सत्यमेव जयते

भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
NERPC Complex, Dong Parmaw, Lapalang, Shillong - 793006, Meghalaya

No.: No. NERPC/SE (O)/OCC/2025/ 419-461 October 24, 202

To
As per list attached

Sub: 231वीं ऑपरेशन समन्वय उप-समिति (ओसीसी) बैठक का कार्यवृत्त / Minutes of 231st Operation Coordination Sub-Committee (OCC) Meeting

महोदय/महोदया,

कृपया 10 अक्टूबर 2025 को एनईआरपीसी कॉन्फ्रेंस हॉल शिलांग में आयोजित 231वीं ओसीसी बैठक के कार्यवृत्त को अपनी सूचना एवं आवश्यक कार्रवाई हेतु संलग्न पाएं। कार्यवृत्त NERPC की वेबसाइट: www.nerpc.gov.in पर भी उपलब्ध है।

कृपया कोई भी टिप्पणी जल्द से जल्द NERPC सचिवालय को सूचित करें।

Sir/Madam,

Please find enclosed herewith the minutes of the 231th OCC Meeting held at NERPC Conference Hall Shillong on 10th October 2025 for your kind information and necessary action. The minutes is also available on the website of NERPC: www.nerpc.gov.in.

Any comments/observations may kindly be communicated to NERPC Secretariat at the earliest.

भवदीय / Yours faithfully,

(वी एन मुंचा / V N Muncha)
निदेशक / Director

Encl: As above

Distribution List:

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Managing Director, APGCL, Bijuli Bhawan, Guwahati – 781 001
3. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
4. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
5. Managing Director, MSPDCL, Secure Office Bldg. Complex, South Block, Imphal – 795 001
6. Director (Transmission), MePTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Director (Generation), MePGCL, Lumjingshai, Short Round Road, Shillong – 793 001
8. Director (Distribution), MePDCL, Lumjingshai, Short Round Road, Shillong – 793 001
9. Director (Tech.), TSECL, Banamalipur, Agartala -799 001.
10. Director (Generation), TPGCL, Banamalipur, Agartala -799 001.
11. GM (Transmission), TPTL, Bidyut Bhaban, Banamalipur, Agartala -799 001.
12. Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Chief Engineer (TP&MZ), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
14. Chief Engineer (Commercial) -cum- CEI, DoP, Govt. of Arunachal Pradesh, Itanagar- 791111
15. Engineer-in-Chief, P&E Department, Govt. of Mizoram, Aizawl – 796 001
16. Engineer-in-Chief, Department of Power, Govt. of Nagaland, Kohima – 797 001
17. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
18. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
19. Group GM, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
20. Vice President (Plant), OTPC, Badarghat Complex, Agartala, Tripura – 799014
21. ED, PGCIL/NERTS, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
22. AGM (BD), NVVN, Core 5, 3rd floor, Scope Complex, 7 Institutional Area, Lodhi Rd., N. Delhi-3
23. Vice President, PTCIL, 2nd Floor, NBCC Tower, 15, Bhikaji Cama Place, New Delhi – 110066
24. Dy. COO, CTUIL, "Saudamini", 1st Floor, Plot No. 2, Sector-29, Gurugram, Haryana – 122001
25. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066
26. Chief Engineer, NPC Division, Central Electricity Authority, New Delhi – 110066
27. ED, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
28. CGM, AEGCL, Bijuli Bhawan, Guwahati – 781001
29. CGM, APGCL, Bijuli Bhawan, Guwahati – 781001
30. CGM, DISCOM, Bijuli Bhawan, Guwahati – 781001
31. Head of SLDC, Dept. of Power, Govt. of Arunachal Pradesh, Itanagar – 791111
32. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
33. Head of SLDC, MSPCL, Imphal – 795001
34. Head of SLDC, MePTCL, Lumjingshai, Short Round Road, Shillong – 793 001
35. Head of SLDC, P&E Deptt. Govt. of Mizoram, Aizawl – 796 001
36. Head of SLDC, Dept. of Power, Govt. of Nagaland, Dimapur – 797103
37. Head of SLDC, TSECL, Agartala – 799001
38. Chief Engineer (Elect), Loktak HEP, Vidyut Vihar, Kom Keirap, Manipur- 795124
39. DGM (O&M), OTPC, Badarghat Complex, Agartala, Tripura – 799014
40. Director, NETC, 2C, 3rdFloor, D21Corporate Park, DMRC Building Sector 21, Dwarka, Delhi-77
41. AGM Regulatory & Commercial, NER II TL, 10th Floor, Berger Tower, Noida sector 16B-201301
42. Project Head, NERPSIP/PGCIL, Pub Suraj Nagar, Nutun Bazar, Kahelipara, Guwahati- 781019
43. ED, Comprehensive Scheme (Ar. Pradesh), PGCIL, Tayeng Building, Nitivihar, Itanagar-791111

(वी एन मुंचा / V N Muncha)
निदेशक / Director

Minutes

of

231st OCC MEETING

Time: 10:30 Hrs.

Date: 10th October, 2025 (Friday)

Venue: Bongaigaon Thermal Power Plant, NTPC, Bongaigaon, Assam

Contents

NORTH EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 231ST OCC MEETING TO BE HELD ON 10.10.2025 (FRIDAY) AT 10:30 HRS

The list of participants is attached as annexure I

1. PART-A: CONFIRMATION OF MINUTES

1.1. Confirmation of Minutes of 230th Meeting of OCC Sub-Committee of NERPC

The minutes of 230th meeting of OCC Sub-committee held on 19.09.2025 at NERPC Conference Hall, Shillong were circulated vide letter No. NERPC/SE (O)/OCC/2025/ 2438-2480 dated 3rd October, 2025.

No comments were received from constituents

Sub-committee confirmed the minutes of 230th OCCM

2. PART-B: ITEMS FOR DISCUSSION

AGENDA FROM NERPC

2.1. Outage planning

I. Generation Planning (ongoing and planned outages)

a. In 217th OCCM, NEEPCO informed that they would provide daily inflow data for storage-type Hydro PS. NHPC also agreed to provide inflow data as per the NER operational data format. Based on that data provided from NEEPCO and NHPC present per day MU and projected number of days of operation.

Plants	Reservoir Level in meters (as on 06/10/2025)	MU Content	Present DC (MU)	No of days as per current Generation
Khandong STG II	721.5	31	1.09	28
Kopili	606.6	77	4.74	16
Doyang	323.25	34	1.77	19
Loktak	768.37	221	2.47	89

The outage of other generating stations may be approved considering the present water levels in reservoirs. CEA has approved the generation outage plan for FY 2025-26. All the utilities may take note of it and in case of any modification from the Approved Planned Outages, the same may be finalized in consultation with GM Division.

b. Outage Planning of Transmission elements

As per the Outage planning procedure of NER the planned outages approved in the OCC forum has to be reconfirmed by the availing utilities on 10:00hrs. of D-4 to 12:00 hrs. of D-3) to NERLDC in order to either avail the approved shutdown or cancel it.

If an outage is to be availed on say 10th of the month, the shutdown availing agency would reconfirm to NERLDC between 10 hrs. of 6th of the month to 1200 hrs. of 7th of the month. This practice is necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

Utilities have submitted the shutdown proposals for the month of November 2025 for discussion in OCC shutdown discussion meeting. Forum may deliberate upon the shutdown proposals.

Deliberation

The forum discussed the shutdown proposals and approved them accordingly. The list of approved shutdowns is attached as **annexure 2.1**.

AGENDA FROM NERLDC

2.2. Operational Performance and Grid discipline during September 2025:

NERLDC presented the Operational Performance and Grid Discipline Report for the month of September 2025 (attached as **annexure 2.2**).

2.3. Scope for Activation of Frequency Control Mode of HVDC BNC–Agra Link:

On 15th September 2025, the 400/220 kV switchyard at Balipara experienced flash flooding due to heavy rainfall and severe inundation of the Manshiri River as informed by Powergrid. The outage of the entire 400 kV switchyard could result in the isolated operation of the Gohpur area of the Assam Power System, along with the capital areas of the Arunachal Pradesh Power System.

In such a scenario, the only connectivity of these areas with the rest of the Indian Electricity Grid would be through the ±800 kV HVDC BNC–Agra link. Any load-generation mismatch in these isolated areas would need to be balanced through automatic changes in the power order of the HVDC link.

In this context, activation and exploration of the frequency control mode of the HVDC BNC–Agra link is essential. Furthermore, for a comprehensive study and assessment of the HVDC operating in frequency control mode, the dynamic model data of the HVDC system is crucial. The matter has already been discussed in earlier OCCM.

Therefore, it is once again requested that Powergrid share the scope of operating the HVDC BNC–Agra link in frequency control mode and provide the relevant dynamic model data of the HVDC system.

Deliberation

Powergrid updated that as informed by the corporate office, the HVDC model is relatively old and Non-disclosure Agreement (NDA) has to be signed between NERLDC and Powergrid to enable sharing of any data.

CGM (I/C), NERLDC stated that they are ready to sign the NDA and requested Powergrid to initiate further process.

Powergrid agreed to share the basic dynamic details and the frequency operation mechanism of the HVDC BNC–Agra link. The detailed dynamic model will be provided after consultation with their Corporate Centre.

Powergrid further informed that the frequency control mode can be activated for the forward direction only, i.e. power flow from BNC to Agra.

Forum noted the above.

2.4. Flooding Issue in Balipara Substation:

On 15th September 2025, Powergrid informed that due to heavy rainfall and severe inundation of the Manshiri River, the water level at the 400/220 kV switchyard in Balipara rose up to the isolator MOM boxes and BMKs. This situation posed a significant risk of a complete shutdown of the switchyard, potentially compromising the safety and reliability of grid operations.

It was subsequently informed that, by the following day, the water level had receded due to timely measures taken by Powergrid.

Discussion Point:

Given the critical nature of substation operations, it is imperative to ensure robust flood protection mechanisms. Safety measures to prevent such incidents in the future are of utmost importance.

Action Requested:

Detailed system study has already been forwarded to Powergrid for operating the lines through tie bays for one and half breaker at 400kV Balipara switchyard. Feasibility for operating through tie bays may please be confirmed by Powergrid.

Powergrid is also requested to share the specific measures undertaken/ to be undertaken to mitigate flooding at the Balipara switchyard. This will help in identifying and implementing proactive actions in other substations to prevent similar occurrences.

Deliberation

Powergrid informed that the situation has occurred for the first time at Balipara substation and an internal committee has been formed to look into the matter and suggest remedial measures.

The forum requested Powergrid to share the committee's report with both NERPC and NERLDC.

Powergrid informed the forum that the lines can be operated through tie bays by modifying the protection settings in accordance with the adjusted line length.Forum requested Powergrid to make necessary changes to ensure the provision of charging the lines through tie bays in case of any contingency.

2.5. Early commissioning of 2nd ckt of 132kV Loktak – Ningthoukhong:

As per the communication received from SLDC Manipur, the 132 kV Loktak – Ningthoukhong line has been experiencing frequent tripping incidents, primarily attributed to jumper snapping. Most recently, the line tripped again on 25th September 2025 due to the same issue.

To mitigate further tripping, SLDC Manipur has requested to limit the line loading to below 55 MW. This can currently be managed by backing down generation from Loktak HEP. However, considering the high reservoir level and the consequent risk of underutilization of national hydro assets, commissioning of the second circuit of the 132 kV Loktak – Ningthoukhong line is of utmost importance to ensure reliability and optimal power evacuation.

MSPCL is kindly requested to expedite the stringing work and share the latest status of commissioning the 2nd circuit of the said line.

Additionally strengthening of jumper/double jumpering works may be done on priority basis for the said line to avoid backing down of Loktak Generation.

Further 132kV Jiribam – Rengpand is under outage since 17-11-2023, revival of 132kV Jiribam – Rengpang could reduce loading of 132kV Loktak – Ningthoukhong. The matter has already been discussed in earlier OCCM.

Deliberation

Manipur representative informed that stringing work is underway for the second circuit of the Loktak-Ningthoukong line, but he could not provide any tentative timeline for completion work. Forum asked Manipur to provide the update with timeline to NERPC and NERLDC via e-mail.

Further Manipur informed that the double jumpering work for the 1st circuit of the line is underway and the proposal for HTLS reconductoring of the line has been submitted to PSDF.

Forum urged MSPCL to revive 132kV Jiribam – Rengpang as early as possible as it will reduce overloading of 132kV Loktak – Ningthoukhong.

2.6. Regarding non-submission of Year Ahead Resource adequacy data for FY 2026-27

As per clause 3.2 of Section 3 of CEA, Guidelines for Resource Adequacy Planning Framework for India- June 2023: "NLDC shall annually publish a one-year look-ahead Short-term National Resource Adequacy Plan (ST-NRAP) which shall include parameters such as demand forecasts, resource availability based on under-construction status of new projects, planned maintenance schedules of existing stations, station-wise historic forced outage rates and decommissioning plans."

Further, as per Regulation 5.3 (d) of CERC India Electricity Grid Code Regulations, 2023, the concerned entities shall furnish the required data to NLDC every year for carrying out a national level simulation for generation resource adequacy of states.

Accordingly, timely furnishing of data by all concerned entities is essential

for preparation of the national level adequacy plan.

As per the "Procedure for Resource Adequacy and Operational Planning" (Annexure 3.1 of Operating Procedures of North Eastern Region -July 2025), the data for year ahead operational planning is to be submitted by following entities:

a) STUs/SLDCs or such other agency as may be designated by the State Commission
b) Interstate Transmission Licensees
c) Regional Entity Generating Stations and ISTS Connected Bulk Consumers

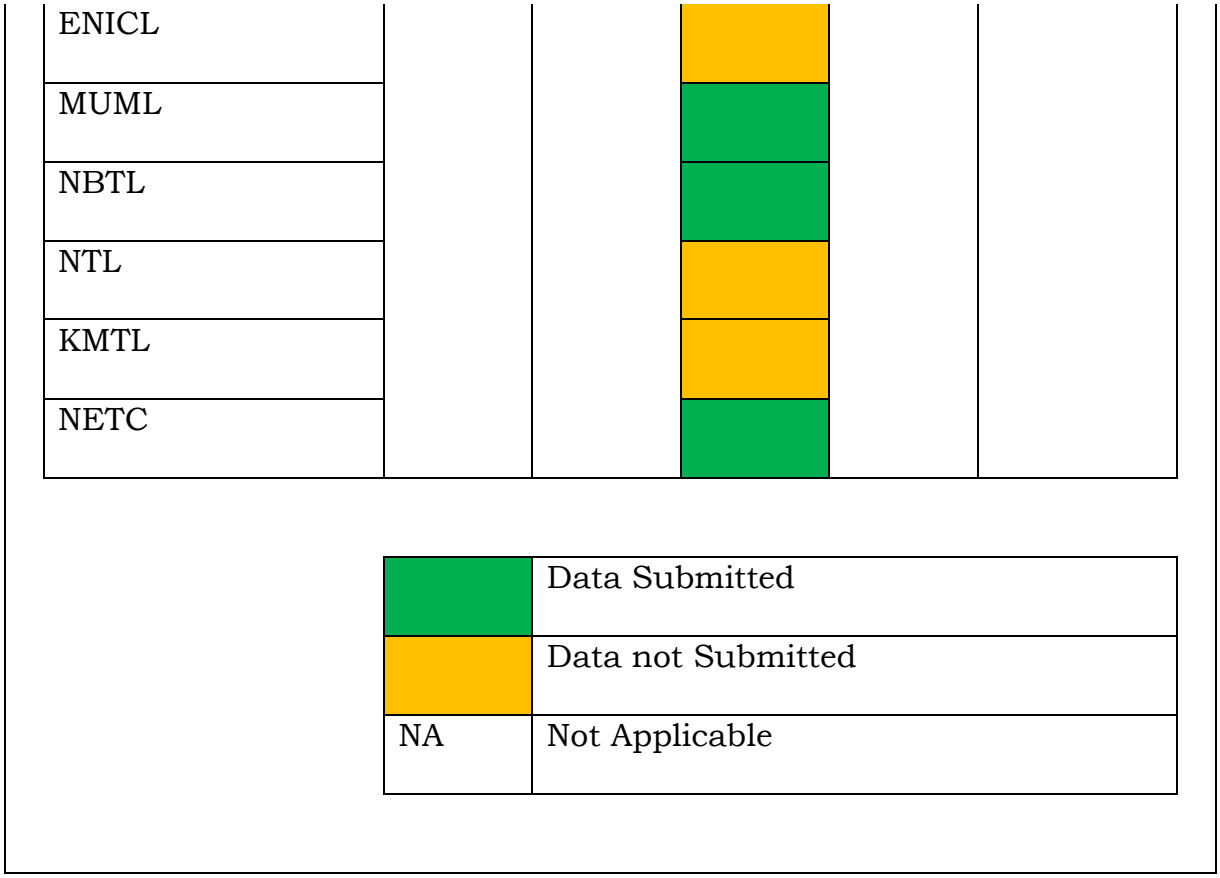
In view of the above, resource adequacy data was requested vide letter NERLDC/SO-1/SO/8242 dated 04/09/2025 and reminder letter NERLDC/SO-1/SO/8309 dated 25/09/2025 in the formats mentioned below from concerned entities:

Sl. No.	Data to be furnished	Format	Responsible entities
1	Electricity Demand Data	RA-1	STU/SLDC
2	Reserve Requirement	RA-2	STU/SLDC
3	Tie-Line Details	RA-3	STU/SLDC, ISTS
4	Transfer Capability	RA-4	STU/SLDC
5	Generation Data	RA-5	STU/SLDC, ISGS, CGS

The status of data submitted by entities is shown below:

Status of Year ahead Resource Adequacy Data Submission

	RA-1	RA-2	RA-3	RA-4	RA-5
Arunachal Pradesh					
Assam					
Manipur					
Meghalaya					
Mizoram					
Nagaland					
Tripura					
Panyor	NA	NA	NA	NA	
Kameng					
Kopili					
Khandong					
Khandong Stg-2					
Pare					
AGBPS					
AGTPPP					
Doyang					
Loktak					
BGTPP					
OTPC					
Monarchak					
Tuirial					
Powergrid	NA	NA		NA	NA



It is requested to furnish the requisite data in the prescribed excel formats at the earliest, so that validation at NERLDC can be completed and the consolidated data can be forwarded to NLDC in time for the National Resource Adequacy Assessment for FY 2026-27. The formats are attached in **Annexure 2.6.**

Deliberation

MS NERPC exhorted all the concerned utilities to provide all the Resource adequacy related data within one week to NERLDC.

2.7. Frequency Response Performance for the reportable events of month of September 2025

S.No	Event Date	Time	Event Description	Starting Frequency	Nadir Frequency (in Hz)	End Frequency (in Hz)	*Δf*	NER FRP during the event

				(in Hz)				
1	01-Sep-2025	14:57	Load loss event of 1240 MW in Delhi, NR	49.954	50.074	50.005	0.12	0.2(Poor)
2	24-Sep-2025	11:04	RE generation loss event of 2500 MW in Tamil Nadu, SR	50.054	49.892	49.954	-0.100	1.01(Excellent)
3	24-Sep-2025	11:32	RE generation loss event of 1400 MW in Tamil Nadu, SR	50.057	49.930	49.975	-0.082	1.08(Excellent)

Frequency Response Performance (FRP) of generating stations for each reportable event are calculated based on the submitted high resolution data from generating stations. However, the generating stations for which data is not received, FRC/FRP as per NERLDC HDR data is used for computation of Average Monthly Frequency Response Performance, Beta 'β' for Generating

Stations.

FRP values as considered (as per NERLDC HDR data/ generator high resolution data) for the event of September 2025 is as follows:

Frequency Response Performance				
S.No	Control Area	01-09-2025	24-09-2025 (11:04 hrs)	24-09-2025 (11:32 hrs)
1	Arunachal Pradesh	1.03	-2.6	2.03
2	Assam	-2.94	0.98	1.44
3	Manipur	Not Applicable	Not Applicable	Not Applicable
4	Meghalaya	6.3	-0.83	0.77
5	Mizoram	-4.57	0.23	-0.51
6	Nagaland	0.42	0.46	0.08
7	Tripura	-0.86	0.10	-0.24
8	Assam GBPS	Not Applicable	Not Applicable	Not Applicable
9	Agartala GBPS	Not Applicable	Not Applicable	Not Applicable
10	Bongaigaon TPP	3.10	1.37	2.09
11	Doyang HPS	0.52	0.17	0.12
12	Kameng HPS	0.02(FGMO Off)	0.25(FGMO off)	-0.10(FGMO off)
13	Panyor HPS	0.36	1.51	1.79
14	OTPC, Palatana	-0.57	1.30	0.90
15	Pare HPS	0.59	0.40	0.24
16	Kopili HPS	3.65	0.99	5.83
17	Khandong HPS	Not Applicable	Not Applicable	Not Applicable
18	Khandong Stg-2 HPS	Not Applicable	Not Applicable	Not Applicable
19	Loktak HPS	0.00	-0.26	0.78

From the FRP data, it has been observed that the Frequency Response Performance (FRP) of many control areas is not satisfactory. It is therefore requested to review the FRC/FRP and governor action of your respective control area, and take the necessary corrective measures to improve the Frequency Response Characteristic (FRC) / Frequency Response Performance (FRP).

Deliberation

Forum noted that the performance of state control areas is not satisfactory. Member Secretary NERPC requested the state Gencos and state SLDCs to take necessary measures to improve the FRP of the control area.

NERLDC informed that Doyang and Loktak have no facility to provide DAS data yet. NEEPCO informed, regarding Doyang, that the DAS data will be provided after the AMP work which is to carried out in Nov-Dec'25. NHPC (Loktak) informed that the DAS data will be provided after the R&M work.

2.8. Methodologies for calculation of Frequency Response Obligation (FRO) of intrastate entities by SLDC, as deliberated in 53th FOLD meeting:

Background:

As per CERC (IEGC) Regulations, 2023, 'Frequency Response Obligation' or 'FRO' means the minimum frequency response a control area has to provide in the event of any frequency deviation;

Annexure-2 of CERC (IEGC) Regulations, 2023 provides the procedure for calculation of frequency response obligation (FRO) of each control area as quoted below:

Quote

The minimum Frequency Response Obligation (FRO) of each control area in MW/Hz shall be calculated as:

*FRO = (Control Area average Demand + Control Area average Generation) * minimum all India Target Frequency Response Characteristic/ (Sum of peak or average demand of all control areas + Sum of average generation of all control areas)*

Provided FRO shall be nil in case of a control area not having any generation resources, such as Goa, DD, DNH etc.

Unquote

In compliance with Reg. 30 (10) (f) of CERC (IEGC) Regulations, 2023, NLDC assesses FRO of regional entity generating stations and state control areas as per Annexure-2, giving due consideration to generation and load within each control area. Likewise, the SLDCs may assess and publish the FRO for the intrastate entities within its jurisdiction.

The matter has already been discussed in earlier OCCM.

During the 48th FOLD meeting held on 21st August 2024, and the 53rd FOLD meeting held on 9th September 2025, five potential methodologies for distributing the Frequency Response Obligation (FRO) allocated to a state control area among its intra-state entities—including generating stations and loads—were presented. These methodologies consider implementation both with and without requiring amendments to the Indian Electricity Grid Code (IEGC), 2023. The potential methodologies are given below:

Method I:

$$FRO = \left(\frac{Average\ Generation\ of\ individual\ generation\ station}{\text{Sum of Avg. generation of all considered generating stations}}\right) X \textbf{ FRO allotted to state control area}$$

- Method-I simply distributes FRO allotted to a state control area among its intra-state generating stations. These generating stations can be identified in accordance with Table4 of IEGC, 2023.

Method II:

$$FRO = \left(\frac{Average\ Generation\ of\ individual\ generation\ station}{Sum\ of\ Avg.Generation\ of\ all\ considered\ generating\ stations + \ Average\ Demand\ of\ State\ Control\ Area} \right) X$$ **FRO allotted to state control area**

Method III:

$$FRO = \left(\frac{Average\ Generation\ of\ individual\ generation\ station}{Sum\ of\ Avg.Generation\ of\ all\ considered\ generating\ stations - Demand\ Response(4\%\ of\ Avg.Demand\ per\ Hz} \right) X$$ **FRO allotted to state control area**

- Method-II & Method-III accommodates demand response while distributing FRO allotted to a state control area among its internal generating stations and load entities.

Method IV:

$$FRO = \left(\frac{Average\ Generation\ of\ individual\ generation\ station}{\text{Sum of Avg. generation and Avg. Demand of all control areas}} \right) X$$ **Minimum All India Target FRC**

- Method-IV utilizes the formula provided in the IEGC, 2023. In this approach, the FRO for intra-state generating stations is allocated from the All-India minimum target FRC, based on the proportion of their average generation relative to the total average generation and average demand across India.

Method V:

$$FRO = \left(\frac{Average\ Generation\ of\ individual\ generation\ station}{\text{Sum of Avg. generation of all considered generating stations (ISGS + Intra SGS)}} \right) X \textbf{ Minimum All India Target FRC}$$

- Method-V entails amendment in current provisions of IEGC, 2023 related to assessment of FRO. All India minimum target FRC would be expected to be achieved by generating stations only.
- Summation of FROs allotted to Intra-state generating stations within a state control area shall constitute FRO of that state control area
- SLDCs shall be responsible for assessment and monitoring of FRO of Intra-state generating stations and thereby FRO of state control area

Members may like to share updates and deliberate on following:

a) Methodology adopted by SLDCs for assigning FRO to intrastate entities

b) Assessment of frequency response performance and its verification

Deliberation

NERLDC requested the states to adopt any one of the five methodologies and apportion the State FRO to the entities lying in their control area.

Forum requested NERLDC to take one more knowledge sharing session with the states on the matter and provide a sample FRO to each state using the methodologies mentioned above.

2.9. Delay in restoration of line out due to Tower collapse within the timeline specified in the regulation

As per CEA (Grid Standards) Regulations,2010 each transmission licensee must maintain an Emergency Restoration System(ERS) to minimize the outage time for 400kV and above transmission lines and strategic 220kV lines in case of tower collapse/failure and must analyse tower collapses and submit

the report to RPC and CEA. The letter from NLDC regarding "Delay in restoration of line out due to Tower collapse within the timeline specified in the regulation" is attached as **Annexure 2.9** for reference.

CERC (Standards of Performance of inter-State Transmission Licensees) Regulations,2012 prescribe restoration timelines as per below:

Type of Failure	Restoration time
Tower Collapse-Restoration by Emergency Restoration system	12 days
Tower Collapse-Plain Terrain	30 days
Tower Collapse-Hilly terrain and riverbed	50 days

The details of tower collapse in NER region are as listed below:

Sl. No	Line	Outage Date	Revival Date	No. of Days still under outage as on 03-Oct-2025	Remarks
1	132kV Panchgram-Srikona	14-01-2019	Still Under Outage	2454	Tower Collapse
2	132kV Lekhi-Nirjuli	28-06-2022		1194	Tower Collapse in tower no 12 near Lekhi
3	132kV Pare-Lekhi	28-06-2022		1194	Tower Collapse in tower no 12 near Lekhi

4	132kV Roing-Tezu	31-03-2024		554	Tower Collapse at tower no 72
5	132kV Lekhi Chimpu	30-05-2025		130	Tower 5 on verge of collapse

Utilities are requested to take following actions and submit action plan to RLDC/RPC for all the cases of line outages due to tower collapse.

1. Prepare firm restoration schedule with committed timelines in line with the regulatory provisions and submit monthly progress reports until normalization.
2. Adhere to compliance requirements for tower collapse cases and submit failure analysis report to RPC and CEA.
3. Commence immediate restoration activities for all outstanding tower collapse cases. The action plan along with along with restoration schedule to be submitted immediately. The tower collapse cases that have exceeded the restorations timelines may be analyzed and reason for delay to be submitted to RLDC.

Deliberation

Member Secretary, NERPC exhorted all the utilities to take necessary measures to restore the towers within the regulatory timeframe and provide the required data and reports to NERPC and NERLDC timely.

Regarding the 132kV Roing-Tezu line, PowerGrid updated that the tower no 72 has been restored permanently.

Further, Member Secretary NERPC stated that a letter will be written from NERPC to heads of the concerned transmission lines mentioned in the table above for ensuring early restoration of the towers.

2.10. Implementation of OTP based login and restriction of GNA requisition based on the contract wise DC by IPP/Merchant plant in WBES from 12:00 Hrs of 07.10.2025

Currently, all users can log in to WBES using a password only from whitelisted IP addresses. After the recent changes, users will be able to log

in to WBES using both a password and an OTP sent to their registered email ID and mobile number. A training session on this new login process was conducted for all users on 15th and 16th September 2025.

For IPP/Merchant Power Plants, if the quantum is scheduled through GNA, the Beneficiary's requisition shall be restricted to the Declared Capacity (DC) submitted by the power station against their contracted quantum as provided in WBES.

Currently, the contract-wise DC is prefilled by default and is equal to the contracted quantum in WBES. After the implementation of the new changes, the default prefilled contract-wise DC for each contract will be set to zero. Power plants will be required to manually enter the DC against each contract; only then will the corresponding Beneficiary be able to submit a requisition. A training session on this change was conducted on 25th September 2025 for all IPP/Merchant Generators.

For information of all the members please

Deliberation

The forum endorsed the OTP based login system for WBES.

Regarding filing of DC against each contract, ISGS GENCOs raised that the process should be system generated and manual intervention should be avoided. NERLDC stated that the sharing of the DC is prerogative of the GENCOs and only they should fill the shares.

Member Secretary , NERPC requested NERLDC to take one more knowledge sharing/ doubt clearing session with the concerned Generators on the matter.

2.11. Implementation of IP Whitelisting for Public-Facing Applications at NERLDC:

As seen in the recent past, cyber-attacks on public websites are increasing very rapidly. A substantial number of malicious cyber intrusion attempts have been observed in GRID-INDIA periphery. These activities are indicative of malicious intent and underscore the urgency to implement stricter access control measures.

As an immediate mitigation step to minimize the risk of unauthorized access

and potential cyber threats, Grid India Corporate Centre has advised NERLDC to enforce IP whitelisting for all its public-facing applications to ensure that only trusted and verified users are able to access these platforms.

Accordingly, all SLDCs and other relevant stakeholders are requested to submit the list of static IP addresses through which they access the following applications hosted by NERLDC:

1. Outage Portal
2. Reporting Portal
3. Tripping Portal

Kindly note that the IP addresses provided must be static and belong to the dedicated ISP (internet service provider) of the SLDC/ stakeholder. Any IP address which belongs to public service provider (like airtel or Jio or any other) will not suffice this requirement as they do not offer the necessary security or reliability for whitelisting in critical infrastructure systems.

Deliberation

NERLDC requested the utilities to provide the list of static IPs at the earliest

Agenda from NTPC

2.12. Requirement of full schedule at least for 2 hrs (Two Hours) on continuous basis for carrying out soot Blowing activity to avoid such tripping.

Indian Coal has very high quantity of Ash content, varying from 40% to 50% of coal weight. This results in slag formation and deposition of same on Boiler tube. This slag is needed to be removed on regular basis with the help of Soot Blowing. If the soot blowing is not done on regular basis this slag formation increases and falls by its own weight. This fall of slag may disturb furnace flame and cause unit tripping on Flame failure.

Boiler#2 has tripped twice recently (on 24th Sept & 29th Sept) on flame failure due to this ash lumps.

Soot blowing can be done only when unit load is full for minimum two hours on continuous basis.

But nowadays NTPC Bongaigaon is getting technical minimum or below schedule in almost all-time blocks. Since we are not getting full schedule on continuous basis for two hours in a day we are unable to carry out Soot Blowing and this may cause unit tripping on flame failure as explained above.

Request:

It is our earnest request to provide us full schedule at least for 2 hrs (Two Hours) on continuous basis for carrying out soot Blowing activity to avoid such tripping.

Deliberation

Forum noted that soot blowing is critical for removing the slag formed inside the boiler and preventing the units from tripping.

NTPC informed that in the peak hours the beneficiaries are giving full schedule. However,at times due to despatch of SRAS,TRAS and SCED down, the final schedule get reduced.

After detailed deliberation the forum advised NTPC to write a letter to NLDC, with a copy to NERPC and NERLDC, explaining the issues and requesting for exemption form the ancillary for the required time.

Additional agenda items

From Ar. Pradesh

2.13. Proposal to connect the 2 X 31.5 MVA, 132/33 kV Banderdewa substation, constructed under the Comprehensive Scheme, to the 132 kV single-circuit Nijuli–Gohpur (Assam) transmission line through a 132 kV LILO (Line-In Line-Out) transmission line

The forum may deliberate upon the matter

Deliberation

Forum noted that the mater pertains to transmission planning of ISTS and therefore referred it to the CMETS of CTU for further discussion.

From DoP Nagaland

2.14. Proposal of projects to be funded under PSDF (100% grant).

DoP Nagaland has proposed the following proposals for implementation of the following projects for funding under PSDF.

Sl. No.	Name of the project	Estimated Cost (Rs. in Cr)
1	Restringing of Kiphire-Meluri-Kohima 132 kV S/c line with conductor of existing ampacity along with upgradation of requisite bay equipment	53.71
2	Restringing of Kiphire-Tuensang-Mokokchung 132 kV S/c line (charged at 66kV voltage level) with ACSR Panther conductor along with upgradation of requisite bay equipment	49.71
3	Restringing of Kohima-Wokha-Doyang HEP 132 kV S/c line with conductor of existing ampacity along with upgradation of requisite bay equipment	39.05

The project is being proposed as a transmission system of strategic importance in line with the eligibility criteria for funding under the PSDF Grant, Ministry of Power. Although the project at Sl.No 1 & 2 has been planned under the Transmission Plan 2035 by the CEA, due to the urgency of the project requirement it is being proposed for early implementation under PSDF funding. Further, approval of the State Govt. for availing PSDF Grant (100%) for the aforementioned project has also been obtained and conveyed vide letter under reference.

In view of the above, you are requested to kindly include the proposal in the agenda for approval of the NERPC in the forthcoming NERPC meeting.

Deliberation

NERPC stated that restringing with the same capacity conductor does not qualify the PSDF criteria and requested DoP Nagaland to conduct system study for 4–5-year timeframe and assess the requirement of conductor upgradation.

From NERLDC

2.15. Non-compliance of FTC Procedure after Completion of 132 kV SM Nagar (ISTS) – SM Nagar (TSECL) Reconductoring (HTLS) Works:

The post-OCC planned shutdown of the 132 kV SM Nagar (ISTS) – SM Nagar (TSECL) line was approved by NERPC for reconductoring (HTLS) work on a continuous basis from 01.09.2025 to 14.09.2025 as an approved shutdown with remarks that ***FTC procedure may be followed***.

However, due to heavy rain, the reconductoring work could not be completed within the approved period and, as informed by Tripura, the completion was delayed till 18.09.2025. Accordingly, the FTC procedure was required to be followed.

As on 18-09-2025, the same line was already under an approved shutdown in the 229th OCC forum for pre-puja activities, Tripura completed the balance reconductoring works concurrently with the pre-Puja shutdown. However, while returning the shutdown, SLDC Tripura did not provide any intimation regarding the completion of reconductoring activities, and the line was subsequently charged without adherence to the prescribed FTC procedure (details placed at **Annexure 2.15** for reference).

Deliberation

Forum noted that that Tripura has violated the pertinent IEGC,2023 regulations and CEA procedures. SLDC Tripura informed that the transmission division was doing the work and they had charged the line without approval of SLDC.

Member Secretary , NERPC instructed Tripura to refrain from such practices in future and provide all the FTC related data to NERPC and NERLDC for the already charged elements within one week.

2.16. Directions and Suggestions Issued by Hon'ble CERC Vide Order Dated 05.10.2025 in Suo Motu Petition No. 9/SM/2024

The Hon'ble Commission had issued Order in Suo Motu Petition No, 9/SM/2024 on 05.10.2025 in the matter of "Planning for safe, secure, and reliable integrated operation of the power system during critical periods arising on account of seasonal variations wherein the electricity demand increases rapidly by undertaking specific measures to mitigate the risks on the power system under clause (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 and the Regulation 31 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023."

The Order is enclosed as **Annexure-2.16** for kind perusal, deliberation, and necessary action by the forum.

Deliberation

NERLDC briefly highlighted the key points of the order. Forum requested NERLDC to conduct a knowledge sharing session on the order to ensure better understanding and compliance by all stakeholders.

2.17. Non-receipt of Meter data from Bokajan and Dimapur(Nagaland) S/S:

Weekly SEM data of Bokajan (Assam) end of Dimapur (PG) feeder and Dimapur (Nagaland) end of Dimapur (PG) D/C are important for the accounting of Assam and Nagaland Drawal. In the past, data for these meters have been provided by POWERGRID Dimapur on weekly basis to NERLDC. However, as per verbal communication from POWERGRID, the data for the same will be discontinued by Dimapur PG Substation from next week (i.e. 13-10-2025). Forum may kindly discuss on the matter and suggest suitable measures for reacquisition of data from Bokajan and Dimapur (State) sites.

Deliberation

SLDC Assam and SLDC Nagaland agreed to provide SEM data and will inform about the availability of DCD. Meanwhile, Powergrid will continue supplying SEM data until the respective SLDCs start providing it from their end.

From NEEPCO

2.18. Withdrawal of SCUC for AgGBPS

It has been observed recently that the SCUC provided to NEEPCO, AgGBPS are being withdrawn from time to time during the current month leading to severe operational inconvenience by implementation of less schedule. As such, the Minimum Turndown Level (MTL) with installed capacity On-bar are not maintained causing significant DSM penalty due to over generation. Also, there are substantial stress involved with the equipments at very low generation. Therefore, it is a matter is of great concern for operation of machines

Deliberation

NERLDC informed the forum that the revocation of SCUC status for AgGBPS, NEEPCO was carried out on 02.10.2025 in view of the reduced all-India demand and persistently high grid frequency. NLDC had advised several power plants to go off-bar as part of measures to maintain grid security. Further, NERLDC informed that CERC Order No. 09/SM/2025 dated 05.10.2025 further reinforced system balancing measures aimed at ensuring grid security. The details of events are provided in annexure 2.18.

PART-C: METERING ITEMS

3.1. Non-Receipt of data from Kolasib Substation:

Weekly SEM data of 132 kV Kolasib (Mizoram) Substation is important for accounting of Mizoram drawal. However, SEM data from the said substation is not being received since 30/06/2025. Issue in Vinplus Software was stated in 229th OCCM. Mizoram stated that the SEM data would be made available from the coming week. In the 230th OCCM, Mizoram updated that the data was not getting downloaded to the Laptop with Vinplus software. Forum requested Mizoram to contact LnT and PGCIL. Mizoram to take DCD to nearest POWERGRID S/S. However, NERLDC is yet to receive data from the said substation.

Deliberation

Mizoram informed the forum that DCD at Kolasib substation is damaged. Also Vinplus software available in the laptop has license issues due to which data cannot be directly downloaded from the laptop from the meter. Forum advised Mizoram to resolve the issues at the earliest.

3.2. Issue in SEM data of 132 kV Dharmanagar end of Dullavcherra Feeder:

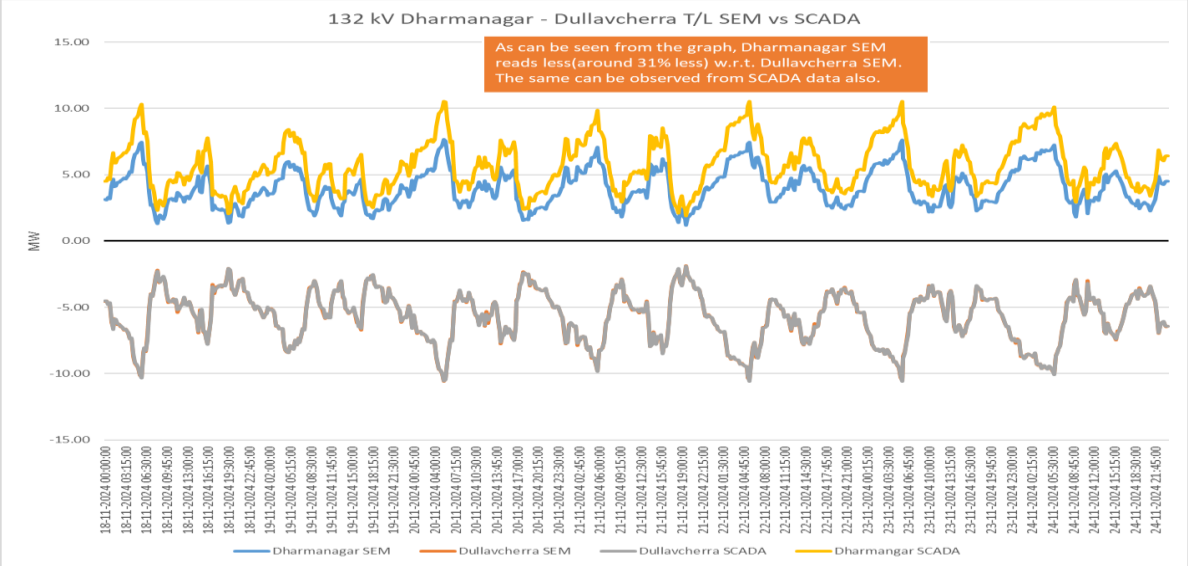
It has been observed that the data received from Dharmanagar end is erroneous and the same neither matches with SCADA data nor with data from Dullavcherra end. Several follow ups have been initiated regarding the matter with utility; however, matter is yet to be resolved.

It is also to be noted that since 222nd OCCM, data from Dharmanagar S/S has not been received by NERLDC from said substation. Issue with Laptop had been mentioned by Tripura in the previous OCCM. Tripura stated that the Laptops are still under procurement and the same shall be procured by next OCCM.

However, the same is yet to be resolved. Tripura is hereby requested to provide updates on the issue and also provide contact details of personnel stationed at Dharmanagar S/S for future communication.

As discussed in 228th OCCM, a letter to Managing Director, TPTL has also been sent on 11-08-2025 on the above stated subject. In the 229th OCCM, Tripura SLDC informed the forum that the required laptops have already been procured. However, they requested assistance from PGCIL for installation of the relevant software.

Tripura may update status.



Deliberation

Tripura informed the forum that they have procured three laptops specifically for the purpose of collecting meter data. However, they currently do not possess the necessary software(licence). Tripura further informed the forum that they plan to purchase the relevant software from the Original Equipment Manufacturer (OEM).

The forum has instructed Tripura to expedite the procurement of the software, as it is a relatively minor expenditure and a key step in resolving the issue.

3.3. Issue in receipt of data from 132 kV Tipaimukh S/S

Weekly SEM data from 132 kV Tipaimukh (Manipur) S/S is essential for accounting of Manipur Drawal. However, SEM data for said substation is not being received. On query, downloading data from DCD to laptop has been failing.

In the 230th OCCM, Manipur stated that the Laptop Procurement is still in progress and the same will take another month. Forum requested Manipur to expedite the request and provide data to NERLDC at the earliest. However, data from said Substation is yet to be received at NERLDC end.

Status of the same may be reviewed.

Deliberation

Manipur informed the forum that the proposal for the procurement of Laptops is still with their finance department. Forum advised SLDC Manipur to expedite the procurement procedure.

3.4. Issue in Receipt of Data data from Udaipur S/S:

Weekly SEM data from 132 kV Udaipur (Tripura) Substation is not being received since replacement of old LnT Meter with Secure Make Meter on 23-12-2024(for 132 kV Udaipur end of Palatana T/L). In 222nd OCCM, the forum advised Tripura to resolve the issue by next OCC meeting. Data from the replaced meter is yet to be received by NERLDC.

As discussed in 228th OCCM, a letter to Managing Director, TPTL has also been sent on 11-08-2025 on the above stated subject. In the 229th OCCM, Tripura SLDC informed the forum that the required laptops have already been procured. However, they requested assistance from PGCIL for installation of the relevant software

Tripura may update status.

Deliberation

Deliberated in Agenda Item no. 3.2

3.5. Receipt of SEM data from 132 kV Budhjungnagar, 132 kV Ambassa, 132 kV Dharmanagar, 132 kV PK Bari & 132 kV SM Nagar (TSECL) Substations:

As per 175th OCCM dated 18th Feb 2021 agenda D.12, Indigrid and Powergrid NERTS were given responsibility to collect and send SEM data on weekly basis for Tripura owned substations viz 132kV Ambassa S/s,132kV Budhjungnagar S/s, 132 kV PK Bari S/s and 132 kV SM Nagar S/s for the interim period, due to shortage of DCDs. The relevant extracts are furnished below

Quote:

"The forum noted that due to the existing shortage of DCDs, the same cannot be provided to Tripura for some time for new locations. This creates difficulty in getting SEM data from Budhjangnagar, Ambasa, PK Bari and SM Nagar. The Matter was discussed and it was decided that during the interim period Powergrid NERTS will provide readings from PK Bari and SM Nagar of Tripura and Sterlite will provide readings from Budhjangnagar and Ambassa of Tripura."

Unquote

As per IEGC 2023 Clause 49(12)(e) entity shall be responsible to send weekly meter data to RLDC. The relevant extracts are furnished below

Quote:

"Entities in whose premises the IEMs are installed shall be responsible for (i) monitoring the healthiness of the CT and PT inputs to the meters, (ii) taking weekly meter readings for the seven day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility (iii) monitoring and ensuring that the time drift of IEM is

within the limits as specified in CEA Metering Regulations 2006 and (iv) promptly intimating the changes in CT and PT ratio to RLDC."

Unquote

In the 228th OCCM, Tripura stated that the Laptops are still under procurement and the same shall be procured by next OCCM.

As discussed in 228th OCCM, a letter to Managing Director, TPTL has also been sent on 11-08-2025 on the above stated subject. In the 229th OCCM, Tripura SLDC informed the forum that the required laptops have already been procured. However, they requested assistance from PGCIL for installation of the relevant software.

Tripura may Update Status.

Deliberation

Deliberated in Agenda Item no. 3.2

PART-D: ITEMS FOR UPDATE/FOLLOW-UP

4.1 Persistent Over-Drawl by Tripura during Low-Frequency Conditions on 08th & 09th September 2025

Indian electricity grid experienced low-frequency scenarios on 08th Sept.2025 and 09th Sept. 2025, particularly during the evening peak hours. Frequency trends for these two days are attached in Annexure-2.5.1 of 230th OCCM. From the frequency trends, it can be seen that the grid frequency remained below the IEGC band for prolonged periods during the evening peak hours. The minimum frequency recorded on 08th Sept. and 09th Sept. 2025 are 49.43 Hz at 19:14 hrs and 49.41 Hz at 18:56 hrs respectively.

During the low-frequency period, Tripura was overdrawing to the tune of 40MW consistently (Annexure-2.5.2 of 230th OCCM), in spite of repeated instructions issued by GRID-INDIA, NERLDC Control Room to adhere to drawl schedule and support frequency recovery. Such sustained over-drawl during low frequency conditions severely undermines grid stability/ jeopardizes real-time operations and is in violation of IEGC regulations.

The matter regarding over-drawl by Tripura was deliberated under Item No. 2.10 of the 226th OCCM held on 20th May 2025, wherein Tripura was advised to refrain from over-drawl during low frequency conditions.

It is observed that Tripura is heavily reliant on the Real-Time Market (RTM) to meet its demand. As per the report submitted by Member (Technical), CERC to the Hon'ble Commission in compliance with the CERC Suo-Moto Order 9/SM/2024, SLDCs were advised to proactively plan their power procurement in advance to reduce dependency on the Day- Ahead Market (DAM) and Real-Time Market (RTM), as these markets do not guarantee assured power availability.

Based on the quantum of reserves (50MW) as calculated by NLDC, Tripura at present is not having sufficient reserves to reduce the Area Control Error/overdrawal during the prolonged low-frequency scenario. In 29th TCC/RPC meeting (Agenda Item No. 2.4), it was highlighted that quantum of

reserve requirements can be reduced if states strictly adhere to scheduled drawls. Continued over-draw from grid will lead to increased requirement of reserves in future.

SLDC Tripura is requested to maintain drawl as per schedule and adhere strictly to the instructions issued by NERLDC

Deliberation of 230th OCCM

Tripura representative was absent. NERLDC briefed the agenda item and also highlighted that the reserve requirement is determined based on the Area Control Error (ACE), which is derived from the deviation from schedule of the state. A higher deviation leads to a higher reserve requirement, which the state must maintain to support frequency control.

After detail deliberation, Forum warned Tripura to refrain from such practice of persistent overdrawl during low frequency scenario, overlooking the instructions issued by Grid India(NERLDC) control room, which may jeopardise the grid.

It was also advised to Tripura to carry out the resource adequacy planning in advance and minimize dependency on DAM/RTM.

Deliberation

The forum advised Tripura to carry out the resource adequacy planning in advance and minimize dependency on DAM/RTM.

4.2 Non-compliance of instructions of NERPC forum -189th OCCM and IECG-2023 by SLDC Tripura regarding First Time Charging (FTC) of elements under NERPSIP:

In 229th NETeST meeting, NERLDC informed that as per the minutes of Special Review meeting regarding implementation of NERPSIP/Comprehensive Scheme held on 02nd May 2025, NERPSIP-Tripura declared that out of 151 elements, 107 elements have been commissioned. Further, as decided in 189th OCCM of NERPC, NERPC instructed all SLDCs to submit documents pertaining to FTC to NERLDC

before commissioning of any element under NERPSIP. However, even after commissioning of 107 elements under NERPSIP-Tripura, there is no information available with NERLDC, which is resulting in mismatch between SCADA database of NERLDC and SLDC Tripura. The minutes of special review meeting and 189th OCCM are attached as Annexure -2.9.1 of 230th OCCM for reference.

SLDC Tripura was advised by the forum to submit all the documents as per the FTC procedure before the 230th OCCM.

Further NERLDC would like raise the concern regarding the charging of Deemed ISTS elements: LILO of 132 kV PK Bari – Ambassa at Manu and 132 kV Manu S/s on Sep'24 and Jul'25 respectively. The information is collected from CEA Monthly Progress Report on Central Funded Schemes (July 2025) attached as Annexure-2.9.2 of 230th OCCM which is clear violation of IEGC-2023. regulations as mentioned below:

- **Regulation 8 (Procedure for Connection):** FTC documentation and compliance with connection requirements to be ensured prior to energisation.
- **Regulation 11 (Data and Communication Facilities):** Reliable communication and data exchange to be maintained in line with CERC/CEA standards. The present SCADA mismatches indicate non-compliance.
- **Regulation 14 (Protection Code):** Protection settings to be submitted to RPC, duly approved, and coordinated. Any changes are to be intimated within a fortnight.

SLDC Tripura and TPTL are requested to justify the non-compliance as mentioned above.

SLDC Tripura may update on the status of submission of FTC documents as advised in 229th OCCM.

Deliberation of 230th OCCM

The Forum advised SLDC **Tripura** to refrain from violations of the provisions of the IEGC and follow the FTC procedure for safety, security, and reliability of the grid.

Further, the Forum directed SLDC Tripura to furnish all First Time Charging (FTC) **related documents** as well as the protection settings of the charged elements to **NERLDC** and **NERPC** respectively, at the earliest, without any delay.

MS NERPC stated that a letter will be written from NERPC secretariat to MD, TSECL highlighting the issue and also the matter will be raised in the upcoming NERPC meeting.

Deliberation

Refer to the discussion in agenda item 2.15

4.3 Status Update on Reliability Issues Discussed in 230th OCC Meeting

Multiple reliability issues were raised during the 228th OCC meeting. To improve the reliability of the power system in the North Eastern Region, it is essential to track the current status of the works being undertaken at the sites. It is therefore requested that the present status of the following works be provided by the utilities so that the agreed timelines may be adhered to.

Sl. No	Agenda	Owner	Deliberation in earlier OCC meeting	Present status
1	Delay in Commissioning of 400 kV Transfer Bus	NEEPCO	228th OCCM: NEEPCO informed that the transfer Bus has not been operational since the CoD of the station due to disagreement with the OEM (BHEL) on the design related matter. He added that BHEL has	

Sl. No	Agenda	Owner	Deliberation in earlier OCC meeting	Present status
	at Kameng HEP		recently agreed on the design as proposed by NEEPCO and the work will start shortly. Further he informed that the work will tentatively be completed by March'26. 230th OCCM: Work in progress, target date remains same	
2	Early Restoration of Phase-B Isolator of 400 kV Balipara–Kameng–1 Line at 400kV Kameng Bus	NEEPCO	228th OCCM: NEEPCO informed that the phase B isolator of the Balipara-Kameng I line has got burnt and its replacement requires shutdown of both the 400kV buses as working with outage of only one poses safety risk to workmen. The NERLDC stated that the current scheme at the 400 kV bus of Kameng HEP is a Double Main Bus scheme. This configuration enables maintenance activities on isolators to be performed without any power interruptions. The forum acknowledged this and requested NEEPCO to reassess the restoration work and plan the shutdown accordingly.	
3	Operation of 400 kV Switchyard on Single Bus	NEEPCO	230th OCCM: NEEPCO informed that the work is expected to be completed by Dec'25.	

Sl. No	Agenda	Owner	Deliberation in earlier OCC meeting	Present status
	mode since commissioning at Panyor Lower HEP (PLHEP)			
4	Urgent Review of Online Element Transfer at 132 kV PLHPS	NEEPCO	228th OCCM: NEEPCO informed that budgetary offer has not been received yet; tentative completion target is June'26. 230th OCCM: Done for two lines, for the rest, to be done by June'26	

Deliberation

MS NERPC requested the concerned utilities to provide the updates to NERPC through email.

4.4 Status Update and Revival Plan for Long-Outage NER Generators & Transmission Lines

The following NER generators & transmission lines have been under outage since long time. Considering the increasing demand trend and reliable power supply in the Region, respective utilities are requested to intimate the updated expected date of revival & take necessary action to restore the mentioned units & lines at earliest:

Generating Units:

As updated in 228th OCC meeting

S. No.	Element Name	Outage time	Reason	Expected date (as updated in 228th OCCM)
1	Khandong Unit II	10:45 Hrs of 26-03-2022	Flash flood of reservoir causing submergence of the Khandong station	Khandong Unit II- July 2025
2	LTPS Unit 7 (20 MW)	17:08 hrs of 08-04-2024	High Vibration issue in Bearing Block-4 turbine bearing of gas turbine	Spare not available, waiting for OEM reply. Process may take significant time.
3	Baramura Unit 4	23:20 Hrs of 05-06-2024	gear box issue, leakage in auxiliary of gear box, display of control unit is not working due to suspected card issue	Baramura Unit 4. Tripura apprised that there is technical problem in rotor. Nonfunctional due to non-availability of gas. Forum advised to resolve rotor issue in the unit.

Transmission Lines:

As updated in 228th OCC meeting

S. No	Element Name	Outage time	Reason	Expected date (as updated in 228th OCCM)
1	400 kV Imphal - Thoubal I	18-10-2021	Tripped on DP, ROW issue.	RoW issue. Law and order situation is fragile.

2	132 kV Jiribam-Rengpang	17-11-2023	Tripped on Earth fault	Tower shifting required due to NHIDCL work. Resurvey done in 1st week of May'25. 16 towers affected. Revival will take significant time.
3	132kV Ningthoukhong-Churachandpurckt 1	04-08-2024	Z-1, 18.5 km, O/C	Elements under outage for more than 6 months and as elements is under intra-state jurisdiction, SLDC may follow their FTC procedure (SIO etc may be obtained) and copy may be given to NERLDC.
4	132kV Srikona – Panchgram	14-01-2019	-	Survey complete, estimate in process

Deliberation

MS NERPC asked the concerned utilities to provide updates through mail to NERPC.

4.5 Implementation/Review of Islanding schemes of NER:

As per Clause 10 of the Central Electricity Authority (Grid Standards), Regulations, 2010: "Islanding Schemes- (1) The Regional Power Committees shall prepare Islanding schemes for separation of systems with a view to save

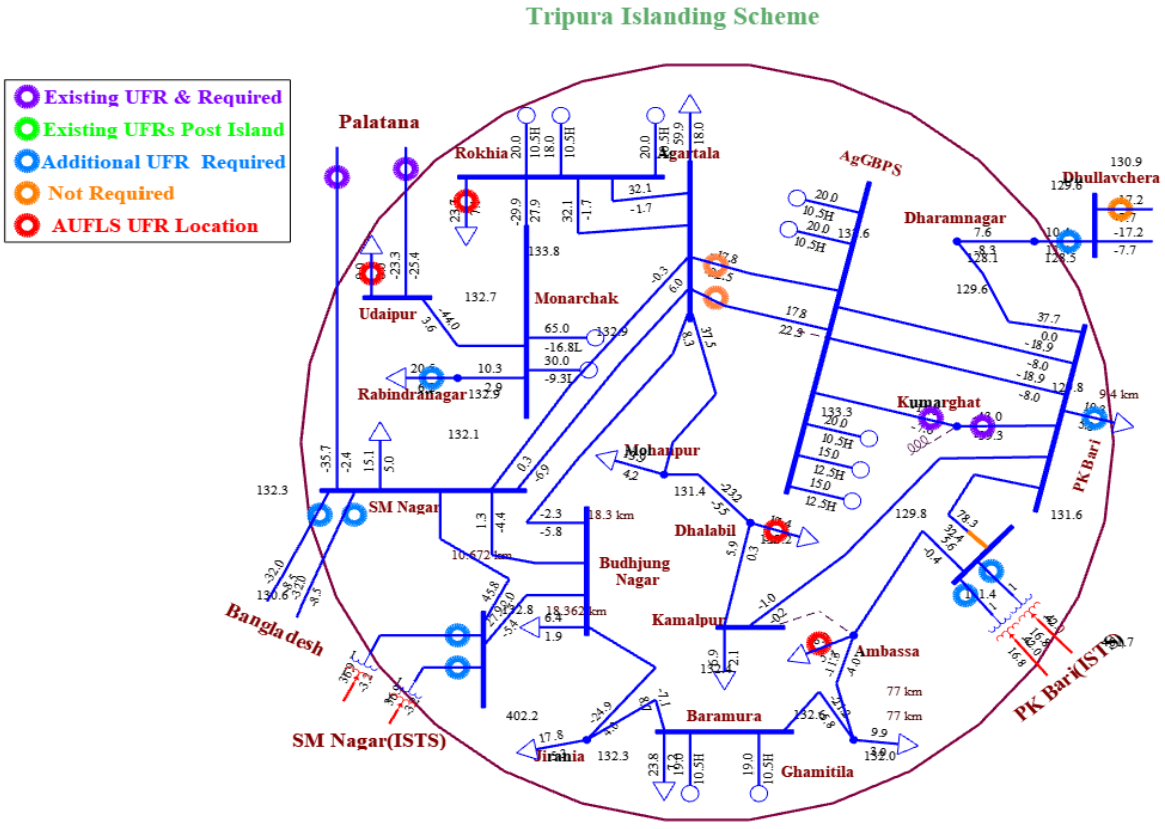
healthy system from total collapse in case of grid disturbance. (2) The Entities shall ensure proper implementation of the Islanding Schemes". In this regard the Islanding schemes which are being planned/have been implemented in NER are mentioned below, along with the updates from 227th OCCM.

A. Guwahati Islanding Scheme

Being discussed in TESG meetings. Queries raised by TESG being replied

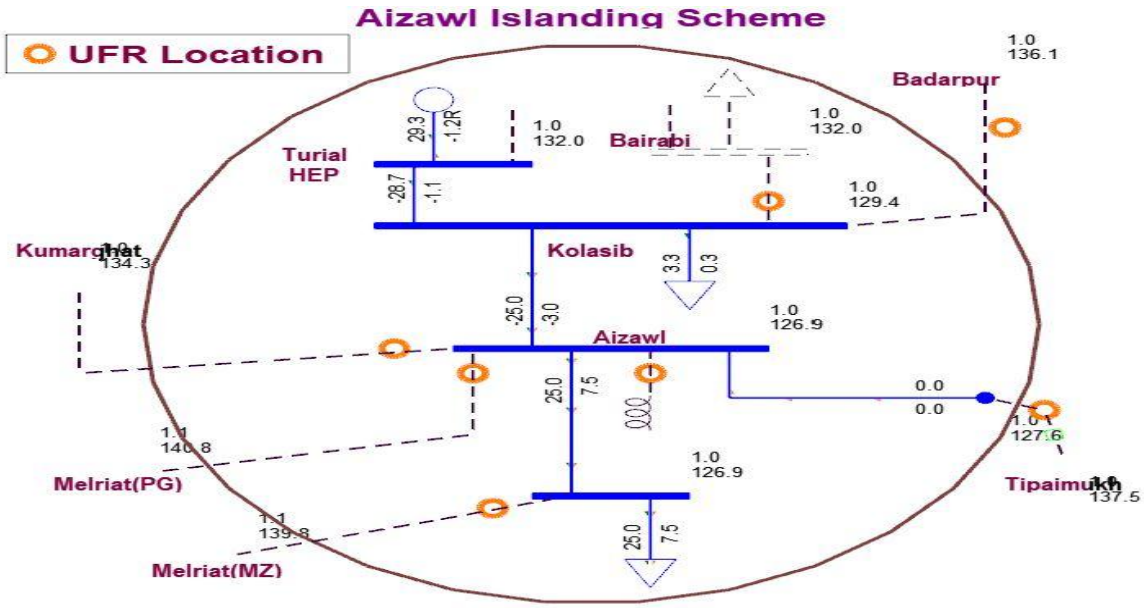
B. Tripura/Agartala Islanding Scheme

OTPC- done its part, Powergrid -will complete shortly, NTL: absent Tripura: to buy UFRs. NERLDC suggested to check whether numerical relays are present or not



C. Aizawl Islanding scheme

Under implementation.



D. Meghalaya/Shillong Islanding Scheme

NERLDC informed that Stability issues observed due to small units. Further study to be done

In 229th OCCM, Forum decided/Utilities updated as follow -

S.N.	***Island***	***Update (229th OCCM)***
1.	Guwahati	AEGCL informed that PSDF funding is approved, except for communication part. At present Tripartite agreement (PSDF, AEGCL and Government of Assam) is underway. NERLDC requested the forum to form a committee to prepare and finalise the Technical Specification & detailed BoQ. The forum advised the committee to complete the task and submit the Technical Specification & detailed BoQ by 15th October 2025.

		Regarding the communication part, MS NERPC the matter will be taken up NPC division of CEA on priority.
2.	Tripura/Agartala	Tripura – UFRs to be procured. Process will commence shortly Rest work done
5.	Aizawl	Implemented on 17th July'2025
6.	Meghalaya/Shillong	Dynamic study to be done. Multi-machine involved, which necessitates real time monitoring of load and generation and load in the machine, therefore PMUs and centralized processors are required, as done for Guwahati Islanding scheme

Deliberation

Member Secretary , NERPC requested the concerned utilities to provide the updates to NERPC through email.

4.6 Automatic Under Frequency Load shedding (AUFLS) scheme of NER:

Status as updated in 229th OCCM

Name of the State/utility	Installation of UFRs	Status of mapping
Ar. Pradesh	Completed	DoP Arunachal Pradesh stated that mapping of feeder at Lekhi SS (Industry feeder, stage 1) completed For rest of the feeders and substations, coordination with GE is underway and will be taken up gradually.
Assam	Completed	Completed

Manipur	UFR installed but not enabled as system integration work is pending with GE. To be completed by June'25 end	Mapping to be completed within one week
Meghalaya	Completed	Completed
Mizoram	Completed	Coordination with GE is underway for mapping. SCADA integration of Shihmui completed but mapping left due to fibre issue. To be resolved within one week
Nagaland	Completed	Completed
Tripura	Completed	Tripura apprised the forum that that mapping at Ambassa is completed but integration is left, OPGW being laid, to be completed by next OCCM.

NERPC informed that AUFLS quantum has been revised for NER for the FY 2024-25 and presented the revised quantum for load shedding to the forum, which is provided below: –

UFR load shedding for NER States for the FY 2024-25

State	**stg I (MW)**	**Stg II**	**Stg III**	**Stg IV**
Ar. Pradesh	8.659594937	10.39151392	12.12343291	12.12343291
Assam	112.3419494	134.8103392	157.2787291	157.2787291
Manipur	11.54612658	13.8553519	16.16457722	16.16457722
Meghalaya	18.85556962	22.62668354	26.39779747	26.39779747
Mizoram	7.542227848	9.050673418	10.55911899	10.55911899
Nagaland	8.100911392	9.721093671	11.34127595	11.34127595
Tripura	16.85362025	20.2243443	23.59506835	23.59506835
Total	183.9	220.68	257.46	257.46

For FY 2023-24 (already under operation)

State	stg I (MW)	Stg II	Stg III	Stg IV
Ar. Pradesh	10	14	12	10
Assam	90	125	113	115
Manipur	10	10	10	10
Meghalaya	25	25	25	25
Mizoram	5	5	5	5
Nagaland	10	10	10	10
Tripura	15	12.2	21.2	30
Total	165	201	196	205

Regarding implementation of revised quantum, Manipur informed that the loads have been identified will be implemented shortly. Tripura left to implement.

Deliberation

Member Secretary , NERPC requested the concerned utilities to provide the updates to NERPC through email.

4.7 Monthly Review of LGBR

PARTICULARS (Peak Demand in MW as per LGBR vs Actual)	July-25 (LGBR)	July-25 (Actual)	Aug-25 (LGBR)	Aug-25 (Actual)	Sep-25 (LGBR)	Sep-25 (Actual)
Arunachal Pradesh	204	223	214	221	212	
Assam	2787	2805	2835	2582	3082	
Manipur	229	233	261	233	265	
Meghalaya	401	337	384	350	349	
Mizoram	141	136	164	144	162	
Nagaland	205	193	203	190	201	

Tripura (exc. Bangladesh)	394	374	381	362	409	
NER DEMAND (exc. Bangladesh)	4158	4088	4265	3922	4396	

PARTICULARS (Energy Requirement in MU as per LGBR vs Actual)	July-25 (LGBR)	July-25 (Actual)	Aug-25 (LGBR)	Aug-25 (Actual)	Sep-25 (LGBR)	Sep-25 (Actual)
Arunachal Pradesh	99	117.94	111	115.59	103	
Assam	1543	1530.04	1521	1439.45	1562	
Manipur	91	99.54	85	94.72	89	
Meghalaya	191	166.64	190	169.41	166	
Mizoram	65	62.73	59	63.09	62	
Nagaland	105	97.17	92	94.56	94	
Tripura (excl. Bangladesh)	205	185.41	237	180.54	196	
NER DEMAND (exc. Bangladesh)	2300	2260	2294	2158	2272	

LGBR projection for September'25, October'25 and Novemebr'25

PARTICULARS (Peak Demand in MW as per LGBR)	Oct-25 (MW)	Oct-25 (MU)	Nov-25 (MW)	Nov-25 (MU)	Dec-25 (MW)	Dec-25 (MU)
Arunachal Pradesh	199	102	199	94	204	104
Assam	2972	1355	2176	1056	2076	1002
Manipur	250	115	280	106	318	131
Meghalaya	424	259	479	263	507	281
Mizoram	163	77	176	81	185	89
Nagaland	205	100	206	82	206	90
Tripura (exc. Bangladesh)	390	199	345	159	294	138
NER DEMAND (exc. Bangladesh)	4386	2207	3624	1841	3634	1836

Deliberation

Forum noted the actual demand vis;a;vis projected demand.

4.8 Compliance with Annual Measurement of Harmonics, DC Injection, and Flicker as per CEA Regulations

As per the CEA (Technical Standards for Connectivity to the Grid) Regulations, Clause B1(4), Measurement of harmonic content, DC injection and flicker shall be done at least once in a year in presence of the parties concerned and the indicative date for the same shall be mentioned in the connection agreement;

Provided that in addition to annual measurement, if distribution licensee or transmission licensee or the generating company, as the case may be, desires to measure harmonic content or DC injection or flicker, it shall inform the other party in writing and the measurement shall be carried out within 5 working days";

In accordance with this regulation, all Wind generating stations and generating stations using inverters connected to the grid are required to perform this test annually and submit the test report to the relevant utility authorities. All utilities are requested to provide an update on the current status of test reports and outline their future testing plans as per CEA guidelines.

Deliberation of the 226th OCCM

NERLDC informed that a mail has been sent by NERPC to the concerned states to provide testing details and reports for the Solar, Wind and IBR based generators but the reply is still awaited.

Assam informed that the matter is being taken up with the Solar developers.

Mizoram informed that price quotation has been asked from various agencies to carry out the tests at Selrui Solar plant and the reply is still awaited.

Forum exhorted the Asam and Mizoram to provide the required details at the earliest to NERPC and NERLDC. Also, the forum requested state SLDCs to provide the charging clearance for Solar, wind and IBR based plants only after ensuring compliance with CEA regulations on testing of Harmonics, DC injection and flicker. SLDs agreed to the same.

Deliberation of the 227th OCCM

Assam and Mizoram informed that corresponding SLDCs are taking up the matter with Solar developers, but no input has been received yet.

Member Secretary NERPC exhorted Assam and Mizoram to ensure compliance with the regulations and timely conduct of the tests.

Deliberation of the 228th OCCM

Member Secretary , NERPC requested Assam and Mizoram to provide update on conducting of tests to NERPC via email.

No update in this regard has been received yet. Assam and Mizoram may update

Deliberation

Member Secretary , NERPC requested the concerned utilities to provide the updates to NERPC through email.

4.9 Mock Black Start of Units in compliance with IEGC:

As per IEGC Clause 34 (3), The user shall carry out a mock trial run of the procedure for different sub-systems including black-start of generating units along with grid forming capability of inverter based generating station and VSC based HVDC black-start support **at least once a year** under intimation to the concerned SLDC and RLDC.

Accordingly, Mock Black Start of the following generating plants were conducted for the FY 2024-25:

Sl. No.	Name of Power station	Date of Mock exercise

1	AGBPS GTG 4	14-05-2024
2	Kopili Unit 1, 3 & 4	Completed (U I & III 09th March 25 & U II & IV 10th March 25)
3	AgGBPS GTG 2	11-09-2024

All utilities are requested to submit the latest status of planning related to mock black-start trials of ***all units*** that are pending or yet to be conducted and to complete these activities within FY 2024-25 to ensure compliance with IEGC.

Mock Black Start of the following generating plant are pending:

Sl. No.	**Name of Power station**	**Last date of Mock exercise**	**Expected date of Mock exercise**
1	Doyang HEP	Unit II-04.04.2025	To be performed during lean hydro season
2	Khangdong Stg-2 HEP	-	November-2025
3	Kameng HEP	-	November-2025
4	Loktak HEP	Unit I -15.05.2025	To be performed during lean hydro season
5	Pare HEP	Unit-II-17.05.2025	To be performed during lean hydro season
6	Panyor HEP	30-05-2023	May-2025
7	Turial HEP	Unit II- 22.07.2025 Unit I- 23.07.2025	To be performed in FY 2026-27

In 226th OCCM, MS NERPC exhorted the concerned generating utilities to carry out the exercise as early as possible.

As per deliberation in 227th OCC meeting, As NERLDC informed that as per discussion held during the special meeting convened by NERPC on 10.05.2025 regarding the preparedness of islanding and black start capabilities, it was decided to carry out unannounced mock black start

exercises for all generating stations equipped with black start facilities. In line with this decision, Loktak and Pare HEP have successfully carried out the unannounced mock black start exercises. However, AGBPS (Kathalguri) was unable to synchronize due to technical issues at the 220 kV Tinsukia substation. The necessary rectification at Tinsukia may be carried out by AEGCL, and the status should be duly communicated to NERPC and NERLDC.

NEEPCO stated that due issues related to online transfer of elements at Panyor HEP unannounced mock black start exercises may not conducted.

Deliberation

Member Secretary , NERPC requested the concerned utilities to provide the updates to NERPC through email.

4.10 Performance of online network estimation tools at RLDC:

IEGC mandates RLDCs and SLDCs to utilize the network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study. Also, performance of the online estimator tools shall be reviewed in monthly operational meetings as per IEGC Regulation 33(2). Quote:

"*SLDCs, RLDCs and NLDC shall utilize network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study. All users shall make available at all times real time error free operational data for the successful execution of network analysis using EMS/SCADA. Failure to make available such data shall be immediately reported to the concerned SLDC, the concerned RLDC and NLDC along with a firm timeline for restoration. The performance of online network estimation tools at SLDC and RLDC shall be reviewed in the monthly operational meeting of RPC. Any telemetryrelated issues impacting the online network estimation tool shall be monitored by RPC for their early resolution.*"

Unquote:

The performance of online network estimation tools at NERLDC is shown below:

03-Oct-2025 16:06:22

Difference & % Error of RTCA and RTNET

Constituents	SCADA	RTCA		RTNET	
		Difference	Error %	Difference	Error %
NER Generation	2538	386	13.00	29	1.00
NER Load	2760	338	12.00	29	12.00
Tripura	241	85	35.00	85	35.00
Assam	1710	553	31.00	553	31.00
Meghalaya	243	29	12.00	29	12.00
Manipur	162	27	23.00	27	23.00
Arunachal	140	41	30.00	41	30.00
Nagaland	154	37	30.00	37	30.00
Mizoram	111	14	12.00	14	12.00

Similarly, SLDC's are requested to present their online network estimation tool performance in the monthly operational meeting of RPC to comply with IEGC regulation 33(2).

Deliberation

Member Secretary NERPC requested the SLDCs to provide the updates to NERPC through email.

4.11 Re-configuring RTUs of NEEPCO owned stations for reporting to NERLDC Guwahati

NERLDC Guwahati was inaugurated on 11th March 2024, following which NERLDC is operating under the Main-1 and Main-2 concept, with its establishments located in Shillong and Guwahati. At present, some NEEPCO stations report exclusively to NERLDC Shillong. In view of achieving 100%

redundancy of Main-1 and Main-2 NERLDC, there is a critical need to reconfigure the RTUs to enable simultaneous reporting to NERLDC Guwahati.

On request, NEEPCO has configured all the stations for parallel except two stations which are mentioned as below along with the status of 32nd NETeST meeting:

1. **RC Nagar**: NEEPCO informed the forum that the Work order is already placed to M/s GE. However, the response from M/s GE is not satisfactory. NEEPCO further requested NERLDC to assist in configuration of the RTU database as similar way assistance was provided for Panyor HEP station.
2. **Pare HEP**: NEEPCO informed the forum that the RTU/PLC has been configured however due to configuration issue the data is not getting telemetered properly. NEEPCO requested that further configuration of RTU/PLC will be carried out during the lead hydro period i.e., Nov'25 – Dec'25 as the same RTU/PLC is being used to control the units which are running continuously.

NEEPCO is requested to provide an update on the current status of these actions.

Deliberation

MS NERPC requested NEEPCO to provide update through mail to NERPC.

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Annexure-I

List of Participants in the 231st OCC Meeting held on 10.10.2025

SN	Name & Designation	Organization	Contact No.
1	Sh.Ojing Jerang, EE (E), SLDC	Ar. Pradesh	08974640622
2	Sh. Tarali Deka, AGM (Tariff), AEGCL	Assam	09864981330
3	Sh. Anup Gupta, AM, AEGCL	Assam	09101925117
4	Sh. Dhrubajyoti Bona, AM, SLDC	Assam	08136059023
5	Ms. Sushmita Das, JM, SLDC	Assam	09864956879
6	Sh. Naoren Purnachandra Singh, JE, MSPCL	Manipur	07628824222
7	Sh. Mex Kumar B., JE, MSPCL	Manipur	09402714737
8	Sh. Bodhodoy Das, SE (Gen.), HQ,MePGCL	Meghalaya	08415041336
9	Sh. B.Samiam, EE, SLDC, MePTCL	Meghalaya	09862021883
10	Sh. Rajib Datta, EE(BDD), MePDCL	Meghalaya	09402196350
11	Sh. L.Hajong, EE, MePTCL, Ri Bhoi	Meghalaya	09862821765
12	Sh. N.K.Singh, EE, MePTCL	Meghalaya	09101242061
13	Sh. H.Law, EE, MePDCL	Meghalaya	07005208427
14	Sh. R.Umni, EE (MOD), MePTCL	Meghalaya	09774591787
15	Sh. Y.Iakai, AEE, SLDC, MePTCL	Meghalaya	09402133552
16	Sh. C.Chawngzikpuia, SDO (MRT)	Mizoram	08974770712
17	Sh, Lalramchhunga, AE, SLDC	Mizoram	09774251677
18	Sh. Meka Kinimi, JE	Nagaland	07630857499
19	Sh. Alex E.Ngullie, JE	Nagaland	08837080321
20	Sh. Anil Debbarma, DGM, SLDC, TSECL	Tripura	09612559250
21	Sh. Debabrata Pal, Sr.Mgr, TSECL	Tripura	09436500244
22	Smti. Mamami Talukdar, GM (T)	NEEPCO	09435339690
23	Sh. Sandipan Sarkar, Sr.Mgr (E/M)	NEEPCO	07005294807
24	Sh. Manas Pratim Sharma, Sr.Mgr	NEEPCO	08729901871
25	Sh. Sajan George, CGM (I/c)	NERLDC	09910378041
26	Sh. Biswajit Sahu, CGM	NERLDC	09425409539
27	Sh. Anjan Kumar Pandey, Dy.Mgr	NERLDC	07003728479
28	Sh. Sunil Singha, Ch.Manager	NERLDC	08414865365
29	Sh. Palash Jyoti Borah, Ch. Manager	NERLDC	08761093397
30	Sh. Yogendra Singh, Engineer	NERLDC	07005587509
31	Sh. Sumit Kumar, Manager	NERLDC	07005371729
32	Sh. Ashim Kr. Paul, DGM	PGCIL	09436602688
33	Sh. Manash Jyoti Baishya, Ch.Mgr	PGCIL	09435555740
34	Sh. Mitangshu Saha, Lead-STG	OTPC	07085310211
35	Sh. Rajeev Kr. Sharma, DGM (O)	NTPC	07908050126

36	Sh. K.Ramesh Kumar, AGM	NTPC	09440901780
37	Sh. Sajeev Mohandas, AGM	NTPC	09496006403
38	Sh. Golerius Murmu, Sr.Manager, Bongaigaon	NTPC	09406711855
39	Sh. Ravindra Laxkar, Sr.Mgr	NTPC	08527597154
40	Sh. Akash Dweep Singh, Sr.Mgr, LOKTAK	NHPC	09107842237
41	Sh. K.B.Jagtap, Member Secretary	NERPC	-
42	Sh. Veerandranath Muncha, Director	NERPC	07358529099
43	Sh. Vikash Shankar, Asst. Director	NERPC	09455331756

Annexure 2.2

उ.पू.क्षे ग्रिड प्रदर्शन

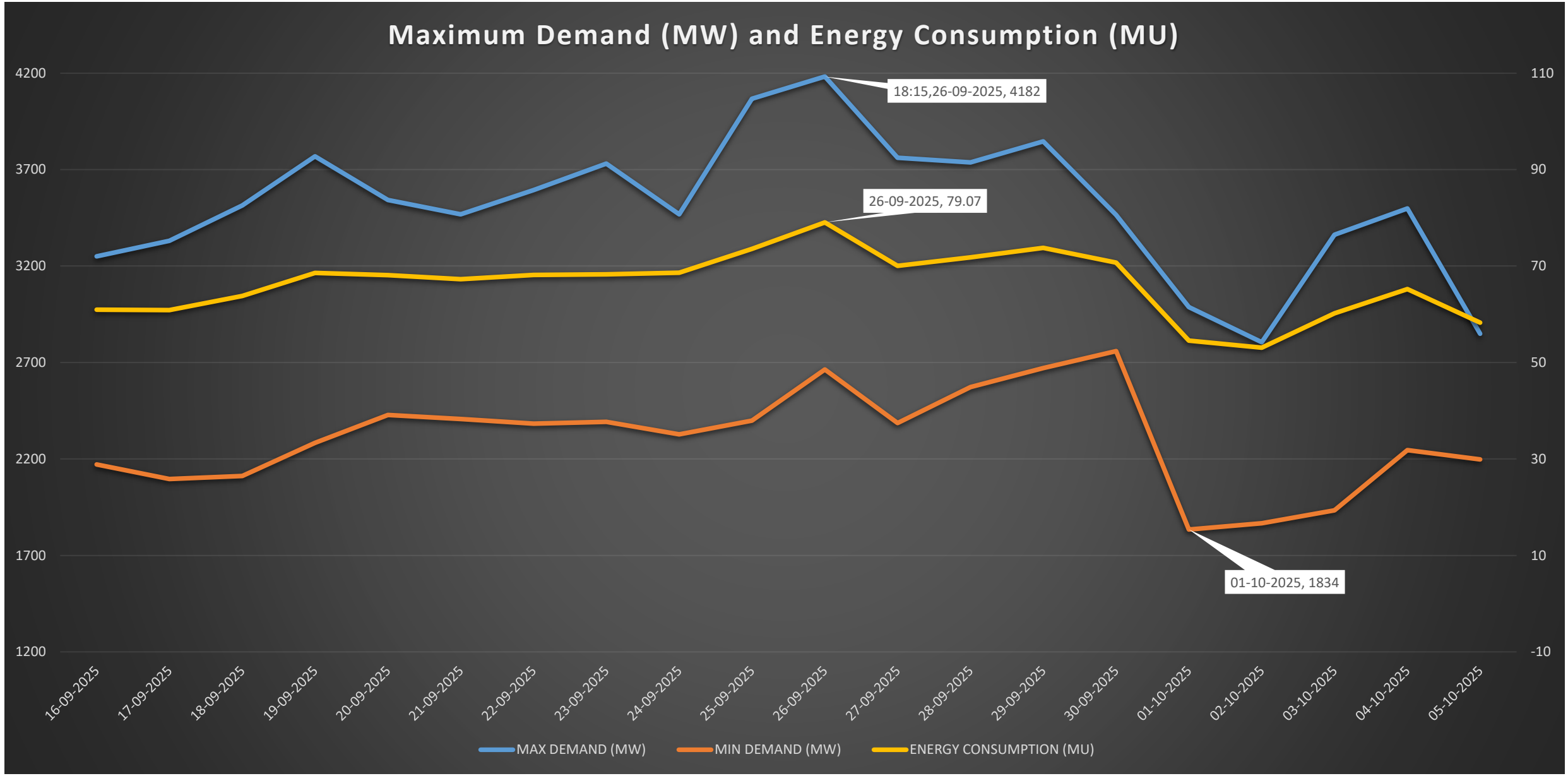
NER GRID PERFORMANCE

For the month Sep'25-Oct'25

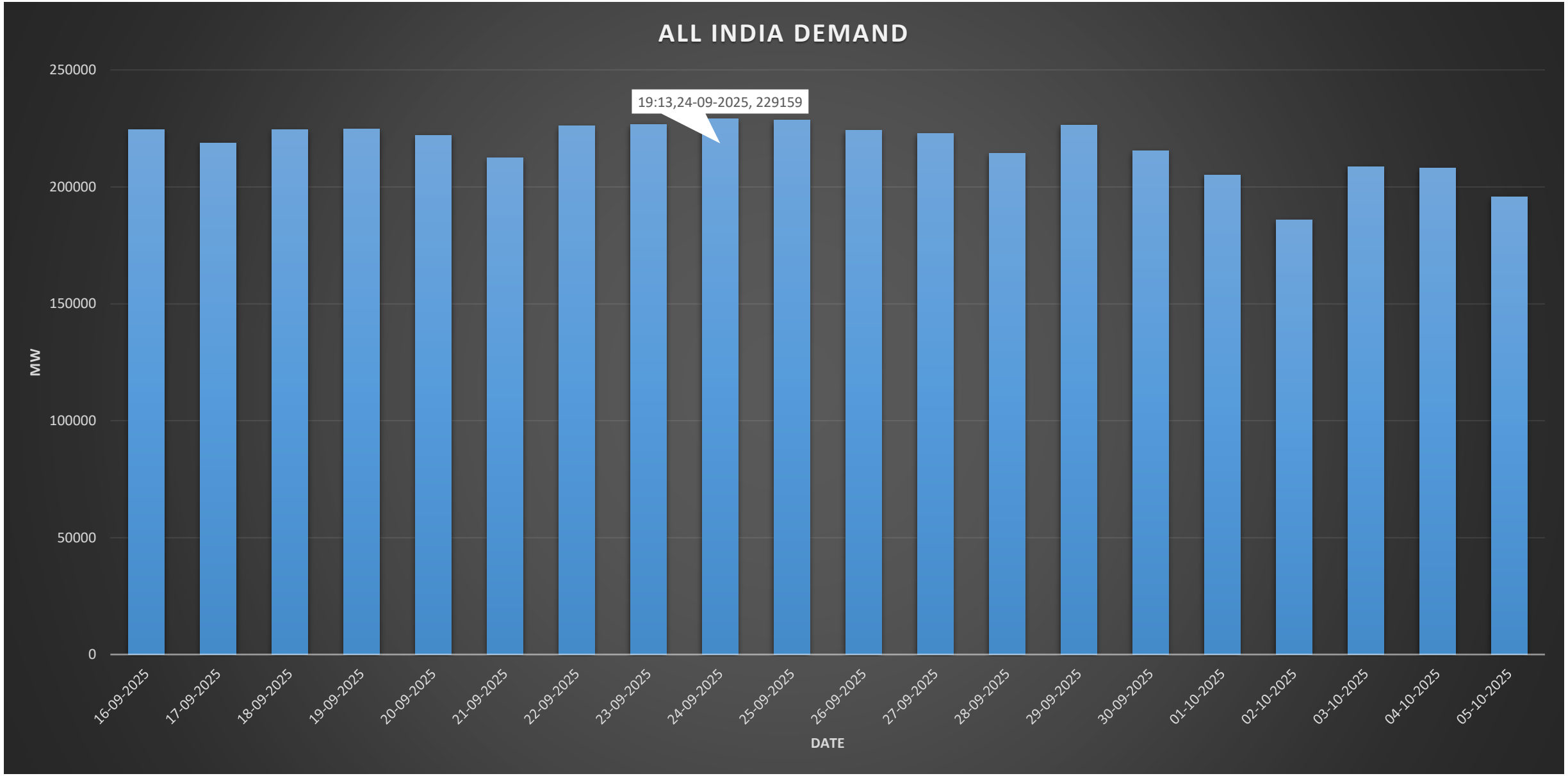
North-Eastern Regional Load Despatch Centre

Grid-India, Shillong

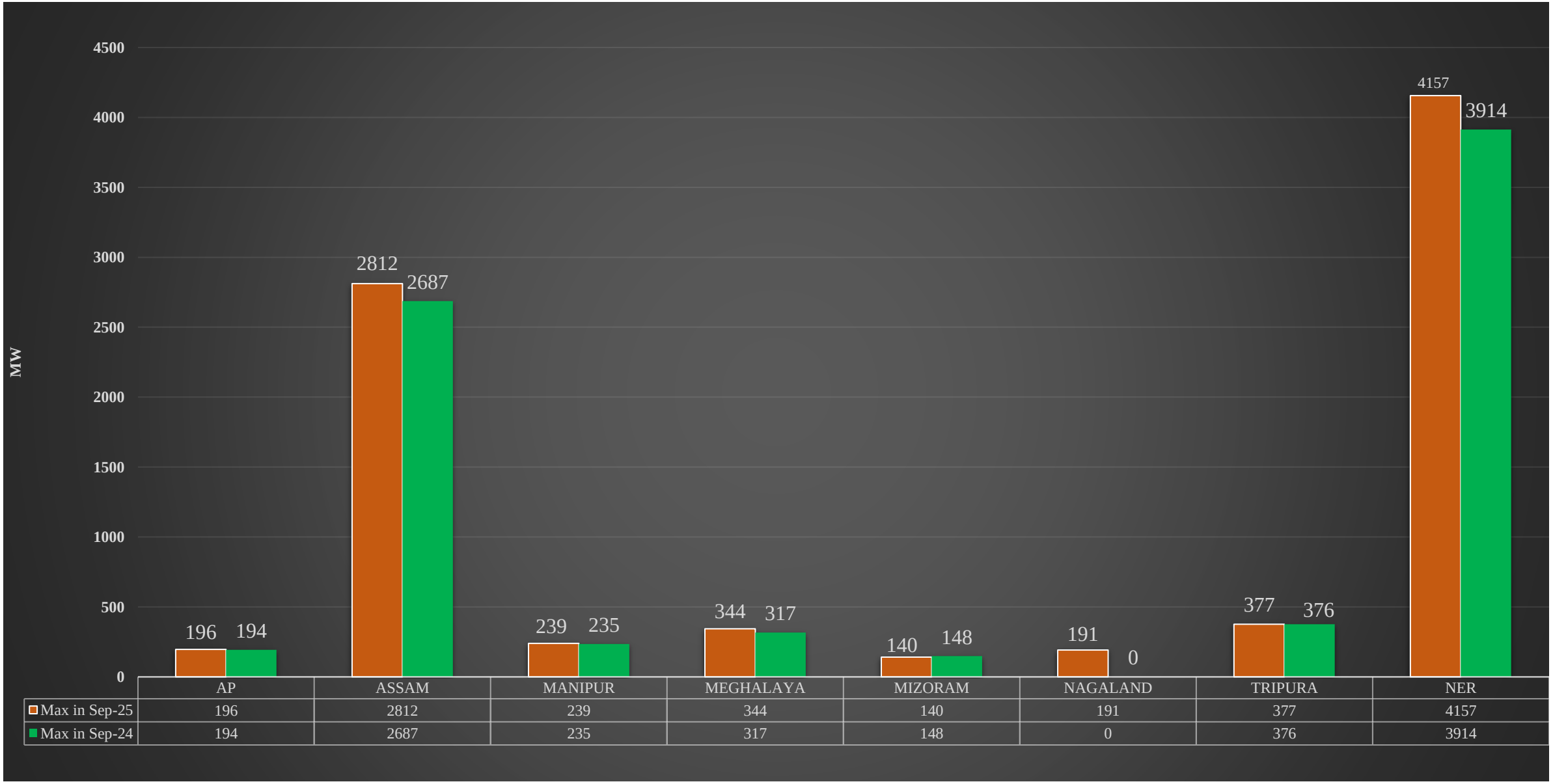
Maximum MW and MU in NER: 16th Sep'25– 05th Oct'25



Maximum All India Demand: 16th Sep'25– 05th Oct'25

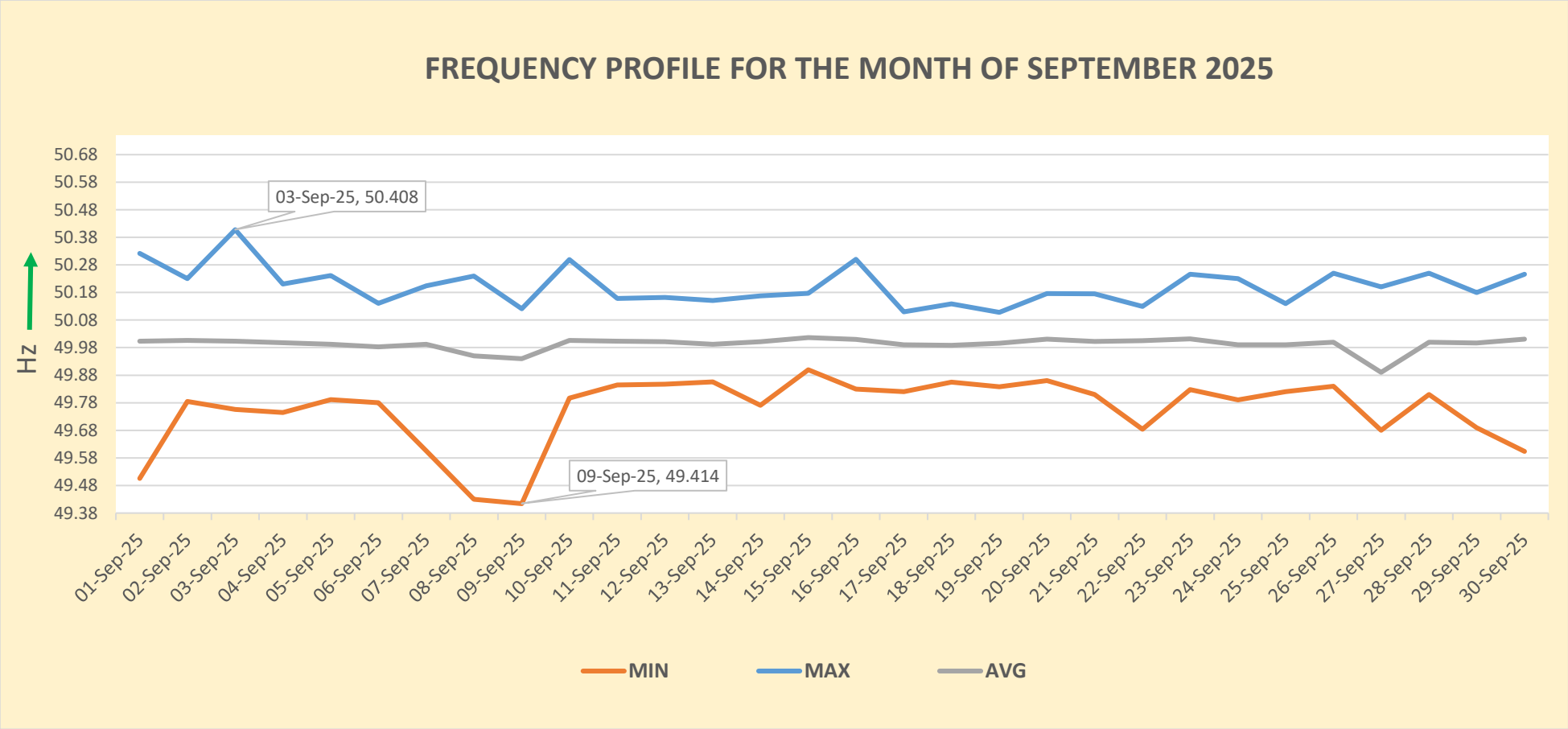


Y-o-Y Maximum Demand Met

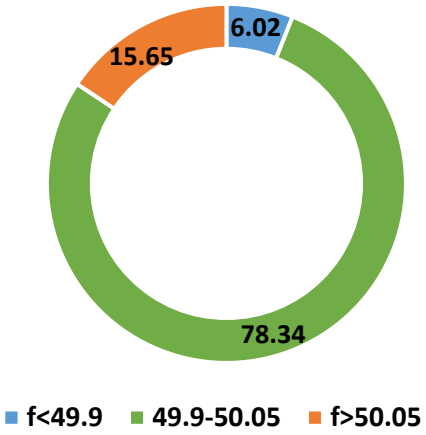


	AP	ASSAM	MANIPUR	MEGHALAYA	MIZORAM	NAGALAND	TRIPURA	NER
Max in Sep-25	196	2812	239	344	140	191	377	4157
Max in Sep-24	194	2687	235	317	148	0	376	3914

Frequency Profile

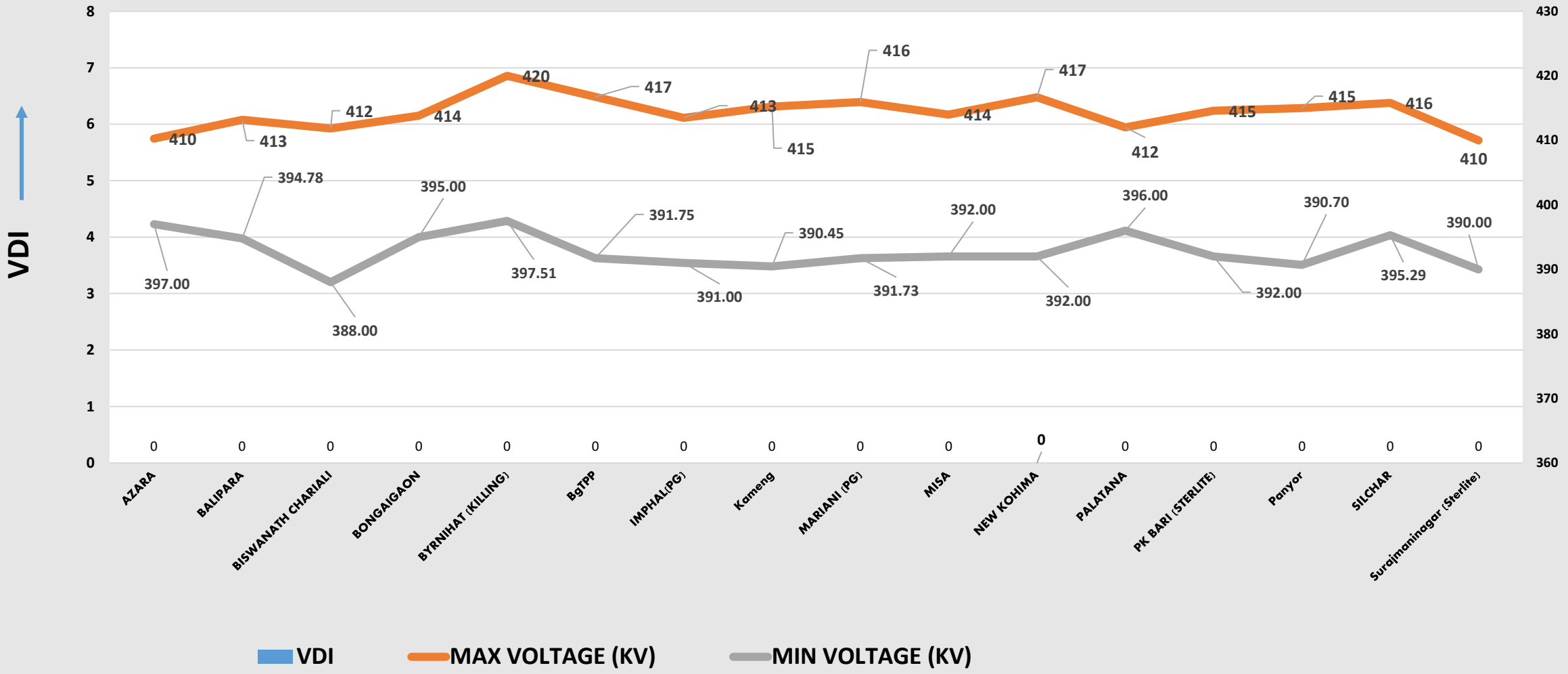


49.41 Hz on 09-Sep-2025: Due to continuous overdrawing of approximately 3000 MW by Southern, Northern and Western Region states. TRAS UP margin was already exhausted.

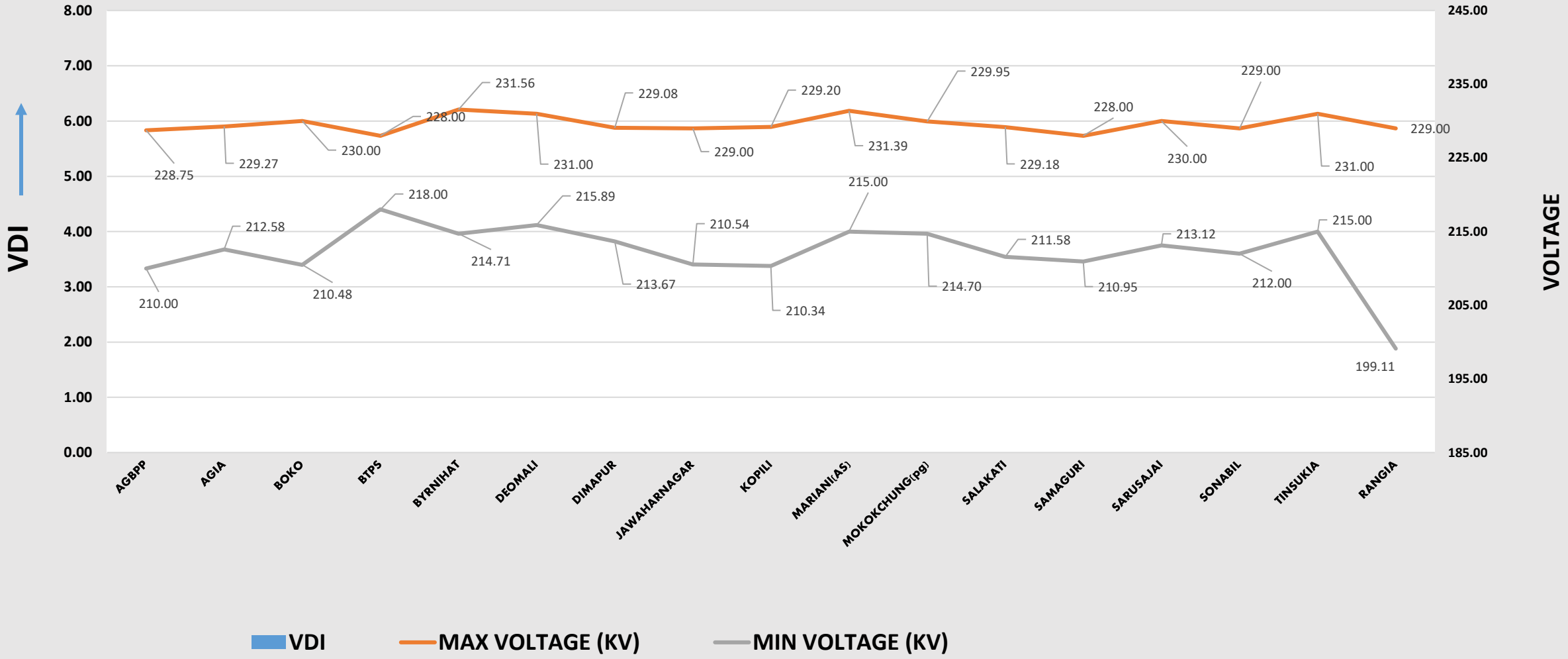


VDI (400 KV) for September 2025

No. of 400 kV lines kept open for over voltage : 0



VDI (220 KV) for September 2025



Projected Hydro Generation Availability

Plants	Reservoir Level in meters (as on 06/10/2025)	MU Content	Present DC (MU)	No of days as per current Generation
Khandong	721.5	31	1.09	28
Kopili	606.6	77	4.74	16
Doyang	323.25	34	1.77	19
Loktak	768.37	221	2.47	89

No. of GD	39
No. of GI	1

Grid Disturbance during September'25

Sl No	Area Affected	GD	Date & Time
1	Grid Disturbance in Zhadima, Chiephobozou, Wokha and Sanis areas of Nagaland Power System	GD-I	01-09-2025 09:27 Hrs
2	Grid Disturbance in Rengpang area of Manipur power system	GD-I	01-09-2025 09:41Hrs
3	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	01-09-2025 16:00 Hrs
4	Grid Disturbance in Golaghat, Sarupathar and Bokajan areas of Assam Power system	GD-I	02-09-2025 09:19 Hrs
5	Grid Disturbance in Rengpang area of Manipur power system	GD-I	03-09-2025 17:06 Hrs
6	Grid Disturbance in Sanis area of Nagaland Power System	GD-I	03-09-2025 17:48 Hrs
7	Grid Disturbance in Rengpang area of Manipur power system	GD-I	04-09-2025 11:57 Hrs
8	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	04-09-2025 20:00 Hrs
9	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	04-09-2025 23:51Hrs

No. of GD	39
No. of GI	1

Grid Disturbance during September'25

Sl No	Area Affected	GD	Date & Time
10	Grid Disturbance in Rengpang area of Manipur power system	GD-I	05-09-2025 10:28 Hrs
11	Grid Disturbance in Churachandpur, Kakching, Elankangpokpi, Chandel, Thanlon, Thoubal Old, Thoubal new, Kongba & Yiangangpokpi areas of Manipur power system	GD-I	05-09-2025 17:58 Hrs
12	Grid Disturbance in Rengpang area of Manipur power system	GD-I	06-09-2025 11:14 Hrs
13	Grid Disturbance in NEIGRIHMS and IIM areas of Meghalaya Power System	GD-I	06-09-2025 14:41 Hrs
14	Grid Disturbance in Rengpang area of Manipur power system	GD-I	07-09-2025 09:26 Hrs
15	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	07-09-2025 02:11 Hrs
16	Grid Disturbance in Rengpang area of Manipur power system	GD-I	08-09-2025 12:00 Hrs
17	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	08-09-2025 08:16 Hrs
18	Grid Disturbance in Rongkhon and Ampati areas of Meghalaya Power system and Hatsingimari area of Assam power system	GD-I	11-09-2025 12:38 Hrs

No. of GD	39
No. of GI	1

Grid Disturbance during September'25

Sl No	Area Affected	GD	Date & Time
19	Grid Disturbance in 220kV Rangia S/S, Nalbari, Nathkuchi, part load of Bornagar, part load Shishugram, Sipajhar, Tangla, Amingaon, Kamalpur and Hajo areas of Assam Power System	GD-I	13-09-2025 02:19 Hrs
20	Grid Disturbance in Kolasib, Tuirial HEP & Bairabi HEP of Mizoram Power System	GD-I	15-09-2025 15:51 Hrs
21	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	17-09-2025 11:05 Hrs
22	Grid Disturbance in Rokhia & Mohanpur areas of Tripura power system	GD-I	18-09-2025 10:35 Hrs
23	Grid Disturbance in Basar area of Arunachal Pradesh Power System	GD-I	19-09-2025 05:35 Hrs
24	Grid Disturbance in Rnegpang area of Manipur Power System	GD-I	20-09-2025 12:54 Hrs
25	Grid Disturbance in Rnegpang area of Manipur Power System	GD-I	21-09-2025 11:37 Hrs
26	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	21-09-2025 11:58 Hrs
27	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	21-09-2025 13:22 Hrs

No. of GD	39
No. of GI	1

Grid Disturbance during September'25

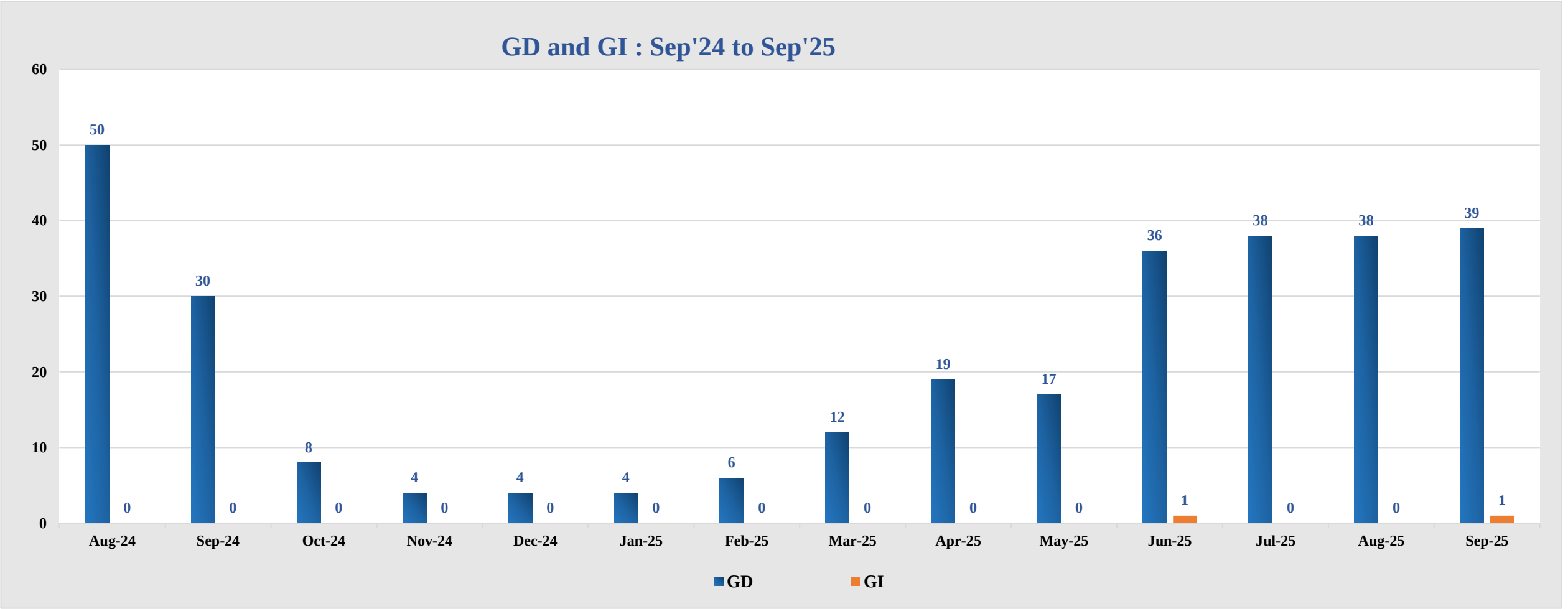
Sl No	Area Affected	GD	Date & Time
28	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	21-09-2025 14:17 Hrs
29	Grid Disturbance in Dhemaji & Silapathar Areas of Assam Power system	GD-I	23-09-2025 03:22 Hrs
30	Grid Disturbance in Rengpang area of Manipur Power System	GD-I	23-09-2025 14:12 Hrs
31	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	23-09-2025 23:13 Hrs
32	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	24-09-2025 05:25 Hrs
33	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	24-09-2025 06:40 Hrs
34	Grid Disturbance in Rokhia area of Tripura Power System	GD-I	24-09-2025 11:28 Hrs
35	Grid Disturbance in Khupi, Seppa, Tenga areas and Dikshi HEP of Arunachal Pradesh Power System	GD-I	24-09-2025 17:34 Hrs
36	Grid Disturbance in Along area of Arunachal Pradesh Power System	GD-I	26-09-2025 13:58 Hrs
37	Grid Disturbance in Tuirial HEP of NEEPCO Power System	GD-I	26-09-2025 23:00 Hrs
38	Grid Disturbance in Rengpang area of Manipur Power System	GD-I	30-09-2025 11:29 Hrs
39	Grid Disturbance in Jiribam(MA) area of Manipur Power System	GD-I	30-08-2025 17:41 Hrs

No. of GD	39
No. of GI	1

Grid Incidence during September'25

Sl No	Affected Substation	GI	Date & Time
1	Grid Incidence occurred at Assam, Meghalaya and AP Power system due to an earthquake measuring 5.9 on the Richter scale hit Assam and parts of northeast India on 14th September 2025	GI-1	14-09-2025 16:41 hrs

Grid Disturbance/Incidences for last 12 Months



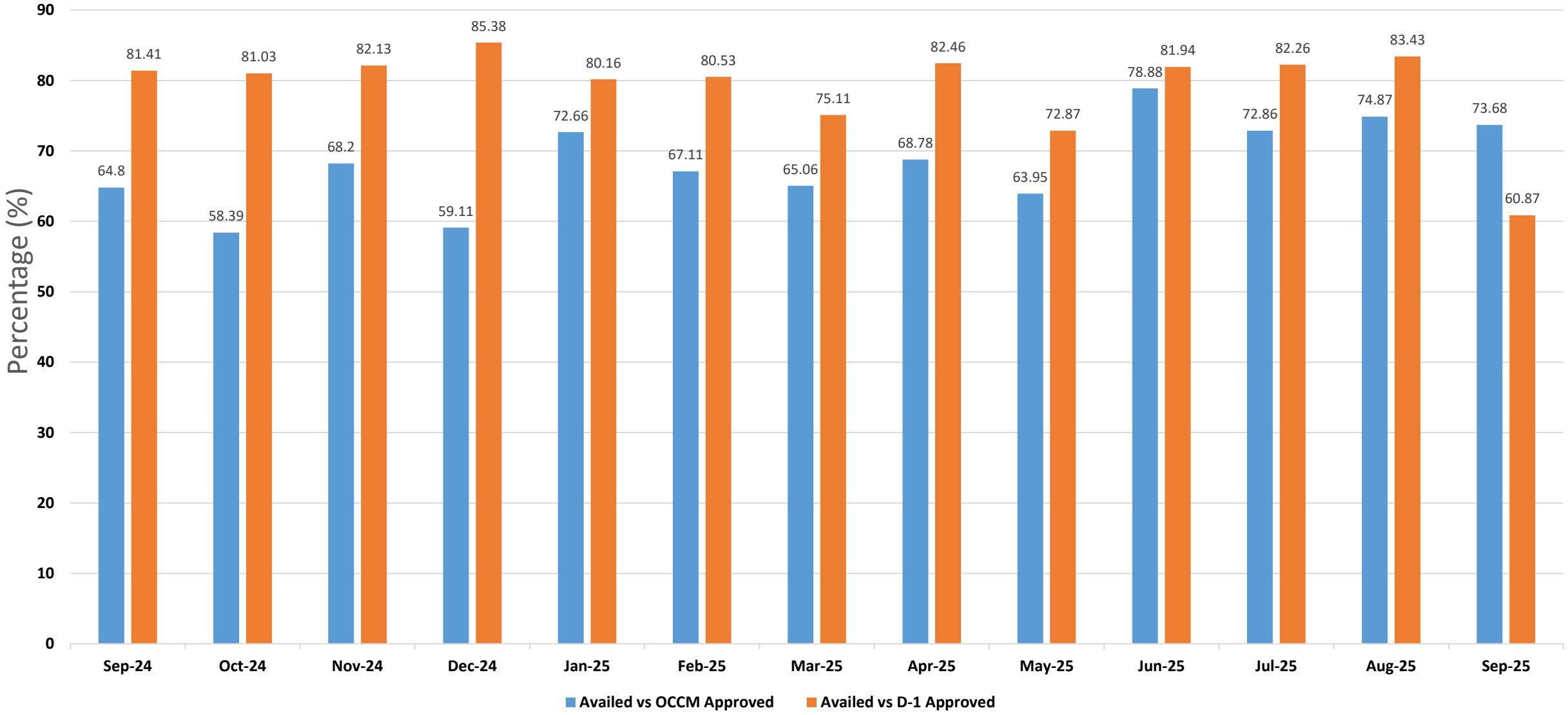
OCC approved shutdown availing status for the month of September 2025

SUMMARY OF NER OUTAGE							
MONTH	PLANNED IN OCC	APPROVED IN D-1	AVAILED IN REAL TIME	NOT AVAILED	AVAILED Vs PLANNED %	AVAILED Vs APPROVED %	DEFFERED BY RLDC DUE TO SYSTEM CONSTRAINT
September 25	207	171	126	44	60.87	73.68	1

Shutdown Statistics

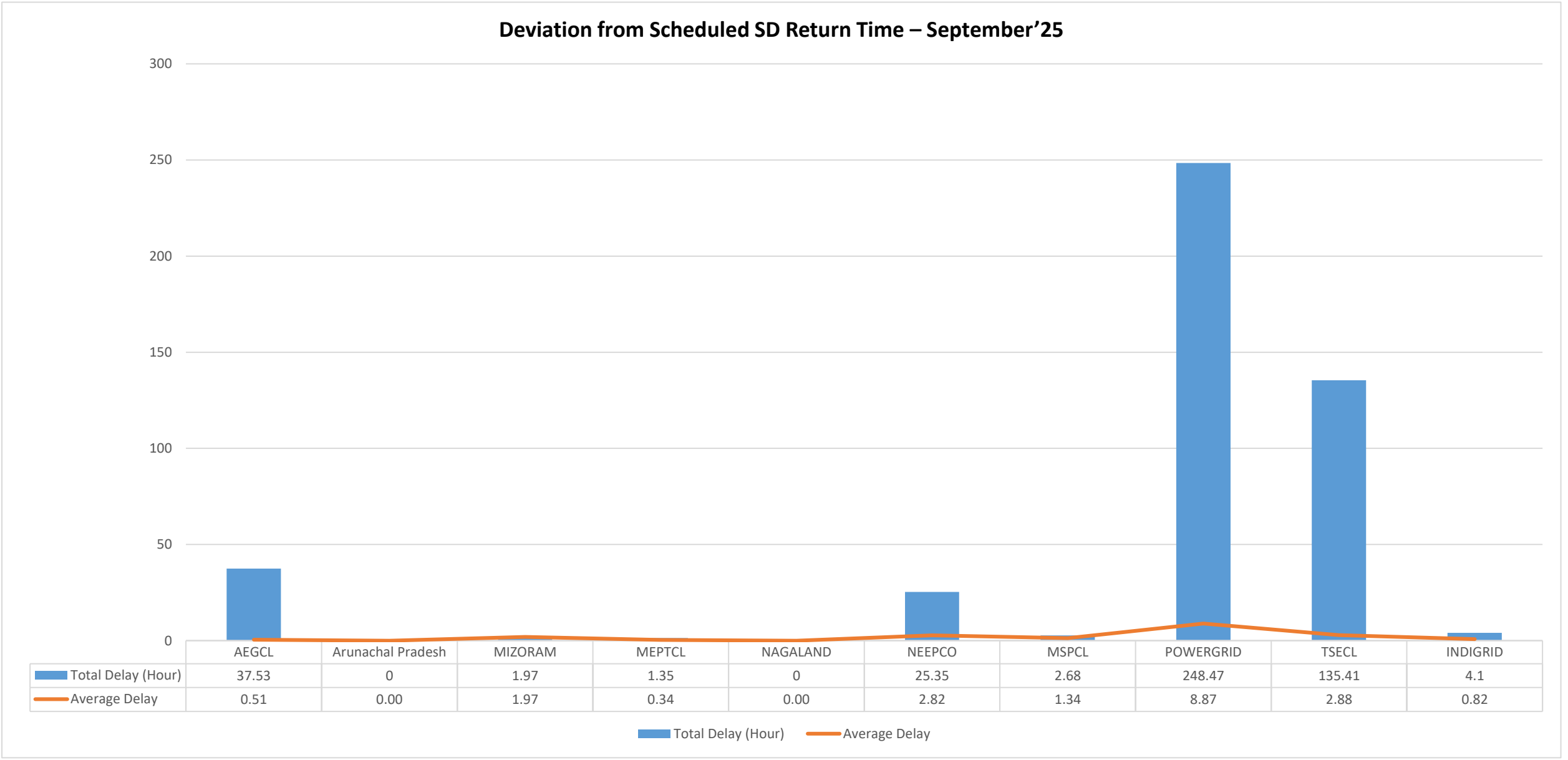
	OCC Approved	D-1 Approved	Availed	Not Availed	RLDC Deferred
NER	207	171	126	44	2
NERTS	48	41	28	13	0
ASSAM	82	74	57	17	1
MANIPUR	0	0	0	0	0
MEGHALAYA	14	9	8	1	0
NAGALAND	2	2	2	0	0
MIZORAM	0	0	0	0	0
TRIPURA	49	38	31	6	1
Arunachal Pradesh	7	6	0	6	0
NETC	0	0	0	0	0
KMTL	0	0	0	0	0
NEEPCO	1	1	0	1	0
NTPC	4	0	0	0	0
OTPC	0	0	0	0	0
INDIGRID	0	0	0	0	0
NHPC	0	0	0	0	0

Approved Shutdown availing trend in percentage



Shutdown Delay statistics

Comparison of delay in returning Shutdown by Entities for the Month of September 2025



	AEGCL	Arunachal Pradesh	MIZORAM	MEPTCL	NAGALAND	NEEPCO	MSPCL	POWERGRID	TSECL	INDIGRID
Total Delay (Hour)	37.53	0	1.97	1.35	0	25.35	2.68	248.47	135.41	4.1
Average Delay	0.51	0.00	1.97	0.34	0.00	2.82	1.34	8.87	2.88	0.82

Shutdown Delay statistics

SL.	Availing Utility	Total SD	Total Delay (Hour)	Average Delay
1	AEGCL	74	37.53	0.51
2	Arunachal Pradesh	1	0	0.00
3	MIZORAM	1	1.97	1.97
4	MEPTCL	4	1.35	0.34
5	NAGALAND	2	0	0.00
6	NEEPCO	9	25.35	2.82
7	MSPCL	2	2.68	1.34
8	POWERGRID	28	248.47	8.87
9	TSECL	47	135.41	2.88
10	INDIGRID	5	4.1	0.82

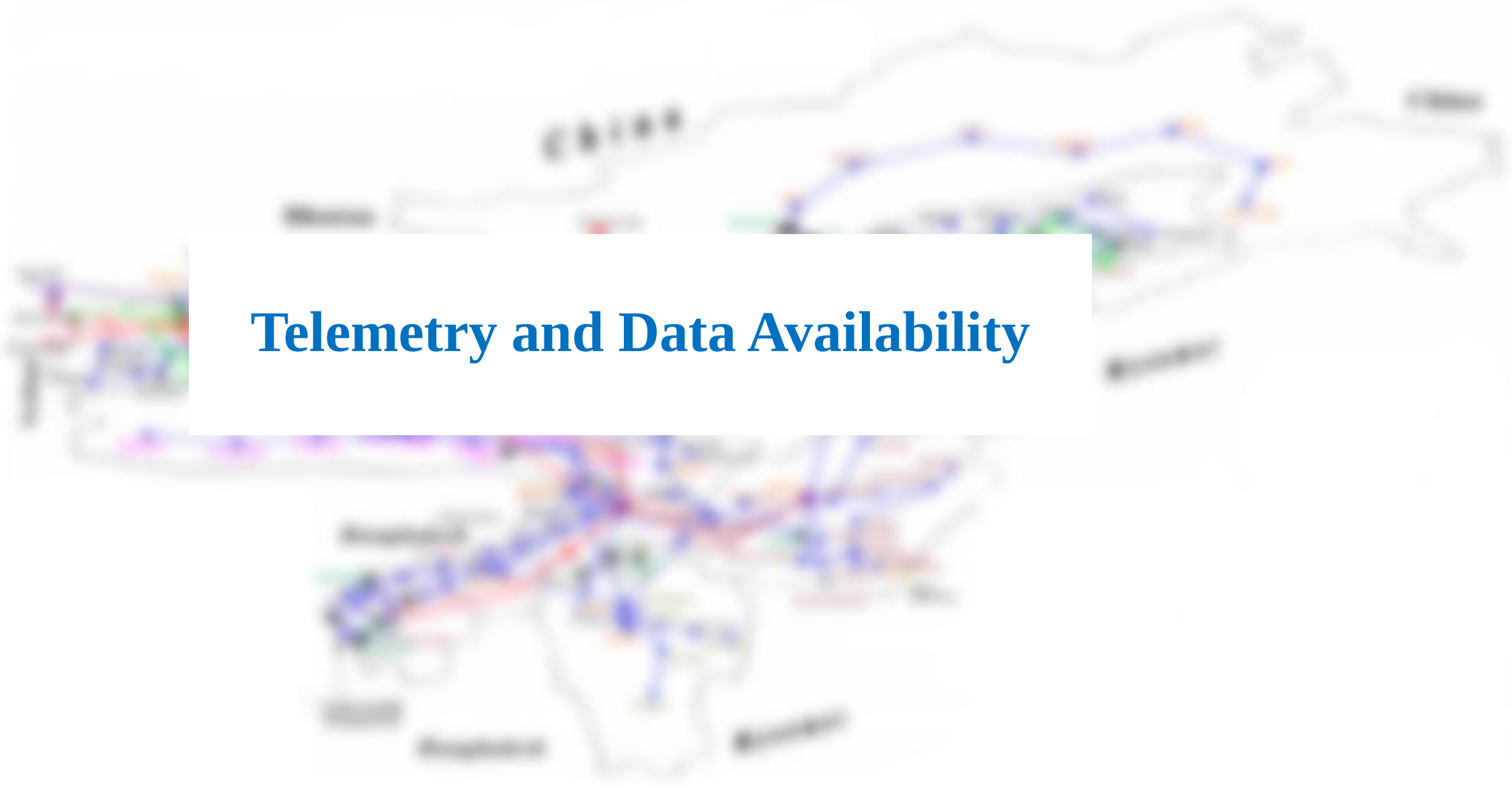
RMSE of Load forecast for September'25

RMSE of the forecasted Demand by SLDCs Vs Actual Demand met as per IEM by SLDCs :

$$RMSE = \sqrt{\frac{\sum_{i=1}^{N} (Predicted_i - Actual_i)^2}{N}}$$

Where,
Predicted$_i$ = Forecasted Value
Actual$_i$ = Actual value
N = Total number of observations.

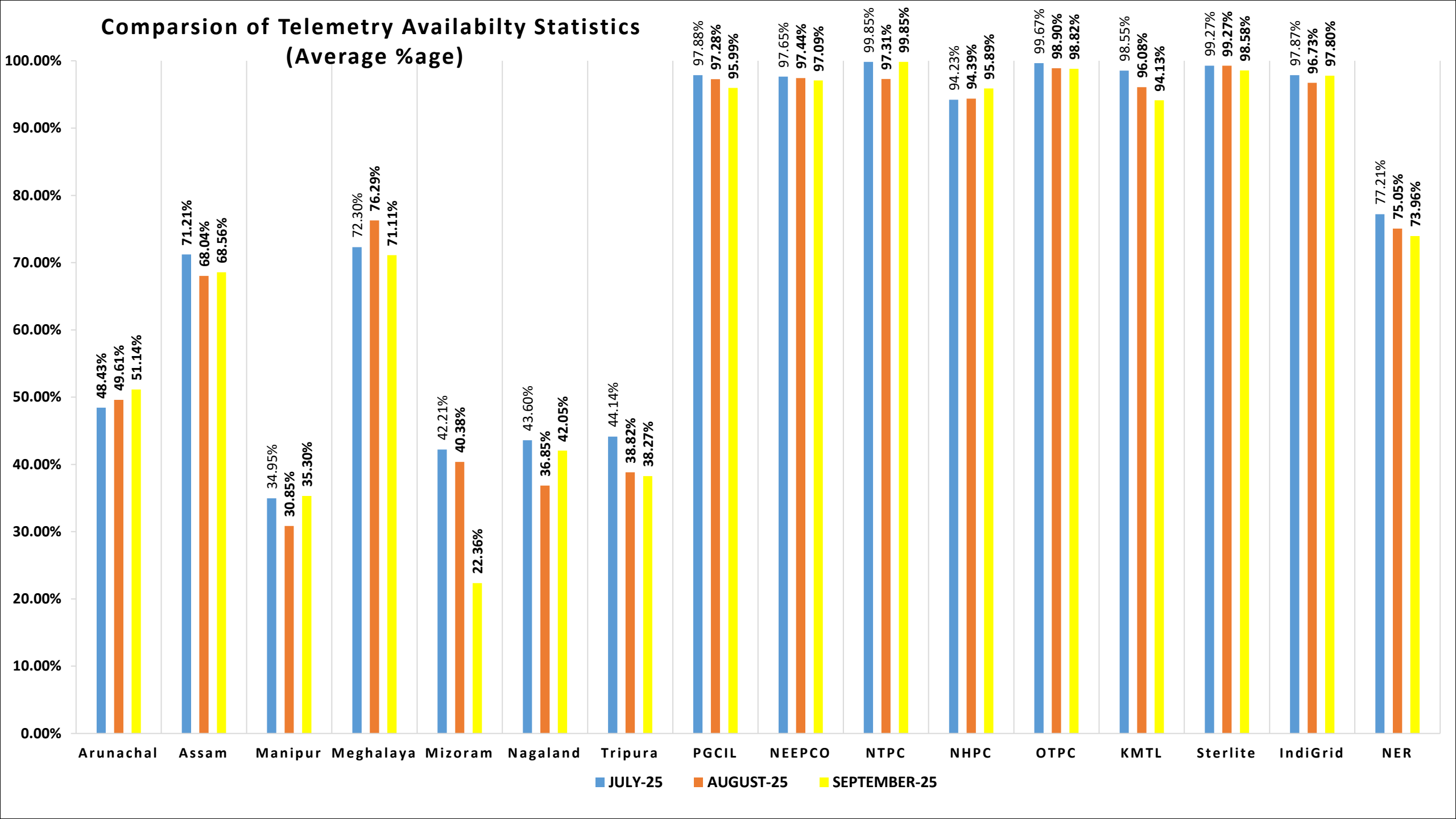
	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura
Median	19	12	10	06	18	20	15



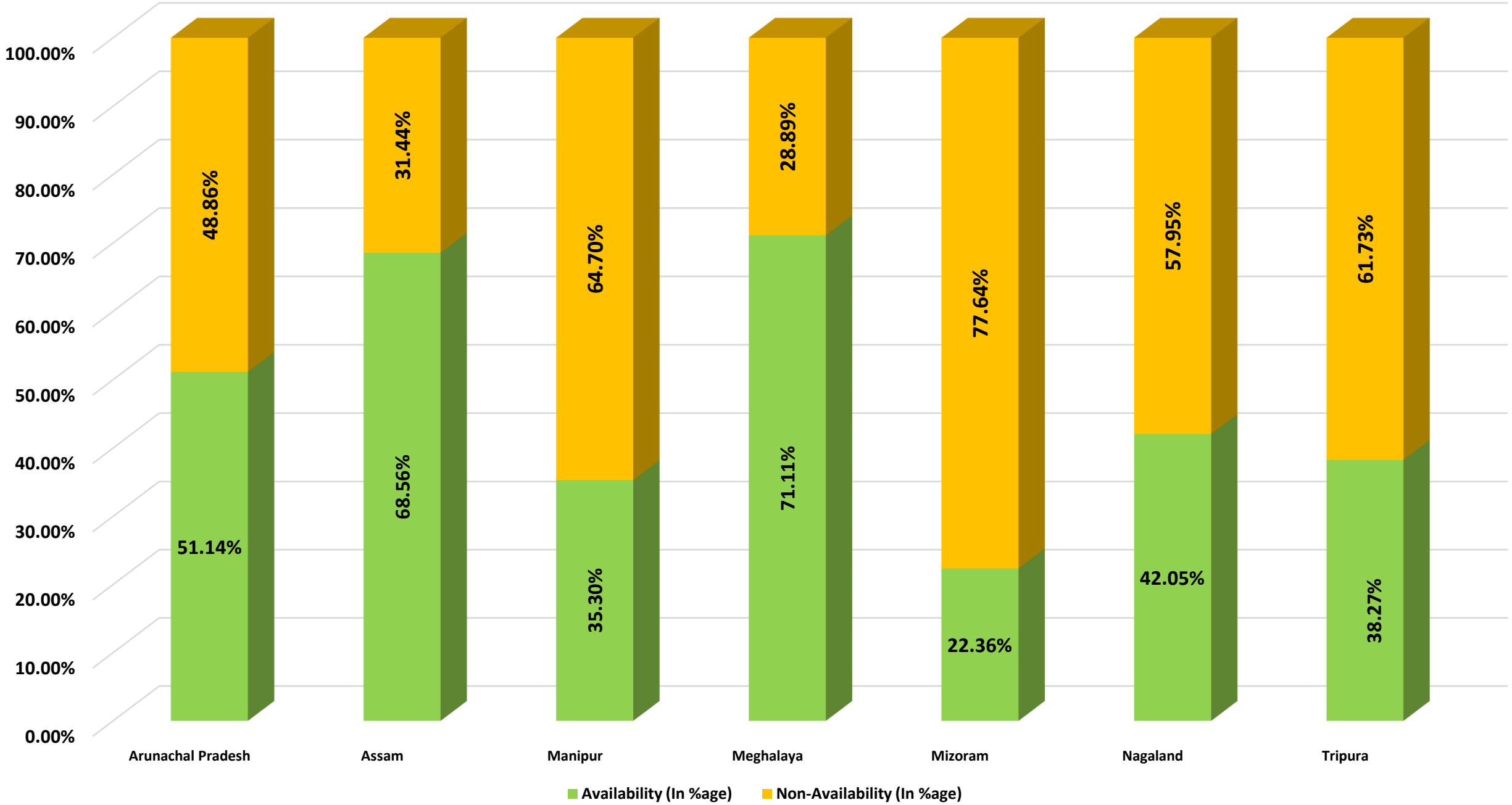
Telemetry and Data Availability

Telemetry Statistics for the month of September 2025

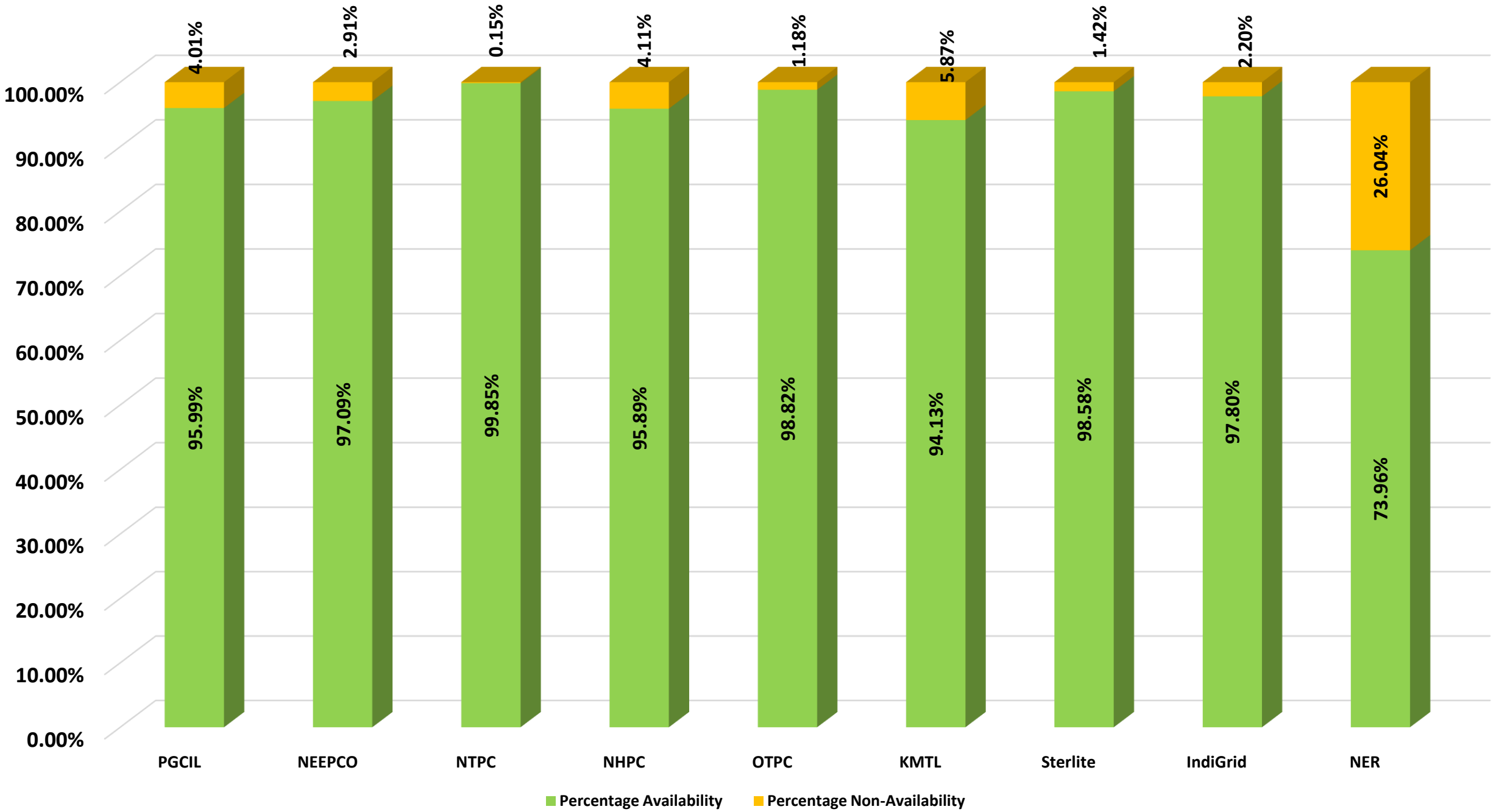
Sl. No.	Utility	Average Total Percentage	Average Analog Percentage	Average Digital Availability	Average RTU Availability	Target as per 30th NeTEST MOM
1	PGCIL	95.99	95.55	96.22	96.47	
2	NEEPCO	97.09	97.23	96.99	99.5	
3	NTPC	99.85	99.82	99.87	99.88	
4	NHPC	95.89	98	94.74	98.32	
5	OTPC	98.82	96.25	100	99.99	
6	KMTL	94.13	93.04	94.64	97.35	
7	Sterlite	98.58	95.39	100	99.92	
8	Indigrid	97.8	95.98	98.55	99.85	
9	Arunachal Pradesh	51.14	50.43	51.58	65.17	85
10	Assam	68.56	67.04	69.68	70.21	85
11	Manipur	35.3	37.26	34.13	40.41	70
12	Meghalaya	71.11	80	64.45	83.63	80
13	Mizoram	22.36	25.68	19.81	46.66	60
14	Nagaland	42.05	38.4	44.27	52	70
15	Tripura	38.27	46.73	32.77	52.24	80


Comparsion of Telemetry Availabilty Statistics
(Average %age)
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
48.43%
49.61%
51.14%
71.21%
68.04%
68.56%
34.95%
30.85%
35.30%
72.30%
76.29%
71.11%
42.21%
40.38%
22.36%
43.60%
36.85%
42.05%
44.14%
38.82%
38.27%
97.88%
97.28%
95.99%
97.65%
97.44%
97.09%
99.85%
97.31%
99.85%
94.23%
94.39%
95.89%
99.67%
98.90%
98.82%
98.55%
96.08%
94.13%
99.27%
99.27%
98.58%
97.87%
96.73%
97.80%
77.21%
75.05%
73.96%
Arunachal
Assam
Manipur
Meghalaya
Mizoram
Nagaland
Tripura
PGCIL
NEEPCO
NTPC
NHPC
OTPC
KMTL
Sterlite
IndiGrid
NER
JULY-25
AUGUST-25
SEPTEMBER-25

Telemetry Statistics for NER States(Average availability of data for the month of September '25)



Telemetry Statistics for Central Sector of NER (Average availability of data for the month of Sept '25)



Annexure 2.15

Annexure A1

Transmission Line	Approved by	Approved Date	Shutdown Nature	Reason	Shutdown remark by outage team
132kV SM Nagar (ISTS) – SM Nagar (TSECL)	NERPC	01-09-2025 to 14-09-2025	CSD	For reconductoring work	**FTC procedure may be followed**
	229th	15-09-2025	Daily	Pre-Puja Maintenance Work 2025	
	229th	18-09-2025	Daily		

Mail from Tripura dated 14-09-2025 regarding shutdown return

Withdrawal of shutdown of the 132kV Transmission Line SM Nagar to ISTS SM Nagar Line

SLDC Tripura <tsecl_sldc@rediffmail.com>

Sun 9/14/2025 3:53 PM

To:nerldccontrolroom@gmail.com <nerldccontrolroom@gmail.com>; nerldccontroolroom@gmail.com <nerldccontroolroom@gmail.com>; NERLDC Control Room <nerldccr@grid-india.in>; NERLDC Control Room <nerldccr@grid-india.in>; NERLDC SO 2 <nerldcso2@grid-india.in>; sod.tsecl@gmail.com <sod.tsecl@gmail.com>; anildebbarma123@gmail.com <anildebbarma123@gmail.com>; sldcdata.tripura@gmail.com <sldcdata.tripura@gmail.com>;

Sir,
132 kv SM Nagar - SM Nagar (ISTS) line shutdown withdrawn at 15.37 hrs. Men and materials removed from site. please issue closing code. Also to inform you that shutdown of the 132 Transmission Line S.M Nagar to ISTS -S.M Nagar for the re-conductoring work, which was delayed due to heavy rain between 1st Sept'25 to 14th September will continue. After completion of work FTC will be submit on 18th Sept'2025 accordingly.

Regards,
Shift-In-Charge
SLDC, Agartala,

Mail from Tripura dated 18-09-2025 regarding shutdown return

Shutdown work of 132 KV SM Nagar-SM Nagar (ISTS) line returned at 17:55 Hrs

SLDC Tripura <tsecl_sldc@rediffmail.com>

Thu 9/18/2025 5:58 PM

To:nerldccr <nerldccr@gmail.com>; NERLDC Control Room <nerldccr@grid-india.in>; sldcdatatripura <sldcdata.tripura@gmail.com>;

Madam / Sir,

Shutdown work of 132 KV SM Nagar-SM Nagar (ISTS) line returned at 17:55 Hrs. Men and materials have been removed from the site. Please issue closing code for the said line.

Regards,
Shift-In-Charge
SLDC, Agartala, Tripura.

CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Suo-Motu Petition No. 9/SM/2024

Coram:

Shri Jishnu Barua, Chairperson
Shri Ramesh Babu V, Member
Shri Harish Dudani, Member
Shri Ravinder Singh Dhillon, Member

Date of Order: 05.10.2025

In the matter of:

Planning for safe, secure, and reliable integrated operation of the power system during critical periods arising on account of seasonal variations wherein the electricity demand increases rapidly by undertaking specific measures to mitigate the risks on the power system, under clause (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 and the Regulation 31 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023.

And in the matter of:

1. National Load Despatch Centre,
   Grid Controller of India Ltd. (CIN U40105DL2009GOI188682)
   B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai,
   New Delhi -110016

2. Northern Regional Load Despatch Centre,
   Grid Controller of India Ltd.
   18-A, Shaheed Jeet Singh Sansanwal Marg,
   Katwaria Sarai, New Delhi -110016

3. Western Regional Load Despatch Centre, Mumbai
   Grid Controller of India Ltd.
   F-3, M.I.D.C. Area, Marol Andheri (East),
   Mumbai -400093

4. Southern Regional Load Despatch Centre
   29, Race Course Cross Road,
   Bangalore -560009

5. Eastern Regional Load Despatch Centre, Kolkata
   Grid Controller of India Ltd. 14,
   Golf Club Road,
   Tollygunge, Kolkata -700003

6. North Eastern Load Despatch Centre, Shillong

Grid Controller of India Ltd.
Lower, Nongrah, Lapalang,
Shillong, Meghalaya 793006

7. The Chief Engineer,
State Load Dispatch Centre,
SLDC Complex. PSTCL,
Near 220 kV G/Stn,
Ablowal, Patiala- 147001

8. The Chief Engineer (LD),
Electricity Department,
UT Secretariat,
Sector - 9D, UT of Chandigarh-160009

9. The Managing Director,
Himachal Pradesh Power Transmission Corporation Limited,
Barowalias House,
Khalini, Shimla-171002

10. The Executive Director,
State Load Despatch Centre,
Delhi Transco Ltd, 33kV Substation Building,
Minto Road, New Delhi, 110002

11. The Superintending Engineer
State Load Dispatch Centre.
Rajasthan Rajya Vidyut Prasaran Nigam Limited.
Ajmer Road, Heerapura,
Jaipur – 302004

12. The Managing Director,
Slate Load Despatch Centre,
Haryana,
Behind BBMB Power house,
Sewah, Panipat, Haryana 132103

13. The Chief Engineer
State Load Despatch Center,
SLDC Complex TOTU,
Shimla, Himachal Pradesh-17 10 1 1

14. The Director,
State Load Despatch Centre,
Uttar Pradesh Power Transmission Corporation Limited (UPPTCL),
Phase II, Vibhuti Khand, Lucknow- 226001

15. The Chief Engineer,
State Load Dispatch Centre,
Vidyut Bhawan, Saharanpur Road Majra,

Near ISBT Dehradun-248001
Uttarakhand

16. The Chief Engineer,
Maharashtra State Load Dispatch Centre,
Thane-Belapur Road. Airoli
Navi Mumbai-400708

17. The Chief Engineer,
State Load Despatch Centre,
Gujrat Energy Transmission Corporation Limited (GETCO),
GSSC Compound Near TB Hospital,
Gotri Road, Gotri, Vadodara - 390 021

18. The Chief Engineer (LD),
State Load Despatch Centre (SLDC),
Chhattisgarh State Power Transmission Co. Ltd.
Danganiya, Raipur, Chhattisgarh- 492013

19. The Chief Engineer,
State 3 Despatch Centre,
MP Power Transmission Co. Ltd
Nayagaon, Rampur, Jabalpur-482008

20. The Chief Engineer (Electrical),
State Load Despatch Centre (SLDC),
Race Course Cross Road, A. R. Circle, Bengaluru-560009

21. The Chief Engineer,
State Load Despatch Centre (SLDC),
Transmission corporation of Andhra Pradesh Limited (APTRANSCO),
Vidvut Soudha, Gunadala, Eluru Road,
Vijayawada, Andhra Pradesh 520004

22. The Chief Engineer/Operation,
State Load Dispatch Centre,
Tamil Nadu Transmission Corporation Limited (TANTRANSCO),
144 Anna Salai, Chennai- 600002

23. The Chief Engineer,
State Load Despatch Centre (SLDC),
Transmission Corporation of Telangana Ltd. (TSTRANSCO),
Vidvut Soudha, Khairatabad,
Hyderabad- 500 082

24. The Chief Engineer (Transmission- System Operation),
State Load Despatch Centre (SLDC)
Vaidyuthi Bhavanam, Pottam, Trivandrum- 695 009 Kerala

25. The Chief Engineer (TRANS., O&M),
State Load Despatch Center (SLDC),
Bihar State Power Transmission Company Limited (BSPTCL),
4th Floor, Vidyut Bhawan, Bailey Road, Patna-1

26. The Chief Load Despatcher,
State Load Despatch Centre (SLDC),
SLDC Building. GR1DCO Colony,
P.O. Mancheswar Railway Colony,
Bhubaneswar- 751017

27. The Chief Engineer,
State Load Despatch
Center, Jharkhand Urja Sancharan Nigam Limited,
Engineering Building, H.E.C.,
Dhurwa. Ranchi – 834004

28. The Chief Engineer,
West Bengal State Load Despatch Centre WBSLDC),
Danesh Seikh Lane,
Andul Road, Howrah-711109

29. The Additional Chief Engineer,
State Load Despatch Centre (SLDC),
Power Department, Govt. of Sikkim, Gangtok-737201

30. The Chief Engineer,
State Load Despatch Centre (SLDC), Damodar
Valley Corporation (DVC),
Danesh Saikh Lane,
Andul Road, Howarh 711109

31. The Executive Engineer (SLDC),
Department of Power,
Government of Arunachal Pradesh,
National Highway 52A,
Vidyut Bhawan, Itanagar-791111

32. The Asst. General Manager,
SLDC Division,
Assam Electricity Grid Corporation Ltd.,
ASEB Colony, Power House Kahilipara,
Guwahati-781019

33. The Superintending Engineer,
P&E Office Complex, North Block (III Floor)
Electric Veng, Aizawl- 796001, Mizoram.

34. The Superintending Engineer,

Load Despatch Centre
Meghalaya Power Transmission Corporation Limited,
Short Round Road,
Lum Jingshai, Meghalaya, Shillong 793022.

35. The Chief Engineer,
Department of Power Govt. of Nagaland, Kohima-797 001

36. The General Manager, State Load Despatch Centre
Manipur State Power Company Ltd (MSPCL)
Electricity Complex, Keisumphat Junction,
Imphal-795001, Manipur

37. The Director (Tech.),
Tripura State Electricity Corporation Ltd (TSECL),
Banamalipur, Agartala -799 001

38. Northern Regional Power Committee, New Delhi
Shaheed Jeet Singh Marg,
Qutab Institutional Area,
New Delhi -110016

39. Western Regional Power Committee, Mumbai
M.I.D.C. Central Road,
Krantiveer Lakhuji Salve Marg, Seepz,
Andheri East, Mumbai, Maharashtra-400093

40. Southern Regional Power Committee,
29, Race Course Rd, Nehru Nagar,
Gandhi Nagar, Bengaluru,
Karnataka 560009

41. Eastern Regional Power Committee, Kolkata
14, Golf Club Rd, Golf Gardens,
Tollygunge, Kolkata,
West Bengal- 70003316

42. North Eastern Regional Power Committee,
Jowai Rd, Umpling, Shillong,
Meghalaya-793006

43. Central Electricity Authority,
Sewa Bhawan, R. K. Puram, Sector-1,
New Delhi

44. The Chief Electrical Engineer,
Goa Electricity Department, Govt. of Goa,
3rd Floor, Vidyut Bhawan, Panaji,
Goa-403001

45. The Executive Engineer

System Control Centre, Electricity Department
137, Netaji Subhash Chandra Bose Salai,
Puducherry-605001

46. The Executive Engineer
DNH & DD Power Corporation Limited,
Vidyut Bhavan, 66 kV Road, Near Secretariat,
Amli, Silvassa, U.T. of Dadar & Nagar Haveli-396230

47. The Chief Engineer,
Jammu & Kashmir Power Transmission Corporation Limited,
SLDC Building, Gladni Complex, Narwal, Jammu -180004 **……. Respondent(s)**

ORDER

The Commission vide Order dated 07.10.2024 in Suo-Moto Petition No. 9/SM/2024, taking cognizance of the previous year's record, took a view that there is a requirement to impress upon all the stakeholders that there is an imperative need for prudent planning of load-generation balance and issue of alerts to all the grid connected user entities of the concerned control areas to make them aware about the anticipated challenges in the operation of the power system and for undertaking the preventive measures as may be required to maintain load-generation balance. Accordingly, the Commission issued various directions to NLDC, RLDCs, and SLDCs in connection with the implementation of Regulations 31 and 33 of the Grid Code to address the anticipated surge in demand for electricity during October 2024 on due to seasonal variations.

2. The relevant extract of Order dated 07.10.2024 in Petition No. 9/SM/2024 is as under:

"6. The Grid Code enjoins the responsibility upon all concerned stakeholders to ensure stable and economic operation of power system and resolve the issues of significant deviations, if any. The Commission, taking cognizance of the previous year's record, intends to impress upon all the stakeholders that there is an imperative need for prudent planning of load generation balance and issue of alerts to all the grid-connected user entities of the concerned control areas to make them aware about the anticipated challenges in the operation of the power system and for undertaking the preventive measures as may be required to maintain load generation balance.

7. The Commission is of the view that there is a need to sensitize all the stakeholders, monitor their actions, and bring about behavioural changes through specific and proactive regulatory interventions The Commission believes that it is advisable to take preventive ex-ante measures instead of the ex-post reactive measures of finding instances of violation of the Grid Code, initiating penal proceedings for violation, and imposing penalty under the provisions of the Act. This proactive approach would also help to encourage collective efforts on the part of the National Load Despatch Centre,

Regional Load Despatch Centres, State Load Despatch Centres, and the grid connected entities to make concerted efforts to ensure stable and economic operation of the grid.

8. The projected requirement of generation is significantly higher than the annual growth of the electricity demand and the addition of generation capacity. The projected requirement of thermal generation during October, 2024 needs proper operational planning and adequacy of resources in terms of Regulation 31(4) of the Grid Code. Any uncertain variation in the electricity demand arising on account of seasonal variations leading to a rapid increase in demand causes undesirable stress in the power system. The steep rise in electricity demand without adequate generation sources may put the power system operation at risk. It is the statutory responsibility of the RLDCs and SLDCs to carry out the operational planning for the increase in demand due to seasonal variations while discharging their functions under Sections 28 and 32 of the Act, respectively, read with the provisions of Regulations 31 and 33 of the Grid Code. 12. In light of the above, the Commission feels that there is a need to prepare the system operators and the stakeholders to meet the situation arising out of the abrupt increase in demand due to seasonal variations, especially during October 2024. Regulation 60 of the Grid Code empowers the Commission to issue practice directions through suo-moto proceedings with regard to implementation of the provisions of the said Regulations. Regulation 60 of the Grid Code is extracted as under:-

…..

9. In exercise of the powers vested under Regulation 60, read with all relevant provisions of the Grid Code, the Commission issues the following directions to NLDC, RLDCs, and SLDCs in connection with the implementation of Regulations 31 and 33 of the Grid Code to address the anticipated surge in demand of electricity during October 2024 on account of seasonal variations:

a) All the State Load Despatch Centres and RLDCs shall furnish the details of operational planning undertaken by them in terms of Regulation 31(4) (a) of the Grid Code especially for October 2024. RLDC shall validate the adequacy of resources in terms of Regulation 31(4)(b) of the Grid Code.

b) All State Load Despatch Centres and Regional Load Despatch Centres shall prepare the worst-case scenario due to possible surge in demand during the period 1.10.2024 to 31.10.2024 in their respective control area and submit within seven days to the Commission with a copy to National Load Despatch Centre.

c) The State Load Despatch Centres or Regional Load Despatch Centres, as the case may be, should assess their demand-generation scenario in the upcoming months, ensure the optimum generation, avoid undesirable planned outages, and advise the generating company to offer their availability. The State Load Despatch Centre or Regional Load Despatch Centre shall ensure the optimum scheduling during the shortage period and surplus power to get despatched during the deficit period.

d) The Distribution Companies, in case of a shortage scenario, can procure the power from surplus or requisitioned capacity of other states so that optimum despatch can be ensured for safe and reliable power system operations. The State Load Despatch Centre shall monitor the generation-demand deficit of the respective distribution companies.

e) The generating companies operating their plant with capacity less than its installed

capacity due to technical issues, i.e., capacity under partial outage or forced outage, are advised to fix the issues to ensure the maximum generation capacity on-bar.

f) The draw schedule of the respective control area needs to adhere to prevent the reduction of system frequency. The State Load Despatch Centre or Regional Load Despatch Centre, as the case may be, shall monitor the deviation of the key system parameters.

g) The State Load Despatch Centres or Regional Load Despatch Centres, as the case may be, shall issue the system alerts to their respective grid-connected entities for the possible deficit during the likely surge in demand.

10. The Regional Load Despatch Centres and State Load Despatch Centres shall submit the report on the implementation of the above measures, a load-generation scenario in their respective control areas, and any other measures taken to address the deficit of power supply during the period 1.10.2024 to 31.10.2024.

11. The objective of the present proceedings is to prepare the system operators and other stakeholders to meet the challenges and threats to the power system that may arise due to the abrupt increase in demand. The responses of the SLDCs, RLDCs, and NLDC with regard to the implementation of the measures detailed in para 9 of this order shall, in the first instance, be examined in detail by a Single-Member Bench comprising a Member of the Commission. Accordingly, in the exercise of powers under Section 97 of the Electricity Act,2003, the Commission nominates Shri Ramesh Babu V., Member, to conduct the proceedings for this purpose. The Single Member Bench shall provide due opportunity to the parties to make their submissions. The Single Member Bench shall have the authority to direct the parties to submit such further information and to take such remedial measures as may be considered necessary. The Single Member Bench shall submit a report to the Commission with regard to the preparedness of the System Operators and other stakeholders to meet the challenges arising on account of the sudden surge in demand for power and his recommendations with regard to the remedial measures to be taken for the future. The Commission, after consideration of the report of the Single Member Bench shall issue appropriate directions as may be considered appropriate."

3. Pursuant to the Commission's order dated 07.10.2024, NLDC, RLDCs and SLDCs have submitted their response in compliance with the Order dated 07.10.2024.

Submissions of SLDC Andhra Pradesh

4. SLDC Andhra Pradesh vide letter to the Secretary, CERC dated 08.10.2024 submitted that Resource Adequacy for the month of October-2024 was submitted to SRLDC on a month ahead basis. APDISCOMs had purchased 500 MW RTC power for the month of October 2024, in advance, to meet the demand. Further, an LOI was placed by APDISCOMs to import swap power of up to 500 MW RTC from other utilities as and when required on a day ahead/ contingency basis, to meet the worst-case scenario due to a possible surge in demand or loss of generation.

Submissions of SLDC Himachal Pradesh

5. SLDC Himachal Pradesh vide letter to the Secretary, CERC dated 15.10.2024 submitted that the Resource Adequacy planning for Himachal Pradesh is being carried out by HPSEBL and finalised in consultation with Central Electricity Authority. HPSLDC is collecting availability and demand data from HPSEBL on a regular basis for its onward transmission to the NRPC to be discussed in the monthly OCC meetings. Further, all the generating stations in the HP Control Area are sharing their anticipated availability of the unit(s) and water availability on a D-1 basis. Accordingly, optimal scheduling of all the generating stations is being done during the period of deficit, by HPSLDC Control Room to mitigate the deficit. Necessary directions given to the HPSEBL for the generators under their jurisdiction or having a PPA with HPSEBL. The drawal schedule shall be adhered to by HP Control Area, to maintain the variation in key parameters within permissible limits as defined in IEGC.

Submission of SLDC Uttarakhand

6. SLDC Uttarakhand vide affidavit dated 15.10.2024 submitted that there is only one Distribution Licensee, i.e. UPCL, in the State of Uttarakhand. UPCL has submitted month-wise demand vs availability data for the months of October 2024 to March 2025. UPCL has intimated in its reply that deficit power would be arranged through Collective Market Products of Energy Exchanges and the Arrangement of Power from PUShP Portal. SLDC has advised UJVNL, the only State generator in Uttarakhand, and other private generators in Uttarakhand to ensure optimal generation, avoid undesirable planned outages, and has advised the generating company to offer its availability. SLDC will also ensure the optimum scheduling during the shortage period and surplus power to be dispatched during the deficit period. Discom has confirmed that they are monitoring the Un-Requisitioned Surplus (URS) and taking actions accordingly as per the demand-supply scenario of the State. SLDC is also monitoring the generation-demand deficit of the only Distribution Licensee in the State and will closely monitor the same in the upcoming months.

Submissions of SLDC Gujarat

7. SLDC Gujarat vide affidavit dated 16.10.2024 submitted pointwise replies to Para 9 of Order dated 07.10.2024 issued under the Present Petition. SLDC Gujarat submitted that all the state DISCOMS furnish the daily day ahead demand in 96-time blocks. SLDC Gujarat forecasts wind and solar generation and estimates the resource availability from conventional sources. SLDC prepares a demand availability scenario every day on a day ahead basis, and in case of deficit, SLDC intimates GUVNL to procure additional power from the Market on a day ahead basis. SLDC Gujarat has prepared demand and resource availability scenarios for every fortnight solar and off-solar peak hour for the upcoming months, considering seasonal load variations, planned outages of generating units, availability of renewable energy sources, etc. All these kinds of scenarios are being conveyed to GUVNL to arrange the required power to overcome the deficit from various segments. Accordingly, GUVNL arranges power through DEEP portal, TGNA, banking, etc. SLDC Gujarat does not allow shutdown of units in peak months, especially in the months of April, May and October. SLDC Gujarat also conveys to the State generators to offer maximum availability during off solar peak hours to avoid unscheduled over drawal from the grid. GUVNL conducts Power Supply Position Review Meeting at regular intervals. SLDC continuously monitors unscheduled interchange at its State periphery. If any deficit occurs, SLDC Gujarat takes corrective measures. If SLDC envisage any deficit due to a surge in demand or due to unforeseen forced outage of bigger-sized generators, SLDC immediately intimates its plan for the revival of units that are under reserve shutdown and costly gas units deployment planning to GUVNL.

Submissions of NERLDC, SRLDC, ERLDC, NRLDC & WRLDC

8. NERLDC, SRLDC, ERLDC, NRLDC & WRLDC each vide affidavit dated 16.10.2024 submitted pointwise replies to Para 9 of Order dated 07.10.2024 issued under the Present Petition. All of the RLDCs submitted the status of demand forecast and generation adequacy data submission by the SLDCs for different time horizons. They submitted that they also independently carry out demand forecasts for all the states in intraday, day ahead, week ahead, month ahead and year ahead time horizons. The data submitted by the states is validated and aggregated to assess the demand estimates at a regional level. They also issue messages and communications to Generators to offer any available surplus power for sale in the DAM and any remaining quantity not cleared in the DAM to sell in RTM. Shortages in meeting the demand of states are being monitored on a daily basis through Power Supply Position reports. Planned and forced

outages of both ISGS and Intra-State Generators unit-wise are also monitored on a daily basis. Also, the expected revival of generator units is being updated/monitored. All the RLDCs continuously monitor the key system parameters and issue alerts accordingly.

Submissions of NLDC

9. NLDC vide affidavit dated 16.10.2024 submitted pointwise replies to Para 9 of Order dated 07.10.2024 issued under the Present Petition. NLDC submitted that they carry out standalone day-ahead and intra-day demand forecast for All India demand and for individual regional demand, Secondary/Tertiary reserve assessment, market-based procurement of tertiary reserves on a day-ahead basis through DAM, and balance reserve through RTM, day-ahead operational planning followed by intra-day updates, generation resource despatch planning under TRAS in the day-ahead horizon, followed by actual despatch in real-time. NLDC ensures adequate generation availability through running of the day-ahead security constrained unit commitment (SCUC) module. Multiple measures have been taken to ensure optimum generation. NLDC carries out monitoring of shortages through daily information from SLDCs/states. NLDC provides periodic advice to concerned states to tie up with the capacity un-requisitioned by the surplus states or other generation resources. NLDC conducts monitoring of any margins available in the plants (both intra and inter-state plants) in real time. Continuous monitoring of all outages is done at NLDC through daily information dissemination. NLDC conducts continuous monitoring of deviations in real-time and violation messages as and when deviations beyond prescribed limits. Directions are being issued by RLDC for maintaining and despatching adequate spinning reserves (up/down) for any deficit/surplus scenario to the concerned SLDC whenever anticipated.

Submissions of SLDC Maharashtra

10. SLDC Maharashtra vide letter to the Member, CERC dated 16.10.2024 submitted that as per the operational planning data for the month of October 2024, the overall shortfall is observed during 16:00 hrs to 08:00 hrs of the next day to the tune of 100 to 1200 MW. The shortfall of Discoms is majorly in non-solar hrs, and discoms are planning to procure power through exchanges. As all Discoms rely mostly on power procurement through power exchanges at non-solar hrs, if the bid is not cleared in the market, there may be a shortfall of discoms and, in turn, the state. Due to the rainy and cloudy environment

in Oct-24, the shortfall is reduced to some extent during 01.10.2024 to 16.10.2024, and if similar weather condition persists, the shortfall may be reduced further. Considering the rise in demand, no planned generating outages were approved by MSLDC in the month of OCT-24, in the OCC meetings. MSLDC is regularly monitoring the load generation balance of all distribution licensees in the state for day ahead and on a real time basis, and suggests distribution licenses to procure power from the Market or from ISGS, as the case may be, to meet the demand during shortages assessed by MSLDC. MSLDC submitted that the issue of partial outages of generating stations is taken up by them with MSPGCL from time to time for improvement in available generation capacity to the maximum DC. MSLDC is continuously monitoring the state deviation for every 15-minute time block and takes necessary actions like maximization/reduction of generation as per scheduled drawal and as per system frequency as well. MSLDC issues the alerts to DISCOMs regarding the expected deficit of generation in advance and also issues notices to control system parameters from time to time.

Submissions of SLDC Mizoram

11. SLDC Mizoram vide letter to the Secretary, CERC dated 16.10.2024 submitted the resource adequacy plan & worst-case scenario for the month of October 2024. SLDC submitted that scheduling is done optimally every day. Generating stations are also scheduled daily to meet the power demand. The resource adequacy plan is formulated on a day-ahead basis in order to monitor the generation-demand deficit of the State. Drawal voltage, frequency, and other key parameters are being monitored in real-time with the help of the SCADA system. System alerts are being disseminated as soon as an event occurs.

Submission of SLDC Arunachal Pradesh

12. SLDC Arunachal Pradesh vide letter dated 16.10.2024 to the Secretary, CERC submitted that the month of October is the most moderate Temperature in the state. As per historical data study for the last five years, the maximum peak load observed is 158 MW, and the off-Peak Load is around 100MW. The expected peak load for the month of October 2024 is 165 MW only. With the power availability as forecasted to be around 200 MW from the central sector share and around 15 MW of own generation, they are expecting to have surplus power during the month of October 2024. The requisition of

power from the Thermal power station shall be requisitioned by the Discom whenever required, as per the state's demand of the state. Arunachal Pradesh SLDC shall monitor the generation-demand deficit of the respective distribution companies as mandated by regulations.

Submission of SLDC Tripura

13. SLDC Tripura vide letter dated 16.10.2024 to the Secretary, CERC, submitted that the time block-wise demand forecast and availability are being sent to NERLDC. SLDC Tripura is monitoring the generation-demand deficit. SLDC Tripura monitors the deviation of the key system parameters. SLDC Tripura issues system alerts to its respective grid-connected entities for the possible deficit during the likely surge in demand.

Submission of SLDC Kerala

14. SLDC Kerala vide letter dated 16.10.2024 to the Secretary, CERC submitted that during the year 2024, the peak demand in the state of Kerala is registering an average growth of around 5% in both peak demand and daily energy consumption. The peak demand during October 2023 was 4159 MW. Accordingly, this year, the peak demand of the State during October is expected to be around 4365 MW. Against this, the state recorded a peak demand of 4455 MW on 3rd October. The peak demand is in the range of 3700-4200 MW for the last 6-7 days. As the NE monsoon normally strengthens in the evening and extends up to midnight, a sharp increase in evening peak demand is not expected in the coming weeks. However, in the worst-case scenario, peak demand of around 4300 MW is expected. Considering the present CGS availability and with the LTA contracts and additional tie up though the DEEP portal, MoP allocation of 177 MW from ER NTPC stations, the State has a peak availability of around 4100 MW. In case of any exigency, purchases from the PX market will be made. The State Load Despatch Centre monitors the Resource Adequacy of the State on a monthly, weekly and daily basis and takes all efforts to manage the LGB effectively in coordination with RLDC.

Submission of SLDC Madhya Pradesh

15. MPSLDC vide letter dated 05.11.2024 to the Secretary, CERC, submitted that the load was continuously lower than the previous year because of widespread rain. The worst-case scenario was prepared considering the generation loss of the largest unit, rather than a surge in demand. MPSLDC continuously monitors demand forecasts, weather conditions, and availability (ISGS, SSGS & IPPs), and suggests to Madhya Pradesh Power Management Co. Ltd., Jabalpur, on the required amount of power to sell / Purchase depending on the situation. MPPMCL is continuously selling/purchasing power from power exchanges and banking with other states as per requirements.

16. Pursuant to the Commission's order dated 07.10.2024, NLDC, RLDCs and SLDCs have submitted their response in compliance with the Order dated 07.10.2024. To discuss the responses filed by NLDC and RLDCs, a meeting was held by a single-member bench under Member (Technical), CERC, with NLDC and RLDCs on 05.11.2024, wherein a detailed presentation was made by the respective RLDC and NLDC, highlighting the various issues on which detailed deliberation was made. As per the discussion held with NLDC and RLDCs, it was felt that a separate meeting with SLDCs of each region is required for further deliberations and understanding the difficulties being faced by the SLDCs with regard to the following issues:

    (i) Shortage of manpower at various levels in SLDCs

    (ii) Submission of adequate demand estimation and resource adequacy data in the prescribed format, as mentioned under clause 31 of the Grid Code.

    (iii) Status of estimation of the reserves requirement and maintaining the reserve capacity as allocated to states as per the provisions of the Grid Code.

    (iv) Forecast of generation from wind, solar, ESS and Renewable Energy hybrid generating stations, which are intra-state entities, for different time horizons and furnishing the time block-wise information to the concerned RLDC as per Regulation 31(4)(b) of the Grid Code.

    (v) Preparedness of the SLDCs for the upcoming expected power shortage in their respective control area.

    (vi) Methodology/ mechanism to manage the sudden changes in demand in their control area. The process followed to procure resources through the Real-Time

Market (RTM) and various other means.

(vii) The minimum turndown levels being achieved during low-demand periods, which are required for optimal utilisation of generation resources.

(viii) Status of implementation of the SAMAST (Scheduling, Accounting, Metering and Settlement of Transactions in Electricity) scheme.

Submissions of SLDC Rajasthan

17. SLDC Rajasthan vide letter to the Secretary, CERC dated 26.11.2024 submitted that state generators and IPPs are regularly being monitored for ensuring the optimum generation. Accordingly, proposals for planned outages are approved meticulously, and the generators are advised to offer maximum generation availability. SLDC takes care of the optimum scheduling of generators during the shortage period and advises on the procurement of power through DAM/ RTM during the deficit period. RUVITL schedules the surplus power of other states for the deficit period in the state through a banking arrangement, if required. SLDC regularly monitors the balancing of generation and demand and, from time to time, advises on procuring power during the deficit period and selling the power during the surplus period. SLDC asks the generator in real time to operate their plants at maximum capacity. SLDC Rajasthan regularly monitors the Discom-wise deviations and other parameters and issues alert messages regarding over drawal from the grid.

Submissions of SLDC Delhi

18. SLDC Delhi vide affidavit dated 04.12.2024 submitted pointwise replies to Para 9 of Order dated 07.10.2024 issued under the Present Petition. SLDC Delhi submitted that they have prepared a Month Ahead Forecast in respect of daily day-ahead Demand for Delhi for the period from 01.10.2024 to 31.10.2024 in 96-time blocks and shared it with NRLDC. To bridge the gap between demand and availability of electricity, SLDC advises Delhi DISCOMs to arrange additional power. SLDC Delhi also provides the day ahead demand resource availability to RLDC on a day ahead basis and also provides a yearly forecast. SLDC Delhi has prepared the worst-case scenario for 03.10.2024 with peak demand (6161 MW), considering the month of October 2024, which was 511 MW higher than the anticipated peak demand, i.e. 5650 MW. SLDC Delhi regularly reviews

forecasts in respect of any power shortages and informs Discoms to make prior arrangements for the same. Further, SLDC Delhi observed that there was a power shortage of BRPL for the month of October 2024 and also in certain time blocks for upcoming months (Nov onwards). SLDC Delhi advised BRPL and other stakeholders to make necessary power arrangements to avoid any shortages during these hours on priority. In the event of a crisis or contingencies, SLDC Delhi schedules power from the gas-based generating stations owned by Delhi to meet the power shortages. SLDC Delhi monitors any deviation of the key system parameters in real time to keep them within permissible limits. SLDC Delhi also continuously monitors the demand and availability of the DISCOMs and issues instructions to them for maintaining drawal schedule of their respective control area in real time.

Submissions of SLDC Haryana

19. SLDC Haryana vide affidavit dated 27.12.2024 submitted pointwise replies to Para 9 of Order dated 07.10.2024 issued under the Present Petition. SLDC Haryana submitted that the DISCOMs have submitted the tentative hourly abstract of load projections (in MW) data for October 2024, and those projections were reviewed and subsequently submitted to NRLDC. There was no power shortage in Haryana during the month of October 2024. SLDC monitors the generation-demand deficit of the DISCOMs on a monthly basis. SLDC has advised all generators in Haryana to ensure optimal generation, avoid undesirable planned outages and DISCOMs to maintain load generation balance during the winter of 2024-25. SLDC has been monitoring the deviation of the key system parameters. SLDC Haryana has been closely monitoring the demand of the State, and issues are being regularly taken up with the respective grid-connected entities, viz., generators as well as DISCOMs, for taking care of adequate generation / arranging power sources to encounter the possible deficit during the likely surge in demand in order to meet the State demand.

Submissions of NLDC

20. NLDC vide letter to the Secretary, CERC dated 27.01.2025 submitted their report regarding implementation of the measures contained in the Order dated 07.10.2024 under the Present Petition. NLDC submitted the actual scenario at the All India level for the month of October 2024, as under:

		Solar Peak on 03-Oct-24	Non-solar Peak on 04-Oct-24	Remark
All India Peak Demand Met	**MW**	219222	218945	Shortage of 53 MW was reported by J&K during the non-solar peak
Shortage at Peak Demand Met		0	53	
All India Peak Demand		219222	218998	
Grid Frequency	**Hz**	50.03	50.06	
Gas	**MW**	3217	6008	
Hydro		24411	35188	
Nuclear		5048	6080	
Thermal		141084	163693	
Wind		7193	10135	
Solar		40494	0	
Total Ex-bus Generation		221447	221103	
Maximum Thermal (ex-bus)		155984	164521	
All MW values are from NLDC SCADA (Other RES like Biomass, etc., are excluded in source-wise generation as NOT telemetered in SCADA)				

Submissions of SLDC Assam

21. SLDC Assam vide affidavit dated 29.01.2025 submitted that the month ahead demand forecast data is collected from the distribution licensee and other Open Access consumers, and the generation forecast is collected from the generating stations to analyse the adequacy of resources. It was observed that resources were adequate for the month of October 2024. State sector generating stations were advised to avoid undesirable plant outages and offer optimum generation during this period. SLDC has taken all possible measures to ensure that the schedule of the control area is maintained within the permissible limit. SLDC anticipated a decrease in demand post October 2024 as per previous trends, and the resources were expected to be adequate during the period.

Submissions of SLDC Meghalaya

22. SLDC Meghalaya vide affidavit dated 30.01.2025 submitted that they have conducted a Load-Generation scenario for meeting the demand during the month of October 2024. As Meghalaya is a rich hydro state during the rainy seasons (June-November) every year, there is a huge surplus of power in October 2024. SLDC Meghalaya submitted that there is a surplus of 105.29 MU for which the DISCOM is informed in advance.

Submissions of ERLDC, NRLDC, NERLDC, WRLDC & SRLDC

23. ERLDC vide letter dated 30.01.2025 and NRLDC, NERLDC, WRLDC & SRLDC each vide letter dated 31.01.2025 to the Secretary, CERC, submitted their report regarding implementation of the measures contained in the Order dated 07.10.2024 under the Present Petition.

Submission of SLDC Nagaland

24. SLDC Nagaland vide affidavit dated 31.01.2025 submitted that the Demand forecast data is prepared by SLDC, and the generation forecast is collected from the generating stations to analyze the resources. The worst-case scenario was anticipated, considering the outage of OTPC Palatana, where the state of Nagaland has its highest share, around 40MW. SLDC Nagaland has started assessment of the demand-generation scenario for the upcoming months, and optimum scheduling in close coordination with generating stations is done to ensure adequate utilization of resources during the shortage period. Any shortages are met by procuring from the energy market on a day ahead basis and in real time to mitigate the state's generation-demand deficit. SLDC Nagaland constantly monitors the generation-demand of the state in real time.

Submission of SLDC Uttar Pradesh

25. SLDC Uttar Pradesh vide letter dated 31.01.2025 submitted that they review Resource Adequacy with respect to its forecast and undertake Load Generation Balance accordingly based on input from PMC, UPPCL/GENCOS on a day ahead and week ahead basis. The monthly plan is limited to peak Load, ATC/TTC and Shutdown concurrence for Generating Resources. Power arrangement as per monthly demand estimation is ensured by the Power Management Cell of UPPCL through bilateral agreements, Deep portal and upcoming generation. As per the forecasted demand of

October 2024, UPSLDC anticipated a surplus power position during most of the time blocks. UPSLDC assessed the worst-case scenario to be 27200 MW, and the actual peak for the month was 26756 MW, which was managed without Load Loss. UPSLDC monitors deficit/surplus continuously on a day ahead as well as a real time basis (90/30 minutes ahead) to minimize loss of load as well AS ACE. In the UP Control Area, if required, all intra-state thermal units are operated at the technical minimum of 55% which gives 45% margin for ramp-up/down in peak demand management. UPSLDC monitors the deviation of the key system parameters and avoids over drawal from the grid. The UPSLDC control room takes immediate action whenever non-compliance, alert, or emergency messages are received from NRLDC. No specific surge was observed within the UPcontrol area for the month of October 2024. The monthly average deviation of forecasted and actual load was 1.6%.

Submission of SLDC West Bengal

26. WBSLDC vide letter dated 31.01.2025 to the Secretary, CERC, submitted the Load Generation Balance data, block-wise demand met and resource adequacy data for the month of October 2024.

Submission of SLDC Sikkim

27. SLDC Sikkim vide letter dated 31.01.2025 to the Secretary, CERC submitted the data in compliance with para 10 of the order 9/SM/2024, dated 7th October 2024.

Submission of SLDC Jharkhand

28. SLDC Jharkhand vide letter dated 31.01.2025 to Secretary, CERC has submitted the report regarding implementation of the measures contained in the Order dated 07.10.2024 under the Present Petition. SLDC Jharkhand is submitting forecasted demand data for Day-ahead, week-ahead, month-ahead and year-ahead time horizons. SLDC instructs users through messages and communications from time to time, considering a sudden surge in demand or some special scenario. SLDC continuously monitors key system parameters. Based on the resource adequacy assessment by SLDC, if any shortfall is identified, DISCOM vide messages/mails are requested in advance to arrange the power from RTM to meet the surge in demand.

Submission of SLDC Bihar

29. SLDC Bihar vide letter dated 31.01.2025 to Secretary, CERC has submitted the report regarding implementation of the measures contained in the Order dated 07.10.2024 under the Present Petition. SLDC Bihar has submitted its demand forecast for October 2024. SLDC Bihar has ensured optimal operational planning for the period of October 2024, especially during peak demand periods, through coordination with ERLDC and other stakeholders. Operational plans were adjusted to accommodate anticipated demand surges, including during festivals and other peak demand events. SLDC Bihar followed the required steps to assess the demand-generation scenario during the period of October 2024. SLDC also communicated regularly with the generating stations to ensure maximum generation during peak times. Maintenance schedules were reviewed during the monthly meetings of ERPC to avoid any forced outages during critical periods. SLDC continuously monitored and adjusted its drawal schedule to avoid any violations of system frequency. Deviations were identified and corrective measures were communicated promptly to the concerned entities. SLDC has issued regular alerts to Discoms and other grid-connected entities to prepare for any possible deficit during high demand periods.

Submission of SLDC Damodar Valley Corporation (DVC)

30. SLDC DVC vide letter dated 31.01.2025 to the Secretary, CERC has submitted the power Scenario in respect of DVC DISCOM for Demand, Availability and Surplus/Shortages for the month of October 2024.

Submission of SLDC Odisha

31. SLDC Odisha vide letter dated 31.01.2025 to the Secretary, CERC submitted the month ahead forecast of Demand, Availability and Surplus/Shortages for the month of October 2024.

Submission of SLDC Manipur

32. SLDC Manipur vide letter dated 31.01.2025 to the Secretary, CERC has submitted that a surge for the festive season for October does not arise in Manipur. Further, SLDC Manipur submitted that they do not have any SGS. As such, any surge (if it arises) due to the outage of ISGS may only be taken care of by making maximum requisition from ISGS and procurement from the market or Bilateral exchange. Scheduling is done optimally every day. The resource adequacy plan is formulated daily on a day-ahead basis. Key system parameters are being monitored in real-time with the help of the SCADA system. System alerts are being disseminated as and when an event occurs.

Submission of SLDC Himachal Pradesh

33. HPSLDC vide letter dated 01.02.2025 to the Secretary, CERC submitted that the forecasted demand & availability vs actual demand & availability in respect of HP Control for the month of October, 2024 was 1093 MW & 1085 MW vs 1067 MW & 1065 MW. Further, to address the deficit of power supply during the period 01.10.2024 to 31.10.2024, HPSLDC requested the Ministry of Power (MoP), GoI, for allocation of power from CGS during the winter months, purchased power in bilateral mode through power exchanges, purchased power in Day Ahead Market (DAM) and Real Time Market (RTM) through power exchanges. HPSLDC did load shedding of 1.13 MUs. HPSLDC had anticipated a 376 LUs demand in the worst-case scenario due to a possible surge in demand during October 2024. However, the maximum demand recorded during October 2024 remained 368 LU. HPSEBL has purchased power in bilateral mode through power exchange(s) for the months of October 2024 to March 2025. Furthermore, NRPC vide allocation orders dated 30.09.2024 & 21.12.2024 has allocated power to HPSEBL for the winter months. The remaining deficit during real time has been mitigated through the purchase of power through power exchange(s), booking of URS, & regulation of power house(s). HPSLDC also issues the alert messages, warning messages and emergency messages to its respective intra-State Grid connected entities to adhere to their schedules.

Submissions of SLDC DNHDD

34. SLDC DNHDD vide letter dated 05.02.2025 & 13.02.2025 to the Secretary, CERC submitted that they do not have any intra-state generating stations. Allocation of ISGS is sufficient to meet the demand, and no surplus capacity of ISGS to keep as a reserve.

SLDC DNHDD submitted the Load Generation Balance Data for the months of Mar-25 to May-25. Furthermore, the power deficit will be met through the Day Ahead Market as per real time data. Further, the DISCOM DNHDDPDCL is exploring the possibilities of RE-RTC tender of 150 MW, and it is opened and rates are discovered, and approval of signing of PPA is under approval stage. SLDC DNHDD has submitted that the day-ahead, week-ahead and month-ahead demand forecast and resource adequacy data are being prepared. With respect to the Implementation of the SAMAST Scheme, SLDC DNHDD submitted that, as per the guidelines of WRLDC, the ABT meter is already installed at the node points of lines.

Submission of SLDC Uttarakhand

35. SLDC Uttarakhand vide letter dated 12.03.2025 to the Secretary, CERC submitted that maintaining reserves on a Year Ahead basis is associated with the cost implications. However, in view of high anticipated demand in the upcoming summer months, UPCL has already floated short-term power tenders of 420 MW, 500 MW and 350 MW for the months of April-25, May-25 and June-25, respectively. Furthermore, UPCL has floated a medium-term RTC power tender of 500 MW from which power is expected to commence from FY 2025-26 till FY 2028-29. Further, UPCL has also floated a long-term power tender of 1320 MW under Shakti Policy B (IV) power supply, which is expected to commence from FY 2029-30. It is expected that, post commencement of the said medium-term and long-term power, UPCL will be in a better position to maintain reserves as per requirement. SLDC Uttarakhand submitted the Load Generation Balance Data along with the Plan to meet the peak deficits for the months of Mar-25 to May-25.

Submissions of SLDC Tamil Nadu

36. SLDC Tamil Nadu vide submissions dated 04.04.2025 submitted that the block-wise demand for the month of October 2024 had been anticipated based on the actual demand that occurred during the last four years, matching the days. The anticipated maximum demand is 19139 MW, the minimum demand is 8346 MW, and the average demand is 15182 MW. To overcome the deficit condition for the month of October 2024, the bilateral arrangements have been made. The remaining shortage will be managed

throughout the day ahead and in the RTM market based on the actual requirements in real-time operations.

37. Single Member Bench conducted multiple meetings with RLDCs, SLDCs and respective Regional Power Committee of each region as under:

Sl. No.	Participants	Date of Meeting	Location
2.	Southern Region (SR) SLDCs + SRLDC+ SRPC	27.01.2025	SRLDC, Bangalore
3.	Western Region (WR) SLDCs+ WRLDC+ WRPC	08.02.2025	MSLDC, Mumbai
4.	Northern Region (NR) SLDCs+ NRLDC+ NRPC	14.02.2025	CERC office, New Delhi
5.	Eastern Region (ER) SLDCs+ ERLDC+ ERPC	22.02.2025	ERPC, Kolkata
6.	Northern Eastern Region (NER) SLDCs+ NERLDC+ NERPC	24.02.2025	NERLDC, Guwahati

38. Single-member bench under Member (Technical), based on the proceedings with NLDC, RLDCs, SLDCs and respective Regional Power Committee of each region, submitted a Report dated 29.04.2025 to the Commission.

Analysis and Decision

39. The relevant extracts of the Report dated 29.04.2025 by Member (Technical) are attached as under:

"*2. **Proceedings under the Order***

2.1 As per the Order dated 07.10.2024, all the State Load Despatch Centres and RLDCs were directed to furnish the details of operational planning undertaken by them in terms of Regulation 31(4) (a) of the Grid Code especially for October 2024 and also to prepare the worst-case scenario due to possible surge in demand during the period 1.10.2024 to 31.10.2024 in their respective control area. Further, the RLDCs and SLDCs were also directed to submit the report on the implementation of the measures suggested in the Order dated 07.01.2024, load-generation scenario in their respective control areas, and any other measures taken to address the power supply deficit during the period 1.10.2024 to 31.10.2024. In this regard 17 SLDCs have filed their report which have been summarised in Paragraph 3 of the Report.

2.2 Meetings were conducted with NLDC, RLDCs and SLDCs as per following details:

Table 1: List of meetings conducted with NLDC, RLDCs and SLDCs

S. No.	***Participants***	***Date of Meeting***	***Location***

1.	*NLDC and RLDCs*	*05.11.2024*	*CERC office, New Delhi*
2.	*Southern Region (SR) SLDCs + SRLDC+ SRPC*	*27.01.2025*	*SRLDC, Bangalore*
3.	*Western Region (WR) SLDCs+ WRLDC+ WRPC*	*08.02.2025*	*MSLDC, Mumbai*
4.	*Northern Region (NR) SLDCs+ NRLDC+ NRPC*	*14.02.2025*	*CERC office, New Delhi*
5.	*Eastern Region (ER) SLDCs+ ERLDC+ ERPC*	*22.02.2025*	*ERPC, Kolkata*
6.	*Northern Eastern Region (NER) SLDCs+ NERLDC+ NERPC*	*24.02.2025*	*NERLDC, Guwahati*

In the meetings with SLDCs of the region, Member Secretary of the respective RPC participated as special invitee. Detailed Presentations and submissions were made by the respective SLDCs and RLDCs on various issues flagged in the Order followed by discussions on proposed solutions. The copies of the minutes of the meeting dated 05.11.2024, 27.01.2025, 08.02.2025, 14.02.2025, 22.02.2025 and 24.02.2025 are attached as Annexure-1 to Annexure-6, respectively.

……

3. Report submitted by SLDCs, RLDC and NLDC for October 2024

3.1 SLDCs have mainly submitted as follows:

(a) Operational planning data for the month of October 2024 have been furnished to RLDCs.

(b) Demand-generation scenario has been assessed for upcoming months.

(c) Generators have been advised to ensure optimum generation, avoid undesirable planned outages.

(d) SLDCs are regularly monitoring the balancing of generation and demand.

(e) SLDCs are monitoring the deviation of the key system parameters (frequency, voltage, deviation etc.) in compliance of the Regulations.

(f) Immediate action is taken by the SLDCs control room whenever any non-compliance, alert and emergency messages are received from the RLDCs and messages regarding over-drawl from the grid is being issued to the Discoms.

(g) There was no power shortage during the month of October, 2024.

3.2 *RLDCs have filed the report wherein RLDCs have furnished the actual Power Supply position during the month of October 2024, which is summarized as under:*

(i) Southern region:

In the SR region the maximum peak demand was projected to reach approximately 60.5 GW on 19th October 2024. However, Southern Region experienced reduction in demand due to persistent rainfall and lower-than-usual temperatures. The highest peak demand for October 2024 occurred on 1st October, when it reached 58.68 GW. In terms of actual demand, it was observed that the actual peak demand met in October 2024 was approximately 5.5% lower as compared to October 2023. This demand was successfully met. All states were able to manage their demand through purchases in DAM/RTM and tie-ups with other regions. Notably, no states in the Southern Region reported any load shedding.

(ii) Western Region:

In the Western Region, the worst-case deficit was forecasted for 21st October 2024. The peak demand met on 21st Oct 2024 was 64.88 GW at 18:00 hrs against the projected peak demand of 73.97 GW. Heavy rainfall in Maharashtra, Gujarat, and Madhya Pradesh significantly

reduced demand as compared to October 2023. The actual peak demand of 68.56 GW occurred on 8th October which was successfully met without any shortages. No shortage was reported by any of the states during the peak demand in Oct'24, however, during the month of October 2024, some of the states experienced shortages due to the following reasons:

- *Maharashtra – Limited market purchases due to LPS and low generation.*
- *Chhattisgarh – Inability to procure power from RTM due to unavailability.*
- *Goa – Transmission constraints caused due to the tripping of the 220 kV Ambewadi - Xeldem line*

(iii) Northern Region:

The Northern Region managed its power supply efficiently. The peak demand forecast for the month of October 2024 was 73.4 GW on 3rd October 2024. The Northern Region efficiently managed its power peak demand of 74.27 GW on 3rd October without any shortages.

(iv) Eastern Region:

In the Eastern Region, the peak demand of 28.39 GW occurred on 1st October (18:00-18:15 hrs) and Eastern Region was able to meet the peak demand of 27.76 GW with a shortage of 631 MW. The planned procurement, including internal generation, ISGS allocation, GNA contracts, and Advance TGNA contracts, totalled 26,738 MW, leaving an initial deficit of 1,656 MW against the total demand of 28,394 MW. To mitigate this, 345 MW was sourced through exigency TGNA, and an additional 681 MW was procured from the market. Despite these efforts, there was shortage of 631 MW, which was managed through grid deviation. In this regard ERLDC has submitted that during the said period mail was issued to constituents to maximize generation during peak period, states were requested to sell their surplus/ un-requisitioned power in RTM and no-load shedding was reported during the peak demand met.

(v) North-Eastern Region:

In the North Eastern Region, no shortages were reported in October 2024, as all states managed to meet their demand through available power procurement options. The actual ISGS share allocation, combined with state-owned generation, ensured adequate power availability in all North Eastern states. Any fluctuations in demand were effectively managed through strategic market participation, allowing states to balance shortages or surpluses with their long-term tied generators. As a result, power supply remained stable throughout the month, with no reported disruptions or shortages. For the month of October 2024, the estimated peak demand for NER was 3537 MW and North Eastern Region successfully met the actual peak demand of 3532 MW.

3.3 NLDC vide its Report for October 2024 submitted that All India peak demand during the month of October 2024, occurred on 03.10.2024. The Load-generation scenario at All India peak demand (solar and non-solar) met is as under:

Table 2: Load-generation scenario at All India peak demand (solar and non-solar) met during the month of October-2024

		Solar Peak on 03-Oct-24	***Non-solar Peak on 04-Oct-24***	***Remark***
All India Peak Demand Met	***MW***	*219222*	*218945*	*Shortage of 53MW was reported by J&K during non-solar peak*
Shortage at Peak Demand Met		*0*	*53*	
All India Peak Demand		*219222*	*218998*	
Grid Frequency	***Hz***	*50.03*	*50.06*	

Gas	***MW***	*3217*	*6008*	
Hydro		*24411*	*35188*	
Nuclear		*5048*	*6080*	
Thermal		*141084*	*163693*	
Wind		*7193*	*10135*	
Solar		*40494*	*0*	
Total Ex-bus Generation		*221447*	*221103*	
Maximum Thermal (ex-bus)		*155984*	*164521*	

All MW values are from NLDC SCADA (Other RES like Biomass etc. are excluded in source-wise generation as NOT telemetered in SCADA)

4. Meeting with NLDC & RLDCs

4.1 The meeting was held in first week of November 2024 when the actual scenario for October 2024 was available. As per the discussions held with NLDC and RLDCs it emerged that no incident of the load surge was observed during the month of October 2024 due to mild weather conditions and the next power shortage was expected from mid-April 2025 to the end of June 2025.

4.2 As per discussions held with NLDC and RLDCs during the meeting, it emerged that discussions with SLDCs may be carried out under the following heads:

(i) *Shortage of manpower in SLDCs*

(ii) *Submission of adequate demand estimation & resource adequacy data in the prescribed format, as mentioned under clause 31 of the Grid Code.*

(iii) *Status of estimation of the reserves requirement and maintaining the reserve capacity as allocated to states as per the provisions of the Grid Code.*

(iv) *Forecast of generation from wind, solar, ESS and Renewable Energy hybrid generating stations which are intra-state entities for different time horizons and furnishing the time block-wise information to the concerned RLDC as per Regulation 31 (4)(b) of the Grid Code.*

(v) *Preparedness of the SLDCs for the next upcoming expected power shortage in their respective control area.*

(vi) *Methodology/ mechanism to manage the sudden changes in demand in their control area. The process followed to procure resources through the Real-Time Market (RTM) and various other means.*

(vii) *The minimum turndown levels being achieved during low-demand periods which is required for optimal utilization of generation resources.*

(viii) *Status of implementation of SAMAST (Scheduling, Accounting, Metering and Settlement of Transactions in Electricity) scheme.*

5. Meetings with SLDCs:

The gist of discussions held with SLDCs and RLDC of each region have been summarized under the broad heads as per subsequent paragraphs.

5.1 Resource Adequacy including Demand Estimation data:

(a)*Accurate demand forecasting and resource adequacy assessment are crucial for maintaining grid stability and ensuring a reliable power supply. SLDCs play a vital role in this process by submitting data in various timeframes, including day-ahead, week-ahead, month-ahead, and year-ahead forecasts. Timely and consistent reporting helps in better planning, efficient resource allocation, and minimizing deviations in the electricity grid. An overview of the status of*

submission of Resource Adequacy including the demand estimation data to RLDCs by SLDCs of the respective region is as under:

(i) *Southern Region:*

Status of Demand Forecast				
Name of State/UT	***Day-Ahead***	***Week-Ahead***	***Month-Ahead***	***Year-Ahead***
Karnataka	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Andhra Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Telangana	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Tamil Nadu	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Kerala	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Puducherry	*Submitting*	*Submitting*	*Submitting*	*Submitting*

Status of Resource Adequacy				
Name of State/UT	***Day-Ahead***	***Week-ahead***	***Month-Ahead***	***Year-ahead***
Karnataka	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Andhra Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Telangana	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Tamil Nadu	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Kerala	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Puducherry	*Submitting*	*Submitting*	*Submitting*	*Submitting*

The Southern Region SLDCs have been compliant in submitting demand forecast and resource adequacy data. All the SLDCs adhere to the prescribed timelines for submitting the data.

(ii) Western Region:

Status of Demand Forecast				
Name of State/UT	***Day-Ahead***	***Week-Ahead***	***Month-Ahead***	***Year-Ahead***
Gujarat	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Maharashtra	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Chhattisgarh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Madhya Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
DNHDD	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Goa	*Submitting*	*Submitting*	*Submitting*	*Submitting*

Status of Resource Adequacy				
Name of State/UT	***Day-Ahead***	***Week-ahead***	***Month-Ahead***	***Year-ahead***
Gujarat	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Maharashtra	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Chhattisgarh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Madhya Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
DNHDD	*Submitting*	*Submitting*	*Submitting*	*Submitting*

Goa	*Submitting*	*Submitting*	*Submitting*	*Submitting*

The Western Region SLDC have been compliant in submitting demand forecast and resource adequacy data except for Maharashtra. On this Maharashtra SLDC submitted that they can furnish the data once input data is received from the Discoms, SLDC has done a meeting with the Discoms to ensure that they submit the data and SLDC shall be furnishing the information as required in future.

(iii) Northern Region:

Status of Demand Forecast				
Name of State/UT	***Day-Ahead***	***Week-Ahead***	***Month-Ahead***	***Year-Ahead***
Rajasthan	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Haryana	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Delhi	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Uttar Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Punjab	*Submitting*	*Submitting*	*Not Submitting*	*Not Submitting*
Himachal Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Uttarakhand	*Submitting*	*Submitting*	*Not Submitting*	*Not Submitting*
Jammu & Kashmir	*Submitting*	*Not Submitting*	*Submitting*	*Not Submitting*
Chandigarh	*Submitting*	*Submitting*	*Not Submitting*	*Not Submitting*

Status of Resource Adequacy				
Name of State/UT	***Day-Ahead***	***Week-ahead***	***Month-Ahead***	***Year-ahead***
Rajasthan	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Haryana	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Delhi	*Submitting*	*Submitting*	*Submitting*	*Not Submitting*
Uttar Pradesh	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Punjab	*Submitting*	*Submitting*	*Not Submitting*	*Not Submitting*
Himachal Pradesh	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Uttarakhand	*Submitting*	*Not Submitting*	*Not Submitting*	*Not Submitting*
Jammu & Kashmir	*Submitting*	*Not Submitting*	*Submitting*	*Not Submitting*
Chandigarh	*Submitting*	*Submitting*	*Not Submitting*	*Not Submitting*

As per above, SLDC of Delhi, Uttar Pradesh and Himachal Pradesh have been submitting demand forecast data for day-ahead, week-ahead, month-ahead, and year-ahead timeframes. SLDCs of other States have expressed difficulty in forecasting demand on longer time horizon. The difficulty in submission of Resource Adequacy data was expressed by the States on week ahead, month ahead and Year ahead time horizon. During the meeting Rajasthan SLDC mentioned that they are in the process of hiring a forecasting agency to assess week-ahead, month-ahead and year-ahead demand estimation with an estimated time frame of 4-5 months and J&K SLDC submitted that they are unable to submit the data in appropriate formats due to shortage of manpower.

(iv) Eastern Region:

Status of Demand Forecast				
Name of State/UT	***Day-Ahead***	***Week-Ahead***	***Month-Ahead***	***Year-Ahead***

Bihar	*Submitting with delay*	*Submitting with delay*	*Submitting with delay*	*Status not available*
Jharkhand	*Submitting with delay*	*Submitting*	*Submitting with delay*	*Status not available*
DVC	*Submitting with delay*	*Submitting with delay*	*Submitting*	*Status not available*
Odisha	*Submitting with delay*	*Submitting Irregularly*	*Not Submitting*	*Status not available*
West Bengal	*Submitting with delay*	*Submitting Irregularly*	*Not Submitting*	*Status not available*
Sikkim	*Submitting with delay*	*Submitting*	*Submitting with delay*	*Status not available*

Status of Resource Adequacy				
Name of State/UT	***Day-Ahead***	***Week-ahead***	***Month-Ahead***	***Year-ahead***
Bihar	*Not Submitting*	*Not Submitting*	*Not Submitting*	*Status not available*
Jharkhand	*Submitting*	*Submitting*	*Submitting*	*Status not available*
DVC	*Submitting Irregularly*	*Not Submitting*	*Not Submitting*	*Status not available*
Odisha	*Not Submitting*	*Not Submitting*	*Not Submitting*	*Status not available*
West Bengal	*Not Submitting*	*Not Submitting*	*Not Submitting*	*Status not available*
Sikkim	*Submitting*	*Submitting*	*Submitting with delay*	*Status not available*

As per above, all the Eastern Region SLDCs have not been submitting required data on demand forecasting and resource adequacy data. DVC SLDC submitted that due to the large volume of data, lack of automation, and workforce constraints, resource adequacy data is delayed, however, after SAMAST implementation, their submission would be streamlined. West Bengal SLDC mentioned that the submission of week-ahead and month-ahead data depends on the input from DISCOM end. In this regard, it was discussed that SLDCs should take up the matter with the concerned Discoms and if the data is not received SLDC should submit the data based on the historical data.

(v) North-Eastern Region:

Status of Demand Forecast				
Name of State/UT	***Day-Ahead***	***Week-Ahead***	***Month-Ahead***	***Year-Ahead***
Arunachal Pradesh	*Submitting*	*Submitting Irregularly*	*Submitting Irregularly*	*Submitting*
Assam	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Manipur	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Meghalaya	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Mizoram	*Submitting*	*Submitting*	*Submitting Irregularly*	*Submitting*
Nagaland	*Submitting*	*Submitting*	*Submitting*	*Submitting*
Tripura	*Submitting*	*Submitting Irregularly*	*Submitting Irregularly*	*Submitting*

Status of Resource Adequacy				
Name of State/UT	**Day-Ahead**	**Week-Ahead**	**Month-Ahead**	**Year-Ahead**
Arunachal Pradesh	Submitting	Submitting Irregularly	Submitting Irregularly	Status not available
Assam	Submitting partial data	Submitting partial data	Submitting partial data	Status not available
Meghalaya	Submitting	Submitting	Submitting	Status not available
Manipur	Submitting partial data	Submitting partial data	Submitting partial data	Status not available
Mizoram	Submitting	Not Submitting	Not Submitting	Status not available
Nagaland	Submitting	Submitting	Submitting partial data	Status not available
Tripura	Submitting partial data	Submitting Irregularly	Submitting Irregularly	Status not available

In North-Eastern Region all SLDCs have largely submitted the demand forecast data with few states not being regular in data submission. Submission of Day ahead Resource adequacy data is being regularly done by the SLDCs but difficulty was expressed by SLDCs in submitting Year ahead Resource Adequacy data. Week-ahead forecasting and resource adequacy data submissions are also largely regular, with most SLDCs, while some challenges remain in month-ahead reporting, particularly in Arunachal Pradesh, Tripura, and Mizoram. On this, Arunachal Pradesh SLDC and Mizoram SLDC stated that there is some lag in the submission of data and the reason for same is shortage of manpower, while Tripura SLDC stated that there is lot of weather variation in Tripura making prediction very difficult. It was discussed that considering the weather variations, various timelines have been provided for the data submissions. The weather-related sensitivity can be taken up in monthly, weekly and day ahead data.

As some of the SLDCs have raised the issue of difficulty in furnishing the resource adequacy including demand estimation data due to inadequate no. of manpower in SLDCs, accordingly the issue of shortage of manpower is discussed under Point No. 5.2 below.

5.2 Shortage of manpower in SLDCs

During the meeting held with NLDC and RLDCs on 05.11.2024, the concerns were raised by the RLDCs regarding the non-submission/ delayed submission of Resource Adequacy including demand estimation and generation data by the various State SLDCs due to shortage of manpower. RLDCs have submitted that based on the demand estimates furnished by SLDCs, RLDC prepares the regional demand estimate and submits it to NLDC and in case the RA study estimate is not submitted by the respective SLDC for any state, RLDC forecasts using their own historically available data.

Keeping in view the same, the issue of shortage of manpower in the SLDCs was discussed in the subsequent meetings held with the SLDCs. During the meetings it was highlighted by almost all the SLDCs that they are facing acute shortages of staff, impacting their operational efficiency. Several SLDCs have taken up the matter with the competent authorities for additional manpower, while others are in the process of doing so. A table presenting the manpower requirement for the SLDCs as per MoP's Workforce Adequacy Guidelines for Load Despatch Centres, sanctioned strength vis-à-vis existing manpower is as under:

Table 2: Sanctioned strength and existing manpower in SLDCs

Region	Name of State/UT	Manpower as per MoP Workforce Guidelines	Sanctioned strength of manpower	Existing Manpower	% of Manpower w.r.t. Manpower as per MoP guidelines
NR	Rajasthan	144	--	122	85%
	Haryana	144	51	32	22%
	Delhi	103	--	83	81%
	Uttar Pradesh	144	129	94	65%
	Punjab	144	67	44	31%
	Himachal Pradesh	103	42	42	41%
	Uttarakhand	103	--	26	25%
	Jammu & Kashmir	103	--	37	36%
	Chandigarh	62	--	--	--
WR	Gujarat	144	--	84	58%
	Maharashtra	144	--	73	51%
	Chhattisgarh	103	--	36	35%
	Madhya Pradesh	144	--	58	40%
	DNHDD	62	--	20	32%
	Goa	62	--	13	21%
SR	Karnataka	144	--	139	97%
	Andhra Pradesh	144	96	74	51%
	Telangana	144	--	92	64%
	Tamil Nadu	144	--	--	--
	Kerala	103	--	69	67%
	Puducherry	62	32	5	8%
ER	Bihar	103	70	37	36%
	Jharkhand	103	65	20	19%
	Odisha	103	64	59	57%
	West Bengal	144	57	47	33%
	DVC	103	64	28	27%
	Sikkim	62	41	42	68%
NER	Assam	103	38	36	35%
	Arunachal Pradesh	62	--	14	23%
	Manipur	62	34	21	34%
	Meghalaya	62	31	17	27%
	Mizoram	62	16	11	18%
	Nagaland	62	47	15	24%
	Tripura	62	--	22	35%

It is observed that there is shortage of manpower in the State Load Despatch Centres. In this regard some SLDCs have also suggested that a separate cadre system is essential for effective working of the SLDCs as at present, the staff in SLDCs are deputed from Gencos, Discoms and Transcos. Issue regarding lack of skilled manpower was also highlighted by the SLDCs during the discussions.

It was suggested during the meeting that the SLDCs having shortage of manpower should proactively take up the matter with the concerned competent authorities including SERCs for the requirement of additional manpower as per the present sanctioned strength and also for approval of revised sanction strength as per the MoP Workforce Adequacy Guidelines for Load

Despatch Centres. Further, with regard to the issue of skilled manpower it was suggested that RLDCs may provide necessary support to the SLDCs and the SLDCs may also post some of their personnel at NLDC/RLDCs for skill enhancement.

5.3 Forecast of generation from wind, solar, ESS and Renewable energy hybrid generating stations

Renewable energy forecasting plays an important role in grid stability and efficient demand management. As per the discussion held with the SLDCs, some of the states having RE generation sources are furnishing the RE forecasting data for the different time horizons and the RE forecasting is also being done by the REMC. SLDC Gujarat mentioned that their forecast gives better results than forecast by the REMC, so they rely on forecasting done by the internal team of Gujarat SLDC.

Further, the state of Delhi, Jammu and Kashmir, Chhattisgarh, Goa, DNHDD, Bihar, Jharkhand, West Bengal, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura and Puducherry stated that they have no RE generation in their control area.

Some states are facing issue of high errors in the forecasted data due to non-availability of SCADA data, necessary tools and framework for better forecasting of RE generation. On this it was suggested that RLDC should engage in further discussions and interactions with SLDCs to ensure they are well-equipped to carry out the forecasting effectively. This may include providing the necessary tools and frameworks for better forecasting and planning.

It was also discussed that the demand is set to rise in upcoming years and much larger RE integration shall also happen in the country, so strengthening of infrastructure for the accurate forecasting of the RE Generation and proactive planning are essential.

5.4 Reserve estimation and management

It was emphasized that each state control area needs to ensure the availability of the reserves for their control area as per the reserve requirement allocated for that State as published by NLDC, under the Grid Code 2023. Efficient reserve management by SLDCs is crucial for maintaining grid stability and reliability to handle the sudden variation in the demand and in case of exigency. It came out during meetings that SLDCs across the country lacks awareness about the methodology for estimation of reserves by NLDC. States have not been maintaining the required reserves. Some of the states are having reserves only during solar hours and there is no reserve capacity in non-solar hours. Further, the states who are maintaining some quantum of reserves in their intra-state generation, are also scheduling the reserve quantum, if requirement arises during peak hours for balancing the demand. In addition to the above some of the states particularly of Eastern Region and North-Eastern Region are facing the issue of maintaining the reserves as they are totally dependent on power from central Sector allocation and they do not have their own intra-state generation. NER SLDCs also expressed their concerns that the reserve requirement published by NLDC for NER states is too high, which may be reviewed.

5.5 Backing down of state-owned thermal generating stations up to Minimum Turndown level (MTL) (i.e., 55% of the MCR)

Issue of capability of backing down of state-owned thermal generating stations up to Minimum Turndown level (MTL) (i.e., 55% of the MCR) was discussed with SLDCs so as to ascertain the quantum of intra-state thermal generation which can be backed down during low-demand periods for optimal utilization of available generation resources. As submitted by the SLDCs, most of the intra-state thermal generating stations are able to achieve the MTL of 55%, however, some of the generating stations are not able to achieve the MTL of 55% due to various reasons including technical & commercial issues and absence of a mandate in the State Grid Code.

A summary of intra-state thermal generation which can be backed down to the MTL of 55% and thereon the total down reserve capacity available in the intra-state thermal generation is at Annexure-7.

As per the table attached in Annexure-7, at present the capacity of 29,364 MW out of total 1,19,291 MW intra-state thermal generation capacity, is not able to achieve the MTL of 55%. If such intra-state thermal generating stations would be able to achieve the MTL of 55%, it would result in following:

(i) There would be an additional down reserve availability of around 3700 MW which can be utilized to further reduce generation during high-frequency periods, thus aiding grid stability

(ii) Greater flexibility in operation of thermal generating units within states and ensure the availability of units on bar during peak hours.

(iii) This would enable the states to schedule cheaper power from inter-state generating station instead of scheduling costlier power from intra-state thermal generating stations.

5.6 Preparedness of the SLDCs for the next upcoming power shortage

To ascertain the preparedness of the states for upcoming expected power shortage, a load - generation balance data for the month of March to May 2025 was sought from the all the SLDCs including the detail of available generation from all sources to meet the peak demand expected during the said period and measures planned to be taken to meet the deficit during the said period. The detail of peak demand of all the states and the total availability of power from different sources to meet such demand indicating the peak deficit/ surplus quantum for the month of March 2025, April 2025 and May 2025 is summarized as under:

……..

As per the above data, in the Northern Region, states of Uttar Pradesh, Punjab, Delhi, Uttarakhand and Rajasthan are expecting power shortages and most of the SLDCs have submitted that they will manage the shortfall through power purchase from DAM and RTM. UPSLDC has also submitted that UPPCL is also procuring power through Banking arrangements and DEEP portal.

In the Western Region, states of Gujarat, Chhattisgarh, Goa and DDDNH may experience some shortages. The SLDCs have submitted that they will manage their deficit through long-duration contracts, firm banking, bilateral contracts and also through market purchases. DDDNH has submitted that they are exploring the possibilities of RE-RTC tender of 150 MW.

In the Southern Region, Telangana has submitted that they have planned to meet the deficit by purchase through market. Puducherry has submitted that they will be able to meet their expected demand from their present allocation from the central generating stations. Karnataka has already procured 1000MW RTC Power through power procurement to meet the peak summer demand. Kerala has submitted that they have banking proposal with UPPCL for supply up to 500 MW as and when available basis and tender has been floated in DEEP portal for purchase of 500 MW during peak hours for May 2025. However, in case of contingency they will purchase the power from DAM and RTM.

In the Eastern Region, all the states are expected to face power shortage during the month of April and May 2025. Odisha SLDC submitted that they have enough buffer in hydro generation to meet the deficit. Other States are relying on DAM, TAM and RTM to meet the shortages. DVC has submitted that it will be purchasing RTC power through Advance Term Ahead Market on Month ahead basis to meet the shortfall in peak hours.

In the North Eastern Region, the states of Manipur, Mizoram, Nagaland and Tripura may face some power deficit during the month of April and May 2025. The SLDCs of Mizoram, Nagaland, and Tripura have planned to procure power through DAM/RTM while DISCOM of Manipur may not be able to procure power due to economic constraints and may resort to load shedding. Meghalaya SLDC does not anticipate any issues due to adequate reservoir levels.

A summary of measures proposed by the states to meet the deficit quantum of power is as under:

Table 3: Measures proposed by the states to meet the expected power deficit from March 2025 to May 2025

Region	***Name of State/UT***	***Measures proposed by States to meet the expected power deficit***
NR	*Rajasthan*	• *Short-term bilateral agreement* • *Purchase through RTM*
	Haryana	• *Data not furnished*
	Delhi	• *Power from Bawana & Pragati gas plants would be scheduled* • *Procurement of power from DAM & RTM*
	Uttar Pradesh	• *Banking arrangement* • *Procurement through DEEP Portal, TAM, DAM & RTM*
	Punjab	• *Procurement of power from DAM & RTM*
	Himachal Pradesh	• *Banking arrangement* • *Procurement of power from DAM & RTM*
	Chandigarh	• *Data not furnished*
	Jammu & Kashmir	• *Banking arrangement* • *Procurement of power from TAM, DAM & RTM*
	Uttarakhand	• *Procurement through DEEP Portal, DAM & RTM*
WR	*Gujarat*	• *Long-duration contracts* • *Procurement of power from DAM & RTM*
	Chhattisgarh	• *Banking arrangement with UPPCL, PSPCL, BRPL, BYPL & CESC* • *Long Duration contracts* • *Procurement through DEEP Portal* • *Requested allocation of power from unallocated-pool*
	Maharashtra	• *Procurement of power from DAM & RTM*
	Madhya Pradesh	• *Procurement of power from DAM & RTM*
	DNHDD	• *Procurement of power from DAM & RTM*
	Goa	• *Bilateral Agreement* • *Procurement of power from DAM & RTM*
SR	*Karnataka*	• *Banking arrangement with UPPCL & PSPCL* • *Procurement through DEEP Portal, TAM, DAM & RTM*
	Telangana	• *Banking arrangement* • *Procurement through TAM, DAM & RTM*
	Andhra Pradesh	• *Data not furnished*
	Tamil Nadu	• *Data not furnished*
	Puducherry	• *Bilateral RE power (to the extent of 330 MW)*
	Kerala	• *Banking proposal with UPPPCL (500MW)* • *Procurement through DEEP Portal (500MW)* • *Procurement through DAM & RTM*

ER	*Bihar*	• *Procurement through DEEP Portal* • *Procurement of power from DAM, RTM, TAM and G-DAM*
	Jharkhand	• *Plan to meet 75% of deficit by purchasing in TAM and rest through DAM & RTM*
	DVC	• *RTC power through Advance Term Ahead Market on Month-ahead basis* • *Procurement of power from DAM & RTM*
	Odisha	• *Enough buffer is available in hydro generation*
	West Bengal	• *Procurement of power from DAM & RTM*
	Sikkim	• *Procurement of power from DAM & RTM*
NER	*Arunachal Pradesh*	• *Surplus power is available during summer months* • *Buffer also available in hydro generation* • *Procurement of power from DAM & RTM*
	Assam	• *Surplus power is available during the summer months* • *Procurement of power through DEEP Portal, DAM & RTM*
	Manipur	• *Procurement of power from DAM & RTM. However, there are some economic constraints.*
	Meghalaya	• *Surplus power is available during summer months* • *Buffer available in hydro generation* • *In case of exigency, may procure power from RTM*
	Mizoram	• *Bilateral Agreement* • *Procurement of power from DAM & RTM*
	Nagaland	• *Procurement of power from DAM & RTM*
	Tripura	• *Short-term Agreement* • *Procurement of power from DAM & RTM*

As per above, it has been observed that most of the states are relying on Procurement of power from DAM and RTM to meet their deficit. It was suggested to the states during the meeting that states should make advance arrangements for power procurement through firm contracts to meet their deficit. The DAM/ RTM should be used only in case of contingency as a last resort since the required power may not be available when they require and they need to meet demand under all conditions. The data with regard to deficit quantum of power met through DAM/RTM were also sought from the states for last six months (i.e. from August 2024 to January 2025) which is being discussed under Point No. 5.7 below.

5.7 Deficit quantum of power met through DAM/RTM

During the initial discussion with SLDCs it came out that most of the states are relying on purchase of power through DAM/ RTM mode to meet their deficit. To ascertain whether the states have been actually able to procure such deficit quantum, the data regarding percentage of the deficit that has been actually met during the last six months (i.e. from August 2024 to January 2025) by purchase through RTM/ DAM, was sought from the SLDCs. In this regard only 13 no. of states has provided the aforesaid data which is as follows:

…….

As per above, it is observed that some of the states such as Telangana and Uttar Pradesh were able to meet their 100% deficit quantum through purchase of power in DAM and RTM while other states were not able to meet their deficit quantum fully through market purchases.

5.8 Implementation of SAMAST Scheme

SAMAST (Scheduling, Accounting, Metering, and Settlement of Transactions) scheme is an important initiative aimed at streamlining power sector operations by enhancing scheduling,

metering, accounting, and settlement mechanisms. During the interaction with the NLDC and RLDCs, some of the RLDCs have submitted that they have recently started implementing the SAMAST scheme due to which complete view of RE generation within the states is not yet available which is also resulting in data gaps. Accordingly, the issue of implementation of the SAMAST scheme was also discussed with the SLDCs and it came out that while some states have fully implemented and integrated the scheme, while others are in various stages of implementation., which is summarized in the table below:

Table 4: Status of implementation of SAMAST Scheme

Region	Name of State/UT	Status of Implementation	Remarks
NR	Rajasthan	Implemented	
	Haryana	Implemented	
	Delhi	Initial Stage	Scope is being finalized
	Uttar Pradesh	Under Implementation	90% meters installed
	Punjab	Under Implementation	Only DSM module pending
	Himachal Pradesh	Implemented	
	Uttarakhand	Under Implementation	
	Jammu & Kashmir	Initial Stage	Draft DPR under preparation
WR	Gujarat	Implemented	
	Maharashtra	Implemented	
	Chhattisgarh	Initial Stage	At bidding stage
	Madhya Pradesh	Implemented	
	DNHDD	Implemented	
	Goa	Initial Stage	DPR to be submitted to PSDF
SR	Karnataka	Implemented	
	Andhra Pradesh	Initial Stage	DPR being finalized
	Telangana	Under Implementation	To be completed by December 2025
	Tamil Nadu	Implemented	
	Kerala	Under Implementation	To be completed by December 2025
	Puducherry	Not initiated	
ER	Bihar	Implemented	
	Jharkhand	Under Implementation	Expected to be completed by December 2025
	Odisha	Under Implementation	Expected to be completed by December 2025
	West Bengal	Implemented	
	DVC	Under Implementation	Expected to be completed by June 2025
	Sikkim	Initial Stage	DPR to be submitted to PSDF
NER	Assam	Implemented	
	Arunachal Pradesh	Implemented	
	Manipur	Under Implementation	Out of 475 meters, 49 meters pending installation
	Meghalaya	Implemented	
	Mizoram	Implemented	
	Nagaland	Implemented	
	Tripura	Implemented	

6. Conclusion and way forward:

6.1 Power supply position during the month of October 2024 and preparedness of the SLDCs for the next upcoming power shortage:

During the month of October 2024, no incidence of load surge was observed due to mild weather conditions. The surge in demand is expected from mid-April to the end of June 2025. The actual power supply position for the month of October 2024 as published by the NLDC is attached as ***Annexure-8****. As per the data, for most of the States, the energy as well as peak shortage was Nil. For States of J&K, Maharashtra, Chhattisgarh, all States in Southern Region and Bihar had a very minimal energy shortage of ~0.1% to 0.9%. The Peak shortage for J&K was for 10%, for Puducherry was 0.1% and for MP was 0.3%. For other States peak shortage was nil.*

Further, as per the data furnished by the SLDCs, a large quantum of deficit of power is expected during the month of March 2025 to May 2025 and most of states have submitted that they will purchase the power through short term means. However, as per the data furnished by the SLDCs for the period August 2024 to January 2025, most of the states are not able to meet up their power deficit through purchase in DAM/ RTM. In this regard data of short-term purchases through DAM and RTM for the month of April 2024 to December 2024 have been analysed which is summarized as under:

Table 5: Details of Short-term purchases through DAM & RTM from April 2024 to December 2024

Sl. No.	Month	Buy Bid (MU) in DAM/RTM	Sell Bid (MU) in DAM/RTM	MCV (MU) in DAM/RTM	% of cleared volume with respect to total buy bid
1	Apr-24	13903.76	16940.87	7128.88	51%
2	May-24	14922.78	19312.55	8268.48	55%
3	Jun-24	16872.66	19211.34	8732.33	52%
4	Jul-24	18266.01	20303.93	9377.91	51%
5	Aug-24	14979.09	22174.92	9054.75	60%
6	Sep-24	14469.03	23022.32	9211.83	64%
7	Oct-24	13038.61	23832.95	8372.87	64%
8	Nov-24	14751.45	26206.48	9432.04	64%
9	Dec-24	18638.23	26122.12	10601.28	57%
		139841.61	**197127.48**	**80180.38**	**58% (Average)**

As per above it is observed that the percentage of the volume that is being cleared in DAM/RTM is only 58% (average) of the total buy bid placed in DAM and RTM which may be due to various reasons (including higher price of sell bids and non-availability of sufficient power during the non-solar peak hours). From above, it can be substantiated that the deficit quantum as anticipated by all the States cannot be met solely through DAM/ RTM purchases. Therefore, a proactive approach for procurement of power is essential. Effective planning will ensure grid stability and prevent disruptions during peak demand months.

Way Forward:

(i) *SLDCs need to adopt a proactive approach to plan their power procurement in advance and to minimize their dependence on last-minute Day-Ahead Market (DAM) and Real-Time Market (RTM) purchases, as these do not guarantee power availability during high-demand periods.*

(ii) *Power may be tied up well in advance through banking arrangements, short-term contracts, and long-term agreements to ensure reliable supply.*

6.2 Submission of Resource Adequacy data:

Submission of Resource Adequacy data is the first step towards operational planning and is crucial for a reliable and secure grid operation. However, it came out after discussions with SLDCs that some of the states are not submitting the data on regular basis and not in the proper format. SLDCs are required to submit Resource Adequacy data for the different time horizons in the prescribed format as per the operating procedure of the respective RLDCs (for reference the format for daily, monthly and weekly data as per the operating procedure of the WRLDC is attached as ***Annexure-9****). With the availability of demand estimation and generation forecast data in advance, stakeholders would be aware about the potential shortages in advance and shall be able to take the necessary corrective measures to meet up such shortages. Further, the RLDCs need to analyse the forecast data submitted by the SLDCs, compare it with actual trends, and provide structured feedback to SLDCs for fine tuning of their forecasting system.*

Way Forward:

(i) *Enhanced coordination between RLDCs and SLDCs for improving forecasting capabilities of SLDCs.*

(ii) *Access to advanced forecasting tools should be facilitated to ensure better accuracy and reliability.*

(iii) *SLDCs facing manpower challenges should leverage automation and training programs to strengthen forecasting and data management capabilities and should make best efforts to submit the requisite data with the available manpower till the availability of additional manpower.*

(iv) *SLDC to take up the matter of non- submission of data with concerned Discoms in their control area and as a short gap arrangement SLDC should submit the requisite information based on historical data*

(v) *The issue of submission of Resource Adequacy data including demand estimation and generation data by the states should be taken up as a regular agenda in the RPC meeting of concerned region.*

(vi) *An issue was highlighted that ISTS drawl of some of the states were more than their ATC limit. In case of inadequate ATC, a State may not be able to draw power from identified sources outside the state and would not be able to meet the demand. States need to ensure their intra-state transmission resource adequacy and needs to plan and implement their intra-state transmission system adequately.*

6.3 Shortage of manpower in SLDCs

The discussions highlighted a widespread shortage of manpower across most of the SLDCs, impacting their operational efficiency. While many SLDCs have already taken up the issue with the competent authorities, urgent action is required to ensure the availability of adequate number of manpower and for this SLDCs need to take up the matter with their management to provide the manpower as per their current sanctioned strength and also to approach their respective State Regulatory Commissions for approval of additional manpower in terms of MoP's Workforce Adequacy Guidelines for Load Despatch Centres. The issue of adequate number of manpower also needs to be escalated at the Forum of Regulators (FoR) with respective State Regulatory Commission. Addressing these shortfalls is essential for ensuring the smooth operation of SLDCs and effective monitoring, compliance and grid management.

SLDCs have also suggested that a separate cadre system is essential for effective working of the SLDCs as at present, the staff in SLDCs are deputed from Gencos, Discoms and Transcos. Lack of skilled manpower in SLDCs is impacting their ability to handle complex grid operations.

Way Forward:

(i) *SLDCs to take up the matter with their management to provide the manpower as per their current sanctioned strength.*

(ii) *SLDCs to take up the matter with their management for approval of revised sanction strength considering the MoP Workforce Adequacy Guidelines for Load Despatch Centres*

(iii) *Forum of Regulator can take up with the State Regulatory Commissions for determining the Fees and Charges for the Load Dispatch Centers which will provide financial autonomy to the Load Dispatch Centers. The possibility of establishing separate cadre system for SLDCs may also be explored.*

(iv) *RLDCs, in collaboration with NLDC, to conduct structured capacity-building programs to equip SLDC personnel with the required technical skills.*

(v) *SLDCs to post their employees at RLDCs temporarily to enhance their technical expertise.*

6.4 Reserve estimation and management

Most of the states are not maintaining reserves allocated by the NLDC to the respective States as per the provisions of the Grid Code. Further, the NER states highlighted that the reserve requirement is on higher side as compared to their peak demand. NLDC is currently maintaining reserves with the cost being socialized among all states through DSM. However, from next year onwards, it has been provided that the cost may be directly allocated to States in ratio of shortfall in maintaining the reserves by them, which may be costly. States must plan accordingly to avoid high-cost allocations and they should review their future generation capacity or long-term tie-ups to ensure availability of adequate power and reserves. DVC SLDC pointed out an issue which needs to be considered. DVC stated that as per understanding the contracted capacity meant for maintaining Reserve should not be scheduled except under contingency or extreme conditions. However, as per the provisions under LPSC Rules, a generator needs to offer the surrendered power of any DISCOM in the Day Ahead Market. Thus, the Day-ahead surrendered power of any DISCOM may not be available because of sale of the power by the Generator in Day Ahead Market. It was discussed that under the Grid Code 2023, the state wise quantum of reserves is required to be reassessed for three day ahead and day ahead basis which should be published by NLDC as per provisions of the Grid Code. Some States pointed out that there are no regulations on AGC in the State.

State SLDCs lack clarity on reserve estimation and allocation, accordingly the respective RLDCs in coordination with NLDC needs to held discussion with the SLDCs to explain the exact process of reserve estimation and allocation of reserve quantum of each state and RLDCs may also share the required tools with SLDCs. Further, a specific portion of the generation should be earmarked exclusively as a reserve and that reserve quantum should not be scheduled unless there is contingency. The commercial issues if any with regard to maintaining the reserves, needs to be looked into by the respective State Electricity Regulatory Commission.

Way Forward:

(i) *SLDCs to take up the issue of maintaining the reserves with their respective Discoms to maintain the reserves as allocated to them by NLDC as per the provisions of the Grid Code.*

(ii) *RLDCs to hold discussions with respective SLDCs, in coordination with NLDC to explain the exact process of estimation and allocation of reserve quantum of each state.*

(iii) *NLDC to review the quantum of reserves allocated to North-Eastern Region states, where the reserve requirement appears disproportionately high compared to their demand.*

(iv) *The regulations enabling implementation of AGC and recovery of cost of maintaining reserves may be taken up at FOR level on recommendations and requirements cited by States.*

6.5 Backing down of state-owned thermal generating stations up to Minimum Turndown level (MTL) (i.e., 55% of the MCR)

While several intra-state thermal generating stations states are capable of operating at MTL of 55%, some of the generating stations having total capacity of 29364 MW were not able to achieve the MTL of 55% due to various technical and commercial issues. The state generating stations needs to further investigate the technical issues and work towards addressing the issues in operation of intra-state thermal generating station at MTL of 55%. Further, a regulatory framework at the state level may also be formulated by the SERCs to compensate the generators for part load operation. Moving forward, state utilities, regulatory bodies, and plant operators must work collaboratively to ensure greater flexibility in thermal power operations.

Way Forward:

(i) *SLDCs to take up the issue of operation of intra-state thermal generating stations with intra-state generators to investigate the technical issues and work towards addressing the issues of operation at MTL of 55%. Intra-State generators to collaborate with the Inter-State Generating Stations in overcoming the various technical issues involved in achieving MTL of 55%.*

(ii) *Forum of Regulator to take up the issue with respective SERC regarding formulation of regulatory framework at state level to compensate the generators for part load operation of thermal generation station.*

6.6 Implementation of SAMAST (Scheduling, Accounting, Metering, and Settlement of Transactions) Scheme

The Report titled SAMAST - "Scheduling, Accounting, Metering and Settlement of Transactions in Electricity" was published by the Forum of Regulators (FOR) in July 2016 with the objective of presenting the available experience of various aspects of energy accounting, metering, deviation settlement at the inter-state/intra-state level and evolving a uniform procedure for SAMAST in Electricity. The SAMAST report provides the roadmap for implementing a robust, scalable and dispute free scheduling, metering, energy accounting and settlement system in the states. The report lays down the basic framework and governance structure of SAMAST including information technology (IT) infrastructure and human resources required for market operations function discharged by the SLDCs. Visibility of data is the first step to ensure grid security and SAMAST implementation is the key to visibility. Out of the total 33 control areas, SAMAST framework has already been implemented in 17 control areas, is under implementation in 9 control areas, in initial stages in 6 control areas and in one control area the framework has not been initiated.

Way Forward:

(i) *Implementation of the SAMAST framework in the 9 control areas needs to be closely monitored and implemented in the timeframe or earlier as indicated in table under para 5.8.*

(ii) *The states where the scheme is under initial stage, the scheme needs to be awarded within two months and its implementation in period not exceeding one year after the award.*

(iii) *In Puducherry the SAMAST framework has not been yet initiated. Puducherry may be directed to implement the scheme in a period not exceeding 15 months after issue of order."*

40. Pursuant to the submission of the report by the single-member bench under Member (Technical), it was felt that there is a need to further deliberate upon the issues

highlighted by the Member (Technical) in its report with the senior-level officers of the respective State Government, officers from NLDC, RLDCs, SLDCs, State Discoms, State Transcos and SERCs, so as to sensitize them about the various issues. Accordingly, regional workshops in association with Grid-India were organized as detailed below:

Sl. No.	Region	Venue of Workshop	Date
1	North Eastern	Guwahati	24.05.2025
2	Eastern	Kolkata	01.08.2025
3	Northern	Lucknow	11.08.2025
4	Southern	Bengaluru	21.08.2025
5	Western	Mumbai	29.08.2025

41. During the aforesaid regional workshops, detailed deliberations took place on planning for safe, secure, and reliable integrated operation of the power system during critical demand periods. The discussions were held by the Chairperson, CERC and Member (Technical), CERC, with senior-level officers of the respective State Governments, officers from NLDC, RLDCs, SLDCs, State Discoms, State Transcos and SERCs. During the regional workshops, detailed deliberation took on various issues as (i) Adequacy of Workforce in SLDCs, (ii) Training and Certification of SLDC staff, (iii) Enablement of AGC in intra-state generating stations, (iv) Submission of demand estimation and Resource Adequacy data, (v) Alignment of the State Grid Code with IEGC 2023, (vi) Cybersecurity preparedness, (vii) Two Shift Operation of thermal generating stations, (viii) Strengthening of intra-state transmission network, (xi) Maintaining the adequate Reserves.

42. The comprehensive conclusions which came out from the Report of the single-member bench under Member (Technical), CERC and further detailed deliberations by the Chairperson, CERC and Member (Technical), CERC with senior-level officers of the respective State Governments, officers from NLDC, RLDCs, SLDCs, State Discoms, State Transcos and SERCs are summarized as under:

(a) Grid security is paramount, and the integration of 500 GW of renewable energy (RE) into India's grid by 2030 poses significant operational challenges, especially in light of past grid disturbances such as the major blackouts of July 2012. Recognising these concerns, CERC has notified a comprehensive Grid Code in June 2023 to guide planning and operations. Grid India's November 2023 report also analysed grid events from January 2022 to May 2023, highlighting 31 incidents of RE generation loss ranging from 1000 to 7000 MW, primarily in Rajasthan. The most severe event occurred on May 28, 2023, when an 8000 MW RE generation dip was recorded due to multiple tripping, emphasising the critical need for maintaining adequate generation reserves. The frequent and high-impact disruptions underscore the vulnerability of the grid to cascading failures, especially in areas with high RE penetration. A particularly alarming event took place on May 21, 2025, when inclement weather triggered the tripping of 104 transmission lines across the Northern Region, leading to a 27 GW load crash within five hours, which illustrates the need for robust and real-time operational readiness by system operators.

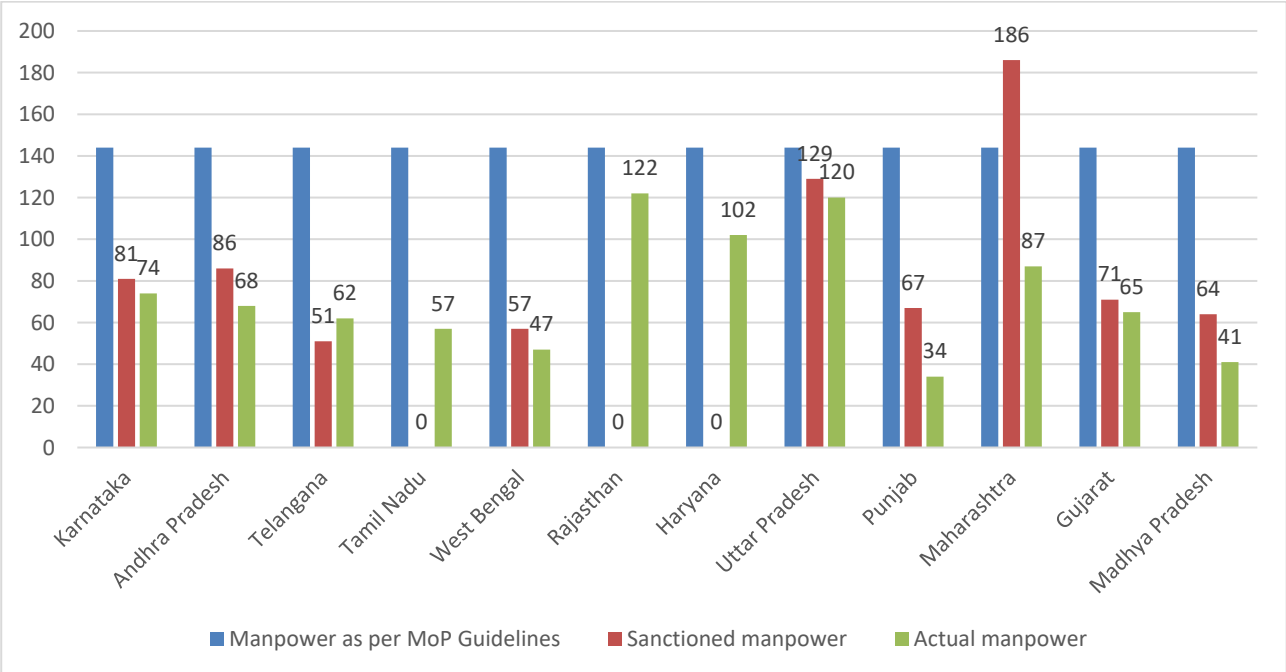
(b) On the international front, as per a report published in "The Economist" Magazine on May 3rd, 2025, a recent incident that occurred in Spain on April 28, 2025, highlighted similar concerns about grid resilience. A sudden and massive loss of 15 GW—approximately 60% of the country's total demand—led to widespread blackouts across Spain and parts of Portugal. Essential services, including public transport, communications, and hospital operations, were severely affected, with electricity restoration taking nearly a full day. Red Electrica de Espana (REE), Spain's national electricity operator, which is partly State-controlled, called the blackout "exceptional and totally extraordinary". The event raised global alarms about the vulnerability of RE and interconnected power systems. The said case strongly reinforces the need for resilient backup infrastructure and stringent operational safeguards to manage large-scale RE integration and prevent catastrophic grid failures.

(c) Similarly, in Chile, a catastrophic blackout affected over 90% of Chile's population due to a malfunction in electronic and software protection systems at the ISA Interchile distributor. This disconnected a critical 500 kV high-voltage transmission line, resulting in a near-nationwide power outage. The incident was declared a state of emergency as power restoration took up to a day for most areas, but some continued experiencing restoration issues for much longer.

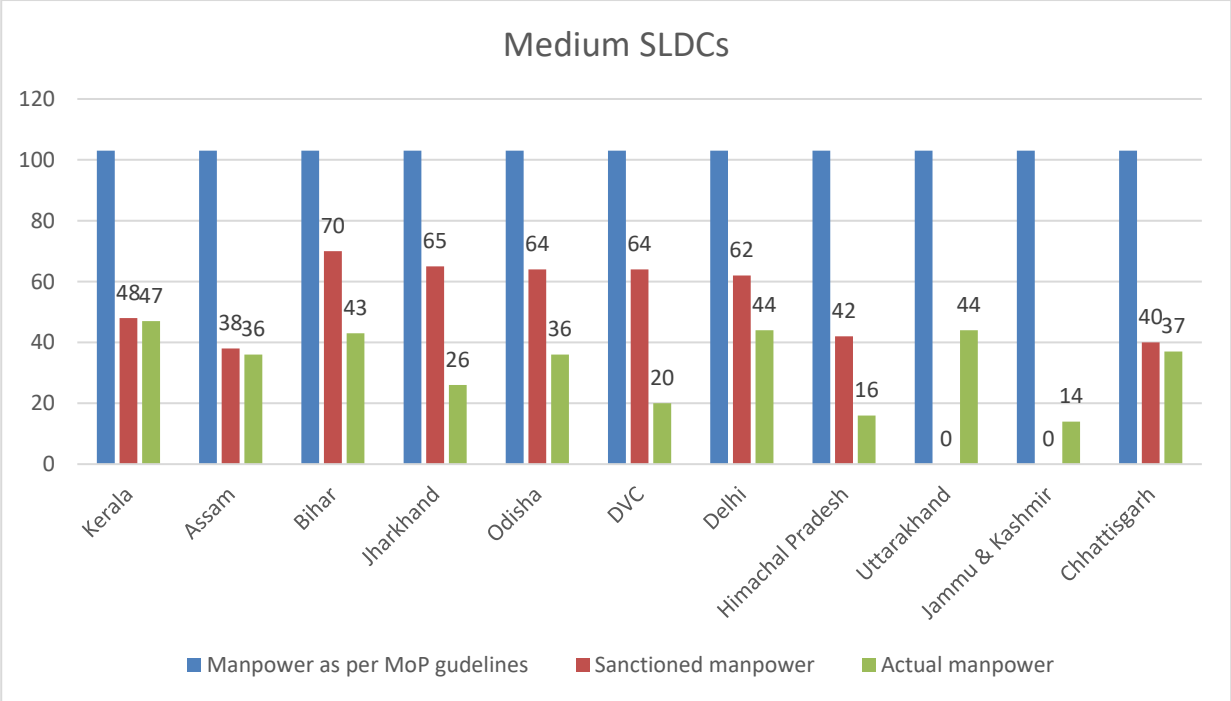
(d) It was highlighted that SLDCs have a crucial role to play in ensuring safe and secure grid operation as they are entrusted with the tasks inter alia of optimum scheduling and dispatch within the states, in accordance with the State Grid Code. The SLDCs must be strengthened and ring-fenced to cope with challenges. Given the integrated nature of the grid, the Act requires the State Grid code to be in conformity with the Grid Code framed by CERC. The 2023 Grid Code has several future-looking provisions, including, inter alia, on Resource Adequacy, reserves assessment and deployment to meet contingency, cost optimization through SCUC/SCED, provisions for the flexibilisation of existing thermal fleet and compensation for providing flexibility, protection coordination, etc. SERCs may align their respective state Grid Code accordingly, and also like to frame regulations on SLDC fees and charges to enable the SLDCs to strengthen themselves. Power Departments of the respective State may also sanction adequate staff for SLDCs as per the MoP guidelines. The expenditure on account of the staffing, etc., may be met through the fees and charges approved by SERCs.

(e) Adequacy of Workforce in SLDCs

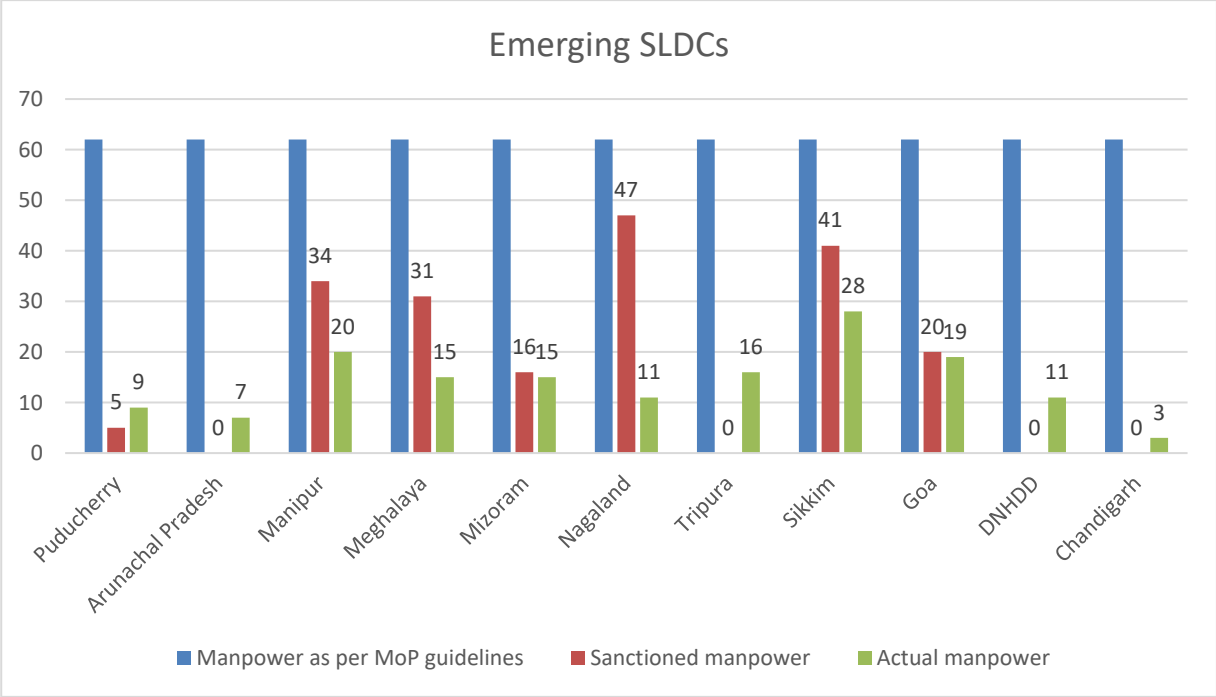
It was highlighted that almost all the SLDCs reported a shortage of manpower. A graphical representation of the manpower position in Large, Medium and emerging SLDCs is as under:



Large SLDCS



Medium SLDCs



Emerging SLDCs

While some of the states have outlined steps taken for recruiting additional staff, others have reported that approval for additional staff is in process. It was suggested during the discussions that the sanctioned manpower strength in SLDCs should be revised, and the actual manpower should also be in line with the Ministry of Power (MoP) guidelines. A separate HR and transfer policy can also be developed in other states in

line with the UPSLDC HR Management and Development Policy, which is aimed at structuring the movement of officers in specialised functions without disrupting operations and ensuring smooth staffing, structured job rotation, and continuous skill development of personnel. SLDCs need to take up the matter with their management to provide the manpower as per their current sanctioned strength, and also need to take up the matter with their management for approval of revised sanction strength, considering the MoP Workforce Adequacy Guidelines for Load Despatch Centres.

The Forum of Regulator may take up with the State Electricity Regulatory Commissions for determining the Fees and Charges for the Load Dispatch Centers, which will provide financial autonomy to the Load Dispatch Centers. The possibility of establishing a separate cadre system for SLDCs may also be explored.

(f) Training and Certification of SLDC staff

The importance of continuous training and certification for SLDC staff was emphasised during the workshop. The aim of training and certification is to ensure that an adequate workforce is trained and certified annually, improving operational preparedness and technical competence. As there is a shortage of staff, ER SLDCs and NER SLDCs expressed the view that it is difficult to spare staff for training. It was suggested during the discussion that, ideally, the trained staff should not be shifted from the SLDCs. To attract the staff for working in SLDCs, incentive provisions can be incorporated for the certified staff under the Fee and Charges of the SLDCs. SERCs were requested to formulate a separate Fee and Charges Regulations for State Load Despatch Centers, wherein the provision regarding training of the SLDC staff as well as incentive provisions can be incorporated. With regard to lag in advanced-level training due to unavailability of slots, Grid-India was requested to address the shortage of advanced-level training slots in discussion with NPTI and increase the frequency of conducting the certification exams.

RLDCs, in collaboration with NLDC, may conduct structured capacity-building programs to equip SLDC personnel with the required technical skills. SLDCs may also post their employees at RLDCs temporarily to enhance their technical expertise.

(g) Enablement of AGC in intra-state generating stations

It was emphasised that the SLDCs need to impress the generators to enable AGC in intra-state generating stations. SERCs should also make suitable provisions for incentives under State Regulations in line with provisions under CERC Regulations. Adoption of AGC would offer dual benefits—generators would be able to earn revenue from AGC operations, while states would be able to maintain reserves within their own boundaries. Further, until the enablement of AGC provisions in the State, the State generators can also participate in Central SRAS.

(h) Submission of demand estimation and Resource Adequacy data

It was emphasised that the States should be prepared for a sudden change in demand and generation for which proper operational planning is required. The Power tied should be on a long-term, medium-term, and short-term basis. A framework for Resource Adequacy needs to be prepared for sudden changes in demand and generation, in the states where it has not been framed yet.

There is a need for enhanced coordination between RLDCs and SLDCs to improve the forecasting capabilities of SLDCs. Access to advanced forecasting tools should be facilitated to ensure better accuracy and reliability. SLDCs which are facing manpower challenges should leverage automation and training programs to strengthen forecasting and data management capabilities, and should make best efforts to submit the requisite data with the available manpower till the availability of additional manpower. The issue of submission of Resource Adequacy data, including demand estimation and generation data, by the states should be taken up as a regular agenda item in the RPC meeting of the concerned region.

(i) Alignment of the State Grid Code with IEGC 2023

It was noted that in the States, incentive provisions are not aligned with the CERC Regulations. The state SERCs may align their respective State Grid Code with the 2023 Grid Code of CERC, which contains the various provisions with respect to AGC, Reserve requirement and part load compensation for the thermal generating stations.

(j) RE Integration issues

Grid India highlighted that at state level there are issues due to non-enforcement of CEA Grid Standards while granting connectivity to intra-state elements, Obtaining FTC permission from SLDC before connection to the State Grid is not consistently followed, inadequate reactive compensation (Non-Availability of STATCOMs, SVCs, and capacitor banks at intra-state nodes), delayed or non-reporting of RE tripping events at the intra-state level, insufficient flexible generation within state boundaries for balancing RE variability, inconsistent LVRT/HVRT compliance across RE plants at the intra-state level, non-implementation or partial implementation of SCADA connectivity for RE plants at SLDC level, non-availability of Power Plant Controllers (PPC) and Master PPC in RE plant.

It was discussed that SLDCs must ensure HVRT, LVRT, reactive compliance, and SCADA visibility for RE generating stations. Once the generator is integrated without these basic requirements, it may be very challenging to get compliance at a later stage.

(k) Cybersecurity preparedness

A Power system is a critical infrastructure that must be safeguarded against cyber-attacks. State SLDCs do not have adequate manpower in the area of cyber Security. With the growing concern of cyber threats, an adequate number of staff need to be deployed. Further, the training on cyber security is a critical area, and the staff should be mandatorily trained in this area.

(l) Backing down of intra-state thermal generating units

It was noted that some of the intra-state thermal generating units are not able to be backed down till MTL of 55% due to commercial as well as technical reasons, such as being older units. State Generators may also visit the older generating stations of NTPC and other ISGS that have been running at 55%. Enablement of backing down of all thermal generating units till MTL of 55% shall result in availability of additional down reserves. It was also suggested that SERCs may also come up with a part-load compensation mechanism for intra-state thermal power plants and also explore the possibilities for the two-shift operation of the thermal generating stations, keeping in view the large RE integration in the country. It was also observed during discussions that costlier intra-State thermal generators are given a schedule much above 55% while at the same time, cheaper ISGS' are given a schedule much below MTL.

Backing down to MTL shall save resources as well as cost to a State. SLDCs need to take up the issue of the operation of intra-state thermal generating stations with intra-state generators to investigate the technical issues and work towards addressing the issues of operation at MTL of 55%. The Forum of Regulators may also take up the issue with respective SERCs regarding the formulation of a regulatory framework at the state level to compensate the generators for part load operation of the thermal generation station.

(m) Strengthening of the intra-state transmission network

During the workshop, the number of grid disturbances that have occurred over the last year was presented, and it was emphasised that most of the grid disturbances occur due to Radial connectivity issues, which require the strengthening of the intra-state transmission network to enhance reliability and reduce such disturbances. In case of inadequate ATC, a State may not be able to draw power from identified sources outside the state and would not be able to meet the demand. States need to ensure their intra-state transmission resource adequacy and plan and implement their intra-state transmission system effectively.

(n) Maintaining adequate Reserves

It was highlighted that no state is actually maintaining the reserve quantum, and even in cases where states claim to have reserves, these are scheduled during peak hours, defeating the purpose. The participants were informed that from 1st April 2026, NLDC will begin maintaining reserves on a state-wise basis; however, this could prove costly for states, as NLDC may need to maintain reserves in costlier gas-based plants. Hence, states were urged to maintain their own reserves. The issue of a high quantum of reserve requirement in respect of NER states was also deliberated. NLDC was requested to look into the issue to incorporate a certain ceiling on reserve requirement specifically for NER states. As some of the states were having doubts about the reserve estimation process, Grid-India made a detailed presentation on the reserve estimation process and allocation to the states. SLDCs to take up the issue of maintaining the reserves with their respective Discoms to maintain the reserves as allocated to them by NLDC as per the provisions of the Grid Code. The regulations enabling recovery of the cost of maintaining reserves may be taken up at the FOR level on recommendations and requirements cited by States.

(o) Implementation of the SAMAST Framework

The implementation of the SAMAST framework in the 9 control areas needs to be closely monitored and implemented. In states where the scheme is in its initial stage, the scheme needs to be awarded within two months, and its implementation period not exceeding one year after the award.

(p) During the discussions, Grid India submitted that due to high frequency, they have been issuing TRAS down instructions to RE generators; however, RE generators who have been issued down instructions still over-inject into the grid, which does not provide the required relief during high frequency.

(q) SLDCs submitted that they shall purchase power through DAM & RTM to meet their power deficit. However, sufficient power is often not available in the market. Sample data for short-term purchases through DAM and RTM for the months of January 2025 to June 2025 is as under:

Data for DAM

Sl. No.	Month	Buy Bid (MUs) in DAM	Sell Bid (MUs) in DAM	MCV (MUs) in DAM	% of cleared volume with respect to total buy bid
1	Jan-25	9618	13099	6017	45%
2	Feb-25	9678	10335	5408	55%
3	Mar-25	10022	10699	5498	54%
4	Apr-25	9892	11189	4351	43%
5	May-25	6606	12051	3461	52%
6	Jun-25	8142	14440	4580	56%
				Average	**51%**

Data for RTM

Sl. No.	Month	Buy Bid (MUs)	Sell Bid (MUs)	MCV (MUs)	% of cleared volume with respect to total buy bid
1	Jan-25	5316	7302	3035	57%
2	Feb-25	4682	5774	2887	61%

3	Mar-25	5151	6932	3732	72%
4	Apr-25	6927	7998	3895	56%
5	May-25	6088	1101	4788	78%
6	Jun-25	5850	9774	4340	74%
				Average	**66%**

As per above, the average cleared volume is 51% in DAM and 66% in RTM over the sample period.

SLDCs need to adopt a proactive approach to plan their power procurement in advance and to minimise their dependence on last-minute Day-Ahead Market (DAM) and Real-Time Market (RTM) purchases, as these do not guarantee power availability during high-demand periods. Power may be tied up well in advance through banking arrangements, short-term contracts, and long-term agreements to ensure a reliable supply. It was urged that the states were required to meet the expected demand as well as keep the necessary reserve so that any load loss would not occur in case of any contingency.

(r) The necessity of adequate skilled and certified workforce in SLDCs, focus on improving the working environment and upgrading infrastructure in SLDCs, strong institutional frameworks, need for compliance to the various provisions under the Grid Code, alignment of State Regulations with the CERC regulations and preparedness towards cyber threats so to ensure safe, secure and reliable grid operation and also grid reliability and stability during critical demand periods, was mainly highlighted.

43. The key issues which came out of the interactions across all India stakeholders were the importance of grid security and proactive handling of possible threats to grid stability. The instant Order has been issued for Planning for safe, secure, and reliable integrated operation of the power system and undertaking specific measures to mitigate the risks associated with the power system, under clause (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 and the Regulation 31 of the Grid Code. We observe that Regulation 31 of the Grid Code pertains to Operational Planning and requires SLDCs to inter alia furnish the following:

"31(4) Adequacy of Resources

(a) SLDCs shall estimate and ensure the adequacy of resources, identify generation reserves, demand response capacity and generation flexibility requirements with due regard to the resource adequacy framework as specified under Chapter 2 of these regulations.

(b) *SLDCs shall furnish time block-wise information for the following day in respect of all intra-state entities to the concerned RLDC who shall validate the adequacy of resources with due regard to the following:*
   (i) Demand forecast aggregated for the control area;
   (ii) Renewable energy generation forecast for the control area;
   (iii) Injection schedule for intra-State entity generating station;
   (iv) Requisition from regional entity generating stations;
   (v) Secondary and planned procurement through Tertiary reserve requirement;
   (vi) Planned procurement of power through other bilateral or collective transactions, if any. "

As per the above, SLDCs need to furnish time block-wise data on day ahead basis for demand forecast, RE generation, schedule from intra-state generating stations as well as inter-state generating stations.

44. We have observed that SLDCs have been furnishing a very typical scheduling pattern to ISGS, which has been brought to our notice by Grid India as well as ISGSs.

45. NLDC vide its letter dated 13.05.2025 submitted as follows:

"On the lean demand days all India grid frequency is remaining above the 50.05 Hz continuously for 4-5 hours during the solar hours. This is mainly due to weekend coinciding with the inclement weather in various parts of the country. During these periods backing down of thermal, gas and hydro generators are being done at Regional and States level. However, it has been observed that the regional thermal plants scheduled under Section 62 (of the Electricity Act) PPAs are being backed down to 55% of their installed capacity, whereas the regional merchant and independent thermal power plants (full or partial merchant capacity) and majority of intra state thermal plants are still running above 55% of their installed capacity. The reason regional entity thermal plants are running above the 55% of their installed capacity is mainly they have sold their power in the power market (bilateral and/or collective) on advance / day ahead basis or adequate compensation is not present in their Section 63 PPAs for backing down of generation. Further, due to inadequate regulatory provision in the state grid code, majority of the SLDCs are compelled to schedule the thermal generation above 55% of their installed capacity even in lean demands hours.

The responsibility of maintaining the frequency within the IEGC band (49.90-50-05 Hz) during these lean hours ultimately gets entrusted on NLDC only through frequency regulation ancillary services. But during these periods the Down reserves also gets exhausted and NLDC could not despatch ancillary down to contain the high frequency.

Thermal plants also could not be decommitted on day ahead basis because these resources are required on the same day in the non-solar hours. The high frequency typically persists for 4-5 hours in the solar hours generally during the lean demand days."

46. NLC vide letter dated 5.6.2025 submitted as under:

"3.Consequent to the implementation of IEGC 2023, NTPL & other generators faced many constraints in real time operation of the Units viz., i) Unrealistic scheduling pattern by Distribution Companies (DISCOMS) especially giving schedule < MTL in D-1 day for D day and revising schedule << MTL during off peak hours of D Day thereby restricting generators to avail other provisions like Day ahead power trading and SCUC support for

MTL schedule , ii) Beneficiaries giving full schedule during peak hours and negligible or less than MTL schedule during non-peak hours forcing generators in real time operation to over-inject thus posing threat to safe operation of thermal power plant and grid security.

4. These difficulties were brought to the notice of the Commission vide representation from different stakeholders including NTPL.

…

9. Hence, considering the above constraints face by NTPL, the Hon'ble Commission's intervention is kindly requested in the following matters.

- *It is submitted that for safe and reliable operation of the machines, units are required to be operated at or above MTL. MTL limitations and guidelines are as per the CEA Standards.*

To honor the technical requirements of the Unit, beneficiaries may be directed to give MTL schedules during non-peak hours if power is availed during peak hours.

- ***Generating stations may be allowed to take the Unit under shut down (USD) without any supply obligations, if MTL schedules are not ensured by Beneficiaries** and SCUC/SCED MTL support is not extended by NLDC.*

- *If MTL support through SCUC/SCED could not be extended in real time operation due to non-availability of down reserve or congestion constraints, the same may be informed beforehand at least before one and half hours so that generators may bid in RTM at required rate to get MTL schedules for sustained operation of the plant."*

47. NTPC vide its letter dated 18.07.2025 submitted as under:

Subject: Regarding feasible schedules to NTPC thermal stations

Sir,

In order to remove difficulties being faced by the thermal generating stations due to schedules below Technical Minimum during off peak hours, Hon'ble Commission has issued IEGC 1st Amendment 2024. The said amendment duly recognizes the requirement of Technical Minimum schedules for thermal generating stations and provides for Technical Minimum support to stations during off peak hours by NLDC through SCED stack.

However, even after implementation of detailed procedure for MTL support through SCED with effect from 24.03.2025, it has been observed that many NTPC stations which are required to be on bar to supply power during evening hours are not getting Technical Minimum support from SCED during solar hours due to non-availability of down reserves in other stations in SCED stack. (Date wise list of stations not getting Technical Minimum schedule in last 3 month is attached as Annexure-A). Therefore, the provision of moderating schedules through SCED is becoming ineffective to resolve the issue of infeasible scheduling and stations are being forced to over inject or under inject leading to high frequency, potential congestion in interstate lines and increased risk to Grid stability apart from incurring DSM liability. It would be pertinent to mention that on many occasions, NTPC stations are being forced to over inject up to 4000MW, endangering Grid security.

Notably, NTPC stations have incurred a total DSM loss of approximately Rs 673 Cr from 01.10.2023 to 30.06.2025, out of which Rs 107 Cr loss has been incurred after the implementation of the procedure for Technical Minimum support through SCED W.e.f. 24.03.2025.

Many times, there is oversupply in Grid causing high frequency and there is a need to get some units off-Grid/under shut down However, under the current regulatory provisions the discretion to take unit shut down has been left to the generators. As Generators do not have the holistic view of overall Grid conditions, they are unable to decide on shut down of units. Moreover, mostly these generators have full or near full schedule in the evening and the obligation to supply hinders their decision to take units under shut down, leaving them to continue to generate over their schedule up to technical minimum and endanger Grid security.

In view of the abovementioned difficulties being faced by the Grid, it is requested to kindly consider the following points which will enable stable and safe Grid operation.

(i) ***offtake obligation on beneficiaries to provide at least Technical Minimum schedule round the clock:***

It is noteworthy that the present regulatory regime places an obligation on the generators to supply even if it has taken a unit under shutdown due to infeasible schedules (schedule below Technical Minimum level). However, there is no corresponding obligation on beneficiaries to provide a feasible schedule through offtake obligation if they need power during the peak hours. Such a situation is leading to a state wherein the generators are continuing to have the infeasible generation schedule (Instances of such scheduling pattern are attached as Annexure B) and even the NLDC is not able to provide the technical minimum support through SCED mechanism. This makes it necessary that an obligation is also put on beneficiaries that if they have scheduled power during peak hours, they must be obligated to provide technical minimum schedule during non-peak hours.

Pertinently, taking stock of the Grid situation, CEA constituted a committee under the chairmanship of the Member Secretary (NRPC) with representatives from CERC, all RPs, all RLDCS, GM Division (CEA), NLDC & NPC to "Evolve mechanism for ensuring Thermal Generation at Technical Minimum level for Grid Stability and RE Integration". The committee in its report dated 30.06.2025, has, also recommended that the beneficiaries requisitioning power during off peak/non-solar hours needs to have Offtake obligations from those stations during solar hours. Beneficiaries may be mandated to maintain a minimum requisition as percentage of maximum requisition in a day, during the lean hours to ensure operationally reasonably schedule. Further, if the ratio of a minimum requisition as percentage of maximum requisition in a day cannot be maintained, one or more units from that station could be allowed to be taken under reserve shutdown without any supply obligation while maintaining its DC for tariff purpose.

In view of the above, it is humbly submitted that in line with CEA Committee recommendations an Offtake obligation may be put on Beneficiaries to provide Technical Minimum schedule to a thermal station if power is availed by them from the station during peak hours/non solar hours.

(ii) ***Procedure for taking unit under USD and revival of Units from USD:***

NLDC has issued the procedure for SCUC, SCED and USD on 16.04.2024. It provides that a unit having below Technical minimum schedule but not committed under SCUC may opt to go under USD, thereby leaving the decision to the generator's discretion. Similarly, the decision to bring the unit back on bar after USD, except when required under SCUC, has also been left to the generator. However, since generators do not have visibility of the overall Grid conditions, they are unable to decide on stop and start units.

Therefore, it is humbly submitted that in case of non-availability of schedules up to Technical Minimum, generators may be instructed by NLDC to take the unit under shut down with no obligation of supply.

It is pertinent to mention that under IEGC-2010, an RSD procedure was formulated in 2017 based on extensive discussions among the stakeholders, considering the technical requirements of the unit such as start up time and commitment for minimum On-bar time with at least technical minimum schedule. Therefore, a procedure for taking unit under USD and revival of Units from USD as existed prior to the implementation of IEGC 2023, is earnestly required."

As per the above, we observe that NTPC stations, which are required to be on bar to supply power during evening hours, are not getting Technical Minimum support from SCED during solar hours due to the non-availability of down reserves in other stations in the SCED stack. This situation arises due to an infeasible schedule given by the beneficiaries of the Station, which generally results in over injection by the generators, which ultimately results in high frequency and is detrimental to the grid.

48. NLC vide letter dated 16.8.2025 has submitted as follows:

Since the enforcement of the IEGC Regulations 2023 wef 01.10.2023, it has been observed that central thermal generating stations are frequently subjected to infeasible scheduling patterns, particularly during solar (off-peak) hours where schedules fall below the Minimum Turn Down Level (MTL), and full schedules are allotted during peak hours. Such operational conditions are unsustainable for thermal power stations.

Currently, as per the IEGC, provisions, DISCOMs have full flexible to submit requisition until 14:30 hrs on D-1. It has been observed that DISCOMs tend to place zero requisition during off peak hours (when surplus power or cheaper market power available), resulting in stations schedules falling below the MTL, while peak hour requisition are often close to the full Declared Capacity (DC). This makes it difficult for generators to plan Unit Shutdown (USD), s they continue to be bound by supply obligations despite unclear future requisitions.

Though the Hon'ble Commission has introduced MTL schedule protection through SCED in IEGC 1st Amendment, in several instances SCED support was unavailable at the last moment due to a lack of down reserve. As a result, the intended protection through SCED has become ineffective, leading to forced over-injection, grid frequency violations, congestion alert, and financial losses to generators.

..

In the light of the above, it is requested that the Hon'ble Commission kindly consider protecting the MTL schedule of lignite- based generating stations through mandatory requisitions by DISCOMs, even if such stations are not participating in SCED.

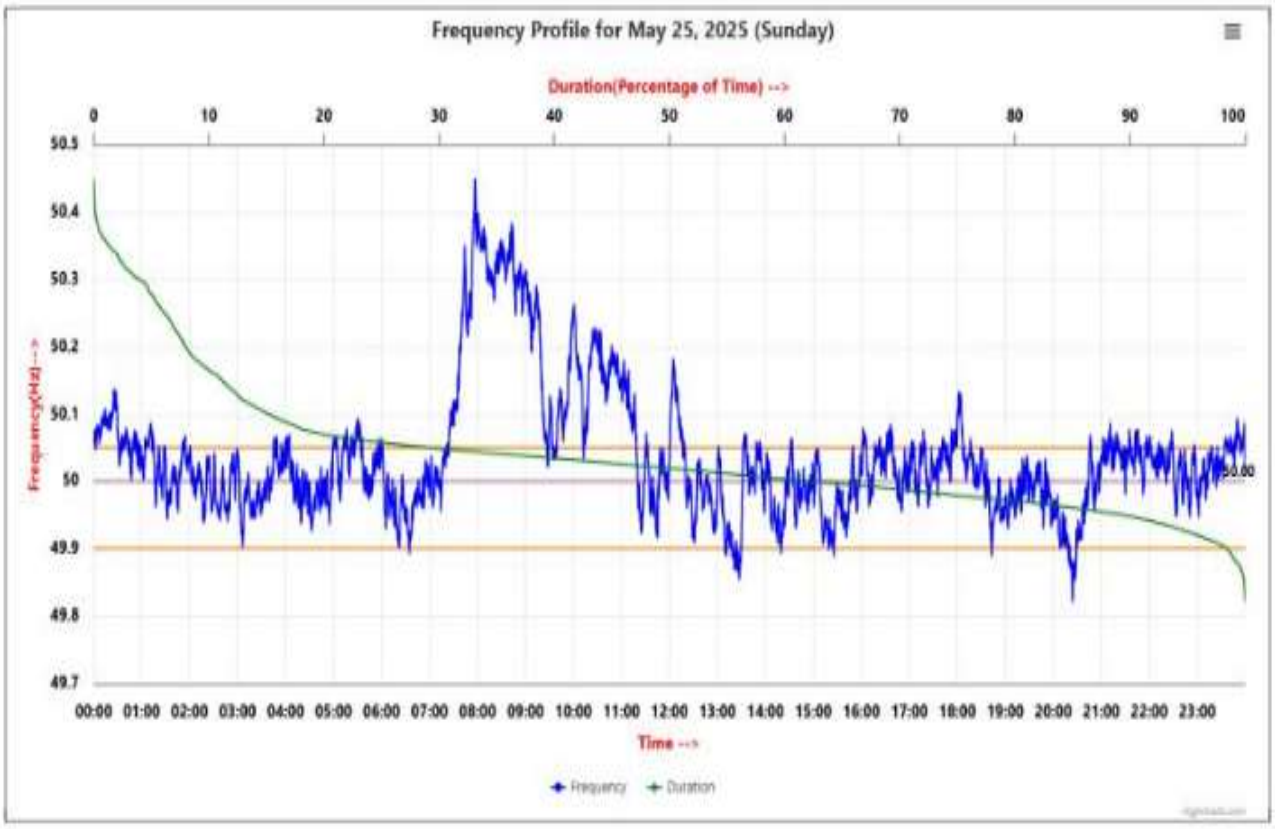
For thermal stations that are participating in SCED, where MTL scheduling support cannot be accommodated, beneficiaries should be mandated to maintain at least MTL schedules during off-peak hours, if they schedule above MTL during peak hours.

In view of the above concern, the following submission are made for the kind consideration of the Hon'ble Commission.

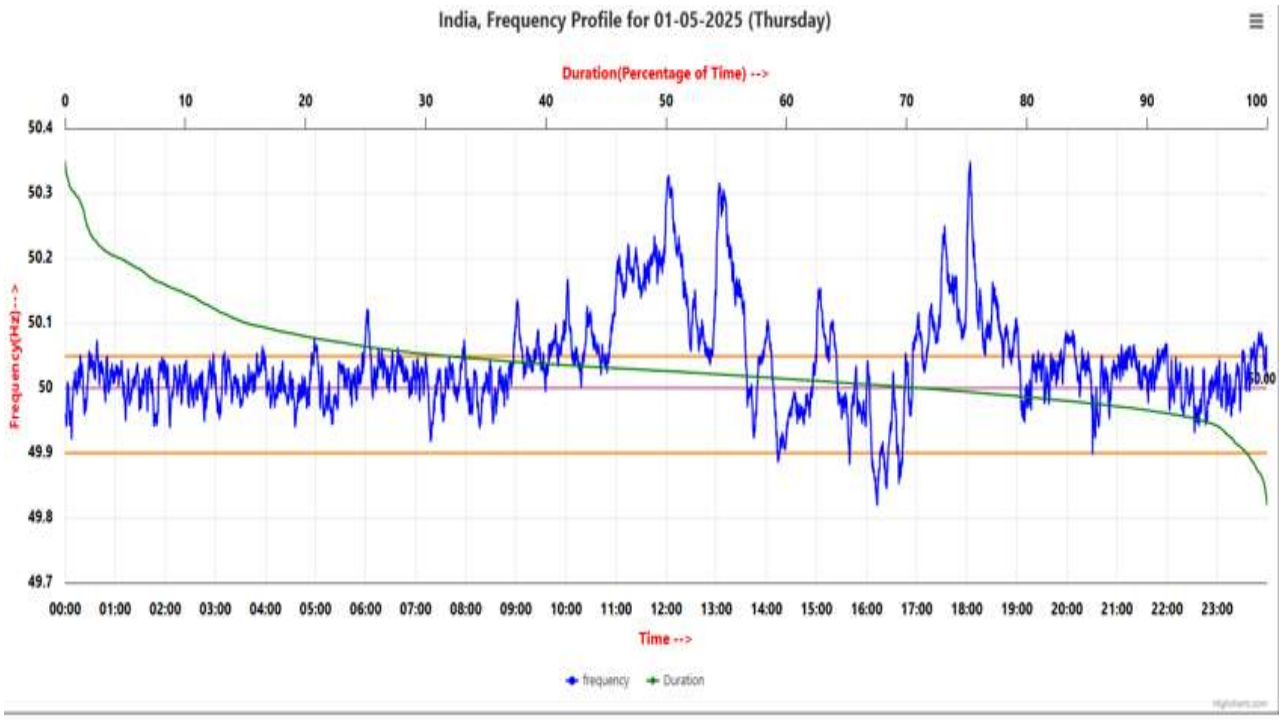
i) MTL schedule for central thermal generating stations should be ensured through SCUC/SCED. If SCED based MTL scheduling is not possible during any time block due to any reason, a mandatory obligation should be place on DISCOMs to schedule power such that the total schedule of a station meets at least the MTL

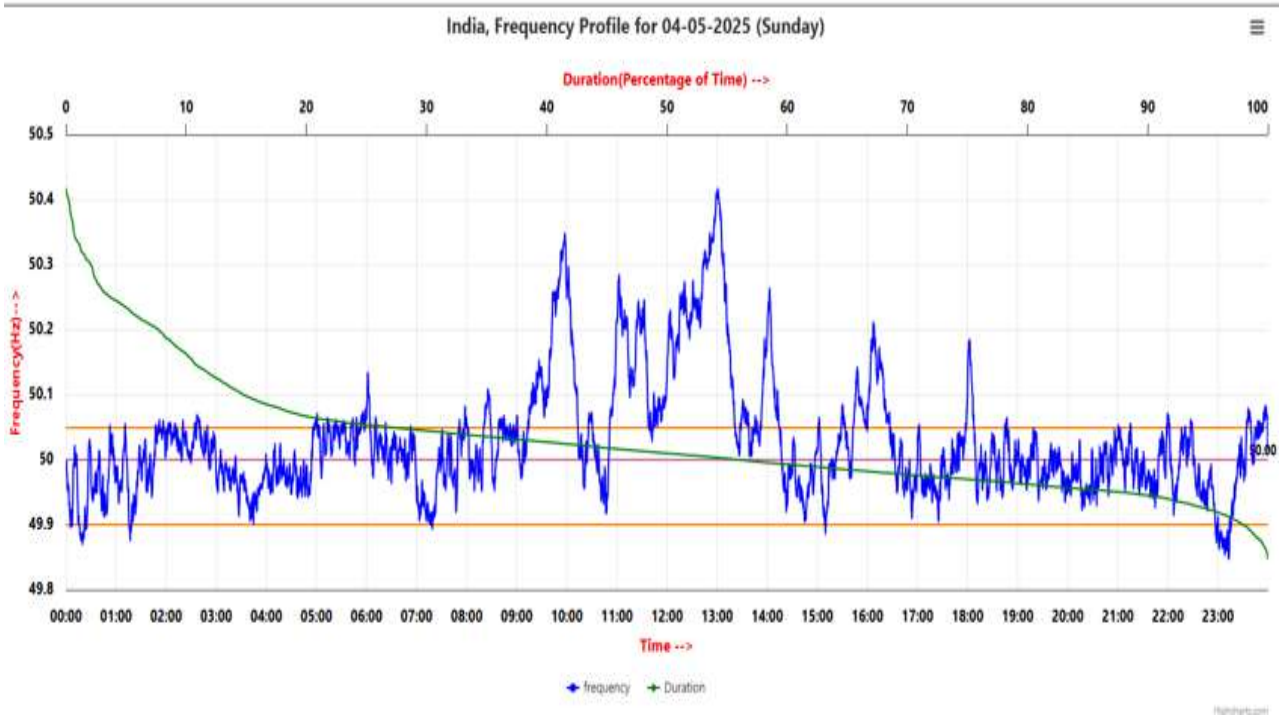
ii) For central stations with linked lignite mines, whose primary fuel cost is regulated under CERC Tariff Regulations, and which are not participating in SCED, the MTL schedule should be ensured through obligations in beneficiaries requisition. "

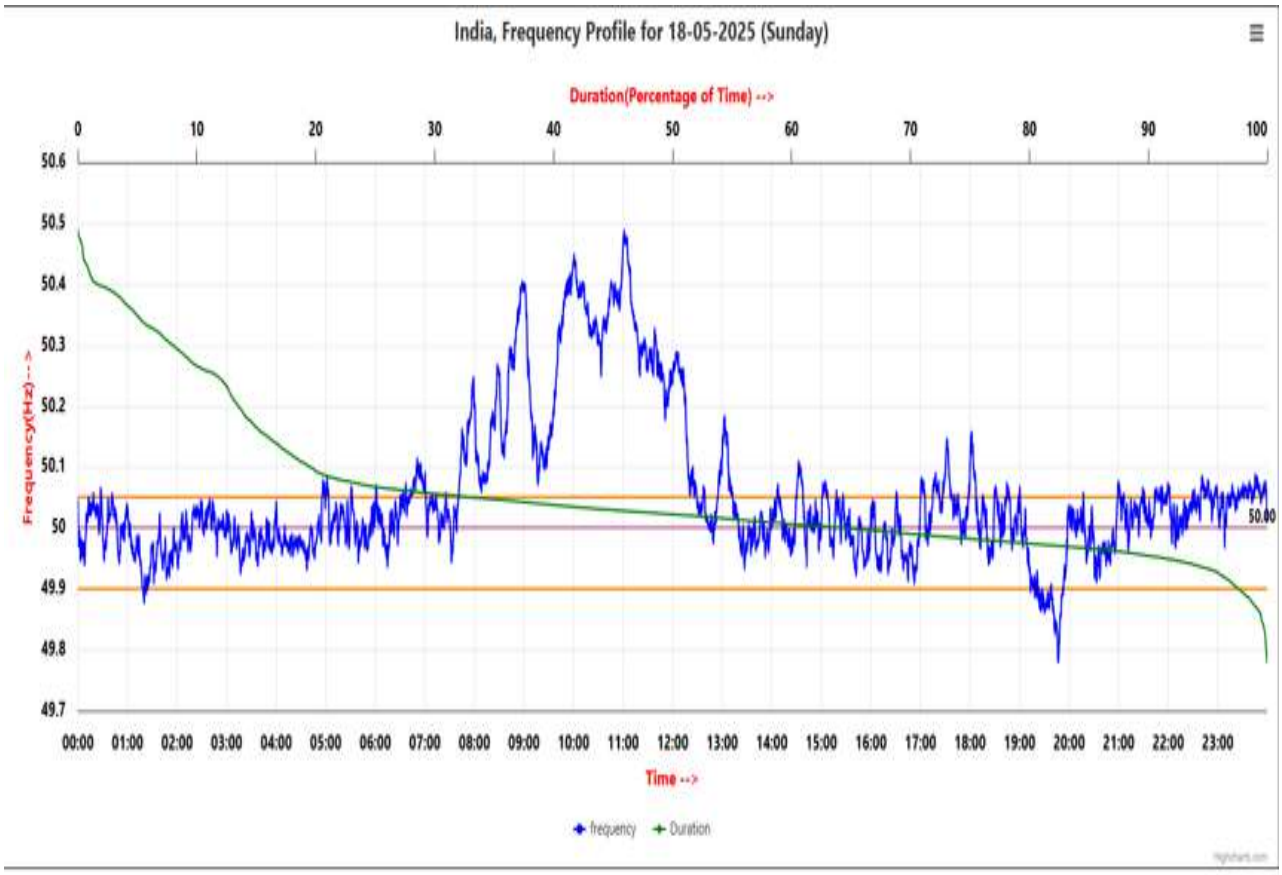
49. We have taken note of the occurrence of persistent high frequency during May 2025 and the duration of sustained frequency excursion above 50.05 Hz as under:

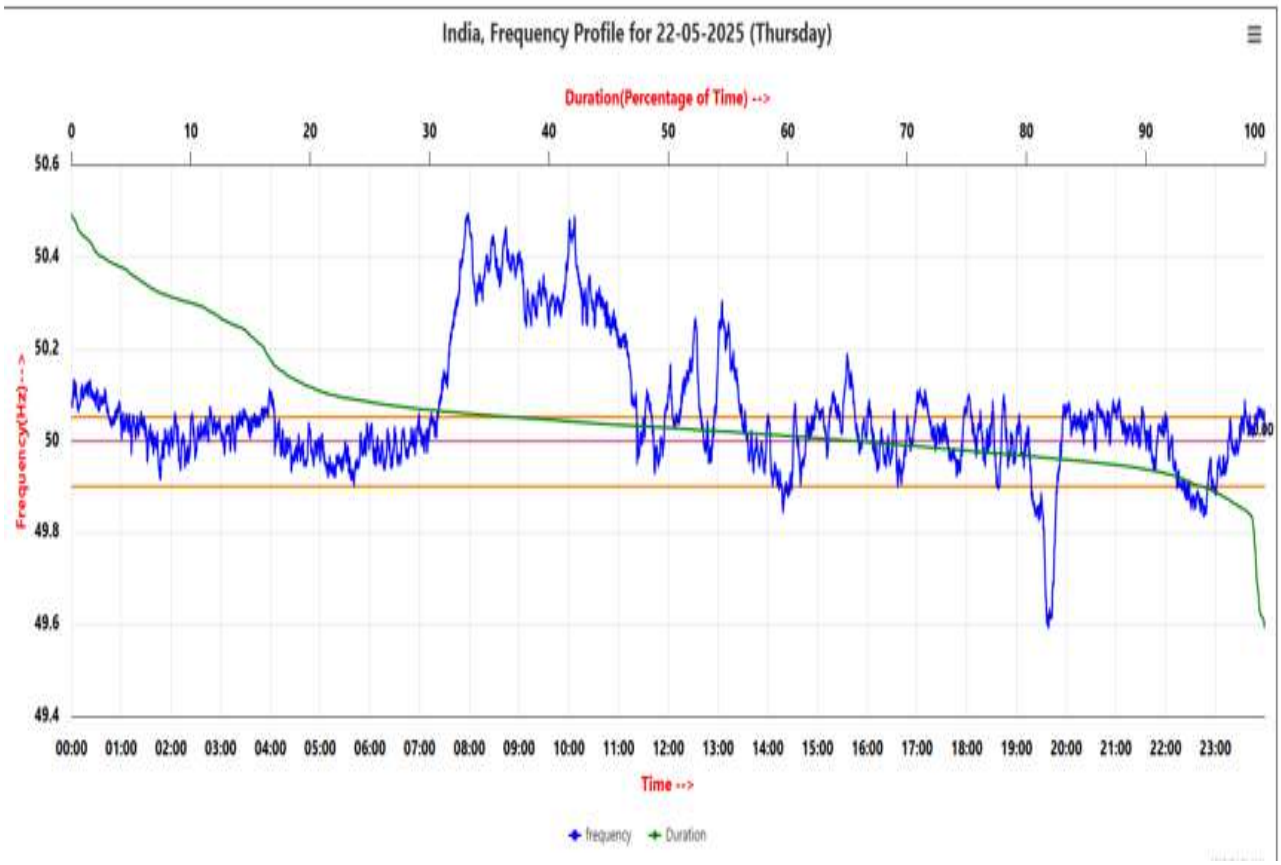


<49.7	<49.90	<49.97	49.7-49.8	49.8-49.9	49.9-50.0	50.0-50.1	50.1-50.2	49.90-50.05	49.7-50.2	49.97-50.03	50.05-50.1	>50	>50.03	>50.05	50.2	<49.95	49.95-50.05	49.90-49.95
0.0	1.54	19.32	0.0	1.54	35.93	47.3	7.25	68.07	92.01	37.38	14.36	62.53	43.3	29.59	7.99	10.43	50.98	8.89


India, Frequency Profile for 01-05-2025 (Thursday)
Duration(Percentage of Time) -->
Frequency(Hz) -->
Time -->
frequency
Duration

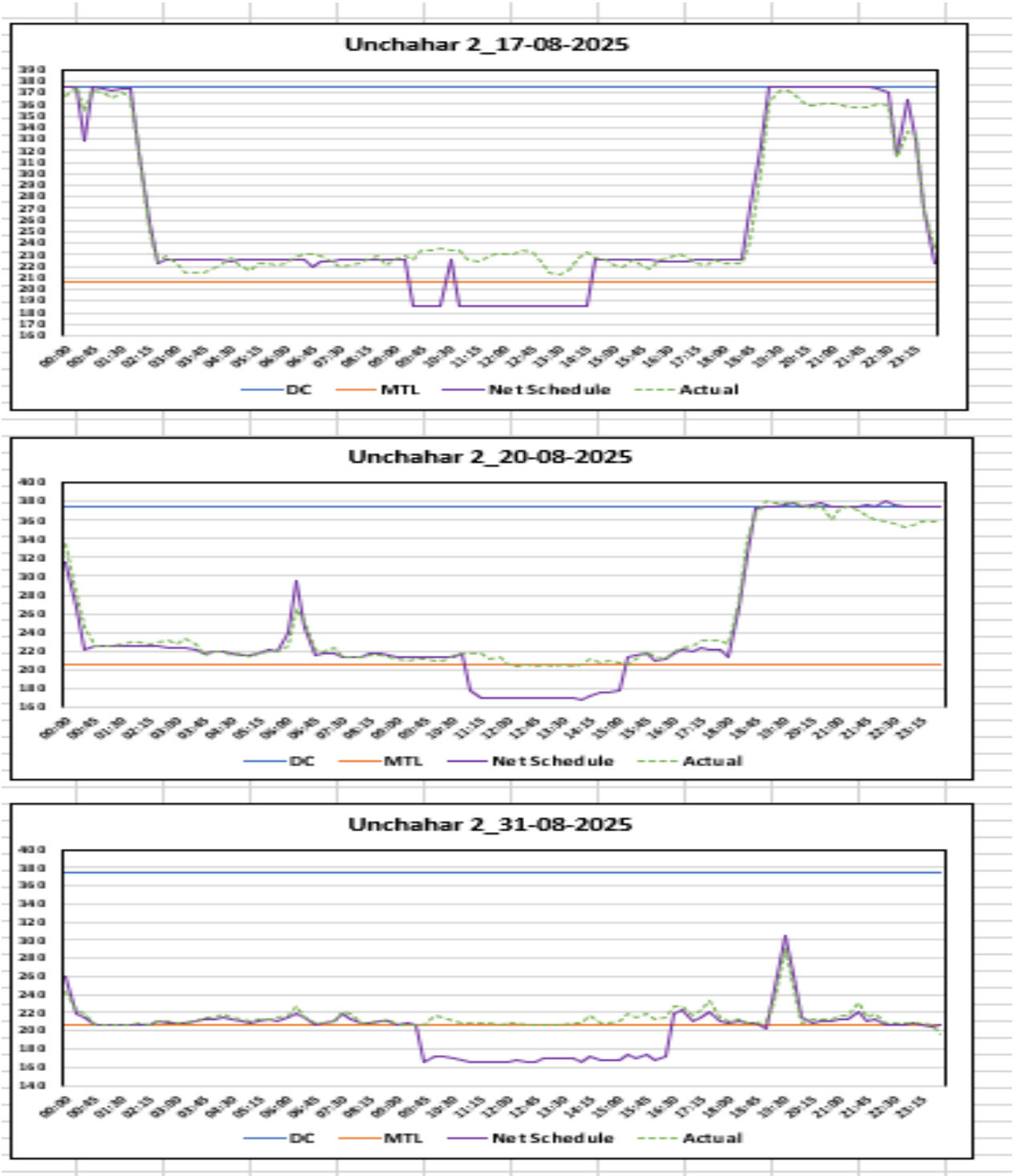

India, Frequency Profile for 04-05-2025 (Sunday)
Duration(Percentage of Time) -->
Frequency(Hz) -->
Time -->
frequency
Duration

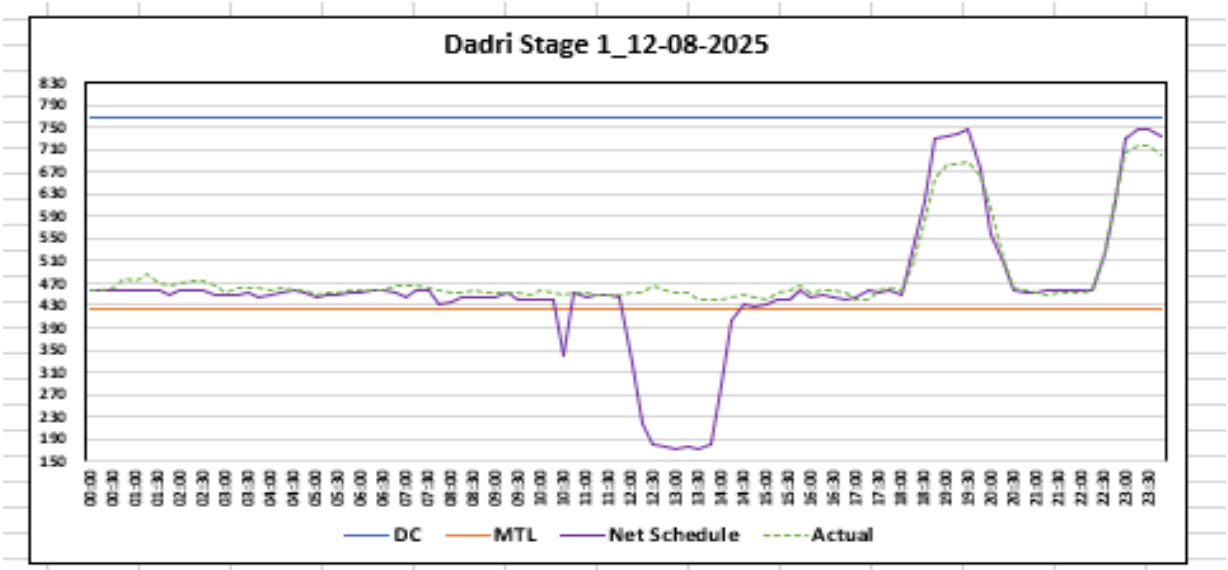


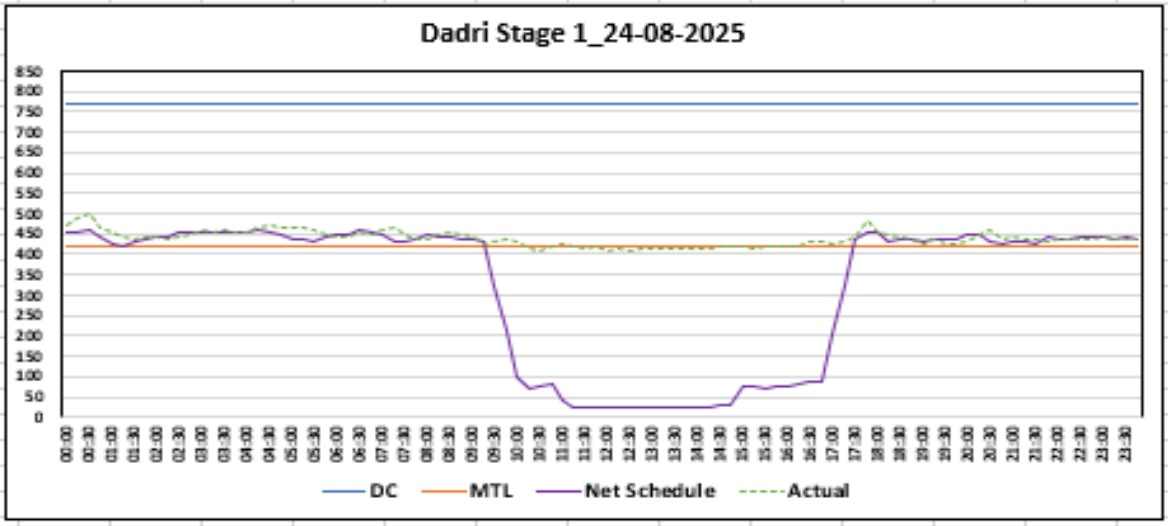


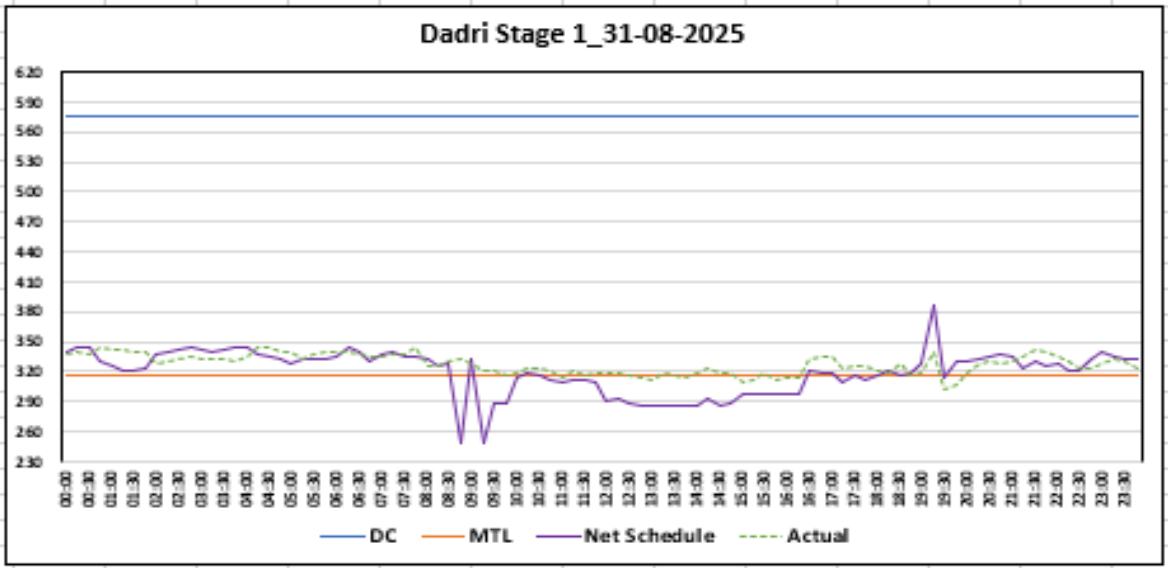
As per the above, it is observed that the frequency consistently remained high during solar hours.

50. We have observed the scheduling pattern and Actual generation for sample days for some generating stations for the month of August 2025 as under:





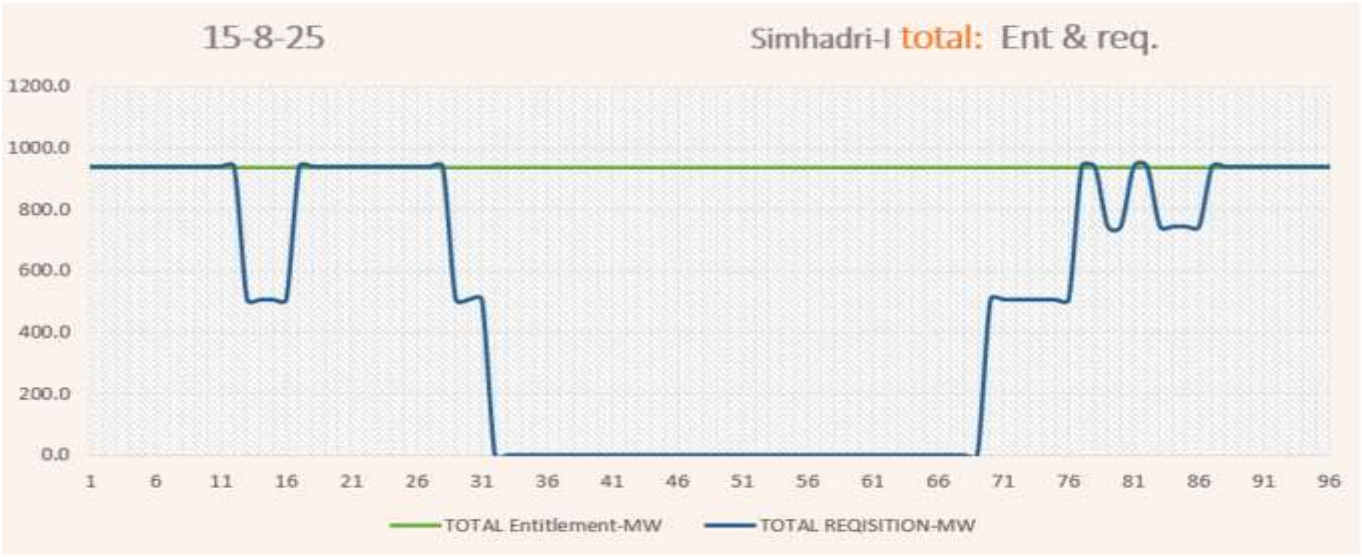


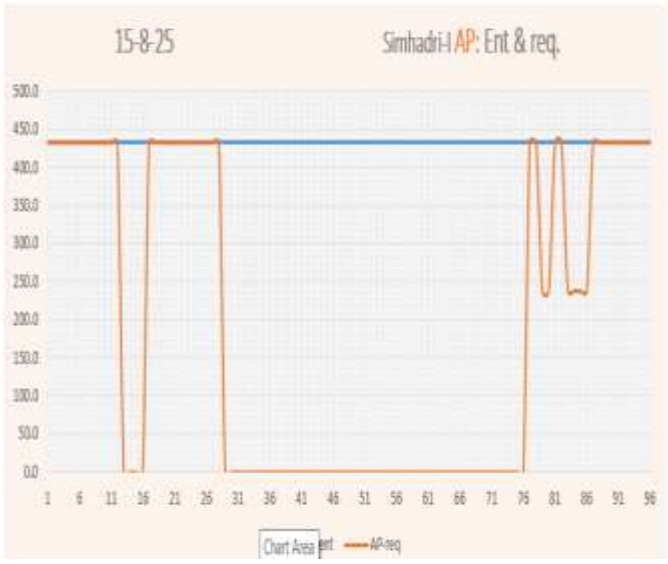


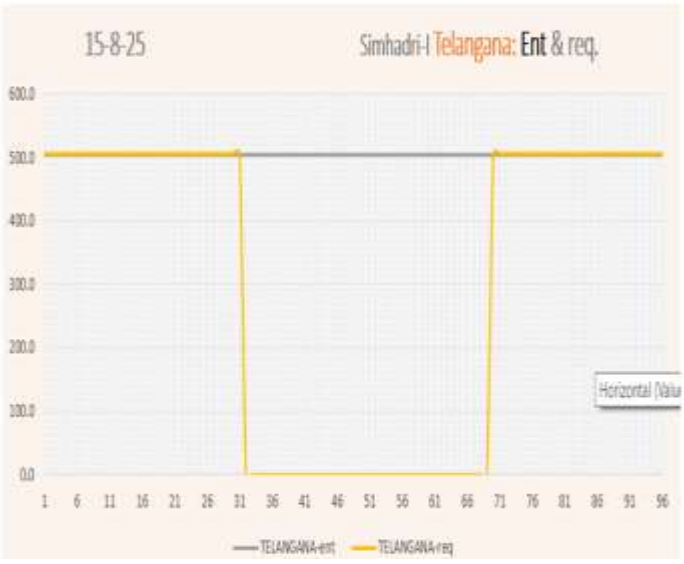
From the above-mentioned graphs, it is evident that the generating stations are getting scheduled much below MTL during solar hours and the schedules up to declared capacity (DC) in evening hours. Therefore, the generating station kept on over-injecting up to their MTL during solar hours so as to remain on bar and to ensure the availability

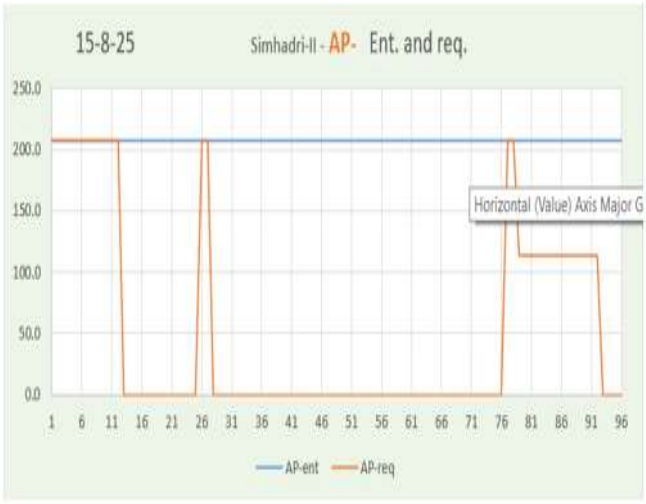
of the unit during evening hours to meet the schedules of beneficiaries during evening hours.

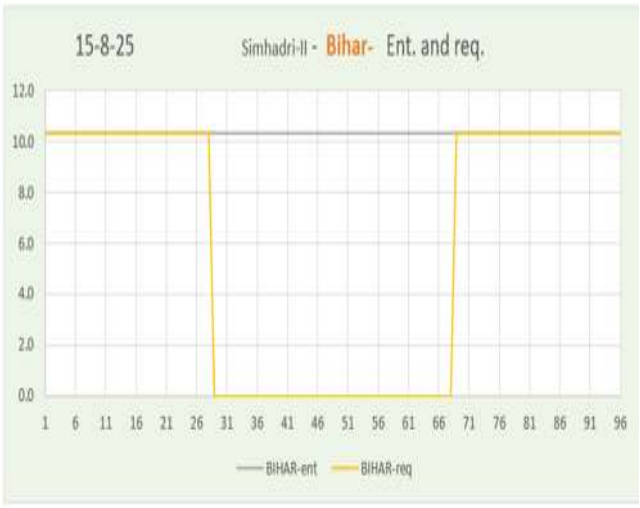
51. We have also taken note of the scheduling pattern by some of the states from ISGS as under:





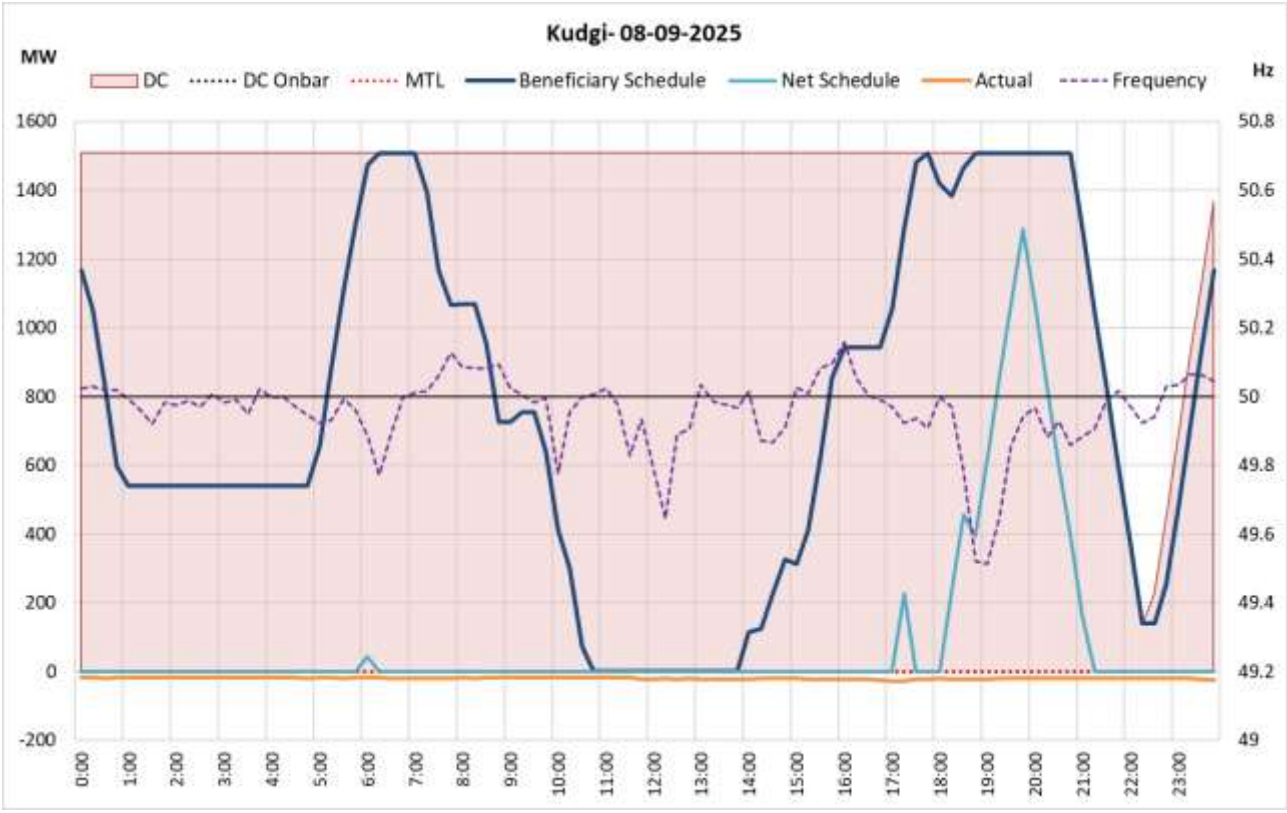






As per the above, it is observed that states are requisitioning zero power during solar hours and full entitlement during evening hours.

52. We have also perused the frequency graph for 8.9.2025, wherein the issue of MTL has led to low frequency during evening hours.



As per the above, the generating station is off bar, but the schedules have been punched against the DC, leading to underfrequency during evening peak hours, since the beneficiary continues to draw power from the grid based on the punched schedules when actual generation is not there.

53. The Commission vide Order dated 29.03.2025 in Petition No. 2/SM/2025 took note of the Grid-India's Report to the Commission on high-frequency operation on 4th, 11th, and 25th August 2024. Grid-India, in its report, submitted that persistent high-frequency operation was observed on the 4th, 11th, and 25th of August 2024 in India's power system, with frequency remaining above 50.05 Hz for around 26%, 33%, and 38% of the time during the day, respectively. The relevant extract is as under:

"7. CERC (Indian Electricity Grid Code) regulations, 2023 provide as follows:

"30. FREQUENCY CONTROL AND RESERVES

(1) The National Reference Frequency shall be 50.000 Hz and the allowable band of frequency shall be 49.900 - 50.050 Hz. The frequency shall be measured with a resolution of +/-0.001 Hz by NLDC, RLDCs and SLDC and such frequency data measured every second shall be archived by RLDCs.

(2) The NLDC, RLDC and SLDC shall endeavour that the grid frequency remains close to 50.000 Hz and in case frequency goes outside the allowable band, ensure that the frequency is restored within the allowable band of 49.900-50.050 Hz at the earliest.

(3) All users shall adhere to their schedule of injection or drawl, as the case may be, and

take such action as required under these regulations and as directed by NLDC or respective RLDCs or respective SLDCs so that the grid frequency is maintained and remains within the allowable band."

As per above, the National Reference Frequency is 50.000 Hz, and the allowable band of frequency is 49.900 Hz - 50.050 Hz. IEGC mandates that NLDC, RLDC, and SLDC shall endeavour that the grid frequency remains close to 50.000 Hz, and in case the frequency goes outside the allowable band, they shall ensure that the frequency is restored within the allowable band of 49.900 Hz - 50.050 Hz at the earliest. Accordingly, all users of the grid are required to maintain their drawl as per schedule to ensure frequency remains within the IEGC-specified band.

8. The overall issue of high frequency during the stated days can be broadly summarised due to (a) over-injection by thermal generators to maintain MTL injection (b) over-injection by solar sources (c) under-drawl by States (possibly due to high RE within the State or suppressed demand) (d) high hydro injection due to high inflows as pointed out by Grid India at Paragraph 2 of this Order. We have analysed the data for 25.08.2024 as a sample study in respect of ISGS thermal power plants, RE Generators, and drawl by the States as received from NLDC.

9. A summary of the detailed analysis on aspect of (a) over-injection by thermal generators to maintain MTL injection (b) over-injection by RE sources (c) under drawl by States, is as under:

…..

It is also observed that the Schedule during evening peak hours for abovesaid generating stations, which got scheduled below MTL during the solar hours, was much above MTL. Such schedule above MTL can be met by such generating stations only when they remain on bar."

As per above, the Commission observed that over-injection by thermal generators to maintain MTL injection is one of the reasons for high frequency.

54. The Commission vide Order dated 29.03.2025 in Petition No. 2/SM/2025 also took note of the issues of zero schedules during solar hours and full schedule during non-solar hours and noted as under:

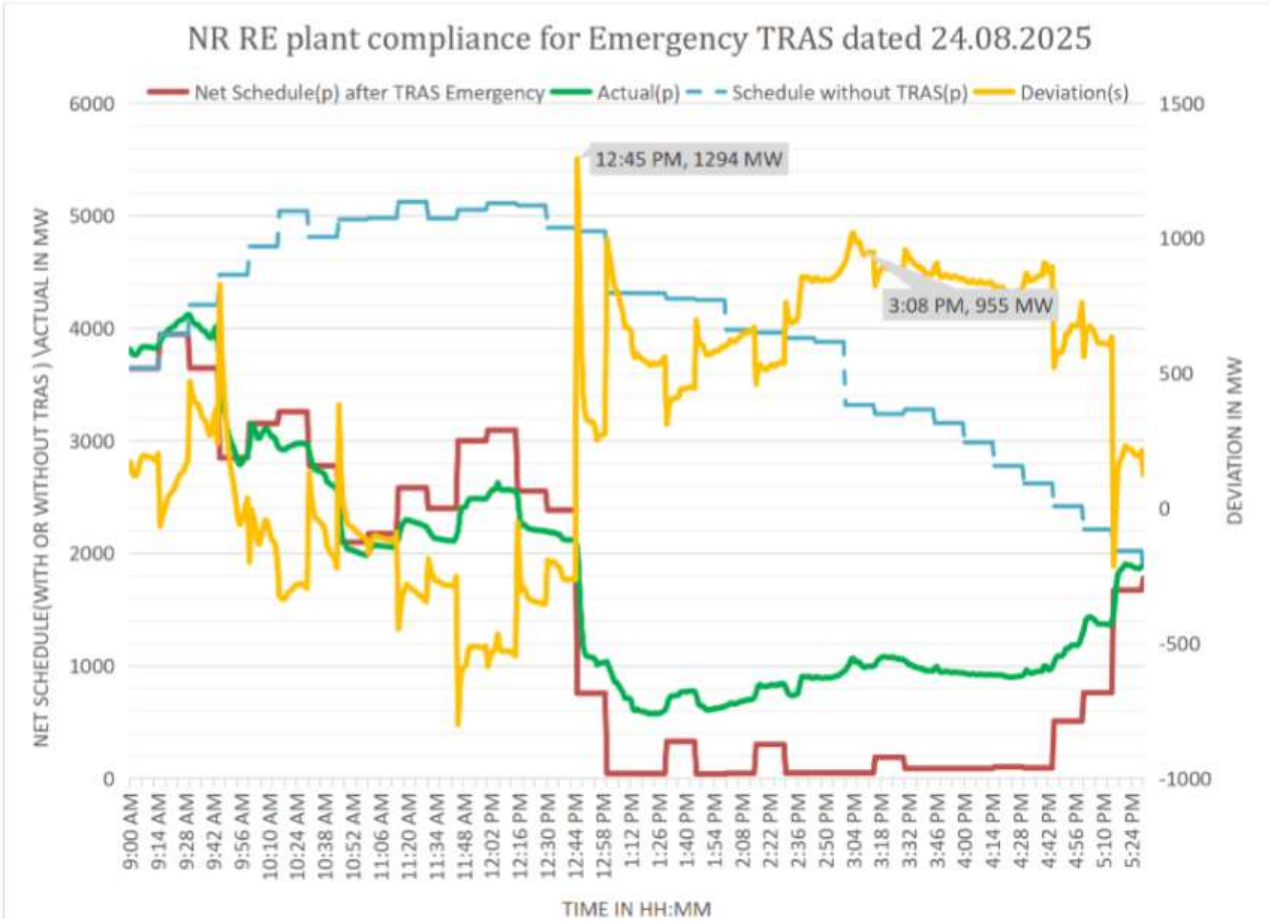
"14. We observe that there was continuous high frequency for hours on the stated days of 4.08.204, 11.08.2024, and 25.08.2024. The situation needs to be addressed keeping in view more additions of RE generation in the future, particularly solar generating stations which would inject power during solar hours and varying demand patterns during such hours. It can also be established that many of such thermal plants, which get scheduled below MTL during solar hours, are required to be On-bar to meet the evening peak. At the same time, distribution licensees are mandated to schedule power from REGS first, which may be one of the reasons for giving a schedule below MTL during solar hours.
……

16. We have considered the suggestions of Grid-India and we are of the considered view that in order to address the challenges being faced with meeting the demand during evening hours with thermal power and, at the same time, low demand for such power during solar hours, action is required to operationalise two shift operation for some of the thermal plants keeping in view technical feasibility and operational efficiency.
..
18. Although the standard specifications provide for two shifts, the thermal units have not

been operated in two-shift mode. Hence, there is a need to first operate some of the coal based thermal units on two shifts on a pilot basis to gain experience and address technical issues encountered during the course of such pilot operation. Accordingly, we direct that as a pilot project, regional entity thermal generating stations whose tariff is determined by this Commission under Section62 of the Act, to be operated in two-shift operations, shall be identified by NLDC in consultation with the owner of such thermal units and CEA. While identifying the units for such pilot, the experience of Tuticorin and Mettur as stated in Paragraph 15 of this Order shall be taken into account."

As per the above, it was directed to carry out a pilot for a two-shift operation; however, the same is yet to be finalised in consultation with the stated entities.

55. Grid India has highlighted the issue of over frequency during solar hours and the TRAS down being issued by Grid India to RE generators to maintain the frequency. We have perused the sample data for 24.08.2025, where there has been substantial over-injection by RE generators, which were issued TRAS down instructions as under:



We are of the view that once a generating station has been issued a TRAS down instruction that too even under emergency conditions, any over-injection by such a generating station would lead to a situation where the assessment of relief, which would be available after TRAS down, becomes challenging. Such a generating station should not over inject once TRAS down has been instructed to it.

56. We note that the Indian Electricity Grid Code 2023 defines the regulatory framework for secure, reliable and stable grid operation. NLDC, RLDCs, SLDCs, Generators and Distribution Companies (Discoms) play pivotal roles in maintaining grid security. The RLDCs are responsible for managing the grid at the regional level, ensuring that the grid's security is maintained within their respective regions. SLDCs are critical for managing the grid at the state level and ensuring that the local grid is secure and reliable. Further, the Generators are required to follow the generation schedules provided by RLDCs or SLDCs, ensuring that power generation aligns with grid requirements and demand forecasts, and in case of grid faults or disturbances, the generators are expected to quickly adjust their output or disconnect from the grid as per the instructions from RLDCs or SLDCs. Accordingly, it is the collective responsibility of NLDC, RLDCs, SLDCs, Generators and Distribution Companies (Discoms) to operate the grid in a secure and reliable manner. We note that it is important for buying entities, such as distribution companies, that if they need power in the peak evening hours, they should give operationally reasonable schedules to the generating station during peak hours, so that they can be operated in a reliable and secure manner.

57. We note that the persistent high frequency in the grid is a significant threat to the stability and security of an electrical grid. Sustained high frequency could potentially cause over voltages at certain nodes, damage equipment insulation, trigger protective relays to prevent damage, etc, which can lead to localised blackouts, voltage instability, or tripping of transmission lines. In worst-case scenarios, these frequent disruptions can cascade through the grid, causing large-scale outages and severe economic consequences.

58. We have considered the following aspects with regard to grid security:

(a) Imminent threat to the grid with high frequency leading to over-voltage and cascade tripping, and grid failure.

(b) High frequency during solar hours due to a lower than MTL schedule by beneficiaries during solar hours and consequent over-injection by thermal generators to be at MTL, since they are unable to keep the unit on bar without injecting up to MTL, to supply the power during evening hours.

(c) If a generating station with schedules below the Minimum Turndown level goes under Unit Shutdown, the injection schedule is still retained, and distribution

companies keep drawing power as per the corresponding drawal schedules. This leads to a threat to the grid due to low frequency since the generating station with the below MTL schedule for the day is not injecting power for the unit, which is off-bar.

59. We have perused the provisions of the 2023 Grid Code, which provides as under:

"47. UNIT SHUT DOWN (USD)

(1) *The generating stations or units thereof, identified by NLDC in co-ordination with RLDCs, as per sub-clause (c) of clause (4) of Regulation 46 of these regulations, but not brought on bar under SCUC, shall have the option to operate at a level below the minimum turn down level or to go under Unit Shut Down (USD).*

(2) In case a generating station, or unit thereof, opts to go under unit shut down (USD), the generating company owning such generating station or unit thereof shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD, by arranging supply either (a) by entering into a contract(s) covered under the Power Market Regulation; or (b) by arranging supply from any other generating station or unit thereof owned by such generating company subject to honouring of rights of the original beneficiaries of the said generating station or unit thereof from which supply is arranged; or (c) through SCED subject to the stipulation under sub-clause (a)(vi) of clause (2) of Regulation 49 of these regulations, the details of which shall be provided in the Detailed Procedure to be specified by NLDC in this regard."

As per the above, a generating station may opt to go under unit shutdown with the obligation to supply electricity to its beneficiaries.

60. Vide Order dated 30.09.2023 in Petition No. 14/SM/2023, the following was clarified:

"27. From the submissions of NTPC and Grid-India, it appears there is some confusion with respect to the requirement of obligation to supply in case of Unit Shutdown. In this regard, we clarify that the obligation to supply the electricity from alternate sources shall only be applicable in case the generating station retains its Declared Capacity. Under the 2010 Grid Code, there was a similar provision regarding "Reserve Shutdown" where the generating station was allowed to go under shutdown in case of requisition below the technical minimum, however, its DC was retained and it could bill fixed charges on beneficiaries. This provision has been done away with in Grid Code 2023 where a generating station opting to go under shutdown due to requisitions less than the minimum turndown level, and if it retains its DC, the beneficiary shall be entitled to fill its scheduling request irrespective of whether generating station is under USD or on bar. In such case generating station has the obligation to supply. If the generating station revises its DC if allowed as per Grid Code, the beneficiary cannot request for schedule and hence no obligation to supply is cast on the generating station. Irrespective of this clarification, the generating station shall comply with any requirement or obligation to supply in agreements entered into between the generating station and beneficiary, if any."

As per the above, it was clarified that, if the DC of the unit under USD is retained, it has the obligation to supply.

61. Considering the issues of grid security due to scheduling, we are of the view that there is a pressing need to address the issue of infeasible scheduling so as to maintain the integrity and security of the Grid. Further, considering the issues of grid security, we are of the considered view that the situation requires us to use our powers under Regulations 57 and 58 of the IEGC 2023 as under:

"57. POWER TO RELAX

The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an affected person to remove the hardship arising out of the operation of any of these regulations, applicable to a class of persons.

58.POWER TO REMOVE DIFFICULTY

If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, on its own motion or on an application made before it by the nodal agency, by order, make such provisions not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations."

62. CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024 ('DSM Regulations') provide as under:

"

11. Power to Relax
The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these regulations on its own motion or on an application made before it by the affected party.

12. Power to Remove Difficulty
If any difficulty arises in giving effect to these regulations, the Commission may on its own motion or on an application filed by any affected party, issue such practice directions as may be considered necessary in furtherance of the objective of these regulations."

We observe that RE generating stations/ WS sellers, which are issued TRAS down instructions, keep over-injecting during high frequency conditions, leading to lower relief than expected from such instructions. The over injection at such high frequency conditions is payable in terms of the DSM Regulations. There is a need to exercise powers under the above-quoted regulations of the DSM Regulations to ensure that there is no over injection in such imminent grid security conditions.

63. In light of the above discussions, we suggest as under:

(a) **Adequacy of Workforce in SLDCs:**

With the round-the-clock system operation, the State Load Despatch Centers are expected to contribute to Market Operation, Communication, IT services, cyber security and other establishment services to carry out the various functions with a suitably skilled workforce. There has been a dynamic shift in the power sector with the large-scale integration of renewable sources, and it brings new challenges. Furthermore, there should be a sufficient number of power system operators so that the grid can be operated safely and efficiently. Keeping in view of above facts, urgent action is required to ensure the availability of adequate number of manpower and for this SLDCs need to take up the matter with their management to provide the manpower as per their current sanctioned strength and also to approach their Management/ respective State Regulatory Commissions for approval of additional manpower in terms of MoP's Workforce Adequacy Guidelines for Load Despatch Centres. Addressing these shortfalls is essential for ensuring the smooth operation of SLDCs and effective monitoring, compliance and grid management.

SLDCs may also work towards framing a separate HR Management and Development Policy, which should be aimed at structuring the movement of officers in specialised functions without disrupting operations and ensuring smooth staffing, structured job rotation, minimum tenure and continuous skill development of personnel. SLDCs also need to work towards improving the working environment and upgrading their infrastructure. In this regard, the HR policy framed by UPSLDC may be referred to by SLDCs.

(b) **Training and Certification of SLDC staff**

The continuous training and certification for SLDC staff ensure that an adequate workforce is trained and certified annually, improving operational preparedness and technical competence of the SLDCs. It is suggested that the trained staff should ideally not be shifted from the SLDCs, and to attract the staff for working in SLDCs, incentive provisions can be incorporated for the certified staff under the Fee and Charges of the SLDCs.

RLDCs are directed to conduct structured capacity-building programs in collaboration with NLDC to equip SLDC personnel with the required technical skills.

(c) **Alignment of the State Grid Code with the Indian Electricity Grid Code**

It is observed that the incentive provisions are not aligned with the CERC Regulations; therefore, the intra-state generators are reluctant to participate in AGC and part-load operation of thermal generating units. The Commission has notified the new Grid Code, which contains various provisions with respect to AGC, Reserve requirements and part-load compensation for thermal generating stations. The state SERCs may align their respective State Grid Code with the 2023 Grid Code of CERC expeditiously.

In light of increasing penetration of RE, there is an immediate need for SLDCs to ensure that RE-generating stations comply with CEA Technical Standards prior to getting integrated with the grid. HVRT, LVRT and reactive compliances should be ensured, particularly prior to allowing the RE generating station to connect to the State system, by SLDC. There is a need to monitor the primary response provided by the intra-state generating stations by SLDCs, as is being done by RLDCs for regional entities under the Grid Code, to ensure that adequate primary response is available.

(d) **Backing down of intra-state thermal generating units**

Some of the state generating stations with a total capacity of 29,364 MW are not able to achieve the MTL of 55% due to commercial as well as technical reasons. It is suggested that the States' generators may have interactive sessions with ISGS to troubleshoot the issues, where older units of 210 MW are able to operate at an MTL of 55%. State Generators may also visit the older generating stations of ISGS, like NTPC and others. Enablement of backing down of all thermal generating units till MTL of 55% shall result in availability of additional down reserves. The States should also come up with a part-load compensation mechanism for thermal power plants and also explore the possibilities for the two-shift operation of the thermal generating stations, keeping in view the large RE integration in the country.

(e) **Enablement of AGC in intra-state generating stations:**

SLDCs need to impress the generators to enable AGC in intra-state generating stations. SERCs should also make suitable provisions for incentives under State Regulations in line with provisions under CERC Regulations. Adoption of AGC would offer dual benefits—generators would be able to earn revenue from AGC operations, while states would be able to maintain reserves within their own boundaries. Furthermore, till the enablement of AGC provisions in the State, the State generators can also participate in Central SRAS.

(f) **Maintaining adequate Reserves:**

It is noted that no state is actually maintaining reserves, and even in cases where states claim to have reserves, these are scheduled during peak hours, defeating the very purpose. It was informed that from 1st April 2026, NLDC will begin maintaining reserves on a state-wise basis; however, this could prove costly for states, as NLDC may need to maintain reserves in costlier gas-based plants. Hence, states are urged to maintain their own reserves. States are required to meet the expected demand as well as keep the necessary reserve so that any load loss may not occur in case of any contingency.

(g) **Two Shift Operation of thermal generating stations:**

With the increasing integration of renewable energy in the country, the states should also work towards enabling two-shift operation of intra-state thermal generating stations to ensure better flexibility and grid reliability.

(h) **Cybersecurity preparedness**

Cybersecurity is a major focus area in the power sector due to the critical nature of electricity infrastructure and the growing sophistication of cyber threats. As power grids become increasingly digitised, interconnected, and decentralised, they are more vulnerable to cyberattacks that can cause widespread blackouts, economic damage, and public safety issues.

State SLDCs do not have adequate manpower in the area of Cyber Security. With the growing concern of cyber threats, an adequate number of staff need to be deployed, and adequate staff should be mandatorily trained in this area.

(i) **Implementation of the SAMAST (Scheduling, Accounting, Metering, and Settlement of Transactions) Scheme**

The SAMAST report provides a roadmap for implementing a robust, scalable and dispute-free scheduling, metering, energy accounting and settlement system in the states. The report outlines the basic framework and governance structure of SAMAST, including information technology (IT) infrastructure and human resources required for market operations functions discharged by the SLDCs. Visibility of data is the first step in ensuring grid security, and SAMAST implementation is the key to this visibility. Implementation of the SAMAST, where the scheme is in its initial stage/not yet implemented, the scheme needs to be awarded and implemented in a period not exceeding one year after the award.

(j) In light of critical grid security issues and in exercise of the powers conferred under Regulation 57 and Regulation 58 of the Grid Code, and the powers conferred under Regulation 11 and Regulation 12 of the DSM Regulations, the Commission directs the following interim measures:

(i) A generating station which gets a schedule below 50% of MCR for some or all time block (s) of 'D' day on 'D-1' day (after sale of un-requisitioned surplus in day ahead market under Regulation 49(1)(l) of the Grid Code), and which is not committed under SCUC (list declared at 1500 hrs of 'D-1' day), shall be eligible to take its generating station or unit thereof under Unit Shutdown (USD), with off-bar DC, as per following:

(a) Such a generating station should endeavour to plan as far as possible the USD in such a manner that the maximum number of units are kept on bar, keeping in view the economy and efficiency of the units of the generating station. When the machine is going under USD:

i. In case the total requisitioned power can be supplied through other units in the same generating station on bar, the generator shall be scheduled according to the requisitions received.
ii. In case total requisitioned power cannot be supplied through other units in the same generating station on bar, the requisition from the beneficiaries shall be reduced in the ratio of requisitioned power.
iii. In the special case of a generating station where the only running machine is going under USD, the beneficiaries who have requisitioned power will not get any power from that generating station.

(b) By 1800 hrs of 'D-1' day, such generating station shall inform RLDC and beneficiaries proposing the unit(s) to be taken under USD. In case beneficiaries wish to retain proposed unit(s) of such a generating station to continue running on-bar, the beneficiaries may revise the schedules by 1900 hrs of 'D-1' day, to ensure at least 50% of MCR for all time blocks of the day.

(c) Such a generating station which gets a schedule below 50% of MCR for some or all time blocks of the day and not committed under SCUC may declare unit(s) going under USD by 2000 hrs of the 'D-1' day.

(d) Once a generator declares to take unit(s) under USD, such generating station shall revise the On-Bar DC (with due consideration to ramp up/down capability) and off-bar DC. The beneficiaries shall continue to bear the capacity charge corresponding to Total DC, including off-bar DC. The schedules for the day of scheduling 'D' day shall only correspond to on-bar unit(s).

(e) In case the generating station decides not to take unit(s) under USD under this provision, despite getting a schedule below 50% of MCR for some or all time block(s) in a day, the requisitioned schedules shall not undergo any change under sub-clause (a) of this clause.

(ii) A generating station which is under USD with off-bar DC under subclause(i) of this Paragraph, shall be revived if beneficiaries and/or the system operator give a schedule at or above MTL, as per the modalities of the Detailed Procedure of SCUC dated 16.4.2024. Such unit(s) shall be required to come on bar as per the startup time provided in said SCUC procedure. In case the generating station is unable to come on-bar within the stipulated time, the unit shall be considered as under forced outage for the purpose of DC, i.e. off-bar DC shall not be considered for such period till the generating station comes on bar. The same treatment shall be for the units committed under SCUC.

(iii) Based on changing grid situations, Grid-India may run SCUC at any time of the day to commit or decommit a unit for managing the grid security. In case of de-committing a unit or station thereof, the schedules of such station or unit shall be adjusted as per the Procedure under Annexure-I of Order dated 25.3.2025 in Petition No. 2/SM/2025.

(iv) The generating stations shall not be permitted to declare Peak hours DC less than off-peak hours DC, other than in cases of forced outage or partial outage. Grid India shall strictly monitor the same. In case a generating station provides less DC

during peak hours of the day than off-peak hours, the DC for such generating station for the purpose of fixed charges shall be taken as the lower of the two.

(v) When the system frequency, f > 50.05 Hz, and directions are given under TRAS Emergency, the charges for deviation of scheduled power by way of over injection for the WS seller shall be zero. In such a situation, DSM charges for over injection shall be zero.

64. We direct that the directions issued under Paragraph No. 63(j) are interim measures to ensure grid security and shall be followed by due process of amendment to the relevant regulations. The directions under Paragraph 63(j) shall come into force from 10.10.2025 and shall continue to be in force until the issuance of appropriate amendments, after which the provisions of the amendments shall prevail. All other directions under the instant Order shall come into effect on the date of issuance of the Order.

65. We have also perused Regulation 45 (12) of the 2023 Grid Code as below:

"(12) Minimum turndown level for regional entity thermal generating stations:

The minimum turndown level for operation in respect of a unit of a regional entity thermal generating station shall be 55% of the MCR of the said unit or such other minimum power level as specified in the CEA (Flexible Operation of coal based Thermal Generating Units) Regulations, 2023, as amended from time to time, whichever is lower:

……."

66. Further, CEA (Flexible Operation of Coal-based Thermal Power Generating Units) Regulations, 2023 provide as under:

"The coal based thermal power generating units shall have flexible operation capability with minimum power level of forty percent.

Provided that the generating units which are not capable of achieving minimum power level of fifty-five percent, shall achieve the same within one year of the notification of these regulations.

Provided further that the generating units which are not capable of achieving minimum power level of forty percent, shall achieve the same as per phasing plan mentioned in the sub-regulation (2) of regulation 5 of these regulations."

As required by the above, CEA has notified the phasing plan for the implementation of the flexible operation of the coal-based thermal generating Units on 15th December 2023. We are of the view that the Minimum Turndown Level of 40% is the ultimate aim

which can be achieved in a gradual manner. Grid India should implement this in consultation with the CEA and the generating stations at the earliest.

67. Petition No. 9/SM/2024 may be listed for hearing, as and when required, keeping in view operational planning or any related grid security issues.

sd/-	**sd/-**	**sd/-**	**sd/-**
(Ravinder Singh Dhillon)	**(Harish Dudani)**	**(Ramesh Babu V.)**	**(Jishnu Barua)**
Member	**Member**	**Member**	**Chairperson**

231st NERPC OCC Agenda on SCUC

10.10.2025

Grid security measures taken on 02.10.2025

- AGTPP Agartala and AGBPP Kathalguri were not provided MTL schedule by their beneficiaries on all days in September and October.
  - SCUC Yes was provided on 28 days out of 32 days factoring the system reserve requirement.
- On 02.10.2025, due to reduced all India demand and persistent high grid frequency, several power plants advised to go off-bar to maintain **grid security** in line with clause 6.14.5 of the CERC approved Detailed Procedure -

"The selected units would be scrutinized by the NLDC for plausibility checks, and the list would be finalized based on up-to-date information, practical considerations due to exigencies, extreme weather conditions, and other situations impacting grid security. "

- CERC informed vide multiple representations regarding persistent high frequency and interventions by Grid-India for safe and reliable grid operation
  - CERC order 09/SM/2025 dated 05.10.2025 further reinforced system balancing measures for maintaining grid-security

"Based on changing grid situations, Grid-India may run SCUC at any time of the day to commit or decommit a unit for managing the grid security…."

 # In view of anticipated heavy congestion in SR export and reduced all India demand factoring the extended weekend, one unit of Kudgi(800MW) & one unit of Ramagundam Stage1&2 (500MW) shall be taken off bar on 02/10/2025 by 0300hrs. The remaining one unit of Kudgi will be provided SCUC support only after first unit is taken off bar. Ramagundam Stage 1 &2 will be provided SCUC after it take out its one unit of 500MW. Kudgi is not eligible to get SCED_MTL support since it does not fulfill the criteria of MTL schedule for minimum 8 time blocks during peak hours.

$ In view of reduced all India demand and persistent high grid frequency, SCUC has been re-run for the date 02-Oct-2025. AS per the revised list, one unit of Solapur (660 MW), two units of Dadri Stage-1 (2x210 MW), one unit of Jhajjar (500 MW), one unit of NTPL (500 MW) & one unit of Khargone (500MW) shall be taken off bar immediately. The remaining units of these stations will be provided SCUC support only after the indicated units are taken off bar. Dadri Stage-2, AGTPP Agartala and AGBPP Kathalguri received NO in the revised list.

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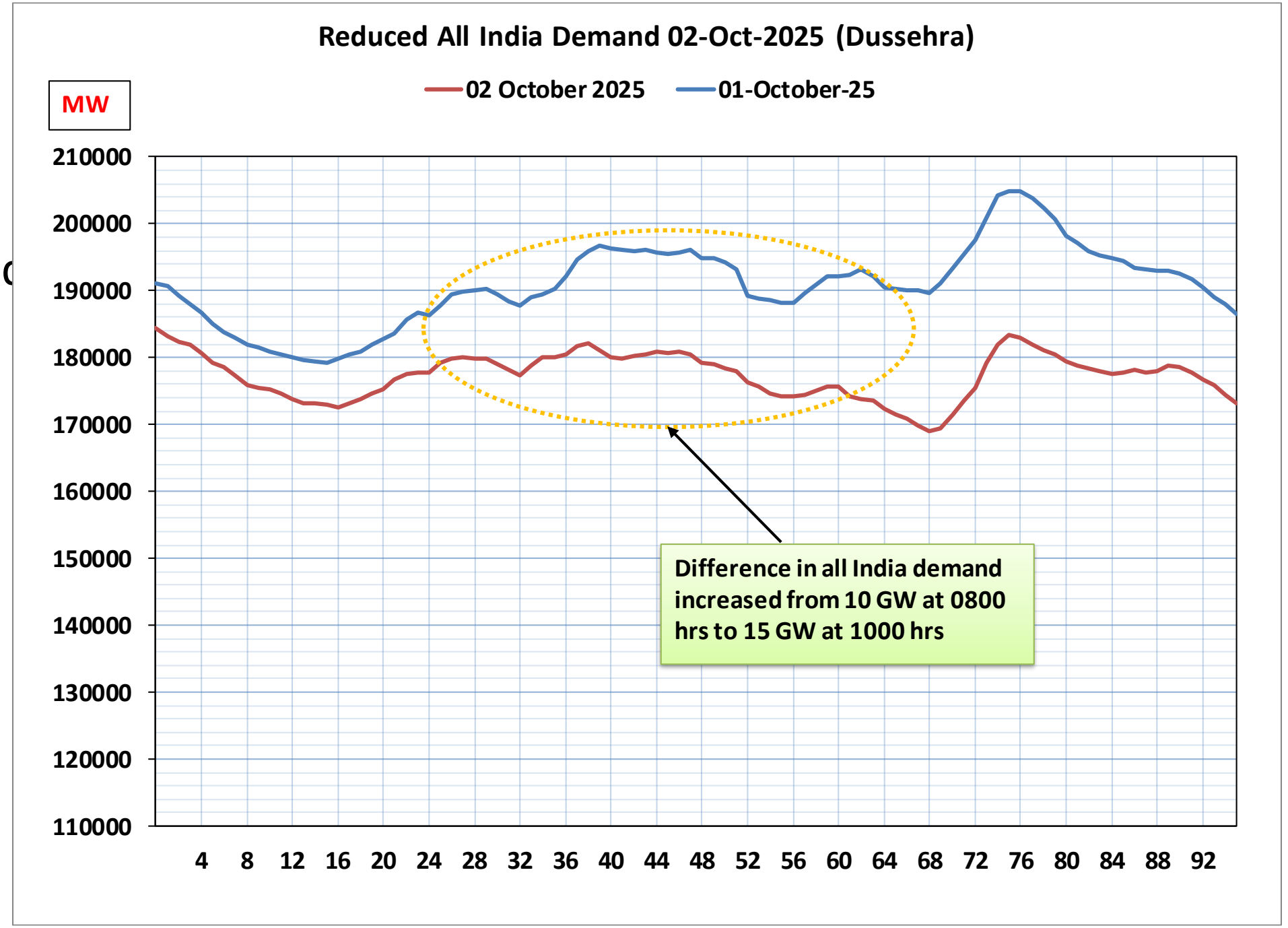
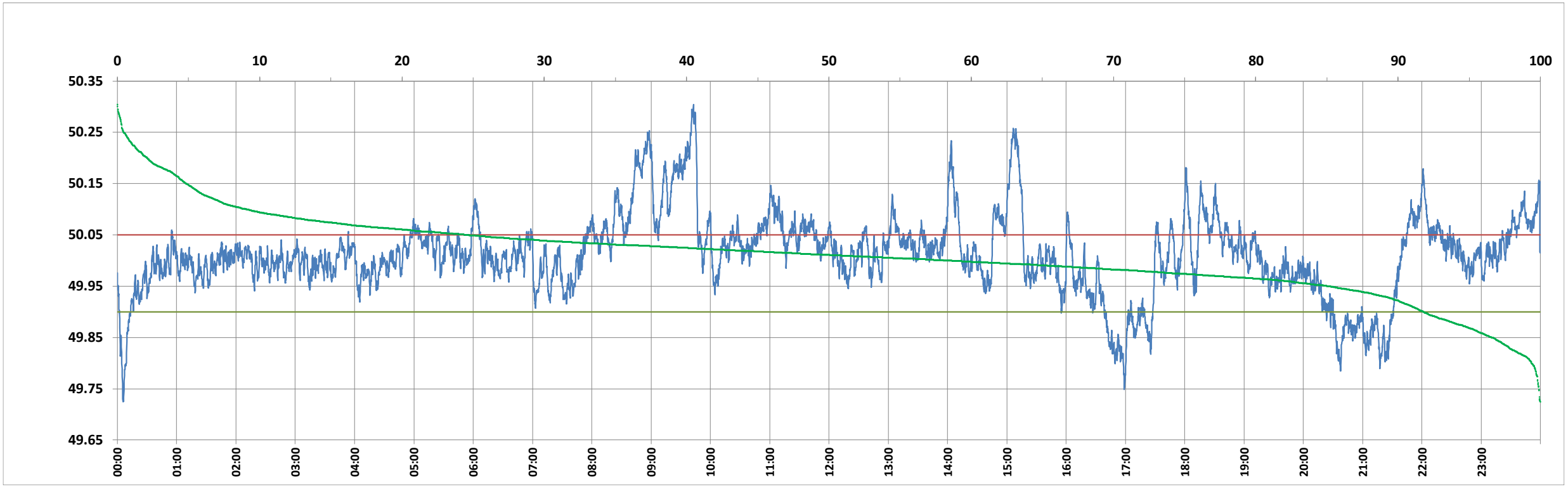
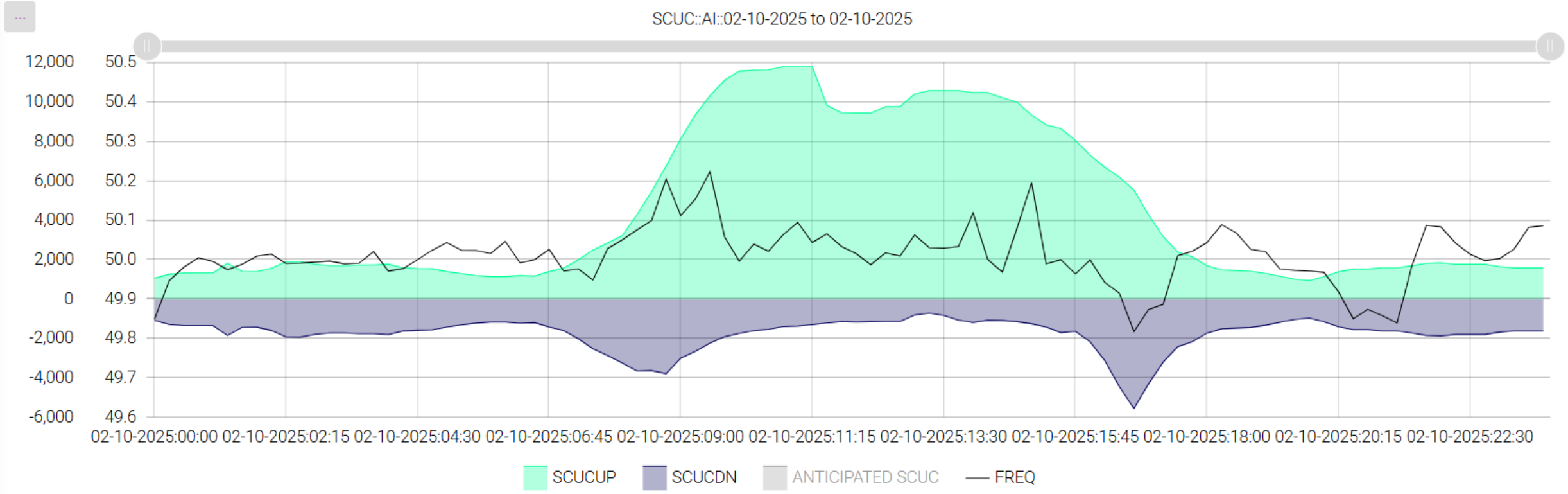

Reduced All India Demand 02-Oct-2025 (Dussehra)
02 October 2025
01-October-25
MW
210000
200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
4
8
12
16
20
24
28
32
36
40
44
48
52
56
60
64
68
72
76
80
84
88
92
Difference in all India demand increased from 10 GW at 0800 hrs to 15 GW at 1000 hrs

Grid Frequency Profile – 02-Oct-2025



Deficit in system down reserves



Thank You