific equipment and when the consequences of an operating condition are outside the capability of conventional protection. SPS consists of three main parts i.e., the input which is the level of physical magnitudes and status of circuits breakers, decision making system which initiate some actions based on inputs and output which may be generator tripping/ back down and or load tripping. SPS are tailor made schemes & are required to operate infrequently. The control actions taken are predetermined & can be armed or disarmed depending upon system conditions. It can comprise of a large number of coordinated actions, in a cascaded manner. For large interconnected system the non-operation of unit (like differential protection etc) / nonunit (Like distance protection or over-current protection etc.) or backup protections may lead to wide spread disturbances. Also there is heavy rush of power flow from an inter-regional or important intra-regional corridors. Tripping of these tie lines may overload other lines in the corridor which may result in cascading. This necessitates the implementation of SPS as safety net for the grid. The following schemes do not constitute an SPS and are exclusions from SPS definition:

- Under frequency or under voltage load shedding
- Locally sensing devices applied on an element to protect it against equipment damage for non-fault conditions by tripping or modifying the operation of that element, such as, but not limited to, generator loss-of-field or transformer top-oil temperature
- Auto-Reclosing schemes
- Locally sensed and locally operated series and shunt reactive devices, FACTS devices, phase shifting transformers, variable frequency transformers, generation excitation systems, and tap-changing transformers
- Schemes that automatically de-energize a line for non-fault operation when one end of the line is open
- Out-of-step relaying
- Schemes that provide anti-islanding protection (e.g., protect load from effects of being isolated with generation that may not be capable of maintaining acceptable frequency and voltage)
- Protection schemes that operate local breakers other than those on the faulted circuit to facilitate fault clearing, such as, but not limited to, opening a circuit breaker to remove infeed so protection at a remote terminal can detect a fault or to reduce fault duty.

- Automatic sequences that proceed when manually initiated solely by an operator
- Sub-synchronous resonance (SSR) protection schemes
- Modulation of HVDC or SVC via supplementary controls such as angle damping or frequency damping applied to damp local or inter-area oscillations
- A Protection System that includes multiple elements within its zone of protection, or that isolates more than the faulted element because an interrupting device is not provided between the faulted element and one or more other elements

NEED FOR SPS :

As per Indian Electricity Grid Code (IEGC), interstate transmission system (ISTS) shall be capable of withstanding and be secured against the certain outages without necessitating load shedding or rescheduling of generation during steady state operation. These include outage of a 132 kV D/C line or Outage of a 220 kV D/C line or Outage of a 400 kV S/C line or Outage of a single ICT or Outage of one pole of HVDC bi-pole or Outage of 765 kV S/C line. The aforesaid contingencies would be superimposed over a planned outage of another 220 kV D/C line or 400 kV S/C line in another corridor and not emanating from the same sub-station. ISTS shall be capable of withstanding the loss of most severe single system infeed without loss of stability. It has also been stated that any one of the aforesaid events shall not cause loss of supply, abnormal frequency on sustained basis, unacceptable high or low voltage, system instability, unacceptable overloading of ISTS elements. As per the IEGC or transmission planning criteria, the system is not designed for 400 kV double circuit line or outage of HVDC bi-pole. In practice it has been observed that there are some contingencies happening in the system resulting in outage of multiple elements for which system is not designed. Disturbances like loss of load, loss of generation or loss of transmission line in large grid may cause wide variations in frequency, voltage & load angles. Originating causes of grid failure may be due to equipment failure (including those of protective systems), human error and cascade tripping or large scale disturbances due to weather and/or natural calamities. Disturbances cause discomfort to the people as well as results into huge economic loss. Therefore, in addition to conventional unit protection system few System Protection Schemes (SPS) are also desirable for safe and reliable operation of the power system. The main objective of SPS is to preserve the integrity of the electric system by using automatic measures that are simple, reliable and safe for the system as a whole and to provide the most extensive coverage against all possible extreme credible contingencies.

REGULATORY REQUIREMENT

As per clause. 5.2 (O) of IEGC "All Users, STU/SLDC , CTU/RLDC and NLDC, shall also facilitate identification, installation and commissioning of System Protection Schemes (SPS) (including intertripping and run-back) in the power system to operate the transmission system closer to their limits and to protect against situations such as voltage collapse and cascade tripping, tripping of important corridors/flow-gates etc.. Such schemes would be finalized by the concerned RPC forum and shall always be kept in service. If any SPS is to be taken out of service, permission of RLDC shall be obtained indicating reason and duration of anticipated outage from service"

As per clause. 4.3 of planning Criteria After suffering single contingency (N-1), grid is still vulnerable to experience second contingency, though less probable ('N-1-1'), wherein some of the equipment's may be loaded up to their emergency limits. To bring the system parameters back within their normal limits, load shedding/re-scheduling of generation may have to be applied either manually or through automatic system protection schemes (SPS). Such measures shall generally be applied within one and a half hour (1½) after the disturbance .

As per Clause 3.5 (f) of IEGC Suitable System Protection Schemes may be planned by NLDC/RLDC in consultation with CEA, CTU, RPC and the Regional Entities, either for enhancing transfer capability or to take care of contingencies beyond that indicated as mentioned in clause a(i) Clause a(i) As a general rule, the ISTS shall be capable of withstanding and be secured against the following contingency outages a. Without necessitating load shedding or rescheduling of generation during Steady State Operation:
Outage of a 132 kV D/C line or,
Outage of a 220 kV D/C line or,
Outage of a 400 kV S/C line or,
Outage of single Interconnecting Transformer, or
Outage of one pole of HVDC Bi-pole line, or
one pole of HVDC back to back Station or
Outage of 765 kV S/C line

CEA/NRC/RA-2015/ dt 20.02.15 Operational Guidelines for determination of TTC, ATC and TRM for the short term horizon (0 to 3 months) :

The SPS must be considered for the purpose of calculation of TTC and ATC, when used for N-1-1 criteria, and for N-1 criteria (in situations, wherein Long Term Access (LTA) and Medium Term Open Access (MTOA) itself has been granted with SPS). However, SPS should be considered for the purpose of thermal rating and not for satisfying the angular stability criteria.

SYSTEM PROTECTION SCHEMES (SPS) IN NER

Normally all the System protection schemes are proposed, discussed and getting approved in RPC meetings such as OCC, PCC, TCC and RPC Board meetings. The Summary of System Protection Schemes (SPS) both inter/Intra regional including cross border SPS which are in service, and no of schemes Approved, no of schemes under discussion stage are detailed below:

Sl. No	Region	No. of Schemes in service	No. of Schemes approved (yet to be operationalized)	No of schemes under discussion
1	SPS in NER under operation	11	1	1
2	SPS related to reliable power supply to Bangladesh	2	1	-
	TOTAL	13	2	1

The System Protection Schemes for inter / intra-regional corridor (Region wise) divided in to five categories as stated below:

a) SPS related to tripping of critical line / corridor

b) SPS related to safe evacuation of Generation

c) SPS related to overloading of Transformers

d) SPS related to maintaining transfer capability

e) SPS related to under voltage condition

Brief Overview of SPS in North-Eastern Region (excluding SPS related to reliable power supply to Bangladesh) which are in service is listed below:

Sl. No	SPS Name
1	SPS related to tripping of 400 kV Palatana-Silchar D/C when both modules of Palatana are in service.
2	SPS related to reverse power flow more than 60 MW from LV to HV side of 400/220 kV Azara ICTs
3	SPS related to tripping of 132 kV Umiam Stg-I to Umiam St-III D/C lines
4	SPS related to overloading of 220kV BTPS- Salakati D/C or in case of outage of one circuit the other circuit gets overloaded i.e loading greater than 600A)
5	SPS associated with generation evacuation from BgTPP(NTPC).
6	SPS associated with generation evacuation from TGBPP, Monarchak(NEEPCO)
7	SPS related to Outage of 220 kV BTPS – Rangia I & II lines
8	SPS related to the tripping of Bus Reactors at 400 kV S M Nagar (ISTS)
9	SPS related to the tripping of Bus Reactors at 400 kV P K Bari (ISTS)
10	SPS related to the tripping of Bus Reactors at 400 kV Imphal (PG)
11	SPS related to Outage of any one of the 400/132kV 2x360MVA ICTs at Panyor Lower Hydro Power Station (erstwhile RHEP) (NEEPCO)

4.3 RTU locations in NER:

1. RTU/SAS Locations (Central Sector)

S.N	Name of Station	Owner	Voltage Level	S.N	Name of Station	Owner	Voltage Level
1	Agartala	NEEPCO	132 kV	20	Loktak	NHPC	132 kV
2	Aizawl	PGCIL	132 kV	21	Mariani	PGCIL	220 kV
3	Badarpur	PGCIL	132 kV	22	Misa	PGCIL	400 kV
4	Balipara	PGCIL	400 kV	23	Mokokchung	PGCIL	220 kV
5	BNCHVDC	PGCIL	+/-800 kV	24	Melriat	PGCIL	132 kV
6	Bongaigoan	PGCIL	400 kV	25	Namsai	PGCIL	132 kV
7	BgTPP	NTPC	400 kV	26	Palatana	OTPC	400 kV
8	Dimapur	PGCIL	220 kV	27	Pare	NEEPCO	132 kV
9	Doyang	NEEPCO	132 kV	28	Ranaganadi	NEEPCO	400 kV
10	Haflong	PGCIL	132 kV	29	Roing	PGCIL	132 kV
11	Imphal	PGCIL	400 kV	30	Salakati	PGCIL	220 kV
12	Itanagar (Nirjuli)	PGCIL	132 kV	31	Silchar	PGCIL	400 kV
13	Jiribam	PGCIL	132 kV	32	Tezu	PGCIL	132 kV
14	Kathalguri	NEEPCO	220 kV	33	Ziro	PGCIL	132 kV
15	Khandong	NEEPCO	220 kV	34	Kameng	NEEPCO	400 kV
16	Khleiriat	PGCIL	132 kV	35	New Kohima	KMTL	400 kV
17	Kopili	NEEPCO	220 kV	36	PK Bari	Indigrid	400 kV
18	Kopili-Ex	PGCIL	132 kV	37	Surajmaninagar	Indigrid	400 kV
19	Kumarghat	PGCIL	132 kV				

2. RTU/SAS Locations (Arunachal Pradesh)

Sl.No.	Name of Station	Voltage Level	Sl.No.	Name of Station	Voltage Level
1	Along	132 kV	7	Pasighat	132 kV
2	Daporijio	132 kV	8	Dikshi	132 kV
3	Deomali	132 kV	9	Tenga	132 kV
4	Itanagar(Chimpu)	132 kV	10	Jairampur	33 kV
5	Khupi	132 kV	11	Bhalukpong	132 kV
6	Lekhi	132 kV			

3. RTU/SAS Location (Manipur)

Sl. No.	Name of Station	Voltage Level	Sl. No.	Name of Station	Voltage Level
1	Chandel	132 kV	8	Kongba	132 kV
2	Churachandpur	132 kV	9	Ningthoukhong	132 kV
3	Hundung	132 kV	10	Rengpang	132 kV
4	Imphal	132 kV	11	Yaingangpokpi	132 kV
5	Jiribam	132 kV	12	Tipaimukh	132 kV
6	Kakching	132 kV	13	Thoubal New	400 kV
7	Karong	132 kV	14	Thoubal Old	132 kV

4. RTU Locations (Assam):

Sl. No.	Name of Station	Voltage Level		Sl. No.	Name of Station	Voltage Level
1.	Agia	220 kV		41.	Lakwa	132 kV
2.	Ashok Paper Mill	132 kV		42.	Karbi langpi	220 kV
3.	Azara	132 kV		43.	Karimganj	132 kV
4.	Mirza	400 kV		44.	Lanka	132 kV
5.	AIIMS	132 kV		45.	Majuli	132 kV
6.	Amigaon	132 kV		46.	Margherita	132 kV
7.	Badarpur (Panchgram)	132 kV		47.	Mariani	220 kV
8.	Barpeta	132 kV		48.	Moran	132 kV
9.	Behiating	132 kV		49.	Myntriang - I	33 kV
10.	Biswanath chariali	132 kV		50.	Myntriang - II	33 kV
11.	Bokajan	132 kV		51.	Khaloigaon	132 kV
12.	Bokakhat	132 kV		52.	Nalbari	132 kV
13.	Boko	220 kV.		53.	Namrup	132 kV
14.	Bongaigaon	220 kV		54.	Narangi	132 kV
15.	Bordubi	132 kV		55.	Nazira	132 kV
16.	Bornagar	132 kV		56.	Pailapool	132 kV
17.	Chandrapur	132 kV		57.	Rangia	132 kV
18.	Chapakhowa	132 kV		58.	Rangia 220 kV	220 kV
19.	Depota	132 kV		59.	Rowta	132 kV
20.	Dhaligaon	132 kV		60.	Rupai	132 kV
21.	Dhemaji	132 kV		61.	Samaguri	220 kV
22.	Dibrugarh	132 kV		62.	Sarusajai	132 kV
23.	Diphu	132 kV.		63.	Sibsagar	132 kV
24.	Dispur	132 kV		64.	Sipajhar	132 kV
25.	Dhekiajuli	132 kV		65.	Sishugram	132 kV
26.	Dullavchera	132 kV		66.	Sonabil	220 kV
27.	Gauripur	132 kV		67.	Sonari	132 kV
28.	Gohpur	132 kV		68.	Srikona (Silchar)	132 kV
29.	Ghoramari	132 kV		69.	Sarupathar	132 kV
30.	Golaghat	132 kV		70.	Tangla	132 kV
31.	Gossaigaon	132 kV		71.	Tezpur	132 kV
32.	Haflong	132 kV		72.	Teok	132 kV
33.	Hailakandi	132 kV		73.	Tinsukia	220 kV
34.	Jagiroad	132 kV		74.	Umranshu	132 kV
35.	Jawharnagar	220 kV		75.	Bilaspara	132 kV
36.	Jorhat (Garmur)	132 kV		76.	Kamakhaya	132 kV
37.	Jorhat (west)	132 kV		77.	Kokrajhar	132 kV
38.	Kahelipara	132 kV		78.	Matia	132 kV
39.	Kamalpur	132 kV		79.	NRPP	220 kV
40.	North lakhimpur	132 kV		80.	Sonapur	220 kV

5. Solar Plants ASSAM

Sl No	Name of Station	Voltage Level
1	Amguri Jackson Solar Plant	220 KV
2	Rowta Azure Solar Plant	33 kV
3	Boko Azure Solar Plant	33 kV
4	Samaguri Azure Solar Plant	33 kV
5	Samaguri Maheswari Solar Plant	33 kV
6	Ghoramari Patanjali Solar Plant	33 kV
7	Pailapool Azure Solar Plant	33 kV

6. RTU/SAS Location (Mizoram)

Sl. No.	Name of Station	Voltage Level		Sl. No.	Name of Station	Voltage Level
1	Bairabi	132 kV		4	Sihhmui	132 kV
2	Indoor	132 kV		5	Zuangtui	132kV
3	Luangmual	132 kV				

7. RTU/SAS Location (Nagaland)

Sl. No.	Name of Station	Voltage Level		Sl. No.	Name of Station	Voltage Level
1	Dimapur	132 kV		9	Nagnimora	66 kV
2	Ganesh nagar	132 kV		10	Powerhouse	66 kV
3	Kiphire	66 kV		11	Sanis	132 kV
4	Kohima	132 kV		12	Tizit	66 kV
5	LHEP	66 kV		13	Tuensang	66 kV
6	Meluri	132 kV		14	Tuli	66 kV
7	Mokokchung	132 kV		15	Wokha	132 kV
8	Mon	132 kV		16	Zuheneboto	66 kV

8. RTU/SAS Location (Tripura)

Sl. No.	Name of Station	Voltage Level		Sl. No.	Name of Station	Voltage Level
1	Agartala	132 kV		14	Gumti	66 kV
2	Amarpur	132 kV		15	Jirania	132 kV
3	Ambassa	132 kV		16	Kamalpur	132 kV
4	Badharghat	132 kV		17	Monarchak	132 kV
5	Barmura	66 kV		18	Mohanpur	132 kV
6	Belonia	132 kV		19	Ompi	66 kV
7	Bokafa	132 kV		20	PK bari	132 kV
8	Boxanagar	66 kV		21	Rabindranagar	132 kV
9	Budhjungnagar	132 kV		22	Rokhia	132 kV
10	Dhalabill	132kV		23	Sabroom	66 kV
11	Dharmanagar	132 kV		24	Satchand	66 kV
12	Gamaitila	132 kV		25	Surajmaninagar	132 kV
13	Gournagar	132 kV		26	Udaipur	132 kV

As the current AMC of SCADA-EMS systems in NERLDC as well as all North-Eastern Region SLDCs will becompleted on 2024, it was proposed in 19th and 21st NeTEST meeting that all SLDCs and NERLDC can upgradein a unified manner to get benefits of seamless integration, joint capacity building and economies of scale in terms of cost implications and also agreed in-principle to sign MoU. The status of the same are listed below: -

a. Signed with Meghalaya SLDC on 28th February 2021
b. Signed with Mizoram SLDC on 01st November 2021
c. Signed with Assam SLDC on 06th January 2022
d. Signed with Nagaland SLDC on 01st March 2022
e. Signed with Arunachal Pradesh on 07th July 2022
f. Signed with Manipur on 11th June 2022
g. Signed with Tripura on 20th May 2022

4.4 Power System Development Fund (PSDF):

Power System Development Fund (PSDF) has been constituted vide Central Electricity Regulatory Commission (Power System Development Fund) Regulations, 2010 dated 4th June 2010.
Following regulatory charges are being credited to PSDF:

- Congestion Charges standing to the credit of the "Congestion Charge Account" after release of amounts payable to Regional Entities entitled to receive congestion charges along with interest, if any, in accordance with the Congestion Relief Regulations.
- Congestion amount arising from the difference in the market prices of different regions as a consequence of market splitting in power exchanges in accordance with Power Market Regulations.
- Deviation Settlement Charges standing to the credit of the "Regional Deviation Pool Account Fund" after final settlement of claims in accordance with Deviation Settlement Mechanism Regulations.
- RLDC Reactive Energy charges standing to the credit of Reactive Energy Charges Account in accordance with the Grid Code.
- Additional Transmission Charges arising out of the explicit auction process in STOA Advance Bilateral transactions in accordance with the CERC (Open Access in interstate transmission) Regulations, 2008 and amendments thereof.
- Such other charges as may be notified by the Central Commission from time to time.

Regional Power Committees, Generating Companies, Transmission Licensees, Distribution Licensees and Load Dispatch Centers as the case may be, shall submit the schemes to NLDC as Nodal Agency for funding from PSDF. NLDC would pose these schemes to the Appraisal Committee for technical Scrutiny. Based on the recommendations of the Appraisal Committee headed by chairperson, CEA and communication of the CERC, the disbursement of the funds under PSDF shall be sanctioned by an inter-ministerial Monitoring Committee headed by Secretary, Power.

The Power System Development Fund will be utilized for the following purposes (as per MoP letter vide No. 29/9/2010-R&R (Vol. II) dated 10th January, 2014 in respect of the Cabinet Approval regarding the scheme for operationalization of the Power System Development Fund (PSDF) and utilization of funds deposited therein):

i) Creating necessary transmission systems of strategic importance based on operational feedback by Load Despatch Centers for relieving congestion in Inter-State Transmission Systems (ISTS) and intra-state system which are incidental to the ISTS.
ii) Installation of shunt capacitors, series compensators and other reactive energy generators for improvement of voltage profile in the Grid.
iii) Installation of standard and special protection schemes, pilot and demonstrative projects, and for setting right the discrepancies identified in the protection audits on regional basis.
iv) Renovation and Modernization (R&M) of transmission and distribution systems for relieving congestion.
v) Any other scheme/project in furtherance of the above objectives, such as, conducting technical studies and capacity building, etc.

National Load Dispatch Center (NLDC) is the Nodal Agency for the implementation of the scheme under CERC (PSDF) Regulations 2014.

Government of India (Ministry of Power) has constituted an Inter-Ministerial Monitoring Committee under the Chairmanship of Secretary (Power) to be known as Monitoring Committee. The Monitoring Committee will consider such projects (or their revised costs) for sanction based on the recommendation of the Appraisal Committee and communication of the Central Commission that such projects are in line with the principles defined in CERC (PSDF) Regulation, 2014
and have been prioritized in accordance with the principles envisaged in these regulations.

Appraisal Committee has been constituted by the Government of India (Ministry of Power) for scrutiny (techno-economic appraisal) and prioritization of the various projects proposals for funding from PSDF.

Guidelines for submission of DPR:

The Appraisal Committee, in its seventh meeting had suggested to bring uniformity, that a model DPR along with suggested guidelines with regard to spares, taxes etc may be made available to the entities through NLDC website. The matter was deliberated by the Appraisal Committee in the meeting held on 8.9.2015. The committee had recommended the following guidelines:

- Spares as specified under the Tariff Regulations for 2014-19 notified by CERC
- Non consideration of state taxes, entry tax, etc in the project cost
- Placement of the Letter of Award (LOA) only after approval of the scheme.
- Supply and erection shall commensurate with each other.
- Opening of a separate bank account for each scheme for linking of the same with Public Finance Management System (PFMS) of Ministry of Finance.

अध्याय CHAPTER 5

उत्तर पूर्वी क्षेत्रीय विद्युत समिति की बैठकें
Meetings of North-Eastern Regional Power Committee

NERPC's interactions with its constituents for strategic operational planning & commercial arrangements for exchange of power and settling of dues/disputes and other unresolved technical and commercial issues are discussed in the meetings of various Sub-Committees viz. OCC, PCC, CCM, TCC and Power Committee meetings set up for the purpose. These meetings under the aegis of NERPC were held regularly and periodically with the convenience and consent of all the constituents and important decisions taken or arrived at these meetings are implemented, for optimum supply of power and to give maximum benefits to the constituents of the Region.

5.1 North-Eastern Regional Power Committee (NERPC) Meeting:

This is the meeting of the highest body and its members are Ministers of Power of all the seven States of NE Region, Chairmen of the SEBs, very high-level officers of the other central Utilities and Member Secretary, NERPC. The policy decisions on major issues are taken by this body in its meetings. During 2022-23, 23rd NERPC meeting was held on 18th November 2022.

23rd NERPC Meeting photo (held on 19th November 2022 at Goa)

5.2 Technical Co-ordination Committee (TCC) Meeting:

The Technical Co-ordination Committee is the highest technical forum of the Power Committee and is comprised of the apex/technical heads of the respective constituents. During the year 2021-22, 23rd TCC meeting was held.

23rd TCC Meeting photo (held on 18th November 2022 at Goa)

5.3 Commercial Committee (CC) Meeting:

The Commercial Co-ordination Committee is the apex forum in NER that resolves all the financial and tariff related maters of NER grid constituents.Three Commercial Committee Meetings (45 th, 46 th & 47th) were held under the Chairmanship of the Member Secretary, NERPC.

5.4 Operation Co-ordination Committee (OCC) Meeting:

The Operation Coordination Committee (OCC) represented by nominees from the State Electricity Boards/Electricity Department, Central Sector Power Transmission and Generation Agencies in the region, meet once in every month. During the year 2022-23, 189th to 200th OCC meetings were held under the Chairmanship of the Member Secretary, NERPC. In the OCC meetings the subjects like Generation Schedule, Power requirements including emergency requirements, Central Sector allocation, shortfalls, maintenance and shutdown schedule for generating units and transmission lines were discussed and finalized. The status of implementation of SPAR, upgradation/ expansion of SCADA/EMS system, progress/status of commissioning of new transmission lines, generating units and associated transmission system in the state and central sector etc. were reviewed.

The implementation of decisions taken in RPC meetings was monitored. Under Frequency Load Shedding Scheme, long outage of the generating and transmission elements was discussed regularly.

Early restoration of generation and transmission elements was pursued for smooth operation of grid. The overall performance of the Grid was reviewed and decisions were taken for necessary improvement. System disturbances during the month and remedial measures to avoid repeatition of such incidences in future were discussed.

5.5 Protection Co-ordination Committee (PCC) Meeting:

The Protection Committee is represented by Protection Engineers of State Electricity Boards/Electricity Departments and Central Sector Power generation and transmission Agencies. Objective of this Committee is to analyze grid disturbances, discuss protection issues relating to generation and transmission system like protection schemes, replacement of old relays, frequently occurring faults, co-ordination of relay setting etc. 56th and 57th Protection Co-ordination Committee meetings was held during this financial year under the Chairmanship of the Member Secretary, NERPC.

5.6 The North Eastern Telecommunication SCADA & Telemetry (NETeST) Meeting:

The NeTest was approved as a sub-committee of NERPC during the 15th TCC&NERPC meeting. During the year 2022-23, 23th and 24th NeTest meetings were held under the chairmanship of the Member Secretary, NERPC.

The main objective of the committee is to monitor the implementation of latest communication technology in power sector along with improvement and upgradation of existing communication system for smooth operation of the system.

अध्याय CHAPTER 6

रिपोर्ट एवं प्रमाणन

Reports & Certification

6.1 Reports Issued:

NERPC has been issuing various reports regarding system operational data, load generation balance data, system studies data etc. The details of various reports issued by NERPC are given below: -

a) Monthly Power Supply Position;
b) Monthly Progress Reports;
c) Load Generation Balance Report;
d) Annual Report.

6.2 Certification of Transmission Availability:

As per CERC Regulations 2014-19 vide notification No. L-1/144/2013/CERC dated 21-02-14 effective from 01-04-14, Availability Certificate of Power grid, NETC element in NER during 2021-22 was issued by NERPC Secretariat on monthly basis. The details of Availability for the year 2021-22 are as given below:

अध्याय CHAPTER 7

राजभाषा नीति का कार्यान्वयन
Implementation of Official Language Policy

7.1 <u>हिंदी प्रशिक्षण:</u>

कार्यालय के 64 % कर्मचारियों को हिंदी का कार्यसाधक ज्ञान हैं । शेष कर्मचारियों को जल्द हिंदी प्रशिक्षण के लिए नामित किया जाने का सुझाव दिया गया है । साथ ही इस कार्यालय के यूडीसी /एलडीसी को हिंदी टाइपिंग के लिए भी नामांकित करने का सुझाव दिया गया है।

7.2 <u>हिंदी पत्राचार एवं प्रयोग :</u>

राजभाषा विभाग,गृह मंत्रालय, भारत सरकार के वार्षिक कार्यक्रम के निर्धारित लक्ष्यों को प्राप्त करने की कोशिश निरंतर जारी है । वर्ष 2021-22 के दौरान 'क', 'ख' और 'ग' क्षेत्र को हिंदी पत्राचार का प्रतिशत 82%, 76% और 78% रहा। कार्यालय में प्रयुक्त सभी रबड़ की मोहरें, स्टैम्प आदि द्विभाषी है। सभी कंप्यूटरों को यूनिकोड समर्थित कर दिए गए है। रजिस्टरों और सेवा पंजिकाओं के शीर्षक द्विभाषी है। इस कार्यालय के वेबसाइट आंशिक रूप से द्विभाषी है।

7.3 <u>राजभाषा कार्यान्वयन समिति की बैठक :</u>

वर्ष 2021-22 के दौरान राजभाषा कार्यान्वयन समिति की दो बैठकों का आयोजन किया गया ।

7.4 <u>हिंदी सप्ताह एवं हिंदी संबंधित अन्य गतिविधियां</u>:

वर्ष के दौरान हिंदी सप्ताह 14.09.2021 से 20.09.2021 तक मनाया गया। इन दिनों अनेक प्रतियोगिताओं जैसे निबंध लेखन, अनुवाद, काव्य वाचन आदि का आयोजन किया गया और कर्मचारियों को हिंदी के प्रति जागरूक एवं प्रोत्साहित किया गया। हिंदी के ज्ञान को विस्तार करने के उद्देश्य से कार्यालय के मुख्य प्रवेश द्वार पर ब्लैक-बोर्ड पर रोज़ हिंदी का एक शब्द उसके अंग्रेजी अर्थ के साथ दर्शाया जा रहा है।

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अनुलग्नक और प्रदर्श
Annexures and Exhibits

अनुलग्नक /Annexure-I

Name	Designation & Address
Shri . Neiphui Rio	Chairman NERPC & Hon'ble Chief Minister &I/C Power, Govt. of Nagaland
Smti. Nandita Gorlosa	Hon'ble Minister of Power, Govt. of Assam, Guwahati – 781 006
Shri. Chowna Mein	Hon'ble Dy.Chief Minister & Minister of Power , Govt. of Arunachal Pradesh, Itanagar – 791 111
Shri. Jishnu Dev Varma	Hon'ble Dy. Chief Minister & Minister of Power, Govt. of Tripura, Agartala – 799 001
Shri. Prestone Tynsong	Hon'ble Dy.CM & Minister of Power, Govt. of Meghalaya, Shillong – 793 001
Shri. Th.Biswajit Singh	Hon'ble Minister of Power, Govt. of Manipur, Imphal - 795 001
Shri. R.Lalzirliana	Hon'ble Minister of Power, Govt. of Mizoram, Aizawl - 796 001
Shri. B.K.Arya	Member (GO&D), CEA Sewa Bhawan, R.K. Puram New Delhi - 110016
Shr.i K.Tayeng	Commissioner (Power), Govt. of Arunachal Pradesh, Itanagar – 791 111
Shri. Niraj Verma	Principal Secretary (Power), , Govt. of Assam, Guwahati – 781 006
Shri. Sailash Kr Chourasia	Secretary(Power), Govt. of Manipur, Imphal - 795 001
Dr. Shakil P. Ahammed	Principal Secretary (Power), Govt. of Meghalaya, Shillong – 793 001
Shri. H. Lalengmawia	Commisioner & Secretary (Power), Govt. of Mizoram, Aizawl - 796001
Shri. K.D. Vizo	Principal Secretary (Power), Govt. of Nagaland, Kohima - 797001
Shri. Brijesh Pandey	Secretary (Power),Govt. of Tripura, Agartala - 799001
Shri. Jishnu Barua	Chairman AEGCL/APGCL/APDCL Bijuli Bhavan, Paltan Bazar, Guwahati - 781 001
Shri Debajyoti Das	Managing Director, AEGCL, Bijuli Bhavan, Paltan Bazar, Guwahati - 781 001
Shri. Bibhu Bhuyan	Managing Director, APGCL, Bijuli Bhavan, Paltan Bazar, Guwahati - 781 001
Shri. Rakesh Kumar	Managing Director, APDCL, Bijuli Bhavan, Paltan Bazar, Guwahati - 781 001
Shri. D.P.Wahlang	Chairman & Managing Director, MeECL, Shillong - 793 001
Shri. Gitte Kirankumar Dinkarrao	Chairman & Managing Director, TSECL, Agartala - 799001
Shri. V.K.Singh	Chairman & Managing Director, NEEPCO, Lower New Colony, Shillong - 793 003
Shri.Y.K.Choubey	Director (Technical),NHPC Ltd., NHPC Complex, Sector-33, Faridabad - 121 003
Shri. Chandan Kumar Mondol	Director(Commercial), NTPC Bhawan, Scope Complex, Institutional Area, Lodhi Road– 110 003
Smti. Seema Gupta	Director (Operation), PGCIL, Saudamini, Plot No. 2, Sector-29, Gurgaon, Haryana – 122 001
Shri .Mohit Bhargava	CEO, NVVNL, Core 5,3rd Floor, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi – 110 003
Shri . Deepak Amitabh	Chairman & Managing Director, PTC , NBCC Tower,New Delhi – 110066
Shri. S. R. Narasimhan	Chairman & Managing Director , NLDC, Katwaria Sarai,New Delhi – 110016
Shri. Sanil C. Namboodiripad	Managing Director, OTPC, ONGC Tripura Power Company Ltd, 6th Floor, A-Wing, IFCI Tower-61, Nehru, Place, New Delhi-110019
Shri. N.Roy	ED, NERLDC, Dong Ktieh, Lapalang, Shillong- 793006
Shri. B. Lyngkhoi	Member Secretary , NERPC, NERPC Complex, Dong Parmaw, Lapalang, Shillong-793006

अनुलग्नक /Annexure-II

उत्तर पूर्वी क्षेत्रीय विद्युत समिति सचिवालय के कार्मिक

(31.03.2023को**)**

PERSONNEL OF NERPC SECRETARIAT (as on 31.03.2023)

Sr. No	Designation	Name
1.	**सदस्य सदस्य सचिव** **Member Secretary**	Shri Brieflee Lyngkhoi
2.	**अधीक्षण अभियंता** **Superintending Engineer**	Shri S. M. Aimol
3.	**सहायक सचिव** **Assistant Secretary**	Shri Abhijeet Agrawal
4.	**कार्यकारी अभियंता** **Executive Engineer**	Shri Srijit Mukherjee
		Shri Sadiq Imam
		Shri Abhijeet Agrawal
5.	**सहायक कार्यकारी अभियंता** **Assistant Executive Engineer**	Shri Shaishav Ranjan
		Shri Vikash Shankar
		Shri Dinesh Kumar Singh
6.	**सहायक अभियंता** **Assistant Engineer**	Shri. Rajib Das
		Shri. Ashim Kumar Goswami

अनुलग्नक /Annexure-III

31.03.2023 तक उत्तर पूर्वी क्षेत्रीय विद्युत समिति में पदों की संस्तुति और भरण

POSTS SANCTIONED AND FILLED IN NERPC AS ON 31.03.2023

क्र. सं **S. N.**	पद का नाम **Name of the Post**	स्वीकृत **Sanctioned**	भरण **Filled**	रिक्त **Vacant**
1	सदस्य सचिव **Member Secretary**	1	1	0
2	अधीक्षण अभियंता **Superintending Engineer**	2	1	1
3	कार्यपालक अभियंता/ सहायक सचिव **Executive Engineer/ Assistant Secretary**	3	3	0
4	सहायक निदेशक-I **Assistant Director-I**	4	3	1
5	सहायक निदेशक-II **Assistant Director-II**	2	2	0
6	आशुलिपिक जीआर-I **Stenographer Gr. I**	1	0	1
7	हिंदी अनुवादक जीआर- **II Hindi Translator Gr. II**	1	1	0
8	सहायक **Assistant**	1	0	1
9	यूडीसी **U.D.C.**	1	1	0
10	एलडीसी **L.D.C**.	3	1	2
11	चालक **Driver**	1	0	1
12	दफतरी **MTS**	7	5	2
	कुल Total:	**27**	**18**	**9**