



सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

विषय: उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 236^{वीं} बैठक का कार्यवृत्त ।

Subject: Minutes of the 236th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 236^{वीं} बैठक दिनांक 16.10.2025 को आयोजित की गयी थी। उक्त बैठक का कार्यवृत्त उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट <http://164.100.60.165> पर उपलब्ध है। यदि कार्यवृत्त पर कोई टिप्पणी हो तो कार्यवृत्त जारी करने के एक सप्ताह के अन्दर इस कार्यालय को भेजें ।

The 236th meeting of the Operation Co-ordination Sub-Committee (OCC) of NRPC was held on 16.10.2025. The Minutes of this meeting has been uploaded on the NRPC website <http://164.100.60.165>. Any comments on the minutes may kindly be submitted within a week of issuance of the minutes.

संलग्नक: यथोपरि।

Signed by Dharmendra
Kumar Meena
Date: 08-11-2025 22:39:19

(डी. के. मीना)

अधीक्षण अभियंता (प्रचालन)

सेवा में,

उ.क्षे.वि.स. के प्रचालन समन्वय उप-समिति के सभी सदस्य

List of addressee (via mail)

OCC Members for FY 2025-26			
S. No	OCC Member	Category	E-mail
1	NLDC	National Load Despatch Centre	nomination awaited (susha@grid-india.in)
2	NRLDC	Northern Regional Load Despatch Centre	somara.lakra@grid-india.in
3	CTUIL	Central Transmission Utility	sandeepk@powergrid.in
4	PGCIL	Central Government owned Transmission Company	rtamc.nr1@powergrid.in rtamcjammu@powergrid.in cpcc.nr3@powergrid.in
5	NTPC	Central Generating Company	RAMESHSINGH@NTPC.CO.IN
6	BBMB		powerc@bbmb.nic.in
7	THDC		ravindrasrana@thdc.co.in
8	SJVN		sjvn.cso@sjvn.nic.in
9	NHPC		surendramishra@nhpc.nic.in
10	NPCIL		df@npcil.co.in
11	Delhi SLDC	State Load Despatch Centre	gmsldc@delhisldc.org
12	Haryana SLDC		cesocomml@hvpn.org.in
13	Rajasthan SLDC		ce.ld@rvpn.co.in
14	Uttar Pradesh SLDC		ceps@upslc.org
15	Uttarakhand SLDC		se_sldc@ptcul.org
16	Punjab SLDC		ce-sldc@pstcl.org
17	Himachal Pradesh SLDC		cehpsldc@gmail.com
18	DTL	State Transmission Utility	bl.gujar@dtl.gov.in
19	HVPNL		cetspkl@hvpn.org.in
20	RRVNL		ce.ppm@rvpn.co.in
21	UPPTCL		smart.saxena@gmail.com
22	PTCUL		ce_oandmk@ptcul.org
23	PSTCL		ce-tl@pstcl.org
24	HPPTCL		gmprojects.tcl@hpmail.in
25	IPGCL	State Generating Company	ncsharma@ipgcl-ppcl.nic.in
26	HPGCL		seom2.rgtp@hpgcl.org.in
27	RRVUNL		ce.ppmcit@rrvun.com
28	UPRVUNL		cgm.to@uprvunl.org
29	UJVNL		gm_engg_ujvn@yahoo.co.in
30	HPPCL		gm_generation@hppcl.in
31	PSPCL	State Generating Company & State	ce-ppr@pspcl.in

		owned Distribution Company	
32	DHBVN	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	(cecommercial@dhbvn.org.in)
33	Ajmer Vidyut Vitran Nigam Ltd.		nomination awaited (md.avvnl@rajasthan.gov.in)
34	Purvanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (mdpurvanchalvnl@gmail.com)
35	UPCL		cgmupcl@yahoo.com
36	HPSEB		cesysophpsebl@gmail.com
37	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	sanjay.bhargava@tatapower.com
38	Aravali Power Company Pvt. Ltd		amit.hooda01@apcpl.co.in
39	Apraave Energy Ltd.,		rajneesh.setia@apraava.com
40	Talwandi Sabo Power Ltd.		ravinder.thakur@vedanta.co.in
41	Nabha Power Limited		Durvish.Yadav@larsentoubro.com
42	MEIL Anpara Energy Limited		arun.tholia@meilanparapower.com
43	Rosa Power Supply Company Ltd		Suvendu.Dey@relianceada.com
44	Lalitpur Power Generation Company Ltd		avinashkumar.ltp@lpgcl.com
45	MEJA Urja Nigam Ltd.		rsjuneja@ntpc.co.in
46	Adani Power Rajasthan Limited		manoj.taunk@adani.com
47	JSW Energy Ltd. (KWHEP)		roshan.zipta@jsw.in
48	Transition Cleantech Services Private Limited	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	nomination awaited (kswamidoss@evrenenergy.com)
49	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the	sojpdd@gmail.com
50	UT of Ladakh		cepdladakh@gmail.com
51	UT of Chandigarh		seelo-chd@nic.in

		entities engaged in generation/ transmission/	
52	Tata Power Delhi Distribution Limited	Private Distribution Company in region (alphabetical rotational basis)	nomination awaited (sandeep.k@tatapower-ddl.com)
53	Gurgaon Palwal Transmission Limited	Private transmission licensee (nominated by central govt.)	nomination awaited (samriddhi.gogoi@indigrid.com)
54	PTC India Limited	Electricity Trader (nominated by central govt.)	nomination awaited (bibhuti.prakash@ptcindia.com)

Contents

A.1. Confirmation of Minutes.....	7
A.2. Status of action taken on decisions of 235 th OCC meeting of NRPC.....	7
A.3. Review of Grid operations of September 2025.....	7
A.4. Maintenance Programme of Generating units and Transmission Lines.....	8
A.5. Anticipated Power Supply Position in Northern Region for November 2025.....	8
A.6. Follow-up of issues from various OCC Meetings - Status update.....	10
A.7. NR Islanding scheme.....	10
A.8. Coal Supply Position of Thermal Plants in Northern Region.....	11
A.9. Periodic Testing of generators and FACTS/HVDC Devices (Agenda by NRPC Sectt.)	12
A.10. Implementation of AUFLS scheme in accordance with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) (Agenda by NRPC Secretariat) 14	
A.11. Electricity Generation Program for the year 2026-27 (Agenda by NRPC Secretariat) 16	
A.12. Monthly Review of LGBR for the next 11 months (Availability & Requirement) (Agenda by NRPC Secretariat).....	17
A.13. SOP for diversion of RPC approved spare Transformers/Reactors to constituents/state transmission utilities (Agenda by NRPC Secretariat).....	17
A.14. Operational Challenges at Kutehr HEP Arising from Uncoordinated Water Releases by Bajoli-Holi HEP (Agenda by JSW Hydro Energy).....	19
A.15. ICT Installation and Connectivity at PGCIL Kankroli Substation – Hindustan Zinc Ltd (Dariba – 200 MW) (Agenda by Hindustan Zinc Ltd.).....	20
A.16. Diversion of dismantled 400/220 kV 315MVA POWERGRID owned ICT from DTL Bawana to Kanpur U.P. (Agenda by POWERGRID- NR1).....	21
A.17. LILO of 400 kV Delhi Ring main Ckt at 400 kV switchyard of 765/400 kV Narela Substation for relieving load of 765/400 kV Jhatikra Substation (Agenda by Powergrid NR- 1) 22	
A.18. Shutdown approval of 400kV Bus-1 at Ballabhgarh and 220kV Bus-1 &2 at Hisar for Jack Bus Replacement work (Agenda by Powergrid NR-1).....	23
A.19. Review of bypassing of 400 kV Bhiwani-Moga from Hissar to relieve overloading of ICTs at Bhiwani (Agenda by Powergrid NR-1).....	24
A.20. N-1 non-compliance for ICT loading at Sohawal S/s (Agenda by Powergrid NR-3) 25	
A.21. High Loading of 400 kV Ballia–Sohawal Ckt#1 & #2 Beyond SIL Limits (Agenda by Powergrid NR-3).....	27

A.22.	Over-voltage condition at Orai (GIS), Aligarh (GIS) and Agra Substations (Agenda by Powergrid NR-3).....	29
A.23.	Charging of dead D/C 400kV Dadri-Harsh Vihar Circuits from Dadri end in case of any 400kV lines tripping (Agenda by DTL).....	30
AA.1	Procurement of Latest Version of PSS/E Software Key (Agenda by PSTCL).....	33
AA.2	Regarding outages of lines due to adverse weather during Aug & September 2025 (Agenda from POWERGRID NR2).....	34
AA.3	Disaster Preparedness of Transmission Infrastructure: Procurement of 20 sets (300 Towers) of Emergency Restoration System under Make in India (Agenda by POWERGRID).....	35
B.1	NR Grid Highlights for September 2025 and demand forecasting related...	36
B.2	Verification and Updation of NCR Drawl Feeders for Real-Time Monitoring at NRLDC.....	38
B.3	Demand forecasting and resource adequacy related: CERC order dated 05.10.2025.....	39
B.4	Huge deviation by NR states during 30 Sep -02 Oct.....	47
B.5	Winter preparedness 2025-26.....	53
B.6	Critical operation of Rajasthan Grid during upcoming winter season:.....	57
B.7	State-wise transmission constraints in monsoon 2025 and SPS proposals....	62
B.8	SPS for Champa-Kurukshetra HVDC.....	67
B.9	Mock testing of islanding scheme and simulation studies.....	68
B.10	Self-audit related:.....	69
B.11	Multiple element tripping events in Northern region in the month of September 2025:.....	70
B.12	Status of submission of DR/EL and tripping report of utilities for the month of September 2025:.....	70
B.13	Frequency response performance for the reportable events of month of September 2025:.....	71
B.14	Mock testing of System Protection Schemes (SPS) in Northern Region	75
B.15	Mock trial run and testing of black start facilities at generating stations in Northern Region.....	79
B.16	Frequent tripping of 220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1.....	81

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 236^{वीं} बैठक का कार्यवृत्त

The 236th OCC meeting of NRPC was held on 16.10.2025 in hybrid mode at NRPC Secretariat, New Delhi. MS, NRPC welcomed all the participants in the meeting.

खण्ड-क:उ.क्षे.वि.स.**PART-A:NRPC****A.1. Confirmation of Minutes**

Minutes of the 235th OCC meeting were issued on 08.10.2025. OCC confirmed the minutes of the meeting.

Decision of OCC Forum:

OCC confirmed the minutes of the meeting with the above modification.

A.2. Status of action taken on decisions of the 235th OCC meeting of NRPC

A.2.1. MS, NRPC, conveyed that the agenda has been taken to track the status of action taken as per the decision of the last meeting. Accordingly, issues may be resolved at the earliest.

A.2.2. Concerned utilities submitted the status of action taken.

Decision of OCC Forum:

*Concerned utilities submitted the status of action taken and the same has been complied as **Annexure-A.I.***

A.3. Review of Grid operations of September 2025**Anticipated vis-à-vis Actual Power Supply Position (Provisional) for September 2025**

Reasons submitted by States/UTs for significant deviation of actual demand from anticipated figures during September 2025 are as under:

- **Delhi**

Delhi informed that moderate rainfall in Sept-2025, resulted in subdued peak power demand and energy consumption, which remained lower than anticipated.

- **Haryana**

The actual demand for the month of Sep-25 was less than the anticipated demand due to excessive rainfall. The second half of September 2025 experienced from -16% to -23% demand lower than last year.

- **Uttarakhand**

The reason for the significant variation in Energy Requirement (decrease) for Sep'25 against anticipated figures was due to significant rainfall and pre-deepawali maintenance of intra-state transmission systems.

A.4. Maintenance Programme of Generating Units and Transmission Lines

- A.4.1. The maintenance programme of generating units and transmission lines for the month of November 2025 was deliberated in the meeting on 13.10.2025.
- A.4.2. Representative of NRLDC stated that regarding the shutdown of 400 KV Bhadla-Bikaner Quad moose D/C line for Rectification of defects, Rajasthan SLDC was requested to carry out the system study. He requested Rajasthan SLDC to update on the same.
- A.4.3. Rajasthan SLDC representative stated that they have carried out load flow studies for the shutdown of both circuits of 400 KV Bhadla-Bikaner line from 01.11.25 to 20.12.25. In their studies, no overloading issues were observed.
- A.4.4. Representative of NRLDC stated that earlier, Rajasthan SLDC had proposed the shutdown of one circuit at a time of the said line. Accordingly, NRLDC had carried out studies. As per their study intrastate RE generation of Rajasthan would need to be restricted to 5000 MW. He mentioned that with the simultaneous shutdown of both circuits of this line, increased oscillations were observed earlier.
- A.4.5. Rajasthan SLDC representative stated that the contractor has submitted that with one circuit under charged condition, rectification of the other circuit cannot be done. Therefore, the shutdown of both circuits would be required simultaneously.
- A.4.6. Representative of NRLDC stated that a detailed study would be required for the simultaneous shutdown of both circuits. He requested Rajasthan SLDC to explore the possibility of rectifying one circuit at a time.
- A.4.7. MS, NRPC asked NRLDC and Rajasthan SLDC to carry out studies jointly. Further, she requested that Rajasthan SLDC consider minimizing the duration of shutdown.

A.5. Anticipated Power Supply Position in Northern Region for November 2025

The updated anticipated Power Supply Position for November 2025 is as below:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	110	350	No Revision submitted
	Requirement	122	322	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Surplus / Shortfall	-12	28	
	% Surplus / Shortfall	-9.8%	8.7%	
DELHI	Availability	2564	4400	15-Oct-25
	Requirement	2250	4400	
	Surplus / Shortfall	314	0	
	% Surplus / Shortfall	14.0%	0.0%	
HARYANA	Availability	4760	9983	14-Oct-25
	Requirement	4527	8162	
	Surplus / Shortfall	233	1821	
	% Surplus / Shortfall	5.1%	22.3%	
HIMACHAL PRADESH	Availability	800	1690	No Revision submitted
	Requirement	1083	2300	
	Surplus / Shortfall	-283	-610	
	% Surplus / Shortfall	-26.1%	-26.5%	
J&K and LADAKH	Availability	1030	2490	No Revision submitted
	Requirement	1891	3653	
	Surplus / Shortfall	-861	-1163	
	% Surplus / Shortfall	-45.5%	-31.8%	
PUNJAB	Availability	4510	10610	No Revision submitted
	Requirement	4694	8589	
	Surplus / Shortfall	-184	2021	
	% Surplus / Shortfall	-3.9%	23.5%	
RAJASTHAN	Availability	8630	19890	16-Oct-25
	Requirement	10075	17000	
	Surplus / Shortfall	-1445	2890	
	% Surplus / Shortfall	-14.3%	17.0%	
UTTAR	Availability	11100	20700	06-Oct-25

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
PRADESH	Requirement	10950	20700	
	Surplus / Shortfall	150	0	
	% Surplus / Shortfall	1.4%	0.0%	
UTTARAKHAND	Availability	1185	2225	09-Oct-25
	Requirement	1200	2250	
	Surplus / Shortfall	-15	-25	
	% Surplus / Shortfall	-1.3%	-1.1%	
NORTHERN REGION	Availability	37700.0	74000	
	Requirement	36747.0	64600	
	Surplus / Shortfall	953.0	9400	
	% Surplus / Shortfall	2.6%	14.6%	

A.5.1. Representatives of HP SLDC, Punjab SLDC and J&K SLDC informed that the shortfall would be met through real-time exchanges and Banking arrangements.

A.5.2. Representative of NRLDC stated that load shedding of 200 MW is reported around 18:00 to 19:00 hrs. in Uttarakhand. Unavailability of Power in RTM is mentioned as a reason for load shedding. He suggested that Uttarakhand may manage the shortages through intrastate Gas Power Stations.

A.5.3. Uttarakhand SLDC representative stated that the DISCOM is pursuing the matter with the state commission.

A.5.4. MS, NRPC advised respective SLDC to make requisite arrangements in advance to meet the demand since power may not be available on exchanges during the peak hours.

A.6. Follow-up of issues from various OCC Meetings - Status update

A.6.1. The updated status of agenda items is enclosed at **Annexure-A.II.**

A.6.2. In 235th OCC, SLDCs were requested again to coordinate with respective Transmission Utilities of states/UTs and submit details about the updated status of the Down Stream network by State Utilities from ISTS Station (enclosed as **Annexure-A.II.I**) before every OCC meeting.

A.6.3. Regarding ADMS implementation, MS, NRPC asked SLDCs to coordinate with DISCOMs of their respective control areas for reliable communication and visibility of the feeders identified for ADMS implementation at the SLDC level.

A.7. NR Islanding scheme

A.7.1. About the Agra Islanding Scheme, the UPPTCL representative informed the forum that the proposal has been resubmitted to the PSDF Secretariat for funding under PSDF, following approval by the UPPTCL Board.

A.7.2. Regarding Lucknow-Unchahar Islanding Scheme, UPPTCL representative apprised the forum that 132 KV S/S Husainganj --- line is on H-pole; therefore, OPGW laying is not possible on this line. However, the data of 132 KV S/S Husainganj is made available through GPRS.

A.7.3. RRVPNL representative informed the forum that the proposal for the Jodhpur–Barmer–Rajwest Islanding Scheme was submitted to the PSDF Secretariat on 16.01.2025 for PSDF funding. A meeting regarding the scheme was held on 07.03.2025, during which certain queries were raised. The representative further stated that responses to these queries were submitted on 30.05.2025. However, the final decision from the PSDF Secretariat is still awaited by RRVPNL.

A.7.4. RRVPNL representative mentioned that DPR for implementation of Suratgarh islanding scheme would be submitted after the confirmation of decision from PSDF Sectt. for PSDF funding for Jodhpur-Barmer-Rajwest islanding scheme.

A.7.5. Punjab SLDC representative informed that two islanding schemes were approved by NRPC for Punjab Control area as mentioned below-

- NPL Rajpura islanding scheme
- RSD islanding scheme (with only one machine)

These schemes were conceptualized and are based on PMUs and DPR (detailed project report) regarding PSDF funding for NPL Rajpura islanding scheme was submitted for PSDF funding about a year ago and DPR regarding PSDF funding for RSD islanding scheme was submitted for PSDF funding recently. The total estimated cost of scheme is around 20 crores based on re-evaluation done on the pattern of Raipur islanding scheme (similar to schemes proposed by PSTCL) as per directives of authorities sanctioning DPRs for PSDF funding. In 236th OCC meeting, MS, NRPC asked PSTCL to get the designing aspect of both the islanding scheme vetted by Punjab SLDC and thereafter submit the proposal to NRPC with the undertaking that earlier PSDF funding was not availed for these schemes.

A.7.6. HPSLDC representative apprised that the Monitoring committee of State PSDF has provided approval for State PSDF funding for implementation of proposed UFR scheme for Kullu-Manali islanding scheme and Shimla-Solan Islanding scheme in

the meeting held on 22nd April, 2025. He further stated that the procurement of UFRs will be undertaken by HPSEBL. HPSEBL had floated the tender with work completion period of 06 months. Financial bid was opened on 6th September, 2025 and price negotiation is underway.

A.8. Coal Supply Position of Thermal Plants in Northern Region

- A.8.1. NRPC representative apprised the forum about the coal stock position of generating stations in Northern Region during current month (till 10th October 2025).
- A.8.2. The coal stock position of generating stations in Northern Region, having critical stock, during first ten days of October 2025 is NIL.

A.9. Periodic Testing of generators and FACTS/HVDC Devices (Agenda by NRPC Sectt.)

- A.9.1 NRPC representative stated that Regulation 40 (1) of CERC (IEGC) Regulations, 2023 stipulate that there shall be periodic tests, as required under clause (3) of this Regulation, carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies as well as ensuring desired performance during an event in the system.
- A.9.2 The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if advised by SLDC or RLDC or NLDC or RPC, as the case may be.
- A.9.3 Further, Regulation 40(1)(b) stipulate that “All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance.”
- A.9.4 Extract of IEGC 2023 clause 40,

“40. PERIODIC TESTING

(1) There shall be periodic tests, as required under clause (3) of this Regulation, carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies as well as ensuring desired performance during an event in the system.

(2) General provisions

(a) The owner of the power system element shall be responsible for carrying out tests as specified in these regulations and for submitting reports to NLDC, RLDCs, CEA and CTU for all elements and to STUs and SLDCs for intra-State elements.

(b) All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance.

(c) The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if so advised by SLDC or RLDC or NLDC or RPC, as the case may be.

(d) The owners of the power system elements shall implement the recommendations, if any, suggested in the test reports in consultation with NLDC, RLDC, CEA, RPC and CTU.

(3) Testing requirements

The following tests shall be carried out on the respective power system elements:

TABLE 9 : TESTS REQUIRED FOR POWER SYSTEM ELEMENTS

Power System Elements	Tests	Applicability
Synchronous Generator	(1) Real and Reactive Power Capability assessment. (2) Assessment of Reactive Power Control Capability as per CEA Technical Standards for Connectivity (3) Model Validation and verification test for the complete Generator and Excitation System model including PSS. (4) Model Validation and verification of Turbine/Governor and Load Control or Active Power/ Frequency Control Functions. (5) Testing of Governor performance and Automatic Generation Control.	Individual Unit of rating 100MW and above for Coal/lignite, 50MW and above gas turbine and 25 MW and above for Hydro.
Non synchronous Generator (Solar/Wind)	(1) Real and Reactive Power Capability for Generator (2) Power Plant Controller Function Test (3) Frequency Response Test (4) Active Power Set Point change test. (5) Reactive Power (Voltage / Power Factor / Q) Set Point change test	Applicable as per CEA Technical Standards for Connectivity.
HVDC/FACTS Devices	(1) Reactive Power Controller (RPC) Capability for HVDC/FACTS (2) Filter bank adequacy assessment based on present grid condition, in consultation with NLDC. (3) Validation of response by FACTS devices as per settings.	To all ISTS HVDC as well as Intra-State HVDC/FACTS, as applicable

A.9.5 In accordance with the above, Generators and HVDC/FACT owners were supposed to furnish the Testing schedule for the next five financial years.

A.9.6 The procedure for testing is available at the NLDC website at <https://posoco.in/wpcontent/uploads/2023/09/Final-Procedure-of-Periodic-Testing-for-Power-SystemElements-submitted-to-CERC.pdf>. This may be used for testing.

- A.9.7 In view of this, a Google sheet was prepared, and it was requested that the testing plan for the next five financial years be updated in the sheet provided at the earliest, as per the requirement of IEGC 2023 and the decision of the 73rd NRPC meeting.
- A.9.8 A letter has been issued in this regard to all the state generators and NR ISTS renewables for submitting their testing schedule for the next five financial years. All SLDCs were requested to take up this with all the generators in their control area to provide information at the earliest.
- A.9.9 In the 235th OCC meeting, the forum asked all Generators and HVDC/FACT owners to furnish a Testing schedule for the next five financial years in the format attached at Annexure-A.IV.a of the agenda to seo-nrpc@nic.in.
- A.9.10 EE(O), NRPC informed that till date, data has been received only from Powergrid, NHPC, SJVN, THDC JSW Hydro, Rosa Power Supply Co Ltd, NLC India Limited, ADHPL, Malana Power Company Limited and Clean Solar Power.
- A.9.11 He further stated that from the intra-state generating stations, data has been received from Rosa Power and LPGCL.
- A.9.12 Representative of NHPC stated that they are not able to place the tender as only one vendor is available for testing.
- A.9.13 MS, NRPC suggested pursuing with the OEMs for testing.
- A.9.14 NHPC representative requested that expenses for these tests be considered under capital expenditure.
- A.9.15 NRLDC representative enquired whether these tests are not covered under annual testing. The NHPC representative replied that these tests are not covered under annual testing.
- A.9.16 MS, NRPC asked Generators and HVDC/FACT owners to furnish the Testing schedule in the format attached at Annexure-A.IV.a of the agenda to seo-nrpc@nic.in.

Decision of OCC Forum:

OCC forum asked all Generators and HVDC/FACT owners to furnish the Testing schedule for the next five financial years in the format attached at Annexure-A.IV.a of the agenda to seo-nrpc@nic.in.

A.10. Implementation of AUFLS scheme in accordance with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) (Agenda by NRPC Secretariat)

- A.10.1. In line with the report of the Task Force on Automatic under Frequency Load Shedding (AUFLS) and df/dt scheme, NPC Secretariat to communicate the region-

wise relief quantum (based on Regional Peak Demand Met during the previous year) by 31st of May to RPCs for implementation in the next Financial Year (FY).

- A.10.2. NPC Secretariat has communicated to RPCs that they have computed the quantum of load shedding in different stages of AUFLS based on the Peak Demand Met of the Region in the financial year (2024-25). The region-wise Peak Demand Met is considered by NPC Sectt. is as follows:

Region	NR	SR	WR	ER	NER
Peak Demand Met (MW)	80,548	68,094	72,556	29,299	3,678

- A.10.3. The quantum of load shedding in different stages of the AUFLS region-wise is as follows:

Sr. No.	Stage	Frequency (Hz)	Demand Disconnection (%)	Quantum of Load shed in MW					
AUFLS Set Points and Percentage Quantum of Relief				NR	SR	WR	ER	NER	All India Load shed
1	Stage 1	49.4 Hz	5.00%	3801.7	3213.9	3424.5	1382.8	173.5	11996.55
2	Stage 2	49.2 Hz	6.00%	4562.04	3856.7	4109.4	1659.4	208.3	14395.86
3	Stage 3	49.0 Hz	7.00%	5322.4	4499.5	4794.3	1935.9	243.03	16795.17
4	Stage 4	48.8 Hz	7.00%	5322.4	4499.5	4794.3	1935.9	243.03	16795.17
Total (in MW)				19008.5	16069.5	17122.4	6914.3	867.9	59982.7

- A.10.4. After the receipt of the allocated load shedding quantum of the Region from NPC, AUFLS relief quantum should be distributed among the State/UT in the region by the RPCs in consultation with the stakeholders.

- A.10.5. NRPC Sectt. has computed each State/UT Stage-wise AUFLS quantum for NR based upon the task force report and quantum of load shedding in different stages of AUFLS region-wise finalized by NPC. The details of which are mentioned in the table below:-

State/UT	Stage-1 49.4 Hz (5%)	Stage-2 49.2 Hz (6%)	Stage-3 49.0 Hz (7%)	Stage-4 48.8 Hz (7%)	Total	Currently implemented relief as per 231st OCC
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief		
Chandigarh	17	21	24	24	86	Nil
Delhi	334	400	467	467	1668	1595
Haryana	586	704	821	821	2931	3177

Himachal Pradesh	101	122	142	142	507	1076
UT J&K & Ladhak	140	168	196	196	700	777
Punjab	645	773	902	902	3223	3012
Rajasthan	853	1024	1194	1194	4266	4066
Uttar Pradesh	1297	1557	1816	1816	6486	8537
Uttarakhand	127	152	177	177	633	865
Total	4100	4920	5740	5740	20499	23105

- A.10.6. States/UT shall identify the load relief for each stage, considering the Quantum of relief and their demand contribution, considering the intra-day, seasonality, etc. 10% additional relief would be finalised considering the demand growth of the year, planned and forced outages, UFR and breaker issues etc. SLDC would communicate feeder-wise, Stage-wise details etc. to RPC/RLDC.
- A.10.7. In the 234th OCC meeting, it was apprised that states like Chandigarh, Delhi, Punjab and Rajasthan need to plan load relief in comparison to actual load relief required (attached as Annexure-A.V of agenda). Further, as per the recommendation of the task force, the planned relief should be 10% more than the actual estimated relief.
- A.10.8. In the 235th OCC meeting, EE(O), NRPC requested States/UTs of NR to submit feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before the next OCC meeting.
- A.10.9. EE(O), NRPC stated that the feeder-wise, Stage-wise AUFLS quantum is still awaited from the aforementioned states.
- A.10.10. Delhi SLDC representative stated that they would submit the information shortly.
- A.10.11. MS, NRPC asked all States/UTs of NR to review their feeder-wise, Stage-wise AUFLS quantum and submit feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before the next OCC meeting. Also, if required, additional UFR may be purchased to implement the requisite AUFLS quantum. Further, she mentioned that bulk consumers are also required to provide UFR for load shedding in their respective systems.

Decision of OCC Forum:

OCC forum asked all states to plan the requisite load relief as mentioned in the attached as Annexure-A.V of the agenda and submit feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before the next OCC meeting.

A.11. Electricity Generation Program for the year 2026-27 (Agenda by NRPC Secretariat)

A.11.1. EE(O), NRPC apprised the forum that Central Electricity Authority vide its letter dated 03.09.2025 has sought the following information from generating utilities of the country for the preparation of the electricity generation program for the year 2026-27:

- i. Unit-wise monthly generation proposed during 2026-27, taking into account likely fuel availability, the anticipated loss of generation on account of various factors such as grid constraint, low schedule/ Reserve shutdown due to high cost, coal/lignite quality etc., if any.

A.11.2. NRPC Secretariat vide letter dated 09.08.2025 (attached as Annexure-A.VII of agenda) had requested generating utilities to submit the above-mentioned data in the prescribed format (attached as Annexure-A.VIII of agenda) by 05th October 2025.

A.11.3. EE(O), NRPC apprised the forum that the electricity generation program for the year 2026-27 has been received from most of the generators. However, the above information is still awaited from some of the generators i.e. intrastate generators under UPSLDC and NTPC Stations. The list of generating stations of NR from which the above information is awaited is attached at attached as Annexure-A.IX of the agenda.

A.11.4. MS, NRPC requested intrastate generators under UPSLDC and NTPC Stations to submit Unit-wise monthly generation proposed during 2026-27 in the prescribed format (attached as Annexure-A.VIII of agenda) via email to seo-nrpc@nic.in at the earliest.

Decision of OCC Forum:

OCC Forum asked intrastate generators under UPSLDC and NTPC Stations to submit Unit-wise monthly generation plan, proposed during 2026-27 in the prescribed format (Annexure-A.VIII of agenda) via email to seo-nrpc@nic.in at the earliest.

**A.12. Monthly Review of LGBR for the next 11 months (Availability & Requirement)
(Agenda by NRPC Secretariat)**

A.12.1. EE(O), NRPC informed the forum that, as per clause 33(5) of CERC (Indian Electricity Grid Code) Regulations, 2023, RLDC shall assess intra-regional and inter-state level TTC and ATC and submit them to NLDC. NLDC shall declare TTC and ATC for import or export of electricity between regions, including simultaneous import or export capability for a region, and cross-border interconnections 11 (Eleven) months in advance for each month on a rolling basis.

A.12.2. He mentioned that recently, in a meeting with Member (GO&D), CEA directed that the 11-month rolling LGBR may be brought out every month by all RPCs.

- A.12.3. All the states to look into this aspect and furnish the data as per the format attached at Annexure-A.X of the agenda.
- A.12.4. MS, NRPC stated that the review will help in assessing how the States are planning to meet their power requirements in advance through various sources.
- A.12.5. EE(O), NRPC stated that Haryana has submitted the data for the next 11 months.
- A.12.6. MS, NRPC stated that break-up of sources through which demand is proposed to be met, such as ISGS, internal generation, bilateral arrangements, DAM/RTM transactions, or other contracts, may also be provided.

Decision of OCC Forum:

OCC Forum requested the NR States/UTs to submit the data for the monthly Review of LGBR for the next 11 months as per the format attached at Annexure-A.X of the agenda. Further, the break-up of sources through which demand is proposed to be met, such as ISGS, internal generation, bilateral arrangements, DAM/RTM transactions, or other contracts, shall also be provided.

A.13. SOP for diversion of RPC approved spare Transformers/Reactors to constituents/state transmission utilities (Agenda by NRPC Secretariat)

- A.13.1. EE(O), NRPC apprised the forum that in line with the discussion held in 55th TCC and 80th NRPC meeting regarding diversion of RPC-approved spare transformers/reactors, POWERGRID was asked to submit draft guidelines for diverting RPC-approved spare transformers and reactors to regional constituents.
- A.13.2. Further, in the above meeting, it was agreed that guidelines should cover scope, cost implications, penalty provisions, responsibilities of borrowers, timeline for return, and other general aspects related to diversion.
- A.13.3. In compliance with the above, POWERGRID submitted draft SOP/Guidelines for diversion of RPC-approved Spare Transformers to the constituents/state transmission utilities.
- A.13.4. Draft SOP submitted by POWERGRID was deliberated in the 234th and 235th OCC meeting of NRPC and the 52nd Commercial Sub-Committee (CSC) meeting of NRPC.
- A.13.5. Based on the observation of CSC and OCC forums revised draft SOP has been prepared. EE(O), NRPC apprised following the salient features of the SOP to the forum:
- Eligible beneficiaries considered for diversion are ISTS Substations and STUs Substations (only in case of failure of existing in-use equipment and where diversion is essential for grid security and reliability).

- Roles and responsibilities of Lender (POWERGRID), Borrower and NRPC Secretariat.
- Procedure for diversion, including submission of request, evaluation approval, Execution of MoU, condition assessment and testing etc.
- General Conditions of Diversion including Timeframe for Diversion and Return, Early Recall, Financial Provisions, Bank Guarantee (BG) requirements, Penalty and Default etc.

- A.13.6. UPPTCL representative stated that conditions which will be considered for encashment of the Bank Guarantee may be included in the guidelines.
- A.13.7. CTUIL representative stated that the additional revenue/penalty will be shared with the concerned regional beneficiaries.
- A.13.8. EE(O), NRPC informed that the sample MoU agreement prepared by POWERGRID in line with the draft SOP is attached as Annexure-A.XII of the agenda.
- A.13.9. NRPC Secretariat requested CTUIL to prepare a draft settlement mechanism and share within one week so that the same can be deliberated in the 81st NRPC Meeting.

Decision of OCC Forum:

*OCC forum agreed that the draft SOP (attached at **Annexure-A.III**) to be put up for approval in the upcoming TCC/NRPC meetings.*

A.14. Operational Challenges at Kutehr HEP Arising from Uncoordinated Water Releases by Bajoli-Holi HEP (Agenda by JSW Hydro Energy)

- A.14.1. EE(O), NRPC apprised the forum that JSW Hydro Energy has submitted that Kutehr HEP, commissioned in the first week of August 2025, being an immediate downstream project, is critically dependent on the regulated water releases from Bajoli-Holi HEP (BHHEP). They are facing operational challenges due to abrupt water releases or stoppages with insufficient advance notice.
- A.14.2. Representative of JSW Hydro Energy stated that despite regular interaction between our respective control rooms, we have repeatedly faced operational challenges due to abrupt water releases or stoppages with insufficient advance notice. Such situations compromise not only our generation planning but also grid stability, often resulting in financial losses and regulatory penalties.
- A.14.3. A particularly concerning incident occurred on 12th September 2025, when we were informed at 3:48 am about a planned generation stoppage from 7:00 am to address leakages in the Bajoli-Holi dam gates. Although described as a controlled release, the water was discharged at a rate far exceeding our consumption capacity. This caused a sudden rise in our reservoir level, endangering both structural safety and

personnel. To mitigate the risk, we were forced to spill excess water that could otherwise have been utilized for generation, leading to financial loss.

- A.14.4. Additionally, the rapid depletion of the Bajoli-Holi reservoir caused a sharp increase in silt levels at our barrage from 500 ppm to 8000 ppm, which severely impacted machine operations and reduced our reservoir's live storage capacity, undermining peak generation capability during lean periods. Later, at 10:30 am, we were informed of a complete stoppage of water release for dam refilling. At that time, Kutehr HEP was scheduled for full capacity generation with overloading, and the sudden cutback not only caused a drastic reduction in schedule output but also posed risks to grid stability, compelling intervention from HP SLDC, Shimla.
- A.14.5. Due to these sudden changes and flood, we faced disruption in planned power generation, which is direct loss to the generator and it also adversely impacted the health of our machinery. Given that Bajoli-Holi is the first upstream project on the Ravi River, its operational decisions directly affect all downstream projects, including Kutehr, Chamera III, and Chamera II. Hence, coordinated planning and communication are essential.
- A.14.6. In view of this, JSW Hydro Energy has proposed establishment of a joint operational protocol between Bajoli-Holi, Kutehr, and other relevant regulatory stakeholders covering Advance Sharing of Generation Schedules, Timely Communication of Deviations, Respect for Peak Generation Windows, Reservoir Flushing, Reservoir Operations (Filling/Depletion), Silt Data Sharing, Hydrological Data Exchange and Loss of downstream projects.
- A.14.7. NRLDC representative stated that since Bajoli-Holi is an intrastate IPP and HP is the majority shareholder in Kutehr HEP, the issue may be resolved at the SLDC level.
- A.14.8. MS, NRPC stated that a Committee may be constituted under the Chief Engineer, HPSLDC, with members from Kutehr HEP, Bajoli-Holi HEP and NHPC for the establishment of a joint operational protocol between Bajoli-Holi HEP, Kutehr HEP and NHPC Power Stations. The committee may finalise the joint operational protocol within two months and submit the same to the OCC forum.
- A.14.9. HPSLDC representative stated that due to the silt issue, some of the plants go under forced outage and a DSM penalty is levied on them. He requested that an additional DSM penalty may not be levied in this case.
- A.14.10. MS, NRPC opined that since this is a commercial issue, HPSLDC may submit an agenda for deliberation on the matter in the Commercial Sub-Committee meeting.

Decision of OCC Forum:

OCC forum decided a Committee may be constituted under the Chief Engineer, HPSLDC, with members from Kutehr HEP, Bajoli-Holi HEP and NHPC for the establishment of a joint operational protocol between Bajoli-Holi HEP, Kutehr HEP

and NHPC Power Stations. The committee may finalize the joint operational protocol within two months and submit the same to the OCC forum.

A.15. ICT Installation and Connectivity at PGCIL Kankroli Substation – Hindustan Zinc Ltd (Dariba – 200 MW) (Agenda by Hindustan Zinc Ltd.)

- A.15.1. EE(O), NRPC apprised the forum that Hindustan Zinc Limited (HZL) has informed that connectivity of 200 MW has been granted to it at the Dariba location through POWERGRID Kankroli Substation. The granted connectivity is contingent upon the installation of an ICT-4 at POWERGRID Kankroli Substation. As per information available with NRLDC (235th OCC meeting), ICT-4 at Kankroli (PG) Substation is expected to be commissioned by October 2025.
- A.15.2. HZL requested an update on the commissioning status of ICT-4 at Kankroli (PG) Substation. Further, HZL sought guidance on how they could draw power from Kankroli (PG) Substation in case of a delay in ICT commissioning.
- A.15.3. MS, NRPC enquired from POWERGRID about the status of commissioning of ICT-4 at Kankroli (PG) Substation.
- A.15.4. POWERGRID representative informed that, as per information received from the project site, commissioning of ICT-4 at Kankroli (PG) Substation is likely to be delayed by about 8 to 10 months due to constraints in material supplies.
- A.15.5. HZL representative stated that they require a minimum of 100-120 MW of power until ICT-4 is commissioned at Kankroli (PG). The balance load will be managed through their captive power plant.
- A.15.6. NRLDC representative stated that, based on the present loading profile of 400/220 kV Kankroli(PG) ICTs, some margin is available and HZL's part requirement can be accommodated. However, HZL is also drawing power from RRVPNL, an NOC/undertaking would be required from RRVPNL, indicating their tentative load drawl plan from 400/220 kV Kankroli ICTs for the next few months.
- A.15.7. It was further discussed that if HZL would be shifting its drawl from Kankroli (RRVPNL) to Kankroli (PG), weekly consent may be required from NRLDC based on the loading pattern of 400/220 kV Kankroli(PG) ICTs during the past week and the margin available. Accordingly, power can be drawn by HZL.
- A.15.8. HZL representative stated that frequent load curtailments are not desirable for them.
- A.15.9. NRLDC representative stated that the forum may deliberate on configuring SPS such that some load (HZL or RRVPNL) is shed in case of any N-1 contingency or when loading exceeds threshold limits.
- A.15.10. MS, NRPC asked CTU whether connectivity could be provided from Kankroli(PG) to HZL with a reduced quantum.

A.15.11. CTU representative stated that a study would be required in this regard.

A.15.12. MS, NRPC requested CTU to carry out a study to explore the feasibility of providing part GNA to HZL.

Decision of OCC Forum:

OCC forum asked CTU to carry out a study before the next OCC meeting to explore the possibility of providing part GNA to Hindustan Zinc Limited. Further, the possibility of SPS may be explored by HZL in coordination with RRVPNL so that some non-essential load is shed in case of N-1 contingency.

A.16. Diversion of dismantled 400/220 kV 315MVA POWERGRID-owned ICT from DTL Bawana to Kanpur, U.P. (Agenda by POWERGRID- NR1)

- A.16.1. EE(O), NRPC apprised forum that POWERGRID NR-1 has submitted that the existing 400/220kV 315 MVA (POWERGRID owned) ICT-3 is being replaced with 500 MVA new ICT as per the agreement of the 26th Consultative Meeting of Evolving Transmission System (CMETS). Further, the commercial operation of 400/220 kV 315 MVA ICT-3 at Bawana has commenced in 1998 and upgradation with a new 500 MVA ICT is being carried out as an ISTS scheme. The dismantled ICT is owned of POWERGRID and diversion of the dismantled ICT to Kanpur, U.P. has been approved by higher management to meet the contingency requirement of U.P. ISTS substations.
- A.16.2. POWERGRID has further submitted that dismantled ICT has been loaded in a trailer for the last 07days; however, DTL is not allowing it to transit from their premises, citing the requirement of dismantled ICT at Bamanauli. Further, 04 nos 400/220kV 315 MVA ICTs have already been provided to DTL by POWERGRID in the last 04 years. In the 78th NRPC meeting, the Executive Director, NRLDC, expressed concern over the diversion of ISTS spares to other utilities and emphasised that the location of spares must be planned as per grid requirements.
- A.16.3. POWERGRID requested that, since the ICT is owned by POWERGRID so gate pass may be provided by DTL so that they can divert the dismantled ICT.
- A.16.4. DTL apprised the forum that the matter was discussed in a meeting held under the chairmanship of Chief Secretary, Delhi on 04.09.2025 and it was decided that the matter of diversion of 400/ 220 kV 315 MVA ICT-3 at 400kV Bawana S/s to 400 kV Bamnauli S/s (DTL) may be brought before the Ministry of Power, Govt. of India after the award of tender of 500 MVA transformers of DTL. Further, vide D.O. letter dated 24.09.2025, Secretary (Power), GNCTD has requested PGCIL to keep the aforementioned 315 MVA Transformer at 400kV Bawana site and not to transport anywhere else, so that its transportation to 400kV Bamnauli may be carried out and commissioned smoothly after the decision taken by the Ministry of Power, Govt. of India.

- A.16.5. SE(O), NRPC enquired DTL about the status of the tender for procurement of ICTs.
- A.16.6. DTL representative replied that the Tender Evaluation Committee has already recommended for consideration of the award. The matter is under consideration by the Board of Directors of DTL, and the LoA is likely to be placed shortly.
- A.16.7. NRPC and NRLDC representative advised PGCIL representative to discuss with their top management with respect to the reply to DTL letter dated 24.09.2025.

A.17. LILO of 400 kV Delhi Ring main Ckt. at 400 kV switchyard of 765/400 kV Narela Substation for relieving the load of 765/400 kV Jhatikra Substation (Agenda by Powergrid NR-1)

- A.17.1 POWERGRID informed the forum that at present, 765/400 kV Jhatikra Substation Caters approx. 55-65% of the total Delhi load through 04 Nos. of 400KV Lines, namely 02 Nos. of Mundka, 01 No. of Dwarka and 01 No. of Bamnauli line. With the complete commissioning of 765/400 kV Narela Substation including 04 ckts to Maharanibagh Substation, the loading situation at Jhatikra Substation in not going to reduce significantly. Further, any major outage incident at Jhatikra 765 kV level may result in significant load loss in Delhi in peak solar hours.
- A.17.2 To increase the reliability of power transmission to Delhi & reduce disproportionate loading of Jhatikra, LILO of 400 kV Delhi Ring main circuit at 400 kV Switchyard at Narela may be considered. 400 kV Mundka-Bawana Line (part of 400 kV Delhi Ring main unit) is passing approximately 11 kms from Narela Substation. Additionally, 400 kV Bawana-Bahadurgarh & 400 kV Bawana-Bhiwani D/C line is passing approximately 04 kms from Narela Substation. Space for the LILO of 400 kV D/C line is available at Narela Substation.
- A.17.3 LILO of any of the above D/C lines (400 kV Mundka-Bawana D/c and 400 kV Bawana-Bahadurgarh & 400 kV Bawana-Bhiwani D/C line) at Narela will result in alternate RE power injection in Delhi 400 kV Ring main ckt, resulting in an increase of reliability of power transmission to Delhi.
- A.17.4 POWERGRID proposed LILO arrangement of 400 kV lines connected with Delhi 400 kV Ring main unit at Narela for relieving loading at Jhatikra.
- A.17.5 NRLDC representative stated that a study would be carried out on the proposal submitted by POWERGRID after the commissioning of the Narela substation.
- A.17.6 MS, NRPC stated that as CTUIL and CEA are already carrying out transmission planning studies and a report on transmission planning for Delhi state has been prepared by CEA till the 2033-34 timeframe. Therefore, CTUIL may study the proposal in coordination with CEA, DTL and NRLDC so that the option suggested by POWERGRID is jointly evaluated. Further, MS, NRPC requested DTL to provide their comments on the proposal in writing.

Decision of OCC Forum:

OCC forum asked CTUIL to study the proposal in coordination with CEA, DTL and NRLDC before the next OCC meeting. Further, the forum requested DTL to provide their comments on the proposal in writing.

A.18. Shutdown approval of 400kV Bus-1 at Ballabgarh and 220kV Bus-1 &2 at Hisar for Jack Bus Replacement work (Agenda by Powergrid NR-1)

- A.18.1. EE(O), NRPC apprised forum that Powergrid NR-1 has submitted that shutdown of 400 kV Bus section-1&2 at Ballabgarh Substation and shutdown of 220 kV Bus-1&2 at Hissar for replacement of old and defective jack buses has been raised in previous OCC meetings (224th, 225th 229th) wherein forum has asked Haryana SLDC/HVPSNL to provide shutdown for replacement of Jack bus.
- A.18.2. After repeated follow-up with Haryana SLDC/HVPSNL, shutdown of 400 kV Bus section-2 at Ballabgarh has been provided from 04th March to 07th March'25 and all defective jack buses were replaced. However, the shutdown of 400 kV Bus Section section-1 at Ballabgarh has not been consented to till now by Haryana SLDC/HVPSNL.
- A.18.3. Similarly, shutdown of 220 kV Bus-1 &2 at Hissar for replacement of old jack bus has been taken up repeatedly with HVPSNL; however, consent for the same has not been provided.
- A.18.4. The replacement of defective jack buses at Ballabgarh & Hissar has been taken up for the last 8-10 months and the forum is requested to direct Haryana SLDC/HVPSNL to provide consent for shutdown to ensure reliable power transmission from critical ISTS stations like Ballabgarh & Hissar.
- A.18.5. EE(O) enquired POWERGRID about the status of action taken based on the direction given in earlier OCC Meetings.
- A.18.6. POWERGRID informed that they have done a joint meeting with HVPSNL and DTL, they have got shutdown of 400 kV Bus section-2 at Ballabgarh and jack bus replacement was done. However, the shutdown of 400 kV Bus Section section-1 at Ballabgarh was not provided.
- A.18.7. Haryana SLDC representative stated that around 40% load of Faridabad is fed from 400 kV Ballabgarh Substation and 220 KV Isharwal and Samwal Substations are radially connected with 400kV Hisar Substation. Therefore, consent of HVPSNL is required for load management during the shutdown.
- A.18.8. MS, NRPC requested PGCIL to submit a day-wise action plan of shutdown to Haryana SLDC. Further, she requested Haryana SLDC to coordinate with HVPSNL and facilitate the shutdown at the earliest.

Decision of OCC Forum:

OCC Forum asked PGCIL to submit a day-wise action plan of shutdown to Haryana SLDC. Further, Forum asked Haryana SLDC to coordinate with HVPNL and facilitate the shutdown at the earliest.

A.19. Review of bypassing of 400 kV Bhiwani-Moga from Hissar to relieve overloading of ICTs at Bhiwani (Agenda by Powergrid NR-1)

- A.19.1. POWERGRID NR-1 informed the forum that at Bhiwani Substation, the 400 kV Bhiwani–Moga line (by-passed at Hissar) is connected to the bus section having 1000 MVA 765/400 kV ICT-2 and ICT-3.
- A.19.2. During solar hours, ICT-2 and ICT-3 experience loading above 1000 MW. It is observed that the 765 kV Bhiwani–Moga line imports around 500 MW, while the 400 kV Bhiwani–Moga line exports about 450 MW. This results in freewheeling of approximately 450 MW between Bhiwani and Moga.
- A.19.3. If the 400 kV Moga–Bhiwani line is opened during daytime, this freewheeling power can be curtailed, thereby reducing the loading on ICT-2 and ICT-3 at Bhiwani.
- A.19.4. In view of the overloading of ICTs at Bhiwani, which is a critical RE evacuating station, POWERGRID requested that the real-time connectivity arrangement of the 400 kV Bhiwani-Moga line (bypassed at Hissar) may be reviewed.
- A.19.5. NRLDC representative stated that:
- 765/400kV Bhiwani ICTs are n-1 non-compliant since long (ICT-4 was approved in 15th NCT held on 25th August 2023 on RTM basis)
 - Frequent delays are observed in the commitment made by POWERGRID for the commissioning of 765/400kV Bhiwani(PG) 1500MVA ICT-4 (earlier it was committed from the POWERGRID side to commission ICT before summer 2025)
 - Due to severe N-1 non-compliance at 765/400kV Bhiwani ICTs, SPS has also been implemented at 765/400kV Bhiwani
 - Loading of 400kV Bhiwani-Hissar-Moga remains upto 500MW. Therefore, relief of only 40MW per 1000MVA ICT is foreseen which will still not make the ICTs n-1 compliant
 - In the next 6months, the demand of Haryana and NR would remain on the lower side and loading of 765/400kV Bhiwani ICTs is expected to reduce.
 - With the removal of the bypass of the 400kV Bhiwani-Moga line from Hissar, the three-phase fault level at Hissar will increase from 36kA to 45kA (as per simulation studies).
 - POWERGRID may expedite commissioning of already approved ICT-4 at 765/400kV Bhiwani.
- A.19.6. POWERGRID committed to expediting and commissioning ICT-4 at 765/400kV Bhiwani by the next 3months.
- A.19.7. CTUIL representative also stated that there is only marginal relief of 35-40MW per ICT after removing bypass of 400 kV Bhiwani-Moga from Hissar.

A.19.8. NRLDC representative requested CTUIL to examine whether there is freewheeling of power in future scenario basecase files being used by CTUIL and if it is the case, CTUIL may plan for corrective actions accordingly.

A.19.9. MS, NRPC suggested to review the matter after commissioning of ICT-4 at Bhiwani Substation.

Decision of OCC Forum:

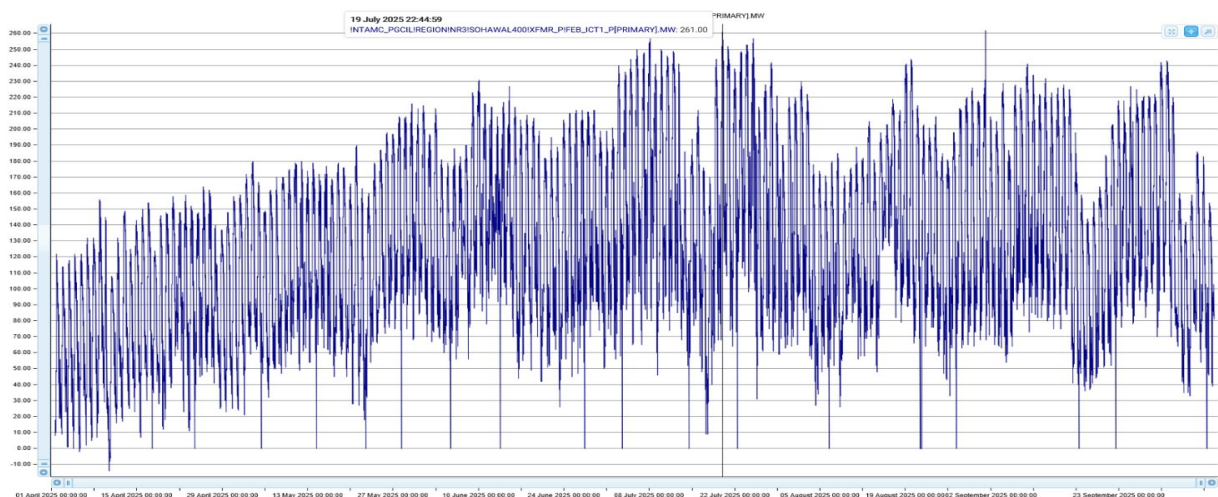
OCC forum decided to review the matter after commissioning of ICT-4 at Bhiwani Substation.

A.20. N-1 non-compliance for ICT loading at Sohawal S/s (Agenda by Powergrid NR-3)

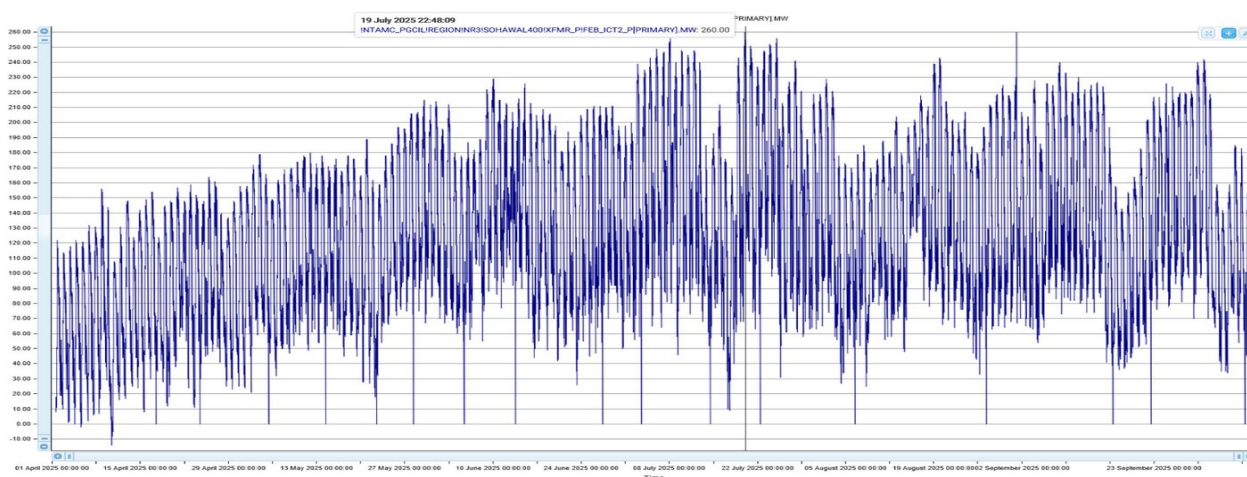
A.20.1. POWERGIRD NR-3 representative submitted that there are 03 nos of ICTs at Sohawal Substation, 2nos of 315 MVA and 1 no of 500MVA. Total load on these ICTs has been found to reach up to 950 MW (approx.) and not meet N-1 contingency.

A.20.2. Loading pattern of the three ICTs during the summer period (from April'25 to Sept'25) is shown below, where it can be seen that on 19th July'25, Max loading of these three ICTs are 261 MW, 260 MW and 431 MW i.e total loading of ICTs reached upto 952 MW, which is beyond the N-1 contingency.

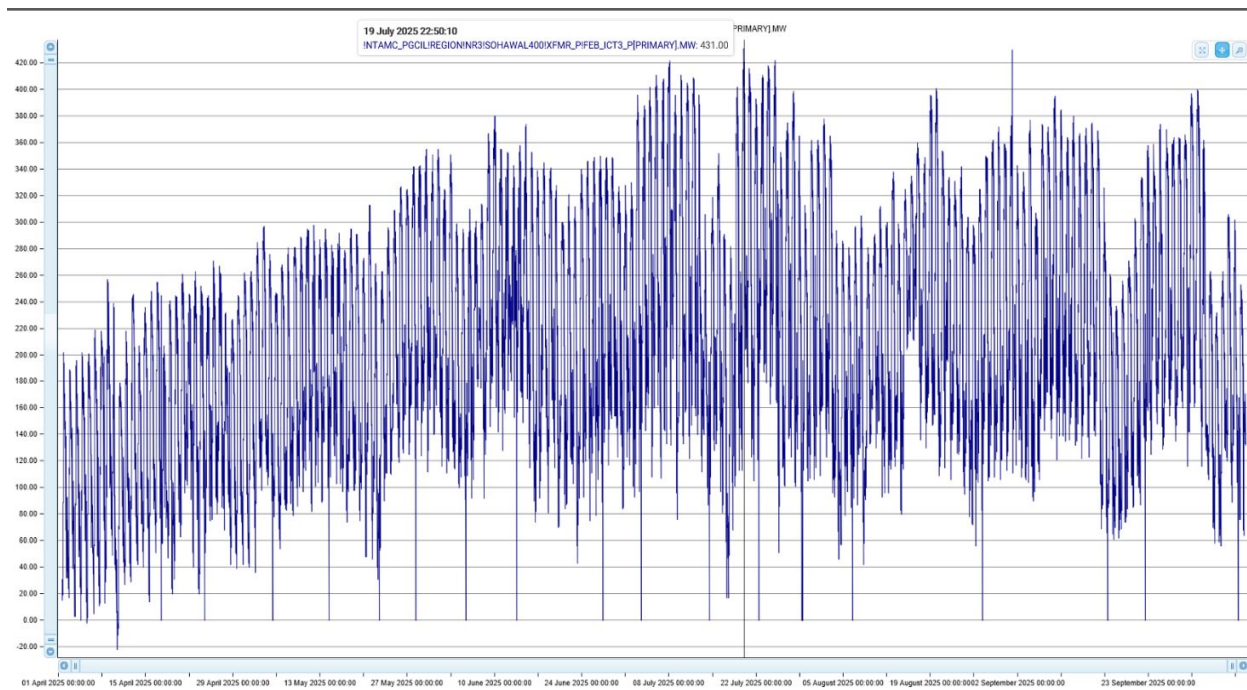
ICT-I (315 MVA):- Max loading-261MW (19th July'25)



ICT-II (315 MVA):- Max loading-260MW (19th July'25)



ICT-III (500 MVA):- Max loading-261MW (19th July'25)



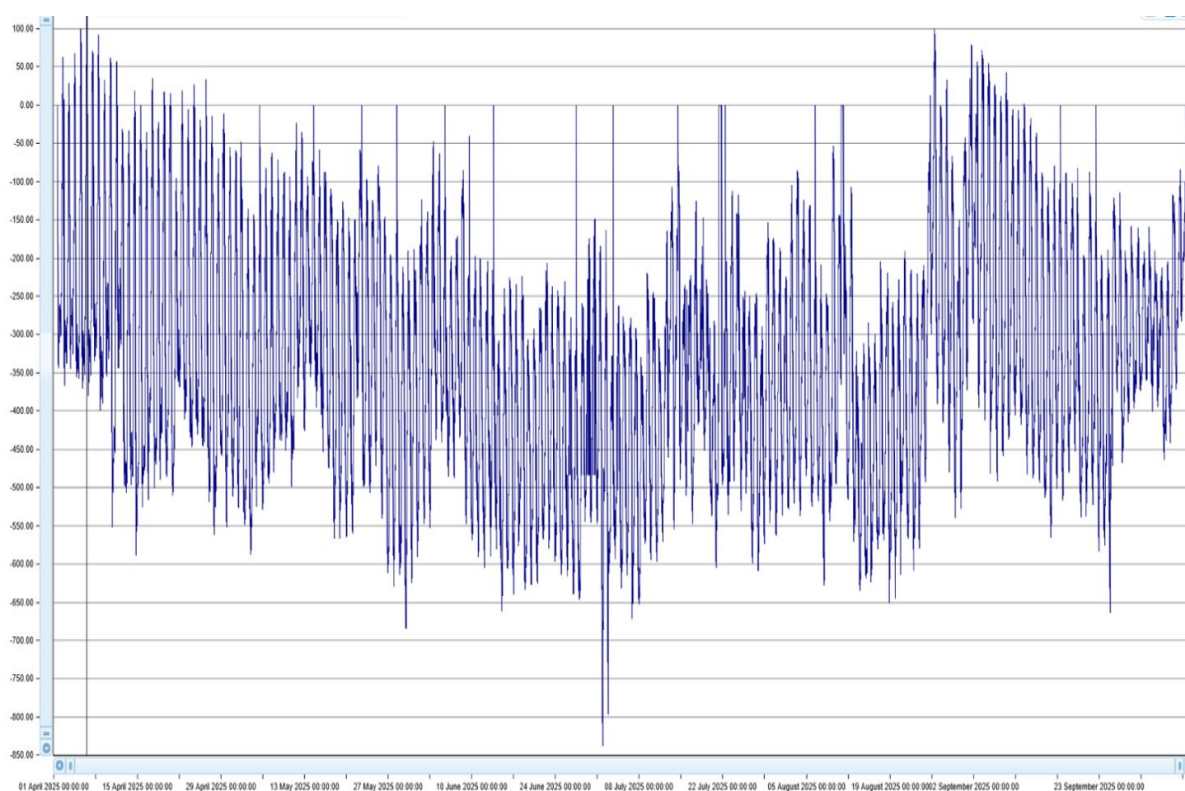
- A.20.3. NRLDC representative stated that since loading of ICTs at Sohawal S/s are reaching beyond N-1 contingency limit, another ICT may be planned by CTU at Sohawal S/s.
- A.20.4. CTU representative stated that Uttar Pradesh may assess the requirement of an additional ICT based on their demand. Further, POWERGRID may confirm the availability of space for installing another ICT at the Sohawal Substation.
- A.20.5. Powergrid representative stated that space is available for another ICT at the Sohawal Substation.
- A.20.6. MS, NRPC asked CTU to take up the matter of another ICT at the Sohawal Substation in the upcoming CMETS meeting.

Direction of the forum:

The forum asked CTU to take up the matter of installing another ICT at the Sohawal Substation in the upcoming CMETS meeting.

A.21. High Loading of 400 kV Ballia–Sohawal Ckt#1 & #2 Beyond SIL Limits (Agenda by Powergrid NR-3)

- A.21.1. Powergrid representative submitted that 400 kV Ballia–Sohawal Circuit #1 and Circuit #2 (twin ACSR Moose conductors) have been experiencing consistently high loading, often exceeding their Surge Impedance Loading (SIL) limits.
- A.21.2. Instances have been observed where the loading has reached as high as **850 MW**, especially when one circuit is out of service and the Fixed Series Compensation (FSC) at Sohawal end is in service. Even under normal conditions, the average loading during summer months remains in the range of **600–650 MW**.
- A.21.3. Due to overloading, multiple incidents of hot spots have been faced in line isolators, jumper dropper, connector etc. Suitable remedial measures like reconductoring the lines with conductor of high-power flow capacity (HTLS) may be taken. Below is the loading pattern of the line during last summer (April'25 to Sept'25) has been shown.



- A.21.4. MS, NRPC enquired about the line length. POWERGRID representative replied that the line length is 230 km and the conductor type is twin ACSR moose with a thermal rating of 85 °C.
- A.21.5. CTUIL representative stated that as the conductor of lines is twin moose and it is designed for 85deg, it can safely carry at least 1000MW safely continuously.

A.21.6. UP SLDC representative stated that LILO of 400kV Tanda-basti at 400kV Gonda is being carried out by UPPTCL and the work is expected to be completed shortly, so in future, it is expected that loading of 400kV Ballia-Sohawal ckts is likely to reduce.

A.21.7. NRLDC representative stated that

- As per the CEA manual on Transmission planning criteria, lines can be loaded up to their thermal limits.
- Issue of high loading of 400kV Ballia-Sohawal D/C and 400kV Ballia-Mau has also been flagged in quarterly operational feedback from the NRLDC side to CTUIL and CEA
- Issue gets aggravated when FSC is available in only one ckt. This causes uneven loading of each ckt. And may cause higher loading in ckt having FSC in service.
- NRLDC would try and further optimise the power order of HVDC Ballia-Bhiwadi HVDC, including power reversal during a single day to control the loading of lines from 400kV Ballia(PG). Power order from Ballia to Bhiwadi during non-solar hours and from Bhiwadi to Ballia during solar hours.

A.21.8. MS, NRPC suggested to review the matter after the LILO of 400 kV Tanda-Basti line at 400 kV Gonda S/s.

Direction of the forum:

OCC forum decided that measures for relieving the loading of 400kV Ballia-Sohawal D/C may be deliberated after taking the following actions:

- *LILO of 400kV Tanda-basti at 400kV Gonda being carried out by UPPTCL*
- *POWERGRID to ensure availability of FSC in both ckts of 400kV Ballia-Sohawal D/C*
- *NRLDC to optimise power order of HVDC Ballia-Bhiwadi HVDC, including power reversal during a single day to control loading of lines from 400kV Ballia(PG).*

**A.22. Over-voltage condition at Orai (GIS), Aligarh (GIS) and Agra Substations
(Agenda by Powergrid NR-3)**

A.22.1. POWERGRID submitted that overvoltage conditions prevail at Orai (GIS), Aligarh (GIS) and Agra Substations, which are causing stress on installations in service. Frequent switching operations of lines and tripping on overvoltage conditions are being faced.

A.22.2. The following are details of line switching on Voltage regulation and tripping on high voltage in last year:

Sr No	Element	No. of times lines opened on Voltage regulation	Tripping on Overvoltage (nos)

1	400kV Agra-Bhiwadi-I	79	
2	400kV Agra-Bhiwadi-II	89	
3	400kV Agra-Sikar-I	121	
4	400kV Agra-Sikar-II	72	
5	400kV Agra-Jaipur (S)-I	100	
6	400kV Agra-Jaipur (S)-I	80	
7	765KV Agra-Fatehpur-I	79	5
8	765KV Agra-Fatehpur-II	65	
9	400kV Agra Ballabgarh	2	
10	765KV Agra-Jhatikara	2	
11	400kv Agra-Auraiya	2	
12	400kV Agra Bassi	1	
13	400Kv Agra-Agra(UP)	-	3
14	765kv Agra-Aligarh	-	3
15	765kv Orai-Aligarh-I	10	1
16	765kv Orai-Aligarh-II	4	
17	765kv Aligarh Jhatikara	1	

A.22.3. Powergrid has requested that to control the voltage profile, Bus reactor/ STATCOM etc of suitable capacity may be installed.

A.22.4. NRLDC representative stated that high voltage issues are being observed in this area. As a short-term measure, transmission lines are opened based on real-time grid conditions; however, high-voltage issues continue to persist. CTU may suggest suitable long-term measures to address the problem.

A.22.5. NRLDC representative stated that all existing reactive power resources are being utilised to control voltages during low low-demand period of NR. As a last resort, a number of 765kV and 400kV EHVAC lines are also being opened to control high voltages. Even after taking all measures due to a huge reduction in NR demand during certain times of the year, high voltages are seen in the grid. The nodes having high voltages even after taking all necessary measures are being shared with CTUIL and CEA through quarterly operational feedbacks for further planning, which also include the substations mentioned by POWERGRID in this agenda.

A.22.6. CTUIL representative informed that the LILO of most of these lines is under progress, which is expected to mitigate these issues in the future.

A.22.7. MS, NRPC, asked CTU to carry out a comprehensive study to examine the requirement of further reactive power devices for voltage control in this area.

Direction of the forum:

OCC forum asked CTU to carry out a comprehensive study to examine the requirement of further reactive power devices for voltage control in this area.

A.23. Charging of dead D/C 400kV Dadri-Harsh Vihar Circuits from Dadri end in

case of any 400kV lines tripping (Agenda by DTL)

- A.23.1. DTL submitted that the D/C 400kV Dadri-Harsh Vihar line was tripped on 21.05.2025, at 20.00Hrs & 20.07Hrs respectively at 400/220/66kV GIS Sub-station Harsh Vihar, during the heavy storm in the evening. The next day, during the patrolling by the NTPC Dadri team (Being the owner & maintained by NTPC Dadri) of this line, they observed that tower no. 24 (tension type DD+25) of 400kV Dadri-Harsh Vihar line (Ckt-1 & 2) was found collapsed. The D/C 400kV Dadri-Harsh Vihar line was restored on 22.06.2025 after installing the new tower in place of the collapsed tower no.24.
- A.23.2. After heavy resistance from DTL's end and with the help of NRLDC, the said 400kV Dadri-Harsh Vihar Ckt-I was charged from Dadri NTPC end and after the second circuit was back-charged from Harsh Vihar end.
- A.23.3. DTL's 400kV Harsh Vihar substation has radial connectivity at 400kV level with 400kV Dadri S/Stn and no other 400kV Source/ Feed is available at 400kV Level at this substation. During that period, there is no voltage at the 400kV level available and both 400kV buses are dead at 400/220/66kV Harsh vihar GIS S/Stn.
- A.23.4. The harsh vihar S/Stn is also having a radial source at 220kV level from DTL's Preet Vihar 220kV S/Stn. It is worth mentioning that Harsh Vihar S/Stn is feeding to Preet Vihar 220kV S/Stn through 220kV cables and also feeding the eastern area of Delhi at 66kV level, including DMRC. The eastern power network of Delhi is in a critical stage during the breakdown of the D/C 400kV Dadri-Harsh Vihar line. As per the load pattern of Delhi, that was the peak demand period.
- A.23.5. At 400kV GIS Harsh Vihar S/stn, having 315 MVA, ICTs are a special type of transformer, which do not have conventional 400kV & 220 kV air bushings. These transformers/ICTs have a special type arrangement at 400 kV side, for connection from 400kV GIS by SF6 gas to oil bushing, wherein 400 kV GIS duct is directly connected with turret of the transformer. And for 220 kV side, the 220 kV bushing is oil to oil bushing which is connected through turret to oil oil-filled cable end box with 220 kV 1200sq mm single cables. These types of ICTs are not easily replaceable.
- A.23.6. But whenever any tripping occurs in these 400 kV lines, the NTPC Dadri always insists for back charging of their dead D/C 400kV Dadri-Harsh Vihar line from 400/220/66kV GIS Sub-station Harsh Vihar end.
- A.23.7. There is no provision mentioned in Operating Procedure that 400kV line must be back-charged through ICT from grid substation, even when there is no voltage at 400kV level & 400kV buses are dead, i.e. first charge the 315MVA transformer from 220kV side and then charge 400kV buses and then charge their dead 400kV line.
- A.23.8. Further, as per NRLDC Operating Procedure cl. No (vii) ***"All precautions should be taken to avoid switching on to fault particularly in case of Interconnecting Transformers. In order to avoid fault current through costly equipment generally the line shall be charged from the far end, wherever possible"***.

Therefore, back charging of dead line by back charging through Interconnecting Transformers is also not in line with operating procedure.

A.23.9. DTL has mentioned that if any adventurous step/decision is taken for back charging dead 400kV line through ICT, then this may lead flow of fault current to ICT, Korean make GIS, 220kV cables which are costly equipment in the GIS Substation and any damage to any of these costly equipments may take generally long time for restoration as these are not available readily and manufacturing of the same will take longer time after placing the PO. Further, any damage to this equipment may affected power supply for many days in eastern part of Delhi.

A.23.10. Further, it is mentioned here that, last year, this kind of operation i.e. back charging of dead 400kV Dadri-Harsh Vihar line through ICT-1 was done in the night on 06.06.2024 and as a result, DTL's one no. 315 MVA, ICT-I was damaged/faulty. Hence, on 22.06.2025, DTL could not take a risk for such kind of operation on our other costly equipment as mentioned above, including ICT. Due to ICT-1 was damaged/faulty, presently Harsh Vihar S/stn have only 02Nos. 315MVA ICTs out of 03Nos.

A.23.11. DTL's OS department also recommended that any 400kV faulty/dead line will not be back-charged from the ICT.

A.23.12. DTL has requested the following:

As the D/C 400kV Dadri-Harsh Vihar circuit is owned & maintained by NTPC Dadri and there is the prime responsibility of NTPC Dadri to make this circuit healthy and provide the CVT at DTL's 400kV GIS S/Stn Harsh Vihar end.

In view of the above, DTL requested that henceforth, during any tripping of both 400kV ckts, then either

- (a) Both dead 400kV Dadri-Harsh Vihar Ckt-I & II should be charged from Dadri NTPC end
Or
- (b) Anyone dead 400kV Dadri-Harsh Vihar Ckt-I or II should be charged from Dadri NTPC end and after the second circuit will be back-charged from 400kV GIS S/Stn Harsh Vihar end.

A.23.13. NTPC representative submitted that around 4500MW of power is being evacuated from Dadri end. It would not be feasible to charge the line from Dadri end in case the units are running.

A.23.14. The NRLDC representative stated that

- As requested earlier, DTL may share the exact reasons for the failure of 315 MVA, ICT-I at Harshvihar. Protection should ideally operate to prevent any damage to equipment.
- Charging of dead 400kV Dadri-Harsh Vihar Ckt-I & II from Dadri end may affect more than 2500 MW generation in the Dadri Complex along with Rihand-Dadri HVDC line, which may result in a major grid event.

- As per NRLDC operating procedure, Deadline charging by a generator shall normally be avoided except during system restoration, black start, or in cases where both ends of the transmission line are terminating at two generating stations or the other end of the line has no other source of power.
- Charging of dead 400kV Dadri-Harsh Vihar Ckt-I & II from Dadri end may affect more than 2500 MW generation in the Dadri Complex along with Rihand-Dadri HVDC line, which may result in a major grid event.

A.23.15.DTL representative submitted that in case of the outage of 400kV Dadri-Harsh Vihar line, there is no source of power for 400kV Harsh Vihar S/s.

A.23.16.NRLDC representative clarified that even during the outage of the 400 kV Dadri–Harsh Vihar line, power supply to the 400 kV Harsh Vihar substation is available from the 220 kV side.

A.23.17.MS, NRPC suggested that in case of future tower collapse events, NTPC submit in writing in a specific format, that patrolling and testing have been carried out and line is healthy and ready for charging. Assistance from POWERGRID may be taken for the format for sharing data. DTL and NTPC may jointly prepare the format.

Direction of the forum:

OCC forum decided that in case of future tower collapse events, NTPC shall submit in writing in a specific format that patrolling and testing have been carried out and the line is healthy and ready for charging. Assistance from POWERGRID may be taken for the format for sharing data. DTL and NTPC would jointly prepare the format. Further, a charging attempt is to be taken from Harsh Vihar side in case of outage of both ckts of 400kV Dadri-Harsh Vihar D/C only after due confirmation from the NTPC side.

AA.1 Procurement of Latest Version of PSS/E Software Key (Agenda by PSTCL)

- AA.1.1 Punjab SLDC representative apprised that PSTCL is presently operating with PSS/E Version 34 for POC, load flow studies, and other operational works. However, to carry out advanced system studies and to meet the present operational requirements, PSS/E Version 36 or any latest available version of the software is essentially required.
- AA.1.2 In this regard, PSTCL has already taken up the matter through multiple correspondences (email dated 24.12.25, 01.01.25, 30.06.2025, 11.08.25.) with M/s Siemens for providing the quotation for the latest software key. However, despite repeated follow-ups, no quotation has been received from the firm so far.
- AA.1.3 PSTCL has requested that the matter may kindly be taken up at the appropriate level with M/s Siemens to expedite the submission of the quotation and provision of the latest software key.
- AA.1.4 Further, PSTCL has suggested that since other utilities also require the updated PSS/E key, a consolidated request may be pursued with Siemens, which would

not only ensure timely availability but also facilitate the procurement at a comparatively lesser cost.

AA.1.5 EE(O), NRPC stated that a similar agenda item was submitted by UPSLDC in the 231st OCC Meeting for renewal of license, in which the forum agreed that GRID-INDIA may request SIEMENS to renew PSS/E Users License at same rate as GRID-INDIA for SLDCs also for the next renewal cycle. Thereafter, each SLDC can engage with SIEMENS based on their requirement on an individual payment basis.

AA.1.6 UPSLDC representative suggested PSTCL to take up the matter with NLDC and Siemens to get the license renewed at the same rate as NLDC.

Direction of the forum:

OCC forum suggested PSTCL to take up the matter with NLDC and Siemens to get the license renewed at the same rate as NLDC.

AA.2 Regarding outages of lines due to adverse weather during Aug & September 2025 (Agenda from POWERGRID NR2)

AA.2.1 POWERGRID NR-2 representative informed the forum that its transmission assets faced a massive onslaught of devastating and unprecedented prolonged weather spell in August and September 2025, which wreaked havoc in parts of J&K UT and HP State.

AA.2.2 Numerous roads were plunged into prolonged outages, several hill slopes came sliding down due to the onslaught of incessant rains, cloud bursts and flooding of mountain streams.

AA.2.3 During the period, POWERGRID faced several outages of transmission line assets and ominous threats and very narrow escape of several towers across hilly terrain in the Region.

Reference documents:

- Newspaper /Photo showing Cloud bursts in J&K Doda, Ramban, Reasi, Chamba etc.
- Newspaper /Photo showing NHAI remains closed during winter.
- Newspaper /Photo cutting showing impact of heavy rains.

AA.2.4 POWERGRID NR-2 representative informed the forum that following were the outages on above account:

Line Name	Outage details	Total outage period in hrs.	Remarks
220KV SALAL-	04-09-2025 to	171:43	Line taken under emergency S/D to divert line on ERS at LOC No 48 as

JAMMU-II	11.09.2025		tower became critical due to huge land sliding caused by incessant rains, and cloud bursts in Reasi area in J&K.
400KV CHAMERA1-CHAMERA2	01-09-2025 to 08.09.2025	188:11	Line hand tripped by Chamera_1(NHPC) on emergency basis in view of flash floods in Ravi River caused by cloud bursts in upper reaches followed by collapse of tower No 78. Tower is located very near to Chamera 1 HEP.
400KV CHAMERA2-KISHENPUR	06-09-2025 to 18.09.2025	304:26	Line tripped on R-Y_N fault due to collapse of Tower at LOC No 238 caused by unequal settlement of land below the tower due to incessant rains /landslides in the area.
400KV RAMPUR-NALAGARH-I & 2	03-09-2025 to 15.09.2025	295:24	Line tripped on R-Y_N fault due to collapse of Tower at LOC No 342 caused by unequal settlement of land below the tower due to incessant rains /landslides in the area.
400KV KISHENPUR - NEW WANPOH-III	26.08.2025 to 06.09.2025	138:40	Line tripped on Y-B fault due to infringement of tree from outside line corridor resulting in damage to 02 No of LOC No 111 & 112. Restoration delayed as Udhampur Srinagar Highway and link road remains closed due to rains.

AA.2.5 POWERGRID NR-2 representative further submitted that an outage shall be required to restore the lines permanently from ERS.

AA.2.6 MS, NRPC enquired about how much time it will take to restore these lines on normal towers.

AA.2.7 POWERGRID submitted that it will take around six months to install these lines on normal towers.

AA.2.8 **MS, NRPC advised Powergrid to restore the lines on the normal towers at the earliest.**

AA.3 Disaster Preparedness of Transmission Infrastructure: Procurement of 20 sets (300 Towers) of Emergency Restoration System under Make in India (Agenda by POWERGRID)

AA.3.1 POWERGRID submitted that the Ministry of Power (MOP), through its letter No. 34/7/2025-TRANSMISSION dated 11.05.2025, has inter alia directed POWERGRID to place an order for 20 sets comprising 300 towers of Emergency Restoration System (ERS). This directive follows a high-level meeting chaired by the Secretary (Power) on 10.05.2025, where the decision was finalized.

- AA.3.2 Subsequently, MOP vide letter ref. No. 34/7/2025-TRANSMISSION (MoP) dated 19.08.2025 has conveyed in-principal approval for procurement of 20 sets (300 towers) ERS under Public Procurement (Preference to Make in India) through Regulated Tariff Mechanism (RTM) to POWERGRID.
- AA.3.3 POWERGRID is to carry out procurement of 20 sets of ERS towers (300 towers) through emergency procurement processes to meet potential requirements in the states. The proposed ERS shall be kept and maintained at suitable locations to meet the requirement of stakeholders during contingencies, and the ERS shall be treated as spares under a common pool.
- AA.3.4 As per preliminary estimation, total expenditure towards said procurement is expected as approximately Rs 440 Cr. Out of 20 sets of ERS (300 towers) suitable for 400kV Transmission Lines being procured, 4 sets of ERS towers (60 towers) shall be kept in the Northern Region, against which a preliminary expenditure of Rs 88 Cr is expected.
- AA.3.5 In view of the above, POWERGRID has planned to procure the proposed ERS and subsequently, approach CERC through a tariff petition for cost recovery of the expenditure in terms of the CERC Tariff regulations, 2024.
- AA.3.6 NRLDC enquired about how 4 sets of ERS towers have arrived for NR.
- AA.3.7 POWERGRID representative informed that 20 sets have been divided equally into all five regions.
- AA.3.8 MS, NRPC suggested to take up the agenda in the upcoming NRPC meeting for approval.

Direction of the forum:

OCC forum asked POWERGRID to take up the agenda in the upcoming NRPC meeting for approval.

खण्ड-ख: उ.क्षे.भा.प्रे.के.

Part-B: NRLDC

B.1 NR Grid Highlights for September 2025 and demand forecasting related

NRLDC representative presented grid highlights for the month of Sep 2025:

Demand met details of NR

S.No	Constituents	Max Demand met (in MW)	Date & Time of Max Demand met	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)
1	Chandigarh	350	29-09-2025 15:00	7.03	29.09.25	6.06
2	Delhi	7064	29-09-2025 15:37	147.13	29.09.25	130.66
3	Haryana	12787	29-09-2025	267.37	16.09.25	230.42

			15:00			
4	H.P.	1896	29-09-2025 07:30	39.14	30.09.25	35.75
5	J&K	2865	24-09-2025 20:00	56.97	28.09.25	50.32
6	Punjab	14440	17-09-2025 15:00	310.68	16.09.25	253.18
7	Rajasthan	16020	29-09-2025 15:00	348.52	29.09.25	300.01
8	UP	29788	25-09-2025 21:00	600.53	27.09.25	533.89
9	Uttarakhand	2677	27-09-2025 18:00	52.9	29.09.25	48.18
10	Northern Region	81539	29-09-2025 19:00	1814.51	29.09.25	6.06

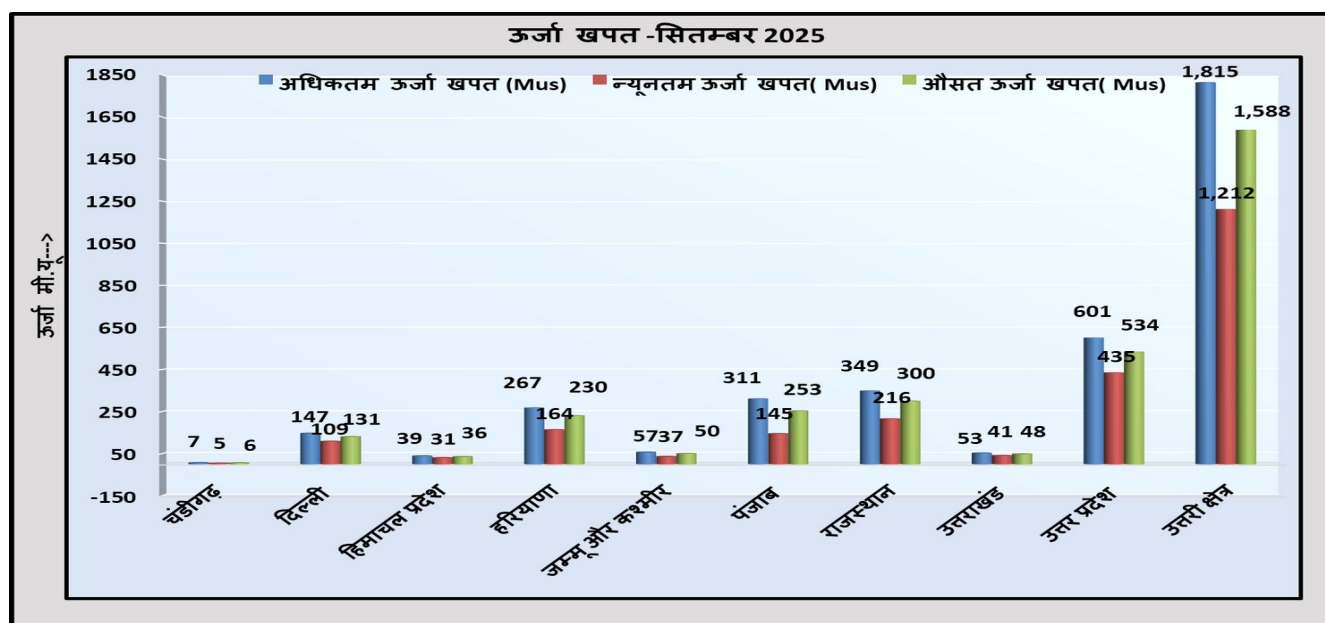
In September'25,

- Maximum energy consumption of Northern Region was 1814.51 MUs on 29th September'25 and it was 1.19% higher than September'24 (1793.09 MU 24th September'24)
- Average energy consumption per day of Northern Region was 1588.45 MUs and it was 3.2% higher than September'24 (1539 MUs/day)
- Maximum Demand met of Northern Region was 81539 MW on 29th September'25 @19:00 Hrs as compared to 80678 MW on 24th September'24 @12:00 Hrs.

Comparison of Average Energy Consumption (MUs/Day) – September '24 vs September '25

क्षेत्र/राज्य	सितम्बर - 2024	सितम्बर - 2025	% अंतर
चंडीगढ़	6.3	6.1	-3.8%
दिल्ली	118.7	130.7	10.0%
हरियाणा	35.8	35.7	-0.1%
हिमाचल प्रदेश	215.2	230.4	7.1%
जम्मू और कश्मीर	52.2	50.3	-3.6%
पंजाब	287.3	253.2	-11.9%
राजस्थान	296.0	300.0	1.4%
उत्तराखंड	48.0	48.2	0.4%
उत्तर प्रदेश	479.7	533.9	11.3%
उत्तरी क्षेत्र	1539.2	1588.5	3.2%

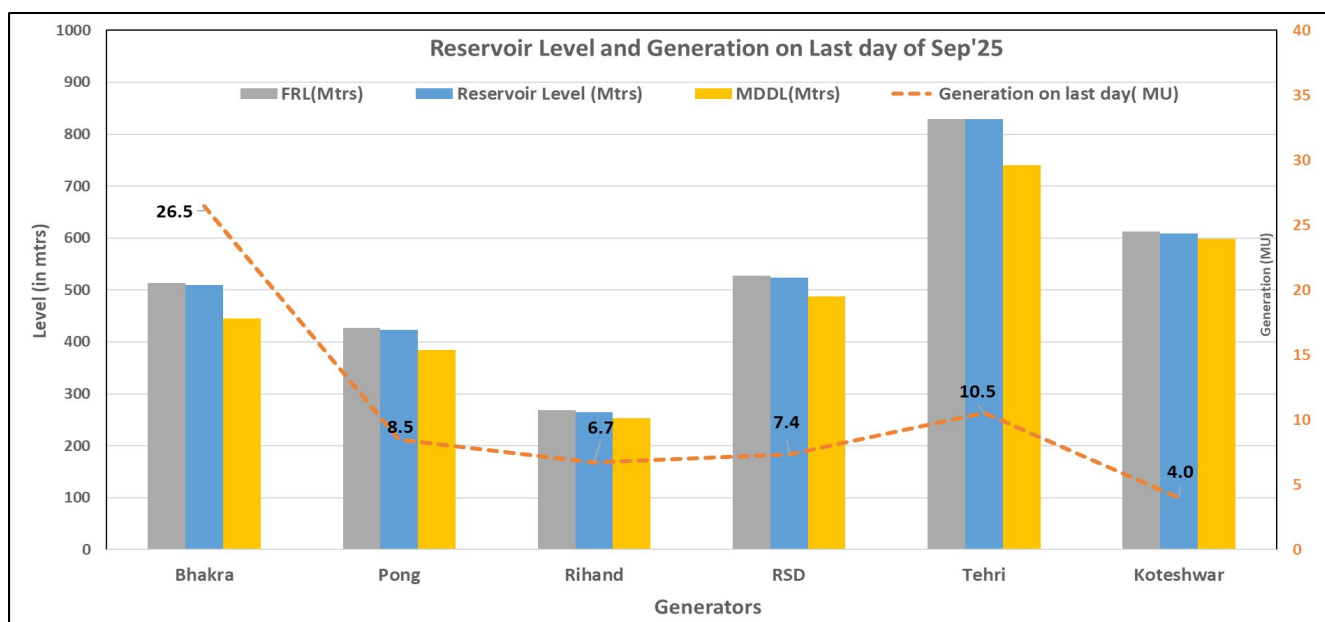
Energy Consumption



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Sep'25	49.996	50.408 (03.09.25 at 12:50:10 hrs)	49.414 (09.09.25 at 18:56:50 hrs)	6.02	78.33	15.65
Sep'24	50.00	50.38 (27.09.24 at 13:02:50 hrs)	49.46 (13.09.24 at 19:20:20 hrs)	6.1	77.1	16.8

Reservoir Level and Generation on Last Day of Month



Reservoir Level on last day of September month				(Low: -ve)	(High: +ve)	
Year	Bhakra	Pong	Rihand HPS	RSD	Tehri	Koteshwar
2025	510	423	265	524	829	609
2024	502	416	258.96	498	830	611
Diff (in m)	7.8	7.8	6.2	26.1	-0.2	-1.8

Detailed presentation on grid highlights of Sep'2025 as shared by NRLDC in OCC meeting is attached as Annexure-B.I.

B.2 Verification and Updation of NCR Drawl Feeders for Real-Time Monitoring at NRLDC

NRLDC representative stated that NRLDC is carrying out real-time monitoring of power supply to the National Capital Region (NCR) through identified drawl feeders pertaining to the States of Rajasthan, Haryana, Uttar Pradesh and Delhi. As per earlier communications and various meetings, these feeders were finalized in consultation with the respective SLDCs and are presently under continuous monitoring. The existing list of feeders is enclosed at Annex-B.I of agenda.

In the First Meeting of the Sub-Committee held on 02.09.2025 to finalize the methodology for forecasting the electricity demand of NCR, it was recorded that NCR demand is already being monitored in real time by NRLDC based on feeders identified with inputs from SLDCs. It was, however, observed that the list of feeders requires verification and revision owing to the inclusion of additional districts in the NCR region. The Minutes of the said meeting are enclosed at Annex-B.II of agenda for reference.

Accordingly, all concerned SLDCs were requested to examine the list of feeders provided at Annexure with respect to their control area and communicate any additions or modifications required for accurate representation of the NCR demand and availability of real-time data.

Haryana representative stated that there is some changes in the NCR feeders and the same would be communicated through email to NRLDC.

OCC forum discussed that the updated information may please be forwarded to NRLDC at the earliest to facilitate comprehensive monitoring and reliable demand forecasting for NCR.

B.3 Demand forecasting and resource adequacy related: CERC order dated 05.10.2025

With reference to the Clause 31(2) of Central Electricity Regulatory Commission-IEGC Regulations, 2023 and the Operating Procedure of NRLDC prepared in accordance

with the same, each SLDC has to furnish the demand estimation for day ahead, week ahead, month ahead (with time block wise granularity) and demand estimation for year ahead (with hour granularity). The sub-clause 31(2) (h) of IEGC-2023 states the following timeline for the submission of demand estimate data to RLDC.

Type of Demand Estimation	Timeline
Daily	10:00 hours of previous day
Weekly	First working day of previous week
Monthly	Fifth day of previous month
Yearly	30th September of previous year

Status of Day Ahead Forecasting, week ahead, month-ahead and year-ahead submission status for Oct-2025 as per Clause 31(4) (a) & (b) of IEGC-2023 as presented in the meeting is shown below:

State/Entity	Day Ahead (As on Sep-25)	Week Ahead	Month Ahead	Year-Ahead(2026-27)
Punjab	As per Format	As per Format	As per Format	Not received
Haryana	Irregular	Only demand & irregular	Not received	Not received
Delhi	Demand and Resource not as per format	As per Format	As per Format	As per Format
Rajasthan	As per Format but irregular	As per Format	As per Format	Not received
Uttar Pradesh	As per Format	As per Format	As per Format	As per Format
Uttarakhand	As per Format	As per Format	As per Format	Not received
Himachal Pradesh	As per Format	As per Format	As per Format	Not received
J&K and Ladakh (UT)	As per Format	Not received	Not received	Only Demand
Chandigarh (UT)	As per Format	Not received	Not received	Not received

During 236 OCC meeting, Rajasthan SLDC representative stated that they have shared year year-ahead demand forecast data recently with NRLDC.

MS NRPC expressed concern on the non-submission of data by states and asked the concerned states to submit the data as per IEGC mandated timelines in future.

In accordance with above, all SLDCs were requested to timely furnish the demand estimation data along with generation adequacy data as per the formats available at <https://drive.google.com/drive/folders/1KWY4G9gTBLV5wTJkhGEleRptKP-QbhjL?>

usp=drive link to NRLDC through mail (nrldcmis@grid-india.in) and FTP as per the above timeline.

All SLDCs agreed to take actions at their end for the timely submission of demand forecasting and resource adequacy data on a day-ahead, week-ahead, month ahead and year-ahead basis.

The NRLDC representative stated that a portal has been prepared for the submission of data by states. The user credentials have been provided to all states of the Northern region.

Further, NRLDC representative mentioned that they have also carried out month month-ahead resource adequacy analysis on a regional basis for Nov 2025 as per data available at NRLDC through PRAS software. The results are attached as **Annexure-B.II** of MoM and were presented in the OCC meeting.

NRLDC had also organized training program for NR SLDCs on 29.07.2025 regarding Demand Forecast, RA Planning & Reserve Assessment for SLDCs of Northern Region. Subsequently, a meeting was also convened on 11.08.2025 by CERC in Lucknow, in which chairpersons of SERC, Head of STUs, DISCOMs and SLDCs were also invited.

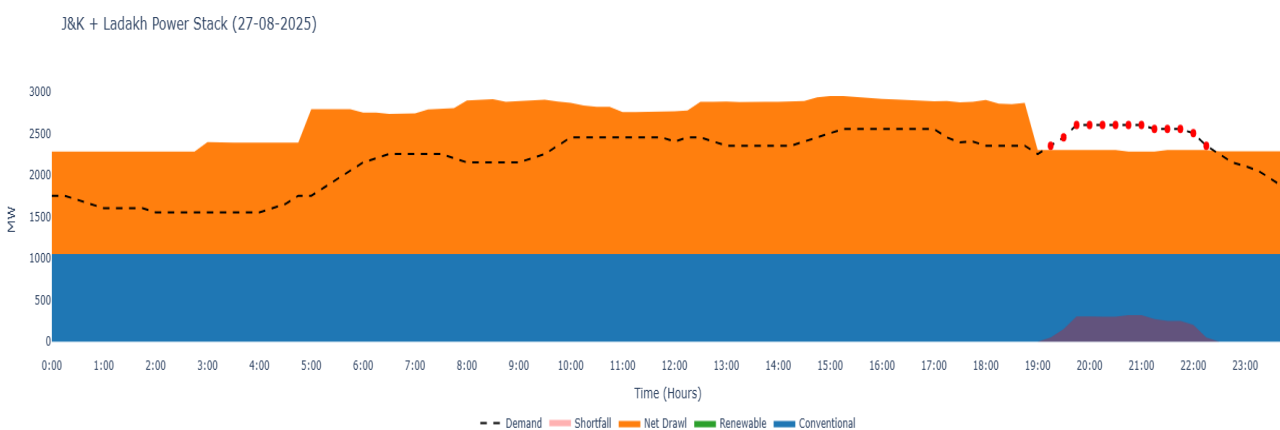
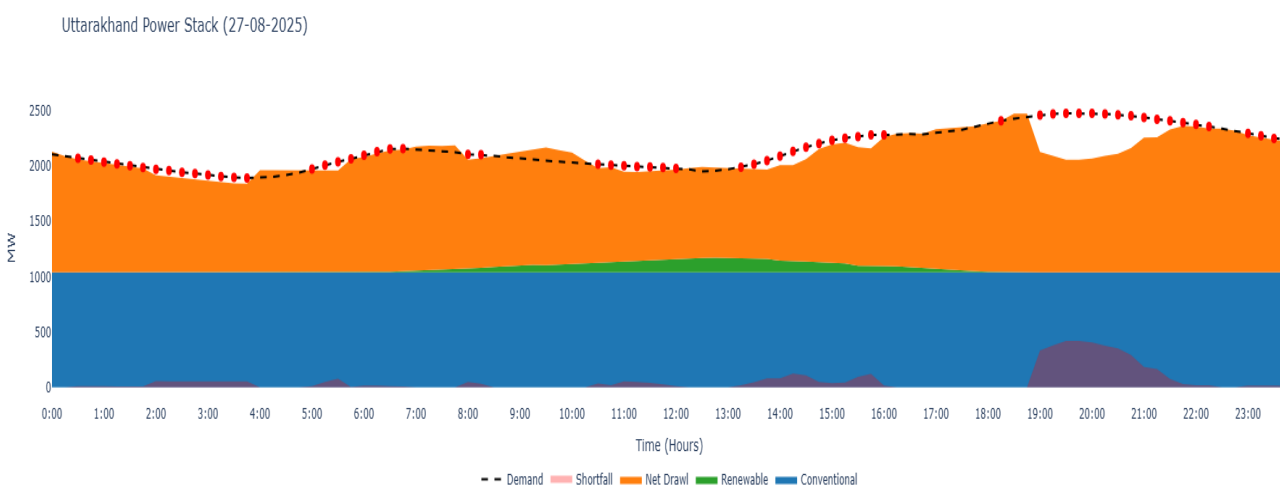
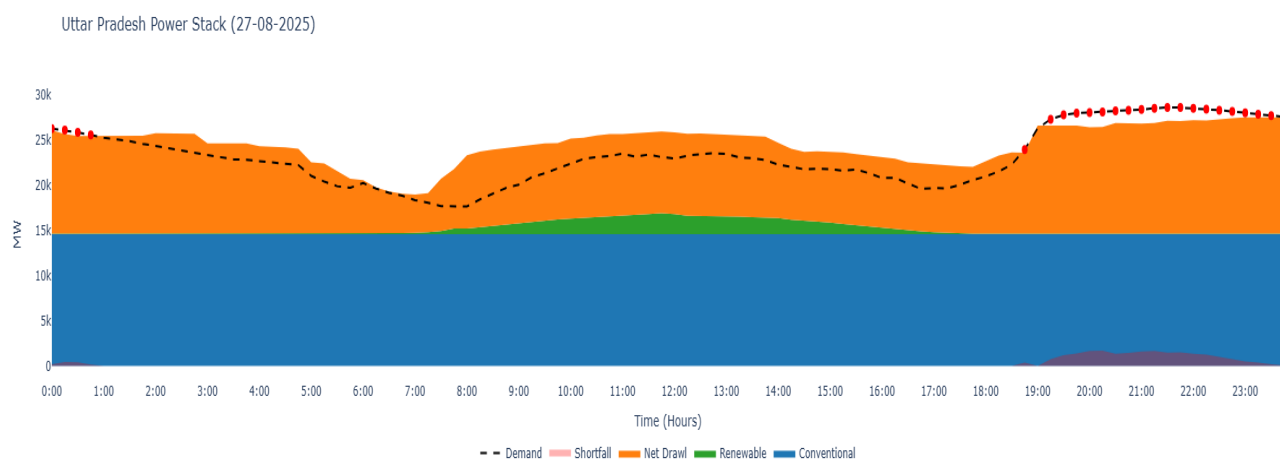
As per IEGC clause 31

Quote

(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.

Unquote

It was also discussed that NRLDC is regularly sending emails based on day day-ahead resource adequacy exercise being carried out at NRLDC end. In case of a major shortfall seen for a state based on the demand forecast and generation adequacy data submitted by the state, NRLDC communicates the actions required from the state side in real-time also. Some sample snapshots emailed to respective states are shown below for reference:



NRLDC representative stated that states are only submitting the generation availability and not the actual internal generation schedule. This leads to a situation wherein only surplus/shortage values are checked. This does not take into account the schedule changes in internal thermal generation, which may be

happening based on merit order to accommodate high solar generation during daytime.

OCC forum discussed that:

- ***Data on day day-ahead basis received from some of the states (as shown in the table) is not as per NRLDC format. It was further mentioned that NRLDC is in the process of developing a code/program for the automation of day-ahead resource adequacy. In case data is not received in formats circulated by NRLDC, it would not be possible to map/utilize the data submitted by states in the internal program being developed at NRLDC end.***
- ***States should submit an actual generation schedule and not a generation availability as a flat/constant value throughout the day.***

It was further discussed that Hon'ble CERC 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 has issued suo-motto order 9/SM/2024 dated 07.10.2024.

Subsequently, a meeting was taken by Hon'ble CERC on 14.02.2025 with all NR SLDCs, NRLDC and NRPC to review the actions being taken at the SLDC end on measures related to resource adequacy.

It is to be noted that CERC has also released "Report on 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 Order dated 07.10.2024 in Suo-Moto Petition No. 9/SM/2024" on 29.04.2025.

NRLDC representative stated that CERC has issued a final order dated 05.10.2025 regarding 9/SM/2024.

Various actions that have been suggested in order are:

(a) Adequacy of Workforce in SLDCs:

With the round-the-clock system operation, the State Load Despatch Centres 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 partload 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.

CERC has also directed the following interim measures:

(1) Unit Shutdown (USD) Eligibility:

- Generating stations scheduled below 50% of MCR and not committed under SCUC may opt for USD with off-bar DC.
- Generators must inform RLDC and beneficiaries by 1800 hrs on D-1.
- Beneficiaries can revise schedules by 1900 hrs to retain units on-bar.

(2) Scheduling Adjustments:

- If a unit goes under USD:
 - Schedules are adjusted based on available units.
 - Beneficiaries may lose entitlement if no unit remains on-bar.

(3) Revival of Units:

- Units under USD can be revived if schedules $\geq$ MTL, following SCUC procedure.
- Failure to revive within the stipulated time = treated as a forced outage.

(4) SCUC Flexibility:

- Grid India may run SCUC anytime to commit/decommit units for grid security.

(5) DC Declaration Rules:

- Generators must not declare lower DC during peak hours than off-peak hours
- If violated lower DC will be considered for fixed charge billing

(6) DSM Charges Waiver

During TRAS emergency (freq. > 50.05Hz), over-injection by WS sellers will attract zero DSM charges

Detailed order is attached as Annex B.IV of the agenda.

OCC forum discussed that as per IEGC clauses, SLDCs should also carry out day-ahead, week ahead and month-ahead resource adequacy exercises and share their results with NRLDC. States should submit actual thermal generation schedule and not generation availability as flat/constant value throughout the day.

Further, OCC took note of the recent CERC order dated 05.10.2025.

B.4 Huge deviation by NR states during 30 Sep -02 Oct

NRLDC vide their letter dated 30.09.2025 had communicated to all stakeholders that based on historical trends, the peak load in the Northern Region during the afternoon and evening hours on 02.10.2025 (Dussehra and Gandhi Jayanti) is expected to be lower compared to that of 29th September 2025 (a normal working day).

As both Gandhi Jayanti and Dussehra fall on 2nd October 2025 (Thursday), this results in an extended weekend. During this period, electricity demand is anticipated to decline significantly and remain subdued throughout the holiday. Accordingly, it was advised that generation resources be planned in advance to ensure grid security and reliability. Generation planning should also be optimized to maintain adequate hot reserves, so that any potential increase in demand on the day following the holiday can be met effectively.

The India Meteorological Department (IMD) had further forecast isolated rainfall in parts of the Northern Region towards the end of the week. The demand forecast and weather advisory for the Northern Region were enclosed for reference.

It may be noted that IEGC 2023 clause 31.4 mentions that:

Quote

“(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 the Tertiary reserve requirement;
- (vi) Planned procurement of power through other bilateral or collective transactions, if any.”

Unquote

During 236 OCC meeting, NRLDC representative stated that the resource adequacy exercise at SLDC as well as RLDC level is becoming crucial on a daily basis. Advance planned actions based on the forecast would help to reduce dependency on actions in real-time. It is to be noted that even after the steps taken by all the states there was continuous deviations (especially under drawl by NR states such as Rajasthan and UP) on 01.10.2025 & 02.10.2025

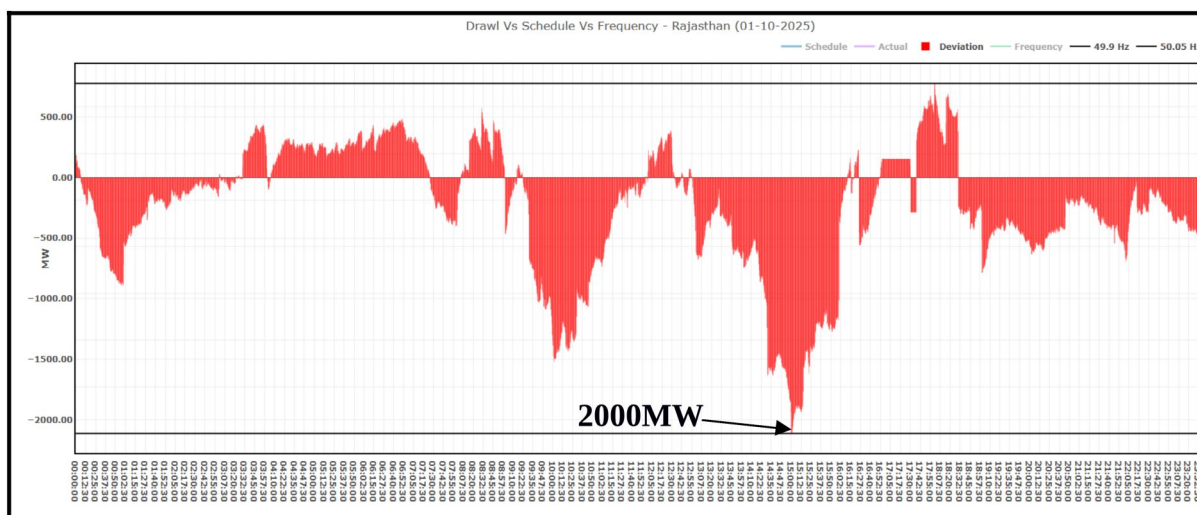
MS NRPC expressed concern about the performance of Rajasthan, mentioning that there has been continuous default from the Rajasthan side regarding huge under drawl for last 3-4 months. It was mentioned that Rajasthan SLDC should strongly take actions at their end, including taking measures for any regulatory changes required, also with the state regulatory commission.

Rajasthan SLDC representative stated that they are providing schedule to intrastate thermal units even below their declared MTL levels to manage drawl from ISTS grid. There has been some response from intrastate thermal units and they have started reducing their generation due to the liability of paying DSM Charges in case they do not reduce their generation. However, there would be a gradual improvement in this area.

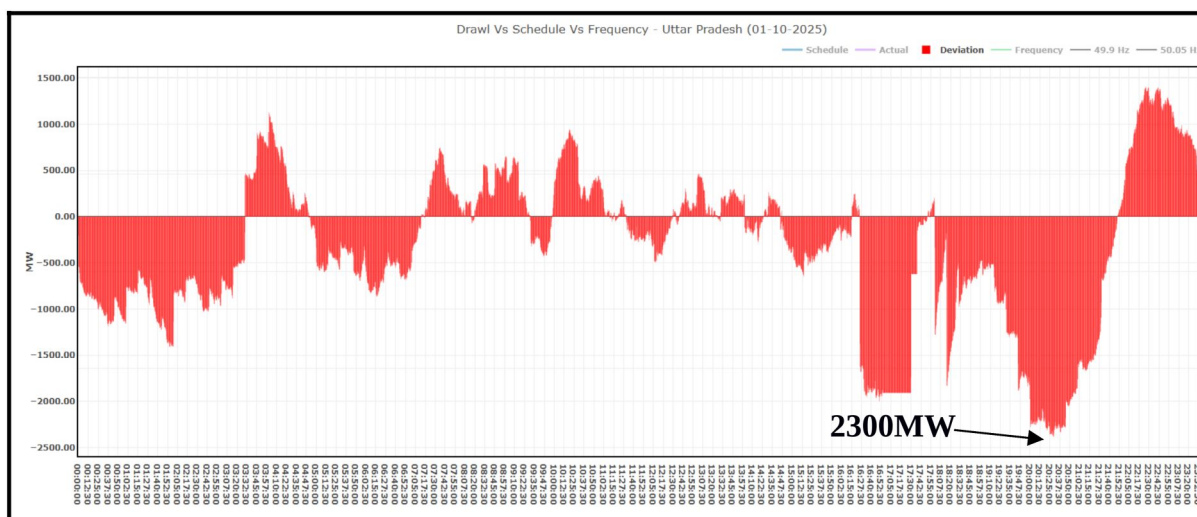
UP SLDC representative stated that the demand was expected to be on the higher side that is why number of machines were on bar, but the demand was

slightly on the lower side. Decision regarding switching off machines could not be taken as there was huge reduction in demand, however they will try and make sure that such under drawl is avoided in future.

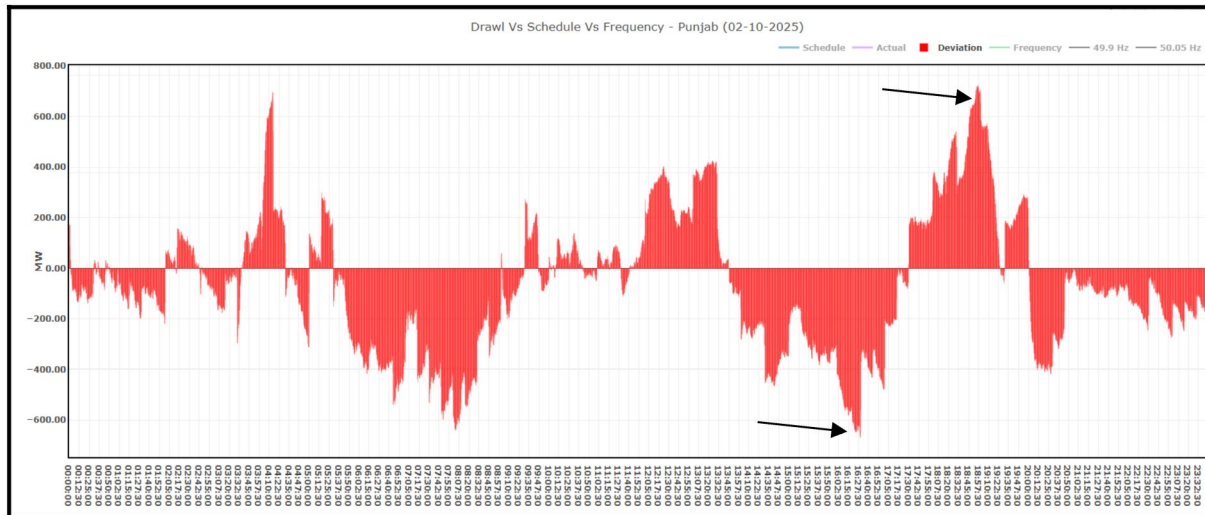
CGM NRLDC suggested that UP SLDC may explore possibility of shutting down some small size thermal units in such cases. UP SLDC agreed to take note of suggestion from CGM NRLDC side.



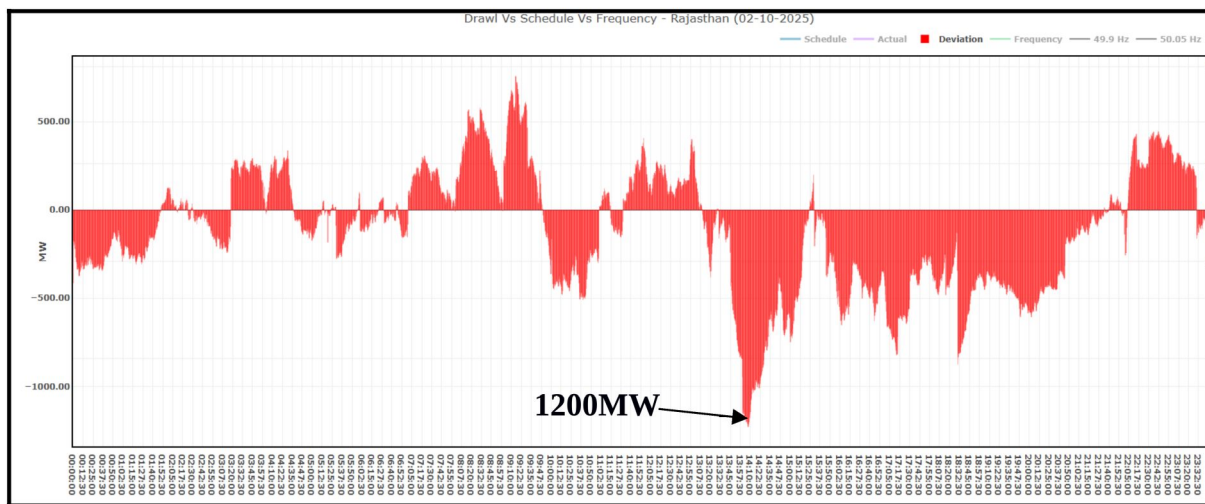
Deviation by Rajasthan on 01.10.2025



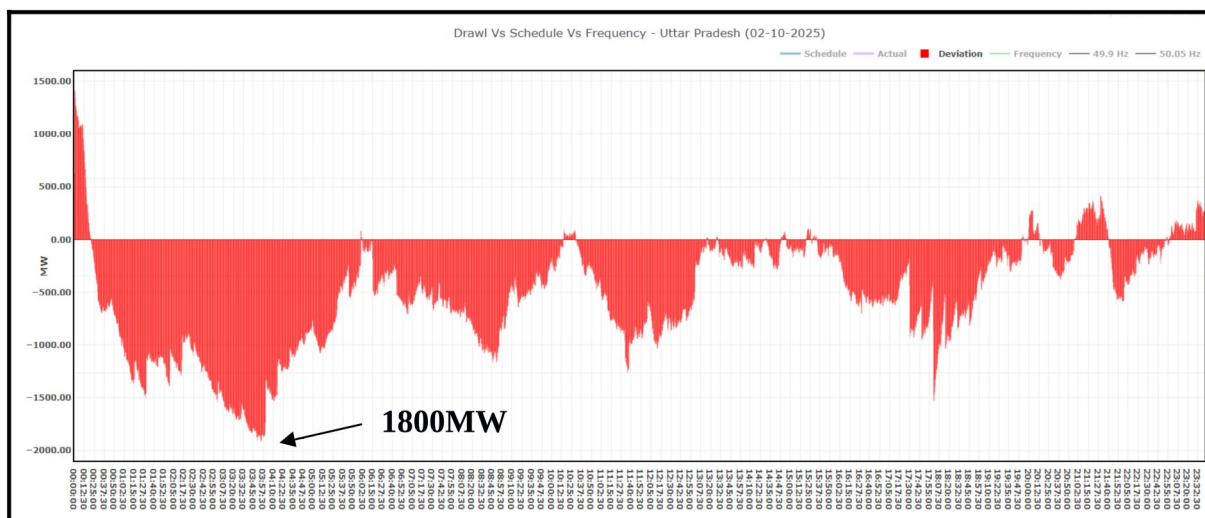
Deviation by UP on 01.10.2025



Deviation by Punjab on 02.10.2025

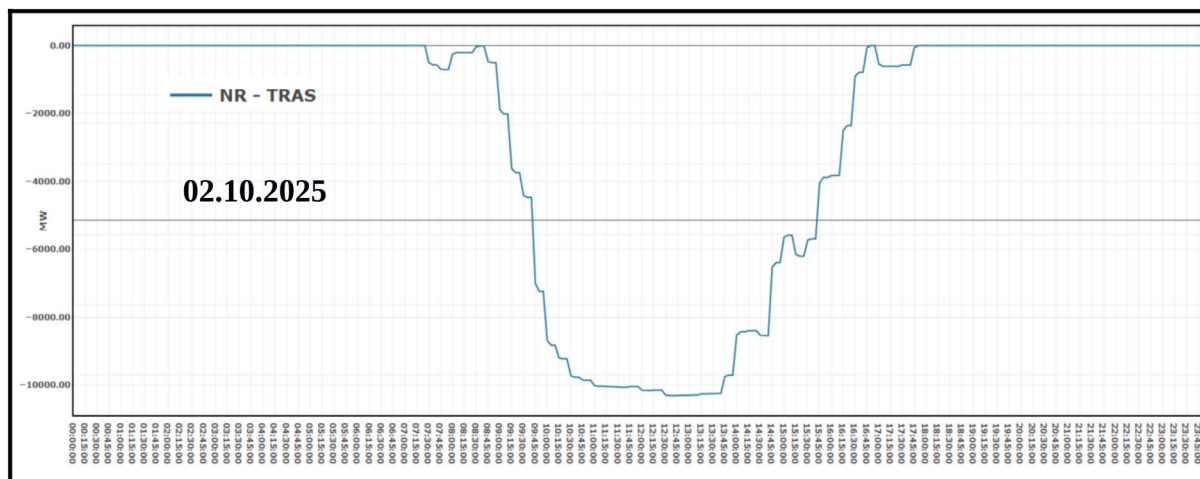


Deviation by Rajasthan on 02.10.2025



Deviation by UP on 02.10.2025

It is to be noted that in view of sufficient down margin not being available in real-time, NLDC had issued instructions for RE TRAS down instructions on 02.10.2025 which was to the tune of 13200MW with around 10300MW in Northern region alone. This requirement of 13.2GW TRAS down in solar in day-time is clear indicator of need for proper planning by states for load and generation balancing.



OCC forum asked all states to implement the following measures to ensure the secure and reliable operation of the grid:

- Maintain high alertness across all control centres, substations, and generating stations.
- Carry out meticulous demand assessment and planning on a 15-minute basis to ensure load-generation balance in all control areas, keeping adequate margin for both up and down reserves.
- Keep sufficient reserve generation on bar to handle contingencies, such as closure of hydro generation due to high silt levels.
- States should manage their internal generation to meet demand and proactively sell surplus capacity in various segments of the electricity market, while keeping reserves for contingencies.
- Generating stations are also advised to sell their un-requisitioned quantum in the Real Time Market on a daily basis to ensure sufficient power is available for states in need.
- Further, stations are advised to manage reactive power by either absorbing or injecting as needed to keep voltage within the prescribed limits.

It is to be noted that as per clause 30.11

Quote

“(q) Each State control area shall ensure the availability of the quantum of secondary reserve at the State control area with due regard to the secondary

reserves estimated and allocated for that State as published by NLDC in terms of sub-clauses (o) and (p) of this clause, and inform the same to the concerned RLDC and NLDC two days before the day of scheduling. The modalities for information exchange and timelines in this respect shall be as per the detailed procedure to be issued by NLDC.

Unquote

OCC forum discussed that CERC has also already issued procedure for reserve management on 28.09.2023 along with various timelines for data submissions as well as other actions required, which was prepared by NLDC and discussed with all stakeholders.

In this regard, a meeting was also convened on 11.08.2025 at Lucknow by Hon'ble CERC with participation from SERCs, SLDCs, DISCOMs, TRANSCOs, GRID-INDIA, NRPC and other sectoral organizations. During the meeting, as mentioned in the CERC order dated 05.10.2025, it has been recorded that:

- Most states are not maintaining required reserves; in some cases, reserves are scheduled during peak hours, defeating their purpose.
- From 1st April 2026, NLDC will begin maintaining state-wise reserves, which may be costlier as it could involve gas-based plants.
- States were urged to maintain their own reserves to avoid higher costs.
- Grid-India gave a detailed presentation on reserve estimation and state-wise allocation to address doubts.
- SLDCs were asked to coordinate with Discoms to maintain reserves as per Grid Code provisions.
- FOR may consider regulations for cost recovery related to maintaining reserves.
- In future, if states fail to maintain reserves, NLDC/RLDC may procure reserves and charge the cost to the concerned state.
- To ensure adequate down reserves, states should introduce part-load compensation mechanisms and consider two-shift operation for suitable generating units.

Accordingly, all states were asked to ensure sufficient reserves in real-time as in future based on the shortfall in reserves maintained by states, the quantum may be procured by NLDC/RLDC and such cost would be allocated to the concerned state.

It was also discussed that to maintain sufficient down reserves, it is essential that there is a suitable part load compensation mechanism in states, especially where generators are not backing down to 55% of their MCR. Moreover, based on specific

scenarios for some of the generating units, the requirement of two-shift operation may also be explored.

States were asked to take actions at their end for the resource adequacy exercise, including management of up/down reserves. Further, OCC forum asked all states to implement measures as discussed to ensure the secure and reliable operation of the grid and minimizing deviations from the grid.

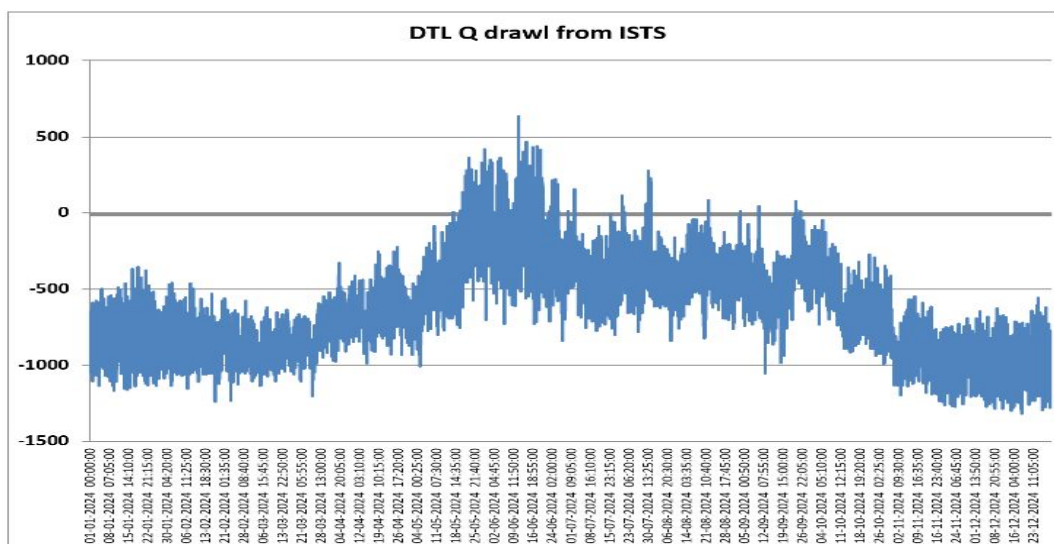
B.5 Winter preparedness 2025-26

NRLDC representative stated that winter in Northern region is likely to start from mid of October till February end, and the challenges faced during these months are well known to all the utilities. During winter, demand of NR states except Rajasthan and hilly states is on the lower side. With decreasing temperatures and festivals, onset of winter also brings some severe challenges to NR grid operators. Moreover, there is possibility for severe winter during this season due to the impact of LA-NINA. IMD in their press release dated 02.10.2025, Extended range Forecast for next two weeks (2-15 Oct, 2025) mentioned that the latest forecast indicates higher likelihood of La Niña conditions are likely to develop during post monsoon season. Accordingly, number of measures were discussed and implemented for better grid operation during winter months:

Based on the detailed discussion held in last OCC meeting, following actions were suggested:

- Transmission utilities to prepare a plan for measures to be taken by them for carrying out pre-winter maintenance activities. It was agreed that the same may be shared by utilities via mail with NRPC/NRLDC before the next OCC meeting.
- To carry out tap change exercise at 220kV and below voltage level. NRLDC will also be studying the voltage profile of 400/220kV substations in NR for the month of Oct 2025. Accordingly, tap changes at the following 400/220kV substations will be proposed in next OCC meeting.
- To ensure that all over flux settings of transformers and overvoltage settings of transmission lines are as per approved protection philosophy of NRPC.
- It was requested that any planned commissioning of bus reactors may please be expedited before winter 2025.
- OCC expressed concern on the lack of progress of DTL reactors and asked them to expedite their works. Status of reactors under commissioning in Delhi control area in Northern region as per discussion in 223 OCC MoM is shown below:

Reactive power exchange by DTL network with ISTS network for year 2024 is shown below:



It can be clearly seen that there is around 1000-1200MVAR injection by DTL network into ISTS from November to March. Thus, commissioning of bus reactors in DTL network is urgently required. Status of reactors under commissioning in Delhi control area in Northern region as per 234 OCC MoM is shown below:

Substation	Reactor
Mundka	1x125 MVar at 400 kV & 1x25 MVar at 220 kV
Bamnauli	2x25 MVar at 220 kV
Electric Lane	1x50 MVar at 220 kV
Indraprastha	2x25 MVar at 220 kV

NRLDC representative also presented the voltage profile of these substations for last winter season in the meeting and emphasized on urgent requirement of these reactors.

During 235th OCC meeting, DTL representative updated that bids have been received for 220kV bus reactors and a single bid has been received for 400kV bus reactor. Management approval is being sought for awarding these bus reactors, but commissioning of reactors would further take at least 2 years.

During 236 OCC meeting, it was requested to expedite the commissioning of these reactors.

Regarding synchronous condenser mode of operation, it was discussed that,

- NRLDC representative requested THDC, BBMB and Punjab SLDC to confirm the availability of their machines for synchronous condenser support.
- THDC representative confirmed the availability of both Tehri Hydro Power Plant and Tehri Pumped Storage Plant generating units for synchronous condenser mode of operation. It was also confirmed that machines from both can be operated in synchronous condenser mode of operation simultaneously.

- BBMB representative agreed to share confirmation through email after discussing with Pong Hydroplant.
- Punjab SLDC confirmed availability of RSD Unit-3 for synchronous condenser mode of operation, as per grid requirement.
- CGM NRLDC advised RSD to ensure availability of machine which runs as synchronous condenser during winter season. Further, it was mentioned that Punjab SLDC may ask RSD to operate other units also in synchronous condenser mode of operation with necessary modifications.
- Punjab SLDC agreed to take up the same.
- **OCC forum asked all concerned to carry out mock testing in synchronous condenser mode of operation by 31st Oct 2025.**
- Utilities were asked to submit feedback on NRLDC reactive power document, including for line reactors, which can be used as bus reactors as per the requirement.
- Utilities were asked to ensure maximum availability of bus reactors and line reactors, including the provision of using line reactors as bus reactors in case of opening of lines on high voltage. Following are some of the bus reactors which are under long outage as per NRLDC Outage Management software portal:
 1. 63 MVAR Bus Reactor No 1 at 400KV Muzaffarnagar(UP)
 2. 125 MVAR Bus Reactor No 1 at 400KV Rewa Road(UP)
 3. 50 MVAR Bus Reactor No 1 at 400KV Bikaner(RS)
 4. 63 MVAR Bus Reactor No 1 at 400KV Unnao(UP)
 5. 125 MVAR Bus Reactor No 1 at 400 KV Kadarapur (GPTL)
 6. 330 MVAR Bus Reactor No 1 at 765KV Lalitpur(LPG)
 7. 125 MVAR Bus Reactor No 1 at 400 KV Jaisalmer(RS)
 8. 125 MVAR Bus Reactor No 1 at 400KV Bhadla(RS)

UPPTCL representative stated that all intrastate bus reactors are available except at 400kV Unnao, which is expected to be available by Jan 2026.

RRVPL representative stated that all intrastate bus reactors are available except at 400kV Jaisalmer and Bhadla which are damaged. Bus reactor at 400kV Jaisalmer is expected to be revived by Jan 2026 while revival of bus reactor at 400kV Bhadla will take time.

OCC forum asked RRVPL to expedite revival of bus reactors at 400kV Jaisalmer and 400kV Bhadla as during winter season there would be huge variation in demand of Rajasthan and high voltage scenarios is likely during night time.

It was further discussed that Special actions are required by Punjab, Haryana & Delhi to avoid the high voltage issues during winter season. It was also requested to expedite the commissioning of these reactors apart from the measures listed above.

EHV line tripping during fog/Smog (Action by transmission line owners)

With low temperature across the Northern region and with high humidity in the air, fog starts to appear across the Northern region. This problem is generally most severe from 15Dec- 15Feb period & more prominent in areas having high pollution. During this time, additional care needs to be taken by the system operator as multiple-element tripping events have been reported in the past, especially in Punjab, Rajasthan, Haryana and Eastern UP. Such tripping are more severe if the lines are tripping from a generation complex.

To furnish details of Progress on cleaning and replacement of porcelain insulator with polymer insulator. NRLDC has already requested vide letter dated 22.09.2025 all transmission utilities to furnish the utility-wise latest status of the replacement of porcelain insulators with polymer insulators so that crucial lines for which such works are pending may be identified & prioritized. List available with NRLDC is also attached as Annexure-B.V of agenda.

Following lines tripped on two or more occasions during Dec-Jan months of last 2 winter seasons between 21:00hrs-11:00hrs

Name of line	Owner	2023-24	2024-25
220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2	RRVPNL	12	7
400 KV Agra-Unnao (UP) Ckt-1	UPPTCL	8	2
220 KV RAPS_B(NP)-Sakatpura(RS) (RS) Ckt-1	RRVPNL	10	4
220 KV Ratangarh(RS)-Sikar(PG) (PG) Ckt-1	POWERGRID	5	2
220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	RRVPNL	6	9
220 KV Agra(PG)-Bharatpur(RS) (PG) Ckt-1	POWERGRID, RRVPNL	2	8
220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-1	RRVPNL	9	14
400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-1	UPPTCL	2	4
220 KV RAPS_B(NP)-Debari(RS) (PG) Ckt-1	POWERGRID	2	2
400 KV Indirapuram-Noida Sec 123 (UP) Ckt-1	WUPPTCL	2	2
220 KV Sahupuri(UP)-New Karamnasa (BS) (BSEB) Ckt-1	BSEB	2	4
220 KV Duni(RS)-Kota(PG) (RS) Ckt-1	RRVPNL	2	2
132 KV Dehar(BB)-Kangoo(HP) (HPPTCL)	HPPTCL	2	5

Ckt-1			
220 KV RSVPL_SL_FTHG3_PG-Fatehgarh_III(PG) Ckt-1		2	4
220 KV Agra(PG)-Kirawali(UP) (PG) Ckt-1	POWERGRID, UPPTCL	2	2
220 KV Fatehgarh_II(PG)-ASEJOL_HB FTGH2 (ASEJOL) Ckt-1		2	2
132 KV Khatima(UK)-Pilibhit(UP) (PTCUL) Ckt-1	PTCUL	2	4

It is being seen that there is a higher number of tripping in lines passing through UP and Rajasthan as compared to Punjab and Haryana. These tripping events were also discussed in past OCC and protection subcommittee meetings, wherein actions being taken at the utility end were also discussed.

OCC forum asked all concerned transmission licensees to ensure:

- **Priority-wise cleaning & replacement is carried out. Priority to be given to the lines that have a historical record of tripping during foggy weather.**
- **Progress on cleaning and replacement of porcelain insulator with polymer insulator to be monitored and the latest status may be furnished to NRPC/NRLDC. NRLDC will also try and prioritize shutdowns for crucial lines having past instances of tripping during foggy weather.**

Utilities were requested to prepare plan for measures to be taken by them for carrying out pre-winter maintenance activities. Same may be shared by utilities via mail with NRPC/NRLDC before OCC meeting. Further, utilities were asked to take necessary actions as discussed above.

B.6 Critical operation of Rajasthan Grid during upcoming winter season:

Issues related to grid operation in Rajasthan state control area have been highlighted from NRLDC side in last several OCC/TCC/NRPC meetings. It is to be noted that such issues get aggravated during winter months when agricultural demand in state is on the higher side. Several issues were encountered in Rajasthan control area during last winter season. The major issues in Rajasthan transmission network include:

1. Augmentation in transformation capacity of 11 number of the intra-state stations to meet the increased drawal and RE absorption requirements. List is mentioned subsequently.
2. Upgradation of terminal equipment at 07 no. intrastate substations could be carried out so as to make them commensurate with the line capacity. This will ensure optimal utilization of the intra-state transmission system.

3. Augmentation of intrastate transmission network for relieving the constraints (power flow and voltage) and improving reliability. Necessary strengthening to relieve 220 kV Bassi (PG)-Sikar (RRVPN), 220 kV Kankroli (PG)-Kankroli(RRVPN), Kankroli (PG)-Amberi (RRVPN), Sikar (PG)-Dhod(RRVPN), Bhiwadi (PG)-Khuskhera (RRVPN) etc. may be planned and implemented on priority.
4. Augmentation of shunt compensation capacity near load centres like Bikaner, Jodhpur, Kankani, Merta, Hindaun, Alwar etc. to improve the voltage profile as well as reduce transmission losses.

ICTs MW drawl, MVar drawl, Power factor and S/s voltage for Solar hours (10:00-14:00hrs) for Rajasthan Control area (01-08 Dec 2024)					
400/220 Sub-Station ICTs	ICTs Capacity (MVA)	MW Drawl	MVar Drawl	Power factor	Voltage(kV)
Bikaner (RVPN)	2*315	100-300	150-300	0.40-0.65	375-390
Jodhpur (RRVPN)	315	400-500	200-300	0.85-0.90	375-385
Kankani (RRVPN)	(315+500)	500-700	200-300	0.87-0.90	370-385
Merta (RRVPN)	2*315	400-500	200-250	0.85-0.89	380-395
Bhinmal (PG)	2*315	500-600	200-300	0.87-0.90	360-370

5. Enforcement of adequate dynamic reactive support from RE plants connected to STU system as mandated in CEA technical standards. Further, other compliances of CEA technical standards with respect to fault ride through, harmonics, flicker, etc. for the existing and upcoming RE capacity in the intrastate network may be ensured for reliable operation of the integrated grid. The compliance verification process being followed by CTUIL and Grid-India for the interconnection of ISTS RE plants may be considered for adoption by STU/SLDC.

Issues were discussed in detail in 224 OCC meeting held on 18.10.2024 and separate meeting organised on 19.10.2024. Some of the actions that were agreed are listed below:

1. SLDC to take up the matter with DISCOMs for shifting of non-essential demand being provided in day-time till transmission network capacity augmentation takes place
2. As Dholpur Gas plant has also been run in the recent past and significant improvement in Voltages and grid parameters have been observed,

RVUNL to ensure the running of Dholpur units as the ultimate solution in the present condition.

3. RE plants installed in state control area should also provide MVAR support to RE plants as per the CEA standards as being implemented in ISGS RE plants.
4. For safely meeting 18000 MW load of Rajasthan with voltage in IEGC band, 4000 MVAR support additionally is required. After installing 2500 MVAR of capacitor banks in the study files the base case is converging with voltages at low of 360 KV at 400 KV sub-stations being observed. The base cases were simulated using the real time data. Hence, there was urgent requirement of installation of capacitor banks to prevent system collapse.
5. DISCOMs were requested to approach MoP with complete proposal for installation of Capacitor banks through RDSS fund. It was also stated that the detailed proposal was already made for all the 04 power companies of Rajasthan when funding through PSDF fund was envisaged earlier.
6. Low voltages in Rajasthan network was a major area of concern it has to be flagged at the highest level. If PSDF/RDSS fund is not available, funding through other routes/schemes to be taken up for installation of Capacitor banks.
7. Expediting capacity augmentation at substations and coordination with PGCIL/CTU to ensure N-1 compliance to prevent major grid disturbances and implementation of SPS before winter demand kicks in.

NRLDC representative asked Rajasthan SLDC and RRVPNL to expeditiously plan for measures as discussed above so as to ensure smooth and secure grid operation during the upcoming winter months.

Rajasthan SLDC and RRVPNL(STU) agreed to provide an update on all the above points through email.

List of constrained 400/220kV ICTs in Rajasthan

Constrained location	Status as available with NRLDC
N-1 contingency of 3*315=945 MVA ICT at Bhiwadi(PG)	An additional 500MVA ICT approved in 29 CMETS on 17.05.2024
N-1 contingency of 2*315+500=1130 MVA ICT at Bassi(PG)	An additional 500MVA ICT has been approved. Same is anticipated by 14.12.2025.

N-1 contingency of 315+500=815 MVA ICT at Neemrana(PG)	Additional 500MVA ICT has been approved in 36 NR CMETS held on 15.01.2025.
N-1 contingency of 2*500=1000 MVA ICT at Jaipur South(PG)	Additional 500MVA ICT has been approved in 36 NR CMETS held on 15.01.2025.
N-1 contingency of 2*315+500=1130 MVA ICT at Sikar(PG)	Additional 500MVA ICT has been approved in 38 NR CMETS held on 28.05.2025..
N-1 contingency of 3*315=945 MVA ICT at Kankroli(PG)	ICT-4 has been approved and is expected to be commissioned by Dec 2025.
N-1 contingency of 2*315=630 MVA ICT at Kotputli(PG)	Augmentation by 400/220 kV 500 MVA (3rd) ICT at Kotputli (PG) is expected by 31.12.2025
N-1 contingency of 2*315=630 MVA ICT at Deedwana(RVPN)	As per latest status shared by Rajasthan SLDC order for 10 no. ICT has been placed recently. New 500MVA ICTs are expected to be commissioned at 400/220kV Merta, Ajmer and Bikaner by Oct 2025. SPS has been implemented as temporary measure for some of the stations such as Chittorgarh (RVPN), Ajmer (RVPN), Merta (RVPN), Bikaner (RVPN), Jodhpur (RVPN), Suratgarh(RVPN), Ratangarh(RVPN)
N-1 contingency of 3*250+315=1065 MVA ICT at Heerapura(RVPN)	
N-1 contingency of 3*315 =945 MVA ICT at Chittorgarh (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Ajmer (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Merta (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Bikaner (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Jodhpur (RVPN)	
N-1 contingency of 2*315=630 MVA ICT at Suratgarh(RVPN)	
N-1 contingency of 3*315=945 MVA ICT at Ratangarh(RVPN)	
N-1 contingency of 1*500+1*315 =815 MVA ICT at Bhilwara (RVPN)	

In 236 OCC meeting,

Rajasthan SLDC agreed to share the updated status through email after discussing with the RRVPNL-transmission team.

NRLDC representative reiterated that the peak demand season of Rajasthan starts from mid Nov onwards, which is hardly 2 months away, so accordingly any continuous shutdown requirement of 400kV Bhadla-Bikaner D/C for condition improvement may be taken up timely and work may preferably be completed by mid Nov so that line remains available during the peak demand and high MVAR drawl season of Rajasthan.

SPS proposals in Rajasthan

The majority of 400/220kV ICTs in Rajasthan state (both interstate as well as intrastate are N-1 non-compliant.

For intrastate substations, where SPS have not been planned and implemented, the same may be taken up. List of N-1 non-compliant substations is shown below:

Constrained location	SPS Status as available with NRLDC
3*315=945 MVA ICT at Bhiwadi(PG)	Not planned
2*315+500=1130 MVA ICT at Bassi(PG)	Not planned
315+500=815 MVA ICT at Neemrana(PG)	Not planned
2*500=1000 MVA ICT at Jaipur South(PG)	Not planned
2*315+500=1130 MVA ICT at Sikar(PG)	Not planned
3*315=945 MVA ICT at Kankroli(PG)	Not planned
2*315=630 MVA ICT at Kotputli(PG)	Not planned
2*315=630 MVA ICT at Deedwana(RVPN)	Not planned
3*250+315=1065 MVA ICT at Heerapura(RVPN)	Not planned
3*315 =945 MVA ICT at Chittorgarh (RVPN)	Implemented
2*315 =630 MVA ICT at Ajmer (RVPN)	Implemented
2*315 =630 MVA ICT at Merta (RVPN)	Implemented
2*315 =630 MVA ICT at Bikaner (RVPN)	Implemented
2*315 =630 MVA ICT at Jodhpur (RVPN)	Implemented
2*315=630 MVA ICT at Suratgarh(RVPN)	Implemented
3*315=945 MVA ICT at Ratangarh(RVPN)	Implemented
1*500+1*315 =815 MVA ICT at Bhilwara (RVPN)	Implemented

Subsequently, NRLDC vide email dated 01.08.2025 had communicated to share simulation studies carried out at RRVPNL side for feeders identified for SPS at the earliest. Further, it was mentioned that NRLDC has also simulated feeders for SPS and need further discussion for feeders identified for Bassi SPS.

Rajasthan SLDC stated that simulation studies are in progress and would be shared with NRLDC at the earliest.

NRLDC representative asked Rajasthan SLDC to submit the same at the earliest as it is desirable that SPS are commissioned before Nov 2025 when demand of Rajasthan starts increasing.

OCC forum asked Rajasthan SLDC and RRVPNL to expeditiously plan for measures as discussed above so as to ensure smooth and secure grid operation during the upcoming winter months. Rajasthan SLDC and RRVPNL(STU) agreed to provide update on all the above points through email.

B.7 State-wise transmission constraints in monsoon 2025 and SPS proposals

During the high-demand season, the transmission system in Northern region remains heavily loaded. Transmission constraints observed in the grid during high-demand period are regularly being highlighted in OCC meetings. Same is also being submitted to CTUIL and CEA through quarterly operational feedback.

Even after several follow-ups, it is observed that progress of several transmission elements are not up to the mark and expeditious actions from transmission utilities are required so that minimal issues are observed at the transmission level during the high demand season.

State-wise issues and measures required thereof are listed below. Concerned transmission utilities are requested to provide an update and ensure that these transmission elements are commissioned during this high-demand season.

Punjab:

During OCC 235 meeting,

Punjab SLDC informed that a study has been carried out and a revised ATC/TTC limit has been recently submitted on 13.08.2025 which requires review from NRLDC. A tentative increase of 500MW in ATC/TTC limits has been proposed from Punjab SLDC side. Subsequently, NRLDC and Punjab SLDC exchanged several communications regarding issues with basecase.

Finally, NRLDC vide email dated 27.08.2025 communicated the import Limits as assessed by NRLDC:

Available Transfer Capability: 10900MW

Total Transfer Capability: 11400MW

(Which is similar to the limits assessed and shared by Punjab SLDC)

Limiting Constraint observed:

- 1.N-1 contingency of 500MVA ICT at 400/220kV Rajpura will overload remaining ICTs (100%)
- 2.N-1 contingency of 500MVA ICT at 400/220kV Dhanansu will overload remaining ICTs (100%)
- 3.N-1 contingency of 500MVA ICT at 400/220kV Muktsar may overload remaining ICTs (on verge of N-1 non-compliance) (95%)

However, there will be a significant increase in ATC/TTC by 500MW based on simulation studies and low voltage issues & overloading of 220kV network may be observed with these increased ATC/TTC limits.

Accordingly, NRLDC proposed to increase ATC/TTC limits of Punjab state control area by 300MW presently and keep it under observation and in case no issues are observed with ATC/TTC limits of 10700/11200MW, a decision on further increase of ATC/TTC by 200MW would be taken by NRLDC in consultation with Punjab SLDC.

Punjab SLDC representative stated that they are awaiting management approval for the same. NRLDC proposal for enhancing ATC/TTC by 300MW and 200MW subsequently, based on observation, has been shared with higher officials and after their consent, the same shall be communicated with NRLDC.

Comments from Punjab SLDC side could not be received in 236 OCC meeting.

Haryana:

As POWERGRID has confirmed via e-mail that SPS has been implemented at 765/400kV Bhiwani(PG), ATC/TTC of Haryana state control area has been revised to 10400/10700 MW w.e.f. 07th Aug 2025.

SPS proposals in Haryana

For SPS at 400/220kV Hissar(PG) ICTs: Haryana SLDC wanted to wire 220kV Hissar(BBMB)-220kV Sangrur D/C (supplying power to Punjab) and 220kV Hissar-Chirawa (supplying power to Rajasthan) lines in SPS. Punjab and Rajasthan SLDC have agreed for wiring 220kV Hissar-Chirawa line in SPS logic.

POWERGRID informed that PLCC channel is not available for transferring signal from 220kV Hissar(PG)--->220kV Hissar(IA-HVPNL)--->220kV Hissar(BBMB) and it would require procurement of DTPC coupler for implementation of SPS. It was discussed that new 500MVA ICT is approved at Hissar(PG) but it may not be commissioned before next paddy season. Further, there are also loading issues in 220kV Hissar(PG)---220kV Hissar(IA-HVPNL)---220kV Hissar(BBMB) for most part of the year. Accordingly, SPS for N-1 contingency of 400/220kV Hissar(PG) ICTs and 220kV Hissar(PG)---220kV Hissar(IA-HVPNL)---220kV Hissar(BBMB) ckts is required. HVPNL and BBMB were asked to check at their respective substations regarding space for DTPC panel and also confirm feasibility of SPS implementation.

As a short term measure (till implementation of SPS at Hissar-PG), in case loading of 400/220kV Hissar(PG) ICTs crosses 90% of rated capacity, then NRLDC in consultation with BBMB, Haryana SLDC, Punjab SLDC and Rajasthan SLDC may ask BBMB to open 220kV Hissar(BBMB)-220kV Sangrur D/C (supplying power to Punjab) and 220kV Hissar-Chirawa (supplying power to Rajasthan) lines. Punjab SLDC and Rajasthan SLDC to ensure supply of these stations from other stations before disconnection from Hissar(BBMB).

During 235 OCC meeting, NRLDC representative stated that as HVPNL and BBMB had confirmed space for placing DTPC panel, POWERGRID was asked by OCC forum to expedite procurement of DTPC for implementation of SPS at Hissar(PG).

POWERGRID representative stated that the proposal has been initiated and DTPC panels would be procured at the earliest.

During 236 OCC meeting, NRLDC representative asked POWERGRID to plan & implement SPS in such a manner that SPS is surely implemented by Apr 2026.

POWERGRID representative stated that offer has been received for DTPC panel procurement and the work is expected to be completed in next 3-4 months.

For SPS at 400/220kV Panipat ICTs: Haryana SLDC to review the requirement of SPS as continuous N-1 violation is being observed. During 234 OCC meeting,

NRLDC representative stated that loading of 400/220kV Panipat is still beyond the N-1 limits even after LILO of 2nd ckt of 220kV Samalkha-Mohana at 400/220kV Sonapat(PG) and continuous N-1 violations were observed during June 2025. HVPNL is implementing new 400/22kV ICT at Panipat. It was requested to provide an update on shifting of some load from Panipat to Sonipat as an interim measure.

Haryana SLDC representative stated that around 40-50MW load has been shifted to Sonipat from Panipat. He further stated that in the coming time loading would reduce only and before the next season ICT might come, timeline for which once confirmed by BBMB and their TS wing will be shared with the forum.

During 235 OCC meeting, Haryana SLDC representative stated that they have communicated with HVPNL TS Wing for preparing proposal for SPS at 400/220kV Panipat.

It was further discussed that two new ICTs would be commissioned at 400/220kV Panipat. One would be implemented by HVPNL and another by BBMB.

NRLDC representative stated that HVPNL and BBMB may take necessary approval from CEA PSPA so that First Time Charging of ICTs is smoothly facilitated.

During 236 OCC meeting, Haryana SLDC stated that they have taken up the matter with their TS-wing and would provide update on SPS implementation at 400/220kV Panipat(BBMB) shortly after the meeting.

Uttar Pradesh:

In 236 OCC meeting,

POWERGRID representative stated that 500MVA ICT-4 at Allahabad is expected to be commissioned by Nov 2025 as the work got delayed due to some rains and flood-like situation.

It was also informed by UPPTCL representative that old 240MVA ICT at Obra is expected to be revived by Nov 2025 whereas 315MVA ICTs at Obra would be revived after some time due to requirement of procurement of ICTs.

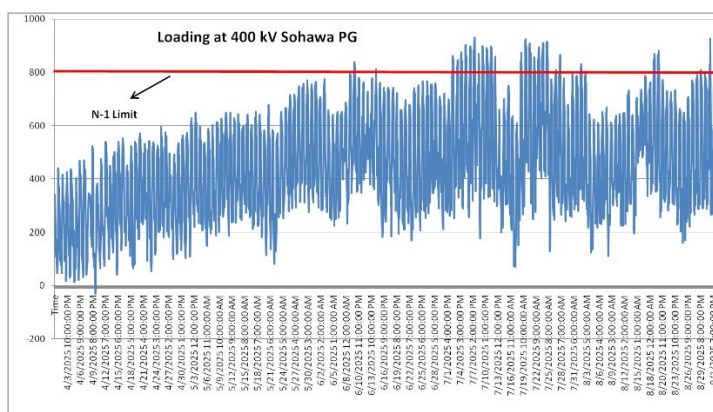
SPS proposals in Uttar Pradesh

UP SLDC informed that work order for SPS logic of 400/220kV Bareilly S/s has been placed. SPS at both 400/220kV Panki and Bareilly substation are expected to be commissioned by Dec 2025.

OCC forum asked POWERGRID to implement SPS scheme at Agra(PG) at the earliest.

POWERGRID representative stated that the SPS at Agra(PG) would be commissioned by Nov 2025 end.

Further, it is being observed that loading of 400/220kV Sohawal ICTs is also exceeding the N-1 limits as shown below:



As discussed in previous OCC meetings, it was once again requested that:

- All SLDCs to take actions such that loading of ICTs and lines in their control area are below their N-1 contingency limits.

- While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC.
- SLDCs also need to ensure that their drawl from grid remains within these limits during real-time operation. In the past, it has been observed that some states have drawn power beyond their ATC limits as assessed by SLDCs and NRLDC.
- Further, all SLDCs need to make sure that loading of 220kV and below voltage level intrastate lines remain within safe limits during the high demand season.

Further, it may be noted that CERC vide their order dated 29.09.2023 has granted approval of “Detailed Procedure for Allocation of Transmission Corridor for Scheduling of General Network Access and Temporary General Network Access under Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022” which requires SLDCs to submit network data as well as PSSE basecases on M-12, M-6, M-1 basis. The monitoring of submission of these data by SLDCs is being done in OCC meetings on monthly basis where response of some of the states needs improvement.

May 2025 Mails						
	ATC/TTC Declaration		Interconnection Studies			
	M-1 (June-25)	M-12 (May-26)	M-6 (November-25)			
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	No	No	Yes	Yes	No	No
Himachal	Yes	No	Yes	No	Yes	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	No	No	No	No	No	No
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

June 2025 Mails						
	ATC/TTC Declaration		Interconnection Studies			
	M-1 (July-25)	M-12 (June-26)	M-6 (December-25)			
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	Yes	Yes
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

July 2025 Mails						
	ATC/TTC Declaration		Interconnection Studies			
	M-1 (August-25)	M-12 (July-26)	M-6 (January-26)			
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	Yes	Yes
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

August 2025 Mails						
	ATC/TTC Declaration		Interconnection Studies			
	M-1 (Sep-25)	M-12 (August-26)	M-6 (February-26)			
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	Yes	Yes
Himachal	Yes	Yes	Yes	No	Yes	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

September 2025 Mails						
	ATC/TTC Declaration		Interconnection Studies			
	M-1 (Oct-25)	M-12 (September-26)	M-6 (March-26)			
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	No	No
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

October 2025 Mails						
	ATC/TTC Declaration		Interconnection Studies			
	M-1 (Nov-25)	M-12 (October-26)	M-6 (April-26)			
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh						
Delhi		Yes	Yes			
Haryana						
Himachal						
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh						
Punjab	Yes	Yes			Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand						

Submitted after 30th of current month

Submitted in next month

Uttarakhand SLDC submitted that they had recently shared basecase file with NRLDC.

NRLDC representative stated that basecase need to submitted for four scenarios as per IEGC approved procedure. Only one scenario basecase has been received by NRLDC from Uttarakhand SLDC which was also submitted after due date.

Further, it was mentioned that states such as Haryana, HP submitting basecase with one month delay may note that the changes given by them do not get reflected in the All India/regional basecase file, as NRLDC prepares

the basecase as per CERC approved timelines and goes ahead as per the data available as on date.

ATC/TTC limits of states for the month of November 2025 are attached as Annexure-B.VI of agenda. Utilities were requested to go through these limits and provide comments. In case of no comments, these limits would be considered deemed approved.

OCC forum asked all utilities to take necessary measures as discussed above.

B.8 SPS for Champa-Kurukshetra HVDC

As discussed in recent OCC meetings, there have been concerns regarding the reliability of Champa-Kurukshetra HVDC. There have been unplanned load loss that have taken place in two events related to a simultaneous all poles outage of HVDC Champa-Kurukshetra, namely,

1. 16.5GW load loss event on 17.06.2024 due to tripping of Champa-Kurukshetra all poles carrying 4000MW with NR total load as 89.4GW
2. 0.9GW load loss event on 09.06.2025 due to tripping of Champa-Kurukshetra all poles carrying 4300MW with NR total load as 82.6GW

NRLDC has been continuously pursuing with NR states to take measures for reactive power support at the local level so that reactive power exchange from ISTS is minimal. However, as per discussions held in OCC meetings, no progress is being reported. There is huge MVAR drawl by NR states during May-Sep months.

Accordingly, in 233 OCC meeting, it was agreed to implement a SPS scheme which can shed loads in case of simultaneous outage of all poles of HVDC Champa-Kurukshetra. Since, identification and wiring of new load groups may be difficult for implementation in short time frame and further utilities have also expressed concerns in identifying further new feeders for UFR or other load shedding schemes, it was suggested to utilise the wired loads of existing Agra-Gwalior or Rihand-Dadri SPS scheme. Signal of multiple HVDC pole outage can be extended from Kurukshetra station to Dadri/Agra SPS scheme and some load relief can be obtained. The automatic disconnection of wired loads post outage of multiple HVDC Poles at Kurukshetra may provide some relief and may help in containing the voltages till suitable static and dynamic compensation devices are commissioned.

During 234th OCC meeting, MS NRPC proposed holding a separate meeting between NRLDC, Powergrid and all states as inputs from states are not being received. It was requested all states provide their input on the feeders connected to the Agra-Gwalior or Rihand-Dadri SPS schemes and submit any proposals if there are changes from the initially planned scheme.

Accordingly, a separate meeting was convened on 04.09.2025 by NRLDC with participation from SLDCs, POWERGRID and NRPC. Thereafter, NRLDC representative requested all states to submit the data for each feeder with following details:

- Loading each feeder-wise for Jun-Jul months during 1200-1500 hrs period
- Whether feeders mentioned in list are operated radially during Jun-July months or not?
- SLDC/STU comments regarding usage of feeder in SPS logic i.e. if there are any preferences or they want to use other alternate feeders in SPS. In case no issues from their side, they may mention Consented.
- Medium of signal transfer to feeders (OPGW/PLCC).

Inputs from all SLDCs have been received at NRLDC end on 01.10.2025.

Moreover, CEA vide letter dated 22.09.2025 had communicated that a committee has been constituted to study the issue of frequent outages of HVDC Champa-Kurukshetra line and recommend mitigation measures.

OCC forum asked POWERGRID to examine and confirm how SPS signal can be transmitted from Kurukshetra to Agra/Dadri and what impact it would have on the effectiveness of SPS.

B.9 Mock testing of islanding scheme and simulation studies

Following four islanding schemes are operational in the Northern Region: NAPP Islanding Scheme (Uttar Pradesh), RAPP Islanding Scheme (Rajasthan), Bawana Islanding Scheme (Delhi), and Unchahar Islanding Scheme (Uttar Pradesh).

During 236th OCC meeting, NRLDC representative presented the latest status of actions required on various islanding schemes.

Scheme	UFR testing done	Basecase shared	SCADA display made
NAPP Islanding scheme (UP)	☑ Yes	☑ Yes	☑ Yes
RAPP Islanding scheme (Raj)	☑ Yes	☑ Yes	☑ Yes

Bawana Islanding scheme (Delhi)	✗ No	☑ Yes	☑ Yes
Unchahar Islanding scheme(UP)	☑ Yes	✗ No	☑ Yes

POWERGRID representative stated that pending testing of UFR at POWERGRID has been carried out and report has been shared with NRLDC.

UP SLDC representative stated that Unchahar islanding scheme basecase has been shared with NRLDC. It was further informed that a meeting to review load and connectivity of the Islanding scheme is scheduled to be held on 17.10.2025. Basecase after incorporating details and discussions of the meeting will be shared again.

OCC forum noted the same and asked UP SLDC to share revised basecase at the earliest.

B.10 Self-audit related:

As per IEGC Clause 56.2(c),

Quote

“The self-audit reports by users, QCAs, and SNAs shall be submitted to the concerned RLDC or SLDC, as the case may be.”

Unquote

Failure to submit the self-audit report within the stipulated timeframe would be considered a non-compliance with IEGC regulations.

During 235 OCC meeting, it was discussed that Self-audit report has been received from NHPC and Koteswar THDC only for F.Y. 2023-24. As F.Y. 2024-25 has also completed recently, all utilities in Northern region were requested to carry out self-audit exercise and share report with NRLDC as per IEGC Clause 56.2(c).

During 236 OCC meeting, NRLDC representative once again reiterated that as 31.07.2025 has already past, it is requested that all concerned users of NRLDC may carry out their self-audit and submit report to NRLDC at the earliest.

NRLDC communication in this regard to all concerned is attached as Annex B.VII of agenda for reference.

The self-audit report should inter alia include the following details:

1. Sufficient information on any instances of non-compliance, explaining how and why they occurred.
2. Extent of impact or damage caused by such non-compliance.
3. Corrective steps planned along with a timeline for rectification.
4. Measures taken to prevent recurrence in the future.

OCC forum asked all concerned to submit self-audit reports to NRLDC to comply with IEGC 2023.

B.11 Multiple-element tripping events in the Northern region in the month of September 2025:

A total of **11** grid events occurred in the month of September 2025 of which **6** are of GD-1 category **03** are of GI-2 Category and **02** are of GI-1 Category. The tripping reports of all the events have been issued from NRLDC. A list of all these events along with the status of DR/EL & tripping detail submission, is attached at **Annexure-B.V of agenda.**

Maximum delayed clearance of fault observed in event of tripping event at 400/220kV Kishenpur(PG) and 400kV Baglihar(J&K) at 21:58 hrs on 05th September 2025. As per PMU at Kishenpur(PG) end, at 21:58:43 hrs, B-N phase to earth fault with delayed clearance of ~680 msec is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **03** events out of **11** grid events occurred in the month. In **04** (no.) of grid events, there was no fault in the grid.

NRLDC representative presented the reporting status of DR/EL & tripping reports w.r.t. grid events occurred in September 2025. It was highlighted that detailed reports of some of the tripping events have not been received. In some of the grid events, complete DR & EL have also been not received.

Members agreed to share the tripping details at the earliest and assured to submit the tripping details as per timeline specified in IEGC.

NRLDC requested utilities to start preparing the detailed report of the tripping events as per timeline mentioned in IEGC 2023 and share the report with NRLDC, NRPC and PSC forum. Remedial actions taken by constituents to avoid such multiple elements tripping may also be included in the detailed report.

As per IEGC clause 37.2 (c), Disturbance Recorder (DR), station Event Logger (EL), Data Acquisition System (DAS) shall be submitted within 24 hrs of the event and as per IEGC clause 37.2 (e), the user shall submit a detailed report in the case of grid disturbance or grid incidence within one (1) week of the occurrence of event to RLDC and RPC.

OCC forum requested members to take necessary preventive measures to avoid such grid incidents/disturbances in future and report actions taken by respective utilities in the OCC & PSC forums. Moreover, utilities may impress upon all concerned to provide the Preliminary Report, DR/EL & detailed report of the events to RLDC in line with the regulations.

B.12 Status of submission of DR/EL and tripping report of utilities for the month of September 2025:

The status of receipt of DR/EL and tripping report of utilities for the month of **September 2025** is attached at **Annexure-B.VI of agenda**. It is to be noted that as per the IEGC provision under clause 37.2 (c), the tripping report along with DR/EL has to be furnished within 24 hrs of the occurrence of the event.

NRLDC representative stated that on the basis of status of September month it is evident that reporting status of some of the constituents i.e., RE stations, POWERGRID, SLDC-HR, SLDC-PS, SLDC-J&K, BBMB, NTPC, NHPC and RAPS are not satisfactory and need improvement. Further, persistent unsatisfactory reporting status of Punjab & J&K was also highlighted.

NRLDC representative requested utilities to improve the status of submission of DR/EL & tripping reports. Timely submission of tripping details (DR, EL, tripping report etc.) helps in detailed analysis of the grid event and further remedial actions.

OCC forum emphasized the importance of DR/EL & tripping report data for analysis of the tripping. In addition, these data are also the base for availability verification. The unavailability of these details delays the availability verification process also. Hence, timely submission of DR/EL & tripping report is necessary. Members were requested to comply with IEGC 37.2(c) and submit the details in time. Members agreed to take necessary follow-up actions to improve the reporting status.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the tripping shall be uploaded on Web Based Tripping Monitoring System (TMS) “<https://postda.nrlc.in/Default.aspx>” within 24 hours of the events as per IEGC clause 37.2(c) and clause 15.3 of CEA grid standard.

B.13 Frequency response performance for the reportable events of month of September 2025:

During the months of **September 2025**, **3 no. of reportable events** were notified by NLDC for which FRC/ FRP need to be calculated. Description of the event is as given in the Table below:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	Nadir Frequency (in Hz)	End Frequency (in Hz)	$\Delta f(Hz)$	NR FRP during the event
1	01-Sep-25	14:57 hrs	As reported, at 14:57 Hrs on 01st September 2025, load loss event of 1240 MW occurred in Delhi, NR. Hence load loss of 1240 MW is considered for FRC/FRP Calculation.	49.954	50.074	50.005	0.05 ₁	1.42
2	24-Sep-25	11:04 hrs	As reported, at 11:04 hrs on 24th September 2025, RE generation loss event of 2500 MW occurred in Tamil Nadu, SR. Hence generation loss of 2500 MW is considered for FRC/FRP Calculation.	50.054	49.892	49.954	-0.1	0.58
3	24-Sep-25	11:32 hrs	As reported, at 11:32 hrs on 24th September 2025, RE generation loss vent of 1400 MW occurred in Tamil Nadu, SR. Hence generation loss of 1400 MW is considered for FRC/FRP Calculation.	50.057	49.930	49.975	-0.08 ₂	0.62

As per IEGC 2023 Clause 30.8, "The primary response of the generating units shall be verified by the Load Despatch Centres (LDCs) during grid events. The concerned generating station shall furnish the requisite data to the LDCs within two days of notification of reportable event by the NLDC."

As per IEGC 2023 Clause 30.10.(n), "Each control area shall assess its frequency response characteristics and share the assessment with the concerned RLDC

along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and 10 (ten) seconds for the state control area."

As per sub-clause (a(v)) of clause (9) of IEGC 2023 Annexure-2, "All the SLDCs shall work out FRC for all the intra-state entities (for events indicated by the Regional Load Despatch Centres) based on the HDR available at their respective SLDCs and submit the same to respective RLDC within six (6) working days after the event. (Format as per Table-B)."

As per sub-clause (a(vi)) of clause (9) of IEGC 2023 Annexure-2, "All regional entity generating stations shall also assess the FRC for their respective stations and submit the same to the respective RLDC within six (6) working days. (Format as per Table-B). The high-resolution data (1 second or better resolution) of active power generation and frequency shall also be shared with RLDC."

Members were requested to share the FRC/FRP computation of their respective control area as per the timeline specified in IEGC 2023.

The status of details received from constituents and FRP values as considered for the events of **September 2025** are attached as **Annexure-B.VII of agenda**.

NRLDC representative highlighted the list of generating stations and control area that haven't shared the FRC/FRP computation details. Details are pending from SLDC-Uttarakhand, SLDC-J&K, Shree Cement TPS, NTPC (Singrauli TPS, Anta GPS, Auraiya GPS, Dadri GPS, Unchhahar_II TPS), NHPC (Sainj HEP, Uri-2 HEP, Sewa_II HEP, Dhauliganga HEP, Chamara_III HEP), Budhil HEP, Singoli Bhatwari HEP and Sorang HEP. Members were requested to share the FRC/FRP computation as per the timeline.

Further, it was also highlighted that only UP, Punjab and Haryana are submitting FRC/FRP computation of generating stations of their respective control area. Other SLDCs were also requested to compute FRC/FRP of their respective control area and submit the FRC/FRP computation to NRLDC as per timeline specified in IEGC.

NRLDC requested SLDCs and generating stations to share the FRC / FRP computation of their respective control area as per stipulated timeline.

NRLDC member also highlighted the persistent issue of partial data submission from Singrauli TPS. NTPC was requested to share the complete plant data of Singrauli TPS otherwise it can't be considered for FRP computation. Presently, data of only 2 units are being submitted by Singrauli TPS.

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 **till 06th October 2025**, FRC/FRP as per NRLDC HDR data is used for computation of

Average Monthly Frequency Response Performance, Beta ' β ' for Generating Stations.

From the FRP data, it is observed that FRP of many of the control areas are not satisfactory. Therefore, it is requested to review the FRC/FRP, governor actions of your respective control area, necessary actions may be taken for improvement in the FRC/FRP.

Members were requested to analyse the frequency response of their respective control area and share the FRC/FRP analysis of generating stations along with unit wise 01 sec data as per timeline for ensuring IEGC compliance.

NRLDC highlighted the unsatisfactory response of some of the generating stations during the event. As per FRC/FRP computation details received from SLDCs, it was highlighted that FRP of most of the generating stations of UP control area is poor or unsatisfactory. Necessary remedial actions need to be taken to improve the FRP of generating stations.

Members were requested to take necessary remedial actions to improve the governor response. PFR testing (governor tuning) may also be conducted if required. The IEGC clause 40.2(c) also mandates governor testing once every five (5) years or whenever major retrofitting is done.

ISGS were requested to confirm whether FGMO as per IEGC 2023 has been implemented at their respective stations or not. Updated list on the basis of details received is as follows:

Sl. No.	Entity	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
1	Dadri -1 (TH)	Yes	6%	
2	Dadri -2 (TH)	Yes	6%	
3	Jhajjar (TH)	Yes	5%	
4	Rihand-1 (TH)	Yes	5%	
5	Rihand-2 (TH)	Yes	5%	
6	Rihand-3 (TH)	Yes	5%	
7	Shree Cement (TH)			
8	Singrauli (TH)	Yes	5%	
9	Tanda-2 (TH)	Yes	6%	
10	Unchahar-I (TH)	Yes	5%	
11	Unchahar-II (TH)	Yes	5%	
12	Unchahar-III (TH)	Yes	5%	
13	Unchahar-IV (TH)	Yes	5%	
14	Anta (G)			
15	Auraiya (G)			
16	Dadri (G)			

17	AD Hydro (H)	Yes	4%	
18	Bairasiul (H)	Yes	4%	
19	Bhakra (H)			
20	Budhil (H)			
21	Chamera-1 (H)	Yes	5%	
22	Chamera-2 (H)	Yes	5%	
23	Chamera-3 (H)	Yes	4%	
24	Dehar (H)			
25	Dhauliganga (H)	Yes	5%	
26	Dulhasti (H)	Yes	5%	
27	Karcham (H)	Yes	5%	
28	Kishenganga	Yes	4%	
29	Koldam (H)	Yes	9%	
30	Koteswar (H)			
31	Malana-2 (H)			
32	Nathpa Jhakri (H)	Yes	9%	
33	Parbati-2 (H)	Yes	4%	
34	Parbati-3 (H)	Yes	4%	
35	Pong (H)			
36	Rampur (H)			
37	Sainj (H)			
38	Salal (H)	Yes	5%	
39	Sewa-II (H)	Yes	4%	
40	Singoli Bhatwari (H)			
41	Sorang (H)	No	4%	ROR, no storage
42	Tanakpur (H)	Yes	4%	
43	Tehri (H)	Yes	4%	
44	Uri-1 (H)	Yes	6%	
45	Uri-2 (H)	Yes	5%	

NRLDC requested generating stations to ensure implementation of FGMO as per IEGC 2023 at generating stations in their respective control area and share the present status of droop setting.

Further, members were requested to share the data and analysis of FRC of their control area. ISGS stations were requested to share the FRC/FRP calculations of each reportable event and also share the 01 sec data of respective generating stations. It was further requested to take remedial actions to improve the governor response if necessary. States were also requested to follow-up with the generating stations of their respective control area and share the unit wise 01 sec data of respective generating stations along with the analysis of FRC response for the aforementioned event.

OCC forum requested members to share the FRC/FRP computation data as per the timeline and also analyse the FRC response of their respective control area. Necessary action for improvement in governor response needs to be taken to ensure the proper frequency response in compliance w.r.t. IEGC 2023.

B.14 Mock testing of System Protection Schemes (SPS) in Northern Region

There are 58 numbers of System Protection Schemes (SPS) approved in Northern Region. These SPS are implemented at major generation complexes, important evacuation transmission lines and ICTs which are N-1 non-compliant. System Protection Scheme Document of Northern Region has been revised/updated on 31st January, 2025. The revised version of the document is available on the NRLDC website.

As per IEGC clause 16.2

“For the operational SPS, RLDC or NLDC, as the case may be, in consultation with the concerned RPC(s) shall perform regular load flow and dynamic studies and mock testing for reviewing SPS parameters & functions, at least once in a year. RLDC or NLDC shall share the report of such studies and mock testing including any shortcomings to respective RPC(s). The data for such studies shall be provided by CTU to the concerned RPC, RLDC and NLDC.”

As per IEGC clause 16.3

“The users and SLDCs shall report about the operation of SPS immediately and detailed report shall be submitted within three days of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.”

NRLDC representative stated that in this regard, communication has already been sent to constituents through NRLDC letter dated 01.05.2024, 21.02.2025, 05.03.2025, 04.04.2025 & 28.05.2025 for conducting mock testing of SPS in their control area and continuous follow-up is also being done in OCC & PSC meetings since May 2024.

Further, it was stated that during 2024-25, mock testing of 14 SPS out of total 55 SPS were not conducted. In view of the high demand scenario during summer 2025-26, NLRDC vide letter dated 04.04.2025 requested all the concerned utility to conduct the mock testing of pending SPS by the end of April 2025. However, as reported, mock testing of 03 SPS out of the pending 14 SPS has been done. In this regard, a discussion was also held in 60th, 61st, 62nd & 63rd PSC meetings. PSC forum requested all the members to conduct the mock testing of all the SPS in their respective control areas at the earliest.

Status of mock testing of all the SPS in NR is attached as **Annexure-B.VIII of agenda.**

NRLDC requested concerned members to conduct the mock testing SPS in their respective control areas and share the mock test report.

DTL representative stated that mock testing of SPS of Bamnauli and Mundka has been planned to be conducted in December 2025.

UPPTCL representative stated that mock testing of SPS of Nehtaur(UP) has been planned in December 2025 and due to damage of ICTs at Obra_B(UP), mock testing can't be conducted there.

NRLDC informed the forum about mock testing of SPS of 765kV Agra-Gwalior D/C which was conducted on 10.10.2025. POWERGRID and involved states were requested to share the report and observation of the mock test exercise w.r.t. their respective control area at the earliest so that final report can be issued.

Further, the discrepancies observed at Bhiwadi(PG) and few of the load stations during mock testing were also highlighted. POWERGRID was requested to take expeditious corrective actions to rectify the issues and make the SPS healthy and operational at all the stations.

POWERGRID agreed to take expeditious corrective actions to make complete SPS system healthy and operational.

NRLDC also highlighted the following points related to SPS schemes in NR:

- i. **SPS of HVDC Rihand-Dadri:** During mock testing of SPS of HVDC Rihand-Dadri on 20.03.2025, issues i.e., faulty SPS hardware at Singrauli TPS (NTPC) and no receipt of SPS signal at 220/132kV Ratangarh(RS) were identified. Further, during the recent operation of SPS on 21.05.2025 in the incident of outage of both poles, desired SPS actions i.e., generation backdown at Singrauli TPS and load relief in UP, Delhi, Haryana & Punjab, were not observed. Desired load/generation relief is important to ensure the security and reliability of grid during such a contingency. As per details received, SPS signal was sent to all the mapped stations from the POWERGRID end however either due to non receipt of signal or error in SPS system at load / generation, SPS action didn't occur. NRLDC vide letter dated 02.07.2025, requested POWERGRID and Singrauli NTPC to take necessary remedial measures and make complete SPS system healthy.

During 233rd OCC meeting, POWERGRID representative stated that the equipment's at Singrauli TPS end is owned by NTPC and need to be revived by them. SPS system at Rihand(PG) is healthy and operational. NTPC representative stated that as per details received from site, NTPC Singrauli team have initiated necessary actions in coordination with the POWERGRID. SPS operation is crucial as it is planned for special contingencies, and its unavailability

may lead to cascade tripping or major grid disturbance especially in case of high-demand period.

NRLDC requested NTPC Singrauli and POWERGRID to share the details of necessary corrective actions taken/planned to be taken to ensure the healthiness of SPS system at Singrauli TPS and load stations.

Representatives from NTPC were not available during the discussion of this agenda point.

POWERGRID assured to take necessary corrective actions to make SPS system healthy.

- ii. **SPS of Anta, Kawai, Chhabra generation complex:** In one of the SPS cases i.e., N-1-1/ N-2 of 765kV Anta-Phagi 1 & 2, instantaneous generation backdown of ~2100 MW is designed as SPS action. In such a scenario, to avoid overloading of WR-NR corridor and over drawl by Rajasthan, it was agreed that RVPNL shall implement the automatic load shedding of ~750 MW by 28.02.2018. However, as per details available, implementation of automatic load shedding as per SPS hasn't been done yet. This matter has already been discussed in PSC as well as OCC meetings on a regular basis. The concern of grid security and reliability was also raised during the request of shutdown of 765kV Anta-Phagi line. is requested to expedite the implementation of the automatic load shedding of ~750 MW as per SPS (N-1-1/ N-2 contingency of 765kV Anta-Phagi-1 & 2). During 235th OCC meeting, the SLDC-Rajasthan representative informed that automatic load shedding of ~750 MW has been implemented.

NRLDC representative requested Rajasthan to share the mock test report of the automatic load shedding part of the SPS If mock testing has already been conducted. Otherwise, Rajasthan was requested to conduct the mock testing of SPS at the earliest and share the report.

RVPNL agreed to share the details of the mock testing of automatic load shedding part of the SPS at the earliest.

- iii. **SPS of N.Jharkri, Karcham, Rampur hydro generation complex:** Status of implementation of case-6(i) and corrective actions w.r.t case-6 (ii) need to be shared.

During 235th OCC meeting, HPPTCL representative informed that faulty communication card at Wangtoo S/s is to be replaced with new card. The case is at procurement stage, and it is estimated that work will be completed by the end of December 2025.

NRLDC requested Karcham(JSW) and HPPTCL to share the update in this regard.

SLDC-HP representative stated that no further updates have been received from HPPTCL.

- iv. **SPS of HVDC Mundra-Mahendragarh: Continuous follow-up is being done since 51st PSC meeting. As informed by ADANI, word order has been placed and SPS will be made healthy by end of December 2025.** During 235th OCC meeting, ADANI representative stated that the Hardware is expected to be received by the partner by 20-Sep-25. Further, FAT is expected to be carried out by 30-Sep-25). The Dispatch and site activities shall be planned based on FAT punch point closures. Further, they will ensure the completion of the work as per timeline.

Representatives from ADANI were not present during the discussion of this agenda point.

Further, Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year. Mock testing of all the SPS needs to be conducted in 2025-26. In view of this NRLDC representative requested the following to the members:

- i. **Concerned constituents/utility are requested to conduct the mock testing of pending SPS (whose mock testing was not conducted in 2024-25) at the earliest.**
- ii. **Utilities are also requested to conduct the mock testing of SPS schemes in their respective control area w.r.t. year 2025-26.**
- iii. **In compliance with IEGC clause 16.2, users shall ensure that mock testing along with the review of SPS logic of all the SPS is conducted at least once a year.**
- iv. **Further, in compliance with IEGC clause 16.3, users shall also share the detailed report of SPS operation in their respective control area within 3 days of its operation. Presently, no such report is being received.**

Further, during 60th PSC meeting, forum also decided not to disable the SPS where ICTs are now N-1 compliant after augmentation. It was decided that SPS may be kept enabled with logic based on loading instead of ICT tripping. In view of this, NRLDC requested members to take necessary actions at their end and share the confirmation.

OCC forum requested members to conduct the mock testing of SPS in their respective control area, share the report of the mock testing conducted.

Members were also requested to review the SPS scheme in their respective control area if there is any change in network configuration and load profile.

B.15 Mock trial run and testing of black start facilities at generating stations in Northern Region

As per Indian Electricity Grid Code (IEGC) clause 34.3

*“ Detailed procedures for restoration post partial and total blackout of each user system within a region shall be prepared by the concerned user in coordination with the concerned SLDC, RLDC or NLDC, as the case may be. The concerned user shall review the procedure every year and update the same. **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.** Diesel generator sets and other standalone auxiliary supply sources to be used for black start shall be tested on a weekly basis and the user shall send the test reports to the concerned SLDC, RLDC and NLDC on a quarterly basis”.*

Hydro and gas-based plants are capable of self-black-start. Conducting periodic mock black start exercises are extremely important to ensure the healthiness of black start facilities and also to build awareness as well as confidence among the system operators.

In view of above, regional entity generating stations shall conduct the dead bus charging of their units on a rotation basis as per the availability of schedule under intimation to the NRLDC. Testing of Diesel generator sets and other standalone auxiliary supply source to be used for black start shall also be done on a weekly basis. SLDC shall also ensure the same in their respective control area. This will ensure the healthiness of the black start facility at generating stations. Further, NRLDC shall coordinate with the ISGS and states to conduct the mock black start exercise of subsystems.

Therefore, regional entity generating stations and SLDCs are requested to share the annual schedule plan for conducting dead bus charging / mock black start exercise of generating stations / sub-systems during 2025-26. The present status of mock black start of generating units is attached as Annexure-B.IX of agenda. Constituents are also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis.

NRLDC representative presented the status of mock black start exercises in NR and requested ISGS and SLDCs to take following actions:

- **share the report of testing of DG sets.**
- **share the tentative schedule of mock black start exercise of generating stations in their respective control area.**
- **SLDCs are requested to share the tentative schedule plan of mock black start exercise of generating stations in their respective control area.**
- **conduct dead bus charging after self-starting the generating station if schedule with load is not available.**
- **share the test report of mock black start exercise conducted along with weekly DG testing on monthly/quarterly basis.**

OCC forum requested all the concerned generating stations and States to conduct the mock black start exercise of black start facilities in your respective control area. Members were also requested to share the report of mock black start exercises after conducting and testing of DG sets on quarterly basis.

B.16 Frequent tripping of 220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1

In recent past, frequent tripping of 220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1 has been observed. Line tripped 21 times since July 2025. List of tripping events of this line during last three months is attached as **Annexure-B.X of agenda.**

NRLDC presented the list of the trippings and further stated that the issue was also highlighted during 62nd and 63rd PSC meetings. During 63rd PSC meeting, UPPTCL representative informed that frequent tripping of the line was mainly due to insulators flashover and insulators have been replaced at few locations. Further actions have also been planned.

NRLDC representative asked UPPTCL regarding the root cause of frequent tripping and details of remedial measures taken to avoid the tripping in future.

UPPTCL representative informed that frequent flashovers of polymer insulators have been observed. It was identified that one lot was defective, leading to early failure. Necessary actions are being taken, and faulty insulators are being replaced.

NRLDC also highlighted that this line is a nuclear generation evacuating line and its frequent outage will affect the reliability and security of the NAPP complex. Further, as winter is also coming, necessary remedial actions need to be taken to avoid frequent tripping of line.

OCC forum requested UPPTCL to take expeditious corrective actions to avoid further tripping of the line.

Status of action taken on decision of 235th OCC meeting of NRPC

S.N.	Agenda	Decision of 235 th OCC meeting of NRPC	Status of action taken
1	Agenda. Rectification of the breaker and charging of the 220kV Sunam (PS)-Patran (IndiGrid) Circuit (Agenda by Punjab SLDC)	The IndiGrid representative informed that the OEM has recently conveyed that the power cord cannot be repaired and must be replaced. The OEM has also requested 15 days to provide the replacement. MS, NRPC expressed serious concern over the line remaining under outage for more than a year and directed IndiGrid to ensure that the cord is replaced within 15 days. She further advised IndiGrid to examine the possibility of invoking the penalty provisions under the contract against the OEM.	Representative of IndiGrid that OEM has dispatched circuit breaker after replacing power cord. He assured that circuit breaker would be replaced by 30 th October, 2025.
2	A.14. Revision of RAPS Island (Agenda by NRPC Secretariat)	OCC forum asked RRVPNL to share the basecase of revised islanding scheme with NRLDC for review.	NRLDC representative stated that with the submission of Rajasthan regarding operation of 220kV Transformers upto maximum tap as per system requirement, the revised islanding scheme of RAPP-A and RAPP-B for full generation (~ 640 MW) is found to be in order. OCC forum approved the revised islanding scheme

Status of action taken on decision of 235th OCC meeting of NRPC

			and asked Rajasthan SLDC to • Ensure and maintain a G/L ratio of ~1.1 for the island, as specified in the revised islanding scheme, by adjusting the island size based on actual island load and generation. This is essential for successful island formation. • Ensure that the network earmarked for island operation is operated as per the revised scheme. • Make any adjustments or modifications to the network, including LILO or bus sectionalization, should be carried out only after a comprehensive review and formal approval of the islanding scheme.
--	--	--	---

Follow up issues from previous OCC meetings

Annexure-A. II

1	Down Stream network by State utilities from ISTS Station	Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.	List of downstream networks is enclosed in Annexure-A. II. I.																																								
2	Progress of installing new capacitors and repair of defective capacitors	Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.	Data upto following months, received from various states / UTs: <table><tr><td>⊙ CHANDIGARH</td><td>Sep-2019</td></tr><tr><td>⊙ DELHI</td><td>Jul-2025</td></tr><tr><td>⊙ HARYANA</td><td>Sep-2025</td></tr><tr><td>⊙ HP</td><td>Mar-2025</td></tr><tr><td>⊙ J&K and LADAKH</td><td>Not Available</td></tr><tr><td>⊙ PUNJAB</td><td>Jul-2025</td></tr><tr><td>⊙ RAJASTHAN</td><td>Sep-2025</td></tr><tr><td>⊙ UP</td><td>Sep-2025</td></tr><tr><td>⊙ UTTARAKHAND</td><td>Aug-2025</td></tr></table> All States/UTs are requested to update status on monthly basis.	⊙ CHANDIGARH	Sep-2019	⊙ DELHI	Jul-2025	⊙ HARYANA	Sep-2025	⊙ HP	Mar-2025	⊙ J&K and LADAKH	Not Available	⊙ PUNJAB	Jul-2025	⊙ RAJASTHAN	Sep-2025	⊙ UP	Sep-2025	⊙ UTTARAKHAND	Aug-2025																						
⊙ CHANDIGARH	Sep-2019																																										
⊙ DELHI	Jul-2025																																										
⊙ HARYANA	Sep-2025																																										
⊙ HP	Mar-2025																																										
⊙ J&K and LADAKH	Not Available																																										
⊙ PUNJAB	Jul-2025																																										
⊙ RAJASTHAN	Sep-2025																																										
⊙ UP	Sep-2025																																										
⊙ UTTARAKHAND	Aug-2025																																										
3	Healthiness of defence mechanism: Self-certification	Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional” . In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.	Data upto following months, received from various states / UTs: <table><tr><td>⊙ CHANDIGARH</td><td>Not Available</td></tr><tr><td>⊙ DELHI</td><td>Sep-2025</td></tr><tr><td>⊙ HARYANA</td><td>Jun-2025</td></tr><tr><td>⊙ HP</td><td>Jun-2025</td></tr><tr><td>⊙ J&K and LADAKH</td><td>Not Available</td></tr><tr><td>⊙ PUNJAB</td><td>Sep-2025</td></tr><tr><td>⊙ RAJASTHAN</td><td>Jun-2025</td></tr><tr><td>⊙ UP</td><td>Sep-2025</td></tr><tr><td>⊙ UTTARAKHAND</td><td>Sep-2025</td></tr><tr><td>⊙ BBMB</td><td>Sep-2025</td></tr></table> All States/UTs are requested to update status for healthiness of UFRs on monthly basis for islanding schemes and on quartely basis for the rest. Status: <table><tr><td>⊙ CHANDIGARH</td><td>Not Available</td></tr><tr><td>⊙ DELHI</td><td>Increased</td></tr><tr><td>⊙ HARYANA</td><td>Increased</td></tr><tr><td>⊙ HP</td><td>Increased</td></tr><tr><td>⊙ J&K and LADAKH</td><td>Increased</td></tr><tr><td>⊙ PUNJAB</td><td>Increased</td></tr><tr><td>⊙ RAJASTHAN</td><td>Increased</td></tr><tr><td>⊙ UP</td><td>Increased</td></tr><tr><td>⊙ UTTARAKHAND</td><td>Increased</td></tr><tr><td>⊙ BBMB</td><td>Increased</td></tr></table>	⊙ CHANDIGARH	Not Available	⊙ DELHI	Sep-2025	⊙ HARYANA	Jun-2025	⊙ HP	Jun-2025	⊙ J&K and LADAKH	Not Available	⊙ PUNJAB	Sep-2025	⊙ RAJASTHAN	Jun-2025	⊙ UP	Sep-2025	⊙ UTTARAKHAND	Sep-2025	⊙ BBMB	Sep-2025	⊙ CHANDIGARH	Not Available	⊙ DELHI	Increased	⊙ HARYANA	Increased	⊙ HP	Increased	⊙ J&K and LADAKH	Increased	⊙ PUNJAB	Increased	⊙ RAJASTHAN	Increased	⊙ UP	Increased	⊙ UTTARAKHAND	Increased	⊙ BBMB	Increased
⊙ CHANDIGARH	Not Available																																										
⊙ DELHI	Sep-2025																																										
⊙ HARYANA	Jun-2025																																										
⊙ HP	Jun-2025																																										
⊙ J&K and LADAKH	Not Available																																										
⊙ PUNJAB	Sep-2025																																										
⊙ RAJASTHAN	Jun-2025																																										
⊙ UP	Sep-2025																																										
⊙ UTTARAKHAND	Sep-2025																																										
⊙ BBMB	Sep-2025																																										
⊙ CHANDIGARH	Not Available																																										
⊙ DELHI	Increased																																										
⊙ HARYANA	Increased																																										
⊙ HP	Increased																																										
⊙ J&K and LADAKH	Increased																																										
⊙ PUNJAB	Increased																																										
⊙ RAJASTHAN	Increased																																										
⊙ UP	Increased																																										
⊙ UTTARAKHAND	Increased																																										
⊙ BBMB	Increased																																										

4	Status of Automatic Demand Management System in NR states/UT's	The status of ADMS implementation in NR, which is mandated in clause 5.4.2 (d) of IEGC by SLDC/SEB/DISCOMs is presented in the following table:	The status of ADMS implementation in NR is enclosed in Annexure-A.II.II.																																													
			⊙ DELHI	Scheme Implemented but operated in manual mode.																																												
			⊙ HARYANA	Scheme not implemented																																												
			⊙ HP	Scheme not implemented																																												
			⊙ PUNJAB	Scheme not implemented																																												
			⊙ RAJASTHAN	Under implementation.																																												
			⊙ UP	Scheme implemented by NPCIL only																																												
			⊙ UTTARAKHAND	Scheme not implemented																																												
5	Status of availability of ERS towers in NR	As per the decesion of 68th NRPC and 211th OCC meeting, ERS availability monitoring is being taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.	As per the information received from different utilities in Northern region, updated status of availability of ERS towers in Northern Region attached as Annexure-A.II.III.																																													
6	Submission of breakup of Energy Consumption by the states	All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under: <table><tr><td>Category→</td><td>Consumption by Domestic Loads</td><td>Consumption by Commercial Loads</td><td>Consumption by Agricultural Loads</td><td>Consumption by Industrial Loads</td><td>Traction supply load</td><td>Miscellaneous / Others</td></tr><tr><td><Month></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Category→	Consumption by Domestic Loads	Consumption by Commercial Loads	Consumption by Agricultural Loads	Consumption by Industrial Loads	Traction supply load	Miscellaneous / Others	<Month>							Status of the information submission (month) from states / utilities is as under: <table><tr><td></td><td>State / UT</td><td>Upto</td></tr><tr><td>⊙</td><td>CHANDIGARH</td><td>Not Submitted</td></tr><tr><td>⊙</td><td>DELHI</td><td>Jun-25</td></tr><tr><td>⊙</td><td>HARYANA</td><td>Aug-25</td></tr><tr><td>⊙</td><td>HP</td><td>Jul-25</td></tr><tr><td>⊙</td><td>J&K and LADAKH</td><td>JPDCL- Mar' 24 KPDCL- Not Submitted</td></tr><tr><td>⊙</td><td>PUNJAB</td><td>Jul-25</td></tr><tr><td>⊙</td><td>RAJASTHAN</td><td>Jul-25</td></tr><tr><td>⊙</td><td>UP</td><td>Feb-25</td></tr><tr><td>⊙</td><td>UTTARAKHAND</td><td>Feb-25</td></tr></table> Chandigarh is requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format			State / UT	Upto	⊙	CHANDIGARH	Not Submitted	⊙	DELHI	Jun-25	⊙	HARYANA	Aug-25	⊙	HP	Jul-25	⊙	J&K and LADAKH	JPDCL- Mar' 24 KPDCL- Not Submitted	⊙	PUNJAB	Jul-25	⊙	RAJASTHAN	Jul-25	⊙	UP	Feb-25	⊙	UTTARAKHAND	Feb-25
Category→	Consumption by Domestic Loads	Consumption by Commercial Loads	Consumption by Agricultural Loads	Consumption by Industrial Loads	Traction supply load	Miscellaneous / Others																																										
<Month>																																																
	State / UT	Upto																																														
⊙	CHANDIGARH	Not Submitted																																														
⊙	DELHI	Jun-25																																														
⊙	HARYANA	Aug-25																																														
⊙	HP	Jul-25																																														
⊙	J&K and LADAKH	JPDCL- Mar' 24 KPDCL- Not Submitted																																														
⊙	PUNJAB	Jul-25																																														
⊙	RAJASTHAN	Jul-25																																														
⊙	UP	Feb-25																																														
⊙	UTTARAKHAND	Feb-25																																														

9	Reactive compensation at 220 kV/ 400 kV level at 7 substations			
	State / Utility	Substation	Reactor	Status
i	DTL	Peeragarhi	1x50 MVar at 220 kV	1x50 MVar Reactor at Peeragarhi has been commissioned on dated 18.09.2023
ii	DTL	Harsh Vihar	2x50 MVar at 220 kV	2x50 MVAR Reactor at Harsh Vihar has been commissioned on dated 31th March 2023.
iii	DTL	Mundka	1x125 MVar at 400 kV & 1x25 MVar at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
iv	DTL	Bamnauli	2x25 MVar at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
v	DTL	Indraprastha	2x25 MVar at 220 kV	Bay work completed on 07.11.2023. Reactor part tender is dropped and at present same is under revision.
vi	DTL	Electric Lane	1x50 MVar at 220 kV	Under Re-tendering due to Single Bid
vii	PTCUL	Kashipur	1x125 MVAR at 400 kV	The Letter of Award for "Procurement of 125 MVAR Reactor, Online DGA, ODS, NIFPS along with its accessories at 400 KV Sub-station Kashipur" against Tender Specification no. PTCUL/E-Tender/C&P-II/SS-12/2024-25 has been issued to M/s Bharat Heavy Electricals Limited, New Delhi on 26.06.2025.

						Annexure-A-II.I
1. Down Stream network by State utilities from ISTS Station:						
Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
1	400/220kV, 3x315 MVA Samba	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays.	-	02 No. of bays shall be utilized for LILO-II of 220kV Jatwal-Bishnah Transmission Line, the work of which is expected to begin on 16th July 2025. Updated in 233rd OCC by JKPTCL.
2	400/220kV, 2x315 MVA New Wanpoh	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV New Wanpoh - Alusteng D/c Line	Mar'25	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Alusteng D/c Line. RoW issues persisting; At present new-wampoh-mirbazar 5km and harwan-alstung 16km have been completed, expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 214th OCC by JKPTCL.
				• 220 kV New Wanpoh - Mattan D/c Line	End of 2024	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Mattan D/c Line. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	End of 2024	02 No. of bays are proposed to be utilized for connecting 220/132 kV GSS Loolipora. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	Commissioned	Updated by HVPNL in 235th OCC.
5	400/220 kV, 2x315 MVA Dehradun	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• Network to be planned for 4 bays	-	PTCUL to update the status.
6	Shahjahanpur, 2x315 MVA 400/220 kV	Commissioned: 6 Approved/Under Implementation:1	Utilized: 7	• 220 kV D/C Shahjahanpur (PG) - Gola line	Commissioned	Energization date: 26.10.2023 updated by UPPTCL in 215th OCC
				• LILO of Sitapur – Shahjahanpur 220 kV SC line at Shahjahanpur (PG)	Commissioned	Energization date: 25.02.2022 updated by UPPTCL in 196th OCC
7	Hamirpur 400/220 kV Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• 220 kV Hamirpur-Dehan D/c line	Commissioned	HPPTCL has commissioned the Planned 220kV Dehan-Hamirpur TL utilizing 2 No. 220kV Bays.Commissioned date: 09.06.2022. Updated in 198th OCC by HPPTCL
				• Network to be planned for 4 bays	-	HPPTCL to update the status.
8	Sikar 400/220kV, 1x 315 MVA S/s	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• LILO of 220 kV Sikar (220 kV GSS)-Dhod S/c line at Sikar (PG)	Commissioned	LILO of 220 kV S/C Sikar-Dhod line at 400 kV GSS PGCIL, Sikar has been charged on dt. 31.03.2022
				• Network to be planned for 2 bays.	-	Against the 3rd ICT at 400 kV GSS Sikar, only 2 bays were constructed and same has been utilized by RVPN by constructing LILO of 220 kV S/C Sikar – Dhod line as updated by RVPNL in 195th OCC
9	Bhiwani 400/220kV S/s	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	Commissioned	Updated in 202nd OCC by HVPNL
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	Dec'25	Issue related to ROW as intimated in 228th OCC by HVPNL. Status: Work was stalled since 29.07.2021 due to ROW issues and farmers agitation and further restarted on 9.10.2023 with the help of district administration. Now, work was again stalled since 30.11.2023 due to severe ROW issues. Expected to be completed by 31.03.2025. Foundation 209/212. Erection 193/212. Stinging 37.8/50.3 km
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Mar'26	Line work awarded to M/s R S Infra Projects Pvt. Ltd. Noida, Uttar Pradesh on dated 09.03.2024. Work of route plan and route alignment has been started by the firm as intimated in 234th OCC by HVPNL.
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0	• LILO of both circuits of 220 kV Jind HVPNL to PTPS D/C line at 400 kV substation PGCIL Khatkar (Jind) with 0.5 sq inch ACSR conductor	Sep'25	Erection and stringing work completed.The signing of Connection agreement amongst the Utilities is pending. Updated in 234th OCC by HVPNL.
11	400/220kV Tughlakabad GIS	Commissioned: 6	Utilized: 6	• RK Puram – Tughlakabad (UG Cable) 220kV D/c line – March 2023.	Commissioned	Updated in 216th OCC by DTL
		Under Implementation: 4	Unutilized: 0	• Masjid Mor – Tughlakabad 220kV D/c line.	Commissioned	Updated in 216th OCC by DTL
12	400/220kV Kala Amb GIS (TBCB)	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 2 Under Implementation:2	• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s	Commissioned	Energization date: 31.05.2024 updated by HPPTCL in 220th OCC
				• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Giri S/s	-	Tendering process is yet to be started.Updated in 219th OCC by HPPTCL
				• Network to be planned for 2 bays	-	HPPTCL to update the status.
13	400/220kV Kadarpur Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• D/C line Kadarpur - Pali D/C line Kadarpur - Sec-65	Commissioned	Updated in 232nd OCC by HVPNL Status:- A-formats for FTC of line submitted on FTC portal of NRLDC on dated 09.04.25.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• LILO of both circuits of 220kV D/c Sohna-Rangla Rajpur at Roj Ka Meo line at 400kV Sohna Road	Oct'25	Line work completed, but commissioning of 220kV substation Roj ka Meo is pending till now.. However, this arrangement will not lead to usage of additional bays i.e. no of utilised bays at Sohna road will remain same.Updated in 230th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	The matter is subjudice in Hon'ble Punjab & Haryana High court, Chandigarh Updated in 228th OCC by HVPNL. Status:- Earlier 02 nos 220 kV line bays were to be utilized for the 220 kV GIS S/Stn. Sec-77, Gurugram but due to denotification of land of the 220 kV GIS S/Stn. Sec-77 the said substation is now going to be dismantled and a new substation is proposed at Sec-75A, Gurugram. Now, these 02 no. 220 kV line bays may be utilized at 220 kV GIS S/Stn Sec-75A, Gurugram.
15	400/220kV Prithla Sub-station	Commissioned: 8 Approved: 2 Total: 10	Utilized: 4 Unutilized: 4 Under Implementation:2	• 220kV D/C line from Prithla to Harfali with LILO of one circuit at 220kV Meerpur Kurali	Dec'25	Contract awarded on 08.08.23 to M/s Skipper with completion in December 25.Updated in 230th OCC by HVPNL
				• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	Commissioned	Energization date: 31.12.2021. Updated in 198th OCC by HVPNL
				• 220kV D/C for Sector78, Faridabad	Dec'25	Issue related to ROW and Pending crossing approval from Northern Railways and DFCCIL. as intimated in 228th OCC by HVPNL.
				• Prithla - Sector 89 Faridabad 220kV D/c line	Dec'25	The work for construction of 220kV D/C Prithla-Sector-78 Faridabad line on multi circuit towers is delayed mainly due to severe resistance by local villagers & ROW problem at site during construction. Due to delay in construction of 220kV D/C Prithla-Sector-78 Faridabad line, the work for construction of 220kV D/C Prithla-Sector 89 Faridabad line might delay..Updated in 230th OCC by HVPNL
16	400/220kV Sonapat Sub-station	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 2 Unutilized: 4 Under Implementation:2	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonapat	Commissioned	Commissioned as updated by HVPNL in 233rd OCC
				• Sonapat - HSIISC Rai 220kV D/c line	Commissioned	Energization date: 31.05.2024 updated by HVPNL in 220th OCC
				• Sonapat - Kharkhoda Pocket A 220kV D/c line	Nov'25	Updated in 232nd OCC by HVPNL. Status: Work order has been issued to M/s R.S Infra on dated 09.08.2023 by O/o CE/PD&C, Panchkula for construction of line. Both bays are under construction and erection of electrical equipment is under progress.
17	400/220kV Neemrana Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• LILO of Bhiwadi - Neemrana 220kV S/c line at Neemrana (PG)	-	Work is under progres. Stub Setting: 14/2017. Permission for Highway is awaited from concerned department as updated in 218th OCC by RVPNL.
18	400/220kV Kotputli Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Kotputli - Pathreda 220kV D/c line	-	Date of bid opening has been extended up to 30.04.2024 as updated in 218th OCC by RVPNL.
19	400/220kV Jalandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar	-	LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar being planned. Route plan and estimate of work sanctioned, DNIT has been sent to float tender as updated by PSTCL in 227th OCC
20	400/220kV Roorkee Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Roorkee (PG)-Pirankaliyar 220kV D/c line	Commissioned	Roorkee (PG)-Pirankaliyar 220kV D/c line commissioned in 2020 as intimated by PTCUL in 197th OCC
21	400/220kV Lucknow Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	Commissioned	• Lucknow -Kanduni, 220 kV D/C line work energized on 05.10.2023. Updated in 212th OCC by UPPTCL. • No planning for 2 no. of bays upated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.
22	400/220kV Gorakhpur Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	Commissioned	• Gorakhpur(PG)- Maharajanj, 220 kV D/C line energized on 27.09.2023 updated by UPPTCL in 212th OCC
23	400/220kV Fatehpur Sub-station	Commissioned: 8 Under Implementation:2 Total: 10	Utilized: 6 Unutilized: 2 Under Implementation:2	• Network to be planned for 2 bays	-	• UPPTCL intimated that 02 no. of bays under finalization stage. In 201st OCC, UPPTCL intimated that it is finalized that Khaga s/s will be connected (tentative time 1.5 years). • No planning for 2 no. of bays updated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.
24	400/220kV Abdullapur Sub-station	Commissioned: 10 Under Implementation:2 Total: 12	Utilized: 10 Unutilized: 0 Under Implementation:2	• Abdullapur – Rajokheri 220kV D/c line	Commissioned	Ckt-1 commissioned at 16:13hrs on dated 06.08.24 & Ckt-2 commissioned at 20:10 hrs on dated 05.08.24. Updated in 223rd OCC by HVPNL
25	400/220kV Pachkula Sub-station	Commissioned: 8 Under tender:2 Total: 10 Out of these 10 nos. 220kV	Utilized: 2 Unutilized: 4 Under Implementation:2	• Panchkula – Pinjore 220kV D/c line	Commissioned	Updated in 218th OCC by HVPNL
				• Panchkula – Sector-32 220kV D/c line	Commissioned	Energization date: 24.05.2024 updated by HVPNL in 220th OCC
				• Panchkula – Raiwali 220kV D/c line	Commissioned	Updated in 194th OCC by HVPNL
				• Panchkula – Sadhaura 220kV D/c line: Sep'23	Nov'25	Revised target date as confirmed by concerned XEN TS, Panchkula.Updated in 234th OCC by HVPNL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
26	400/220kV Amritsar S/s	Commissioned:7 Approved in 50th NRPC- 1 no. Total: 8	Utilized: 6 Under Implementation:2	• Amritsar – Patti 220kV S/c line	-	Draft connectivity agreements for 220kV Rashiana-Amritsar has been received from CTU and the same under processing. Draft connectivity agreements for 220kV Patti-Amritsar line is under consideration by CTU. CTU is processing the agreement and PSTCL has provided with the requisite inputs/data to CTU. Updated in 232nd OCC by PSTCL.
				• Amritsar – Rashiana 220kV S/c line (2 bays shall be required for above lines. However, 1 unutilized bay shall be used for Patti and requirement of one additional bay approved for Rashiana by NRPC)	-	Draft connectivity agreements for 220kV Rashiana-Amritsar & 220kV Patti-Amritsar lines are under consideration by CTU. CTU is processing the agreement and PSTCL has provided with the requisite inputs/data to CTU. Updated in 232nd OCC by PSTCL.
27	400/220kV Bagpat S/s	Commissioned: 8 Total: 8	Utilized:6 Unutilized: 2	• Bagpat - Modipuram 220kV D/c line	Commissioned	Updated in 201st OCC by UPPTCL
28	400/220kV Bahadurgarh S/s	Commissioned: 4 Approved: 4 Total: 8	Utilized:2 Unutilized: 2	• LILO of 220 kV Nunamajra- Daultabad S/c line at 400 kV Bahadurgarh PGCIL	-	Proposal turned down by CEA.Updated in 230th OCC by HVPNL.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	15.06.2026	Updated in 230th OCC by HVPNL. Status: The work stands awarded to the M/s KRR and the execution work has been started at site. Partial route stands approved by the competent authority of the HVPNL. Further, 06 no. Foundation has been casted.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	30.11.2025	Updated in 234th OCC by HVPNL. Status: RoW issues which are being resolved with the help of Duty Magistrate.
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• LILO of 220 kV S/C Dausa – Sawai Madhopur line at 400 kV GSS Jaipur South (PG)	06.10.2025	Work order has been issued on 06.10.2023, work under progress as updated by RVPNL in 215th OCC
30	400/220kV Sohawal S/s	Commissioned: 8 Total: 8	Utilized: 8	• Sohawal - Barabanki 220kV D/c line	Commissioned	Energization date: 14.04.2018 updated by UPPTCL in 196th OCC
				• Sohawal - New Tanda 220kV D/c line	Commissioned	Energization date: 28.05.2019 updated by UPPTCL in 196th OCC
				• Network to be planned for 2 bays	Commissioned	• Sohawal - Gonda 220kV S/c line (Energization date: 27.04.2020) updated by UPPTCL in 196th OCC • Sohawal - Bahraich 220kV S/c line (Energization date: 15.02.2021) updated by UPPTCL in 196th OCC
31	400/220kV, Kankroli	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220 kV D/C Kankroli(PG) - Nathdwara line	-	Standard bid document has been finalized on 13.08.2024 and bid is under preparation as updated by RVPN in 222nd OCC.
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	-	Status:- A proposal is being prepared for the creation of another 220kV D/C line from the 400kV substation Panchgaon (PG) to the 220kV substation Panchgaon (HVPNL), along with the LILO of one circuit of the 220kV D/C Panchgaon (PG) – Mau line at the 220kV substation Panchgaon to utilize two bays at the 400kV substation Panchgaon. The load flow study for this has already been completed.
33	400/220kV, Saharanpur	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	Commissioned	Saharanpur(PG)-Devband D/c line (Energization date: 20.04.2023) updated by UPPTCL in 207th OCC
34	400/220kV, Wagoora	Commissioned: 10 Total: 10	Utilized: 6 Unutilized: 4	• Network to be planned for 4 bays	-	PDD, J&K to update the status.
35	400/220kV, Ludhiana	Commissioned: 9 Total: 9	Utilized: 8 Unutilized: 1	• Network to be planned for 1 bay	Commissioned	Direct circuit from 220 kV Lalton Kalan to Dhandari Kalan to be diverted to 400 kV PGCIL Ludhiana. Work completed , final agrement is expected to be signed by May'24. Updated in 218th OCC by PSTCL.
36	400/220kV, Chamba (Chamera Pool)	Commissioned: 3 Under tender:1 Total: 4	Utilized:3 Unutilized: 0 Under tender:1	• Stringing of 2nd ckt of Chamera Pool – Karian 220kV D/c line	Commissioned	Stringing of 2nd Circuit of Chamera Pool-Karian Tansmission line has been completed & terminal bay at 400/220 kV chamera pooling substation (PGCIL) is commissioned on 20.01.2024. Updated in 217th OCC by HPPTCL.
37	400/220kV, Mainpuri	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	-	• 02 no. of bays under finalization stage updated by UPPTCL in 196th OCC. Mainpuri S/s planned. Land is not finalized, therefore timeline not available as intimated by UPPTCL in 201st OCC.
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 400 kV PGCIL Patiala - 220 kV Bhadson (D/C)	-	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. Construction of boundary wall has started at 220 kv ss bhadson.yard work could not be started as approval for dismantaling existing 517 no tress is pending at district level committee which is competent for giving approval of dismantling of trees. Chairman of committee is DC pataiala.. as updated by PSTCL in 233th OCC meeting

Status of ADMS implementation in NR:

Sl. No.	State / UT	Status	Remarks
1	DELHI	Scheme Implemented but operated in manual mode.	In 236th OCC meeting, Delhi SLDC representative stated that as informed by BRPL and BYPL, SCADA upgradation work of would be completed by Dec'25. Further, SCADA upgradation work of TPDDL would be completed by Dec'26.
2	HARYANA	Scheme not implemented	Haryana SLDC intimated that as per Joint Roadmap of implementation of ADMS in Haryana supplied to NRPC vide memo dated 17.10.2023 (Annexure-II), the implementation plan was proposed to be carried out in two parts, as mentioned below: PART-I: Control with Transmission Utility PART-II: Control with Distribution Utility It is pertinent to mention that as part of upcoming SCADA-EMS system i.e. upgradation of SCADA-EMS system, a feature in the name of LSS (Load Shedding Software)/ ADMS is part of the Technical Specification of project to be delivered. Therefore, the functionalities of ADMS application will be covered under 'Part-I: Control with Transmission Utility' will already be covered using the RTUs available at select substations along with the ADMS software being delivered by M/s GE under SCADA upgradation project. Hence, there is no need to acquire a separate ADMS application & associated hardware for data centre for implementation of PART-I. Further for Part -II a committee has been constituted for further finalization of the ADMS module with control with Discoms is under discussions for preparation of DPR.
3	HP	Scheme not implemented	In 236th OCC meeting, HPSLDC representative informed that revised feeders list is awaited from HPSEBL. MS, NRPC asked HPSLDC to have and meeting with Discoms in its control areas and finalize of feeder list before next OCC meeting.
4	PUNJAB	Scheme not implemented	In 236th OCC meeting, Punjab SLDC representative informed that testing of SCADA upgradation under ULDC phase III is underway. It is likely to be completed by Dec'25.
5	RAJASTHAN	Under implementation	RVPN has pilot tested the logic of ADMS which is to be implemented for Rajasthan. In 232th OCC meeting, RVPN informed that 286 nos. of circuit breakers have been mapped to ADMS, all 286 circuit breakers tested upto yard individually. Total 650CBs are to be mapped in phased manner.
6	UP	Scheme implemented by NPCIL only	In 236th OCC meeting, UP SLDC representative stated that 300 No. of 132 KV Substations have been integrated with SCADA. SCADA upgradation under ULDC phase III is likely to be completed in the next 3 to 4 months. List of 33kV feeders to be mapped under ADMS is required from the Discoms. In the meeting held in Aug'25, UPSLDC had requested Discoms to provide the feeders list. Reminders were also sent to Discoms. However, 33 kV feeder list is still pending from the Discoms. MS, NRPC asked HPSLDC to have and meeting with Discoms in its control areas and finalize of feeder list before next OCC meeting.
7	UTTARAKHAND	Scheme not implemented	i. UPCL has prepared a system architecture in which all the non-monitored sub-stions have been selected and 11kV feeders have been considered for ADMS operation. For the scheme, discom has also done group-wise selection of feeders and quantum of MW relief to be given for automatic demand response at 11kV level has also been decided. UPCL has awarded the tender for implementation of the aforementioned scheme to M/s Metergy Pvt.Ltd. ii. As per the status report submitted by M/s Metergy Pvt.Ltd, the survey work of 30 nos. incomer sites have been completed and order has been placed by UPCL for hardware equipments. iii. Uttarakhand SLDC informed that feeder list at 11kV level has been finalized and logic of ADMS implementation is under finalization. iv. Uttarakhand has intimated that It is bring to your notice that installation MFT(Multi Function Transducers) at various interstate points at PTCUL Substations under ADRS Project of UPCL is in progress. v. First Phase- Data Acquisition of 32 interstate points completed. vi. Second Phase-95 distribution side Substation work is on progress. vii In 230th OCC meeting Uttarakhand SLDC representative informed that Harbour installation and communication establishment has been done on 35 11kV feeders out of total 195 11kV feeders. The work is expected to be completed by December, 2025.

Status of availability of ERS towers in NR

Sl. No.	Transmission Utility	Voltage Level (220kV/400kV/765kV/ 500 kV HVDC etc.)	Length of the transmission lines owned by the Utility (Ckt. Kms.)	Number of ERS Sets (towers) available (Nos.)	ERS Set (towers) required as per the Govt. norms.	Location	Remarks
1	PTCUL	400kV	418.394	NIL	1		Tender has been scraped due to single bidder.
		220kV	1045.135	NIL	1		
2	Powergrid NR-1	220 KV	1842.88	NIL	1		
		400 KV	11074.26	12 Towers	3	All 400kV ERS at Ballabgarh	make-Lindsey
		765 KV	4721.85	15 Towers	1	All 765kV ERS at Meerut	Make-SBB
		500 KV HVDC	653.88	NIL	1		
		800 KV HVDC	416.58	NIL	1		
3	Powergrid NR-2	66 KV	37.56	Nil	1		ERS tower available for 400KV rating can be used in place of lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can be erected will reduce due to increase in Tower Hight.
		132 KV	262.7	Nil	1		
		220 KV	2152	Nil	1		
		400 KV	8097.3	02 Set (32 Towers)	2	Kishenpur & Jalandhar	
		765 KV	337.5	Nil	1		
4	Powergrid NR-3	800KV HVDC	2205	NIL	1		400KV ERS will be also be used in other voltage level lines
		500KV HVDC	2566	NIL	1		
		765KV	4396	NIL	1		
		400KV	12254	26 Towers	3	Kanpur	
		220KV	1541	NIL	1		
		132KV	207	NIL	1		
5	PARBATI KOLDAM TRANSMISSION COMPANY LIMITED	400kV	457	NIL	1		Procurement under process.
6	PATRAN TRANSMISSION COMPANY LTD	400kV	0.4	NIL	1	It is kept in Bhopal and on need basis is moved across region	Not available, will tie up based on the requirements in future. However the parent company IndiGrid owns one set of ERS for all five regions.
7	NRSS-XXIX TRANSMISSION LTD	400kV	853	NIL	1		
8	GURGAON PALWAL TRANSMISSION LTD	400kV	272	NIL	1		
9	RAPP Transmission Company Limited.	400kV	402	NIL	1		
10	NRSS XXXVI Transmission Limited	400kV	301.924	NIL	1		Element I - Operational comprising of 3 kms. Element II - Work Under Progress comprising of 221.924 kms. Element II - Work Under Progress comprising of 77 kms.
11	HPPTCL	220 kV	659	NIL	1		
		400 kV	75.7	NIL	1		
12	RVPN	132 kV	18969.958	1	4	01 No. ERS available at 220 kV GSS Heerapura, Jaipur	ERS proposed : 01 Set at 400 kV GSS, Jodhpur. 01 set at 400 kV GSS Ajmer.
		220 kV	16227.979		3		
		400 kV	6899.386		2		
		765 kV	425.498		1		

Sl. No.	Transmission Utility	Voltage Level (220kV/400kV/765kV/ 500 kV HVDC etc.)	Length of the transmission lines owned by the Utility (Ckt. Kms.)	Number of ERS Sets (towers) available (Nos.)	ERS Set (towers) required as per the Govt. norms.	Location	Remarks
13	DTL	220kV	915.498	NIL	1	400kV Bamnauli Sub station	ERS tower available for 400KV rating can also be used for lower voltage lines as well
		400kV	249.19	02 Sets (32 towers)	1		
14	JKPTCL						JKPTCL, Jammu: being procured JKPTCL, Kashmir:10 tower procured (out of which 3 on loan to JKPTCL, Jammu)
15	HVPN						HVPN has apprised that purchase order for procurement of 2 sets of Emergency Restoration System (ERS) in HVPNL has been issued to M/s Jost's Engineering Company Ltd., Mumbai
16	PSTCL	400 kV	1666.43	2	2		
		220 kV	7921.991				
17	UPPTCL 1- Meerut	132KV	27508.321	24 Nos(15 Running+9 Angle)		400 kV S/s Gr. Noida	ERS will be also be used in other voltage level lines.
		220KV	14973.453				
		400KV	6922.828				
	UPPTCL 2-Prayagraj	765KV	839.37	24 Towers		220 kv S/s phulpur	ERS will also be used in other voltage lines.
		400KV	1804.257				
		220KV	2578.932				
		132KV	4714.768				
18	POWERLINK						
19	POWERGRID HIMACHAL TRANSMISSION LTD						
20	Powergrid Ajmer Phagi Transmission Limited						
21	Powergrid Fatehgarh Transmission Limited						
22	POWERGRID KALA AMB TRANSMISSION LTD						
23	Powergrid Unchahar Transmission Ltd						
24	Powergrid Khetri Transmission Limited						
25	POWERGRID VARANASI TRANSMISSION SYSTEM LTD						
26	ADANI TRANSMISSION INDIA LIMITED		2090	1 Set (12 towers)	1 set (12 towers)	Sami (Gujarat)	Make-Lindsey ERS set available for 400KV & 500KV rating can be used for lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can reduce due to increase in Tower Height & nos of conductors.
27	BIKANER KHETRI TRANSMISSION LIMITED		482				
28	FATEHGARH BHADLA TRANSMISSION LIMITED	500 kV HVDC 400 kV HVAC	291				
29	NRSS-XXXI(B) TRANSMISSION LTD	400 kV	577.74	Not Available	Not Available		Tied up with M/s INDIGRID for providing ERS on need basis.
30	ARAVALI POWER COMPANY PVT LTD	765 kv HVAC					

*The transmission Utility with line length less than 500 ckt kms (of 400 KV lines) may be given option either to procure ERS or have agreement with other transmission utilities for providing ERS on mutually agreed terms, when need arises. (As per MoP directions)

STANDARD OPERATING PROCEDURE on DIVERSION of REGIONAL SPARES (TRANSFORMERS AND REACTORS)

Draft Version 2.0



October 2025

NORTHERN REGIONAL POWER COMMITTEE

1. Background & Objective

POWERGRID procures and maintains regional spares- transformers and reactors- to ensure the continuity of power supply and grid stability in the event of a contingency, such as the sudden failure of an in-service transformer or reactor. The primary purpose of these spares is to meet contingencies/emergencies within ISTS substations of the region. Regional spares are primarily sanctioned for use in Inter-State Transmission System (ISTS) substations. However, diversion of such spares to a State Transmission Utility (STU) may be permitted only under exceptional circumstances, based on the criticality of the requirement and subject to expeditious replenishment by the Borrower.

This Standard Operating Procedure (SOP) sets out the framework, eligibility, processes, roles, responsibilities, and conditions under which regional spares- transformers and reactors- maintained by POWERGRID may be diverted to STUs or other eligible utilities. The SOP seeks to balance the need to extend emergency support to constituents with the responsibility of ensuring adequate spare availability for the ISTS network.

2. Scope & Applicability

This SOP applies exclusively to transformers and reactors approved by the respective Regional Power Committee (RPC) as *Regional Spares* for use in Inter-State Transmission System (ISTS) substations within the region. These spares are procured, owned, and maintained by POWERGRID to ensure operational continuity of the ISTS network during contingencies. Diversion of Regional Spares may be considered for the following eligible beneficiaries within the same Region:

- **ISTS Substations** including those developed by Transmission Service Providers (TSPs) other than POWERGRID.
- **State Transmission Utility (STU) Substations:** Diversion may be considered only in case of failure of existing in-use equipment and where diversion is essential for grid security and reliability.

Diversion for commissioning of new assets may not be permitted under this SOP. Inter-regional diversion of equipment to any constituent may not be permitted. All diversions may be executed strictly on a replenishment basis and may not amount to sale or transfer of ownership of the equipment.

3. Roles and Responsibilities

3.1. Lender (POWERGRID): POWERGRID may ensure that the regional spares- **Transformers and Reactors**- are maintained in operationally ready condition and available for deployment during contingencies. POWERGRID may:

- Maintain a central inventory of all Regional Spares with technical particulars and locations.
- Implement the diversion only after RPC forum approval and in accordance with this SOP.

- Record every approved diversion in the central register, including date of diversion, borrower, and approved return timeline.
- Monitor adherence to approved diversion timelines and report deviations to the RPC Secretariat.

3.2. Borrower (TSP/STU): The Borrower may be responsible for safe custody and operation of the diverted Regional Spare during its possession. The Borrower may:

- Submit a formal diversion request to the RPC Secretariat with required technical and contingency details.
- Jointly verify the equipment condition at POWERGRID substation prior to MoU signing.
- Bear all expenses associated with transportation (both ways), transit insurance, erection, testing, commissioning, and related statutory charges, as applicable, and any incidental expenditure or loss to POWERGRID.
- Ensure site readiness and compatibility of the spare equipment before diversion.
- Furnish a valid Bank Guarantee equal to the prevailing cost of the equipment, effective till 45 days after return or replenishment is completed.
- Maintain and operate the equipment in accordance with applicable technical standards and POWERGRID's guidelines.
- Return or replenish the equipment in healthy condition within the approved timeframe and bear any repair or replacement cost arising from damage or failure.
- After returning of equipment, all pre-commissioning tests may be jointly performed at POWERGRID station to ascertain healthiness. In case of any deviation, POWERGRID may take up the repair of equipment and cost of the repair may be borne by the Borrower.

3.3. RPC Secretariat: The concerned RPC Secretariat may facilitate deliberation of the diversion proposal in the RPC forum and place the Borrower's request before the members for decision. It may record all decisions, including timelines for return or replenishment. RPC Secretariat may communicate the decision of the forum to borrower and Powergrid within one week of decision in RPC meeting.

4. Procedure for Diversion

4.1. Submission of Request: The Borrower may submit a written request to the concerned RPC Secretariat, specifying:

- The nature of contingency or failure necessitating diversion, including details of affected substation and equipment.
- Technical parameters of the failed equipment and the matching requirement from the Regional Spare pool.
- A detailed action plan and proposed timeline for return or replenishment of the diverted equipment.

4.2. Evaluation and Approval: The RPC forum may evaluate the request on merit, considering:

- The severity and genuineness of the contingency.
- Availability of the Regional Spare and its necessity for ISTS grid reliability.
- Impact on overall system stability and adequacy of remaining spares.

The decision of the RPC forum may be final and binding on all concerned entities. Upon approval, the forum may record the diversion details and the agreed period of utilization in its proceedings.

4.3. Execution of Memorandum of Understanding (MoU)

- Following the approval of diversion by the respective RPC forum, the Borrower and POWERGRID may execute a Memorandum of Understanding (MoU) within forty-five (45) days from the date of RPC approval. For the purpose of this SOP, date of RPC approval shall mean the date of RPC meeting.
- The MoU may specify all terms and conditions of diversion, including equipment details, responsibilities of both parties, financial implications, Bank Guarantee (BG) requirements, maintenance and reporting obligations, timelines for return/replenishment, and applicable penalties for default.

4.4. Condition Assessment and Testing

- Before diversion, a joint inspection of the equipment may be carried out by POWERGRID and the Borrower at the designated POWERGRID substation. The physical condition and test results may be documented and signed jointly.
- Upon return, the equipment may undergo joint pre-commissioning testing at the POWERGRID station to ascertain its healthiness. Any deviation, defect, or damage observed during inspection may be rectified at the Borrower's cost. Where repair or refurbishment is necessary, the Borrower may carry it out through the OEM or other approved agency as per POWERGRID specifications.

5. General Conditions of Diversion

5.1. Timeframe for Diversion and Return

- The Borrower should take the physical handover of the equipment from the designated POWERGRID substation or storage location within forty-five (45) days from the date of execution of the MoU.
- Failure to take the physical handover of the equipment within the ninety-days (90) days from RPC approval may be construed as revocation the diversion approval. In exceptional circumstances, a single extension of up to thirty (30) days may be granted by POWERGRID with intimation to the RPC Secretariat.
- The maximum diversion period may not exceed twenty-four (24) months from the Zero Date of Diversion.

- The Borrower may ensure return or replenishment of the diverted equipment within this period as per the action plan approved by the RPC forum and the provisions of the MoU.
- Any request for extension of the diversion period beyond twenty-four (24) months may require prior approval of the concerned RPC forum, supported by written justification.
- On completion of the diversion period, the Borrower should return the equipment in healthy condition to POWERGRID to POWERGRID's technical specifications.
- The "Zero Date of Diversion" shall be the date recorded in the joint handover certificate signed by representatives of POWERGRID and the Borrower at the time of physical transfer from the designated POWERGRID substation or storage location.
- The "Date of Return" shall be the date recorded in the joint handover certificate signed by representatives of POWERGRID and the Borrower, after successful healthiness checking, at the time of physical transfer at the designated POWERGRID substation or storage location.

5.2. Early Recall

- RPC Forum may recall any diverted equipment at any time before the expiry of the approved period if required in the interest of grid security or system reliability.
- The Borrower should return the equipment immediately upon receipt of such recall notice, and the RPC Secretariat may be intimated accordingly.

5.3. Financial Provisions: Diversion of Regional Spares may be carried out on a cost-neutral basis, ensuring that POWERGRID neither incurs financial loss nor earns additional revenue on account of such diversion. The diversion should not result in any change in the Yearly Transmission Charges recoverable by POWERGRID as per the approved tariff against the diverted asset. All financial adjustments, if any, may be settled within the regional pooling mechanism as approved by the RPC forum.

- **ISTS Substations:** Diversion to any ISTS substation, whether owned by POWERGRID or another TSP, forming part of the ISTS network in the region should be without financial liability to any TSP or DIC. Such diversion should not affect the Regional tariff or cost-sharing framework.
- **STU Substations:** For diversions to STU-owned substations, the equivalent Yearly Transmission Charge (YTC) of the diverted asset on pro-rate basis, along with any applicable penalty, may be credited to the Regional Component for the diverted period. The same amount may be billed to the concerned State(s) through a suitable mechanism decided by the NPC.

The Borrower shall bear all direct and incidental costs, including transportation, loading/unloading, insurance, erection, testing, and commissioning charges. The Borrower may be fully liable for any loss, damage, theft, or deterioration of the equipment during the diversion period. Insurance coverage may be obtained in the joint name of POWERGRID and the Borrower, with POWERGRID designated as the primary beneficiary.

5.4. Bank Guarantee (BG) requirements:

- Borrower may furnish a valid Bank Guarantee equal to the prevailing cost of the equipment, effective till 45 days after return or replenishment is completed.
- The BG may be invoked by POWERGRID to recover any financial loss or liability arising from events such as failure to return or replenish the equipment within the agreed timeframe, or failure to repair, refurbish, or replace the equipment in the event of damage, failure, or loss during transit, erection, or operation.

5.5. Penalty and Default:

- If the Borrower fails to return or replenish the diverted equipment within the agreed timeframe, which may not exceed 24 months, a penalty of 15% of the approved Yearly Transmission Charge (YTC) of the diverted asset may be levied on a pro-rata basis for the delayed duration.
- The penalty amount may be credited to the Regional Component of ISTS charges for the corresponding period. In case of continued default or non-replenishment, POWERGRID may report the matter to the RPC forum for further decision, which may include encashment of the Bank Guarantee and/or regulatory intervention.

5.6. Record-Keeping and Monitoring: POWERGRID may maintain a centralized and up-to-date register of all diversions, containing the following information:

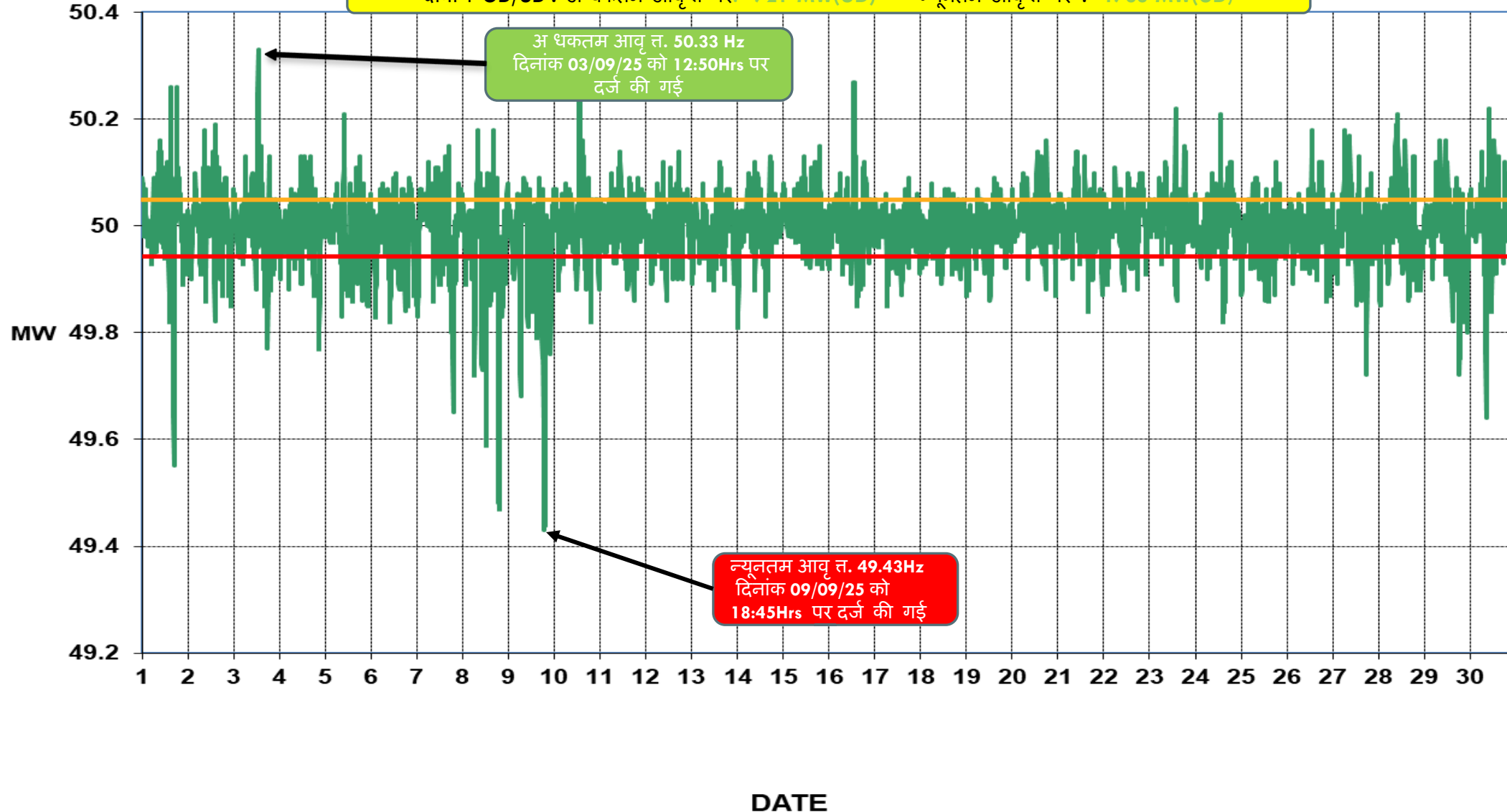
- Borrower entity name and category (TSP/STU).
- Equipment details (type, rating, make, serial number).
- Date of diversion and expected return date.
- Physical and test condition at dispatch and upon return.
- Financial treatment and applicable YTC adjustments.
- Status of replenishment or replacement.

6. Review and Amendment: This SOP may be reviewed from time to time to incorporate operational experience, regulatory updates, or changes in system requirements. Any amendment may be proposed by POWERGRID or any RPC member in the RPC forum or its sub-forum and may become effective only after approval by the RPC forum.

प्रचालन समन्वय उपस मति की बैठक
सतंबर - 2025

सितंबर-2025 के दौरान आवृत्ति की स्थिति (As per 5 Minute SCADA data)

क्षेत्रीय OD/UD : अधिकतम आवृत्ति पर : -721 MW(UD) न्यूनतम आवृत्ति पर : -1783 MW(UD)



OD(+)/UD(-) at
Max Freq

UP	+ 398
Har	+ 464
HP	+ 77
Raj	- 1338
JK	- 214
Pun	- 18
Del	- 10
Utt	- 17
Chd	- 63

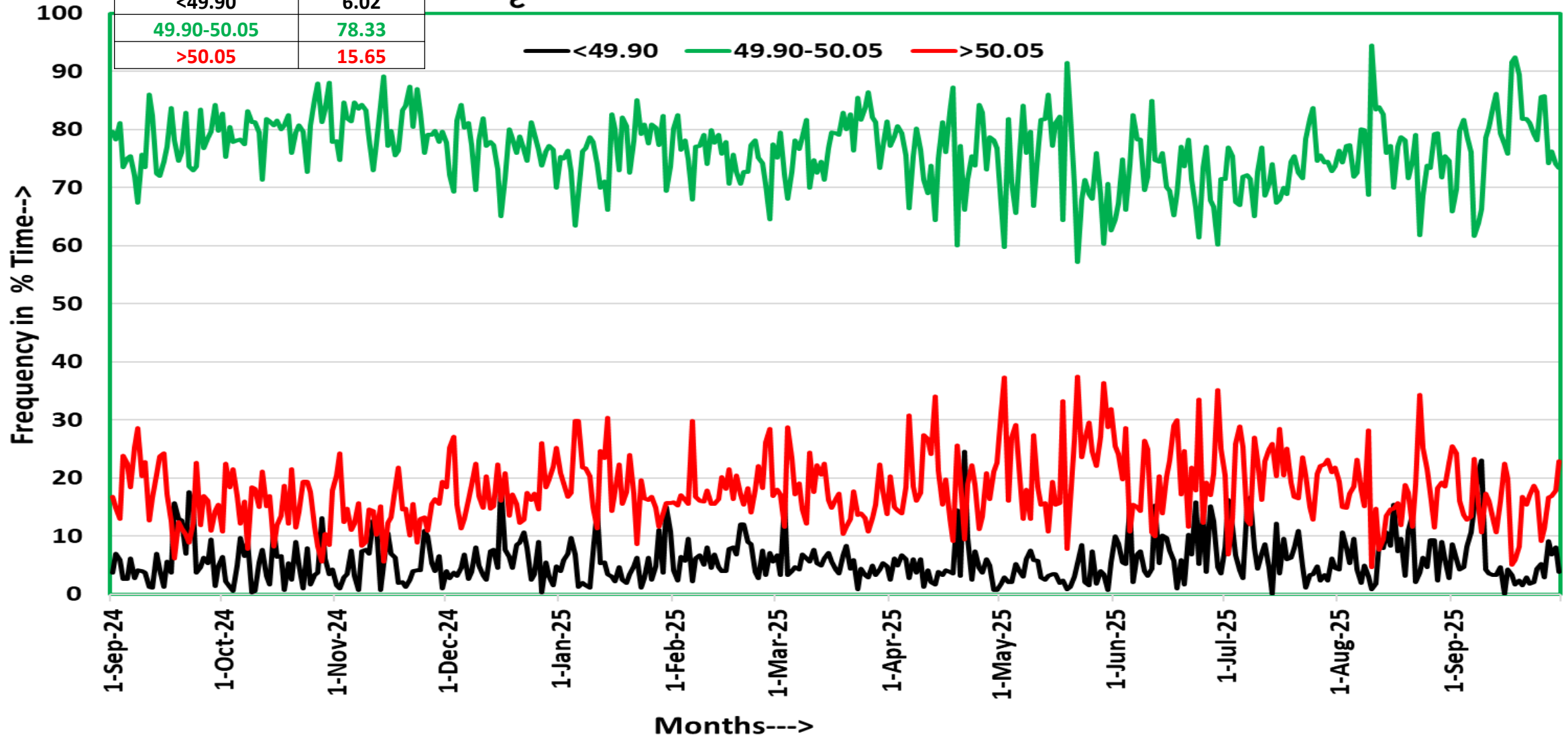
OD(+)/UD(-) at
Min Freq

Har	- 447
Raj	- 553
UP	- 752
Utt	- 16
HP	- 60
JK	- 88
Chd	-0.6
Pun	- 65
Del	+ 81

आवृत्ति की स्थिति: सितंबर-2024 से 2025

आवृत्ति की स्थिति: सितंबर'24 से सितंबर'25

Frequency(Hz)	% of Time
<49.90	6.02
49.90-50.05	78.33
>50.05	15.65



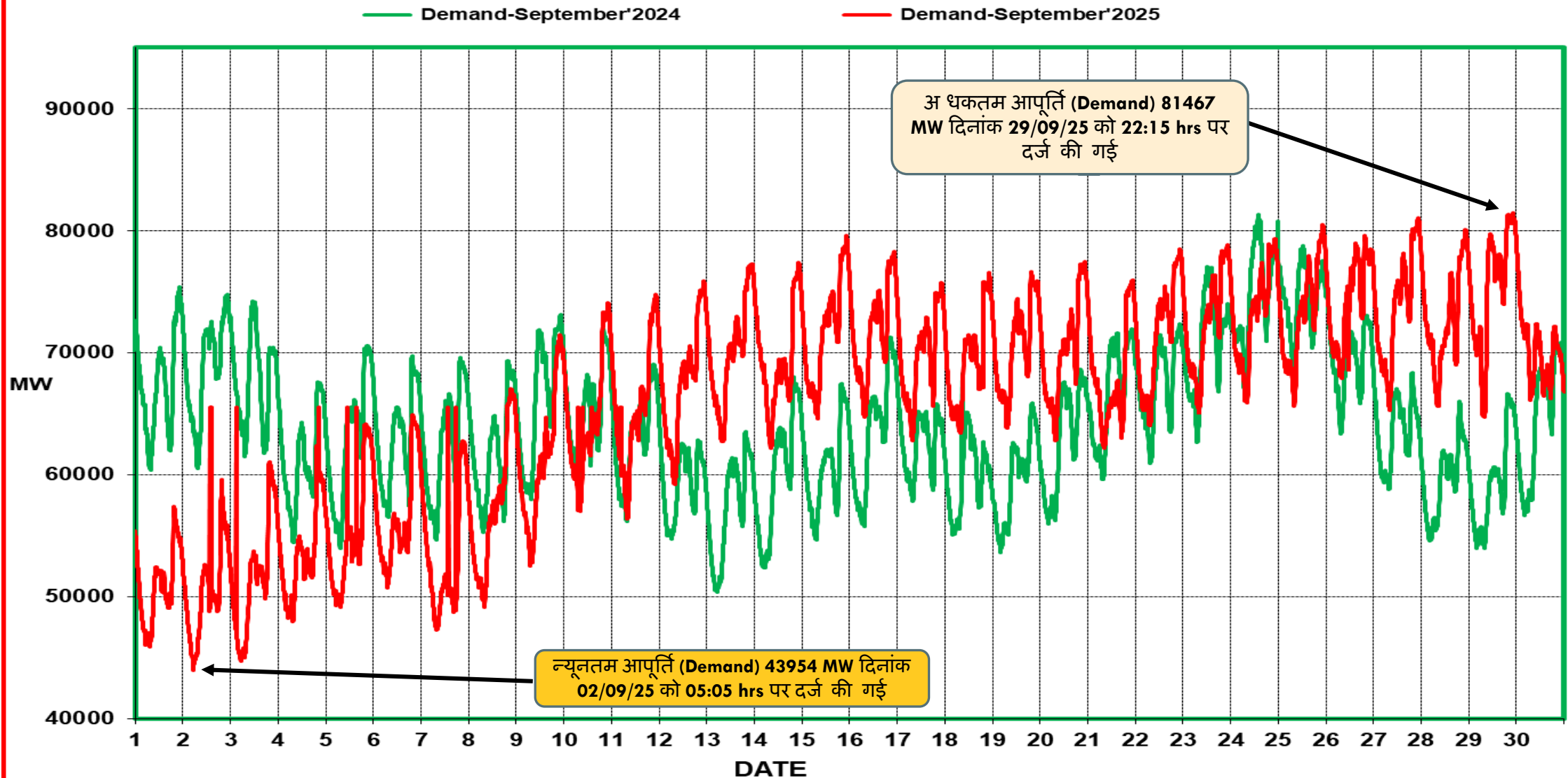
सितंबर-2025 के दौरान अधिकतम मांग (Demand Met), अधिकतम ऊर्जा खपत (Energy consumption) और अब तक का कीर्तिमान (राज्यों द्वारा जमा आंकड़ों के अनुसार)



राज्य	अधिकतम मांग (MW) (in Sep'25)	दिनांक / समय	रिकॉर्ड अधिकतम मांग (in MW) (upto Aug'25)	दिनांक / समय	अधिकतम ऊर्जा खपत (MU) (in Sep'25)	दिनांक	रिकॉर्ड अधिकतम ऊर्जा खपत (MU) (Upto Aug'25)	दिनांक
पंजाब	14440	17-09-2025 15:00	16754	28.06.25 at 15:00	310.68	16.09.25	366.8	21.07.2024
हरियाणा	12787	29-09-2025 15:00	14662	31.07.24 at 14:30	267.37	16.09.25	293.4	30.07.2024
राजस्थान	16020	29-09-2025 15:00	19165	12.02.25 at 11:00	348.52	29.09.25	388.01	11.06.2025
दिल्ली	7064	29-09-2025 15:37	8656	19.06.24 at 15:06	147.13	29.09.25	177.7	18.06.2024
उत्तर प्रदेश	29788	25-09-2025 21:00	31486	11.06.25 at 00:45	600.53	27.09.25	658.7	17.06.2024
उत्तराखंड	2677	27-09-2025 18:00	2910	11.06.25 at 22:00	52.9	29.09.25	62.1	14.06.2024
हिमाचल प्रदेश	1896	29-09-2025 07:30	2273	17.01.25 at 09:00	39.14	30.09.25	42.55	11.06.2025
जम्मू और कश्मीर (UT) तथा लद्दाख (UT)	2865	24-09-2025 20:00	3200	07.01.25 at 10:00	56.97	28.09.25	70.3	04.02.2025
चंडीगढ़	350	29-09-2025 15:00	482	18.06.24 at 15:28	7.03	29.09.25	9.28	12.06.2025
उत्तरी क्षेत्र #	81539	29-09-2025 19:00	91234	19.06.24 at 14:37	1814.51	29.09.25	2022.9	12.06.2025

उत्तरी क्षेत्र अधिकतम मांग (Demand Met) as per 1 min SCADA Data

क्षेत्रीय विद्युत आपूर्ति (Demand) सितंबर 2024 बनाम सितंबर 2025 (As per 5 Minute SCADA data)



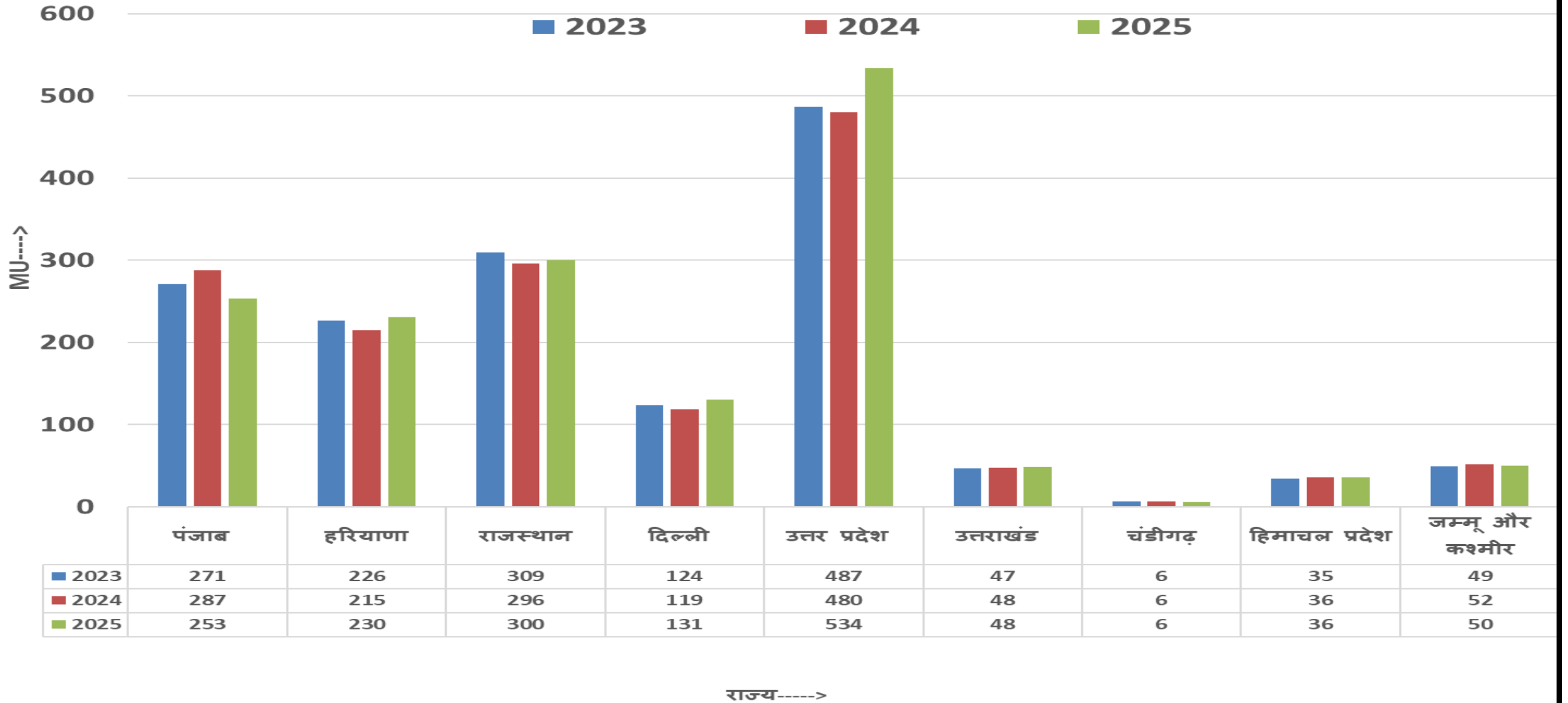
सितंबर -2024 की तुलना में सितंबर -2025 की औसत वद्युत आपूर्ति में 1694 MW वृद्ध हुई

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) सितंबर-2025/ सितंबर-2024 / सितंबर-2023

राज्य	सितंबर-2023	सितंबर-2024	सितंबर-2025	% वृद्धि (सितंबर-2024 vs सितंबर-2023)	% वृद्धि (सितंबर-2025 vs सितंबर-2024)
पंजाब	271	287	253	5.9%	-11.9%
हरियाणा	226	215	230	-4.9%	7.1%
राजस्थान	309	296	300	-4.4%	1.4%
दिल्ली	124	119	131	-4.0%	10.0%
उत्तर प्रदेश	487	480	534	-1.4%	11.3%
उत्तराखंड	47	48	48	3.0%	0.4%
चंडीगढ़	6	6	6	-2.9%	-3.8%
हिमाचल प्रदेश	35	36	36	3.4%	-0.1%
जम्मू और कश्मीर (UT) तथा लद्दाख (UT)	49	52	50	6.1%	-3.6%
उत्तरी क्षेत्र	1558	1543	1593	-0.9%	3.2%

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) सितंबर-2025/ सितंबर-2024 / सितंबर-2023

औसत ऊर्जा खपत में वृद्धि(% में)

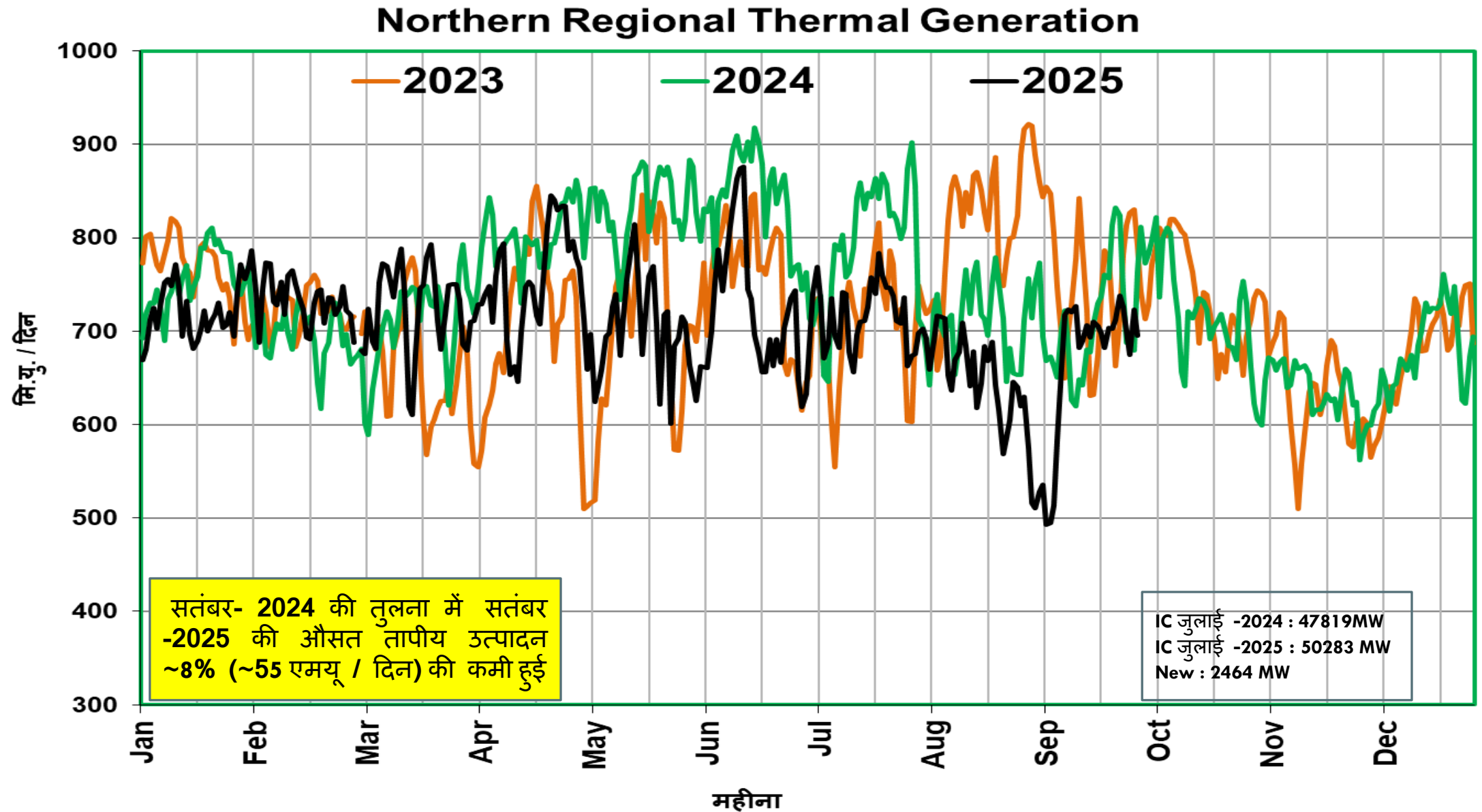


उत्तरी क्षेत्र की ऊर्जा खपत(MUs)

Northern Region Energy Consumption Pattern

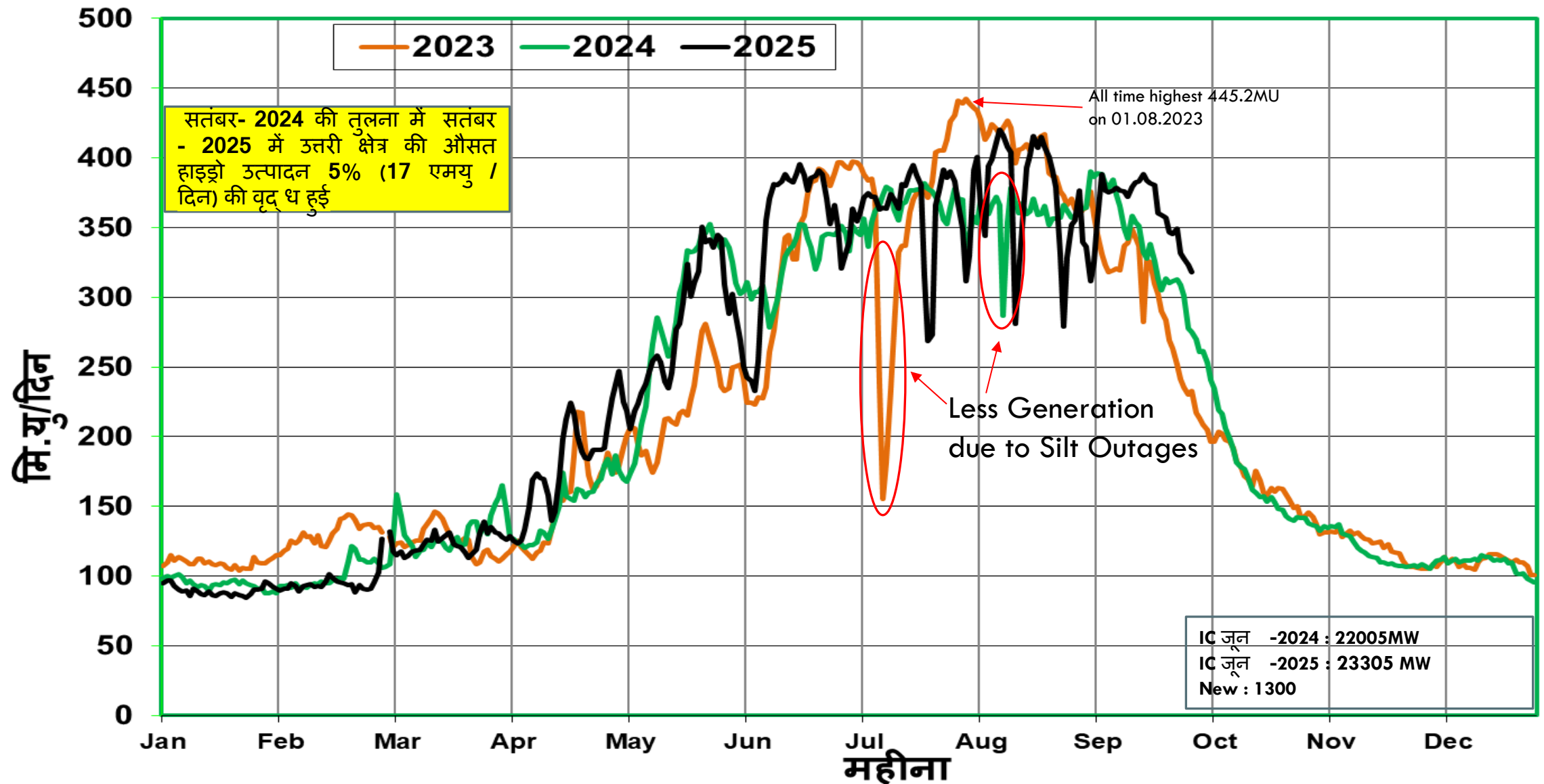


उत्तरी क्षेत्र की तापीय (Thermal) उत्पादन की स्थिति (MU_s/Day)

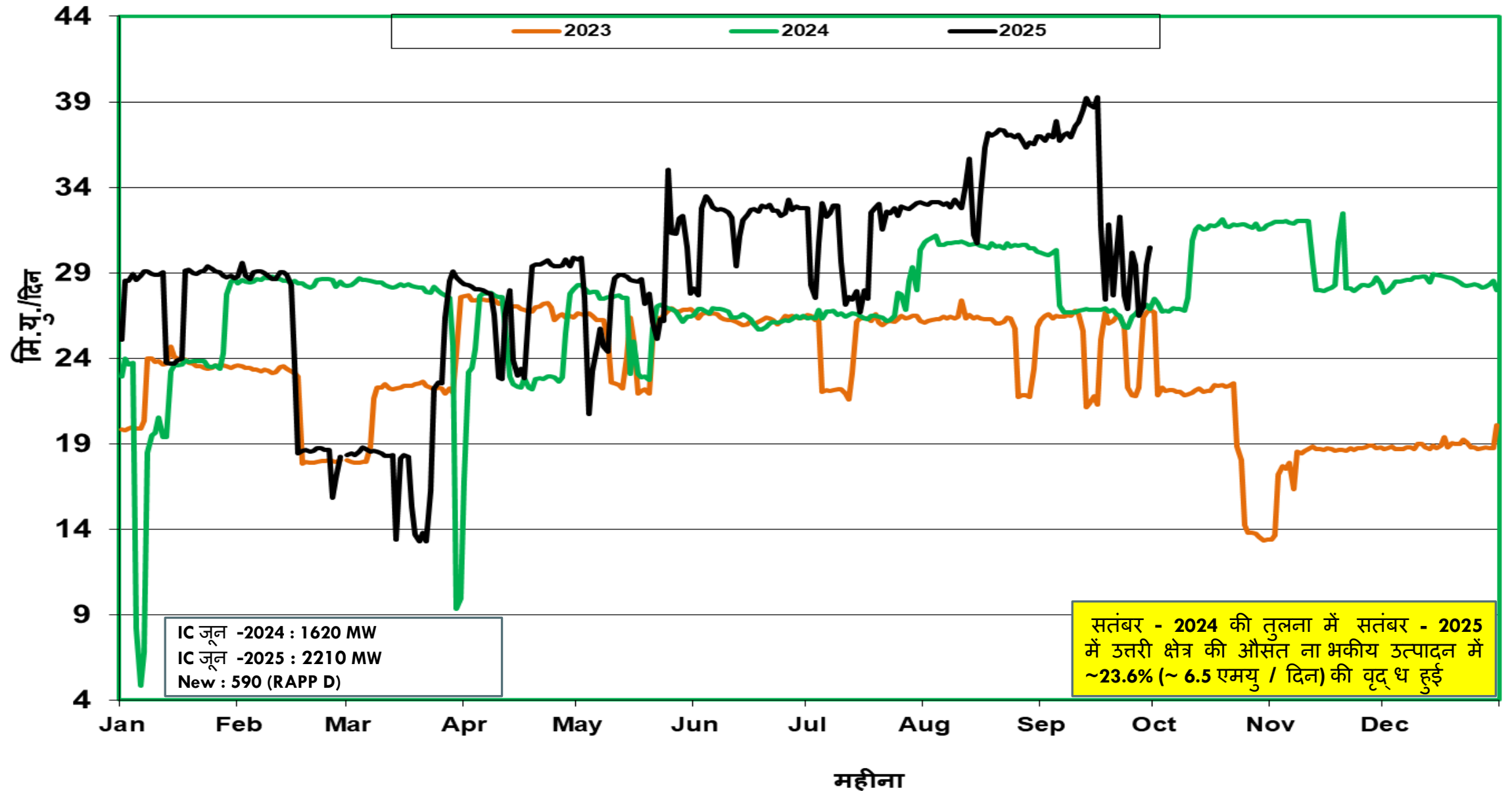


उत्तरी क्षेत्र की जलीय (हाइड्रो) उत्पादन की स्थिति (MU_s/Day)

Northern Regional Hydro Generation

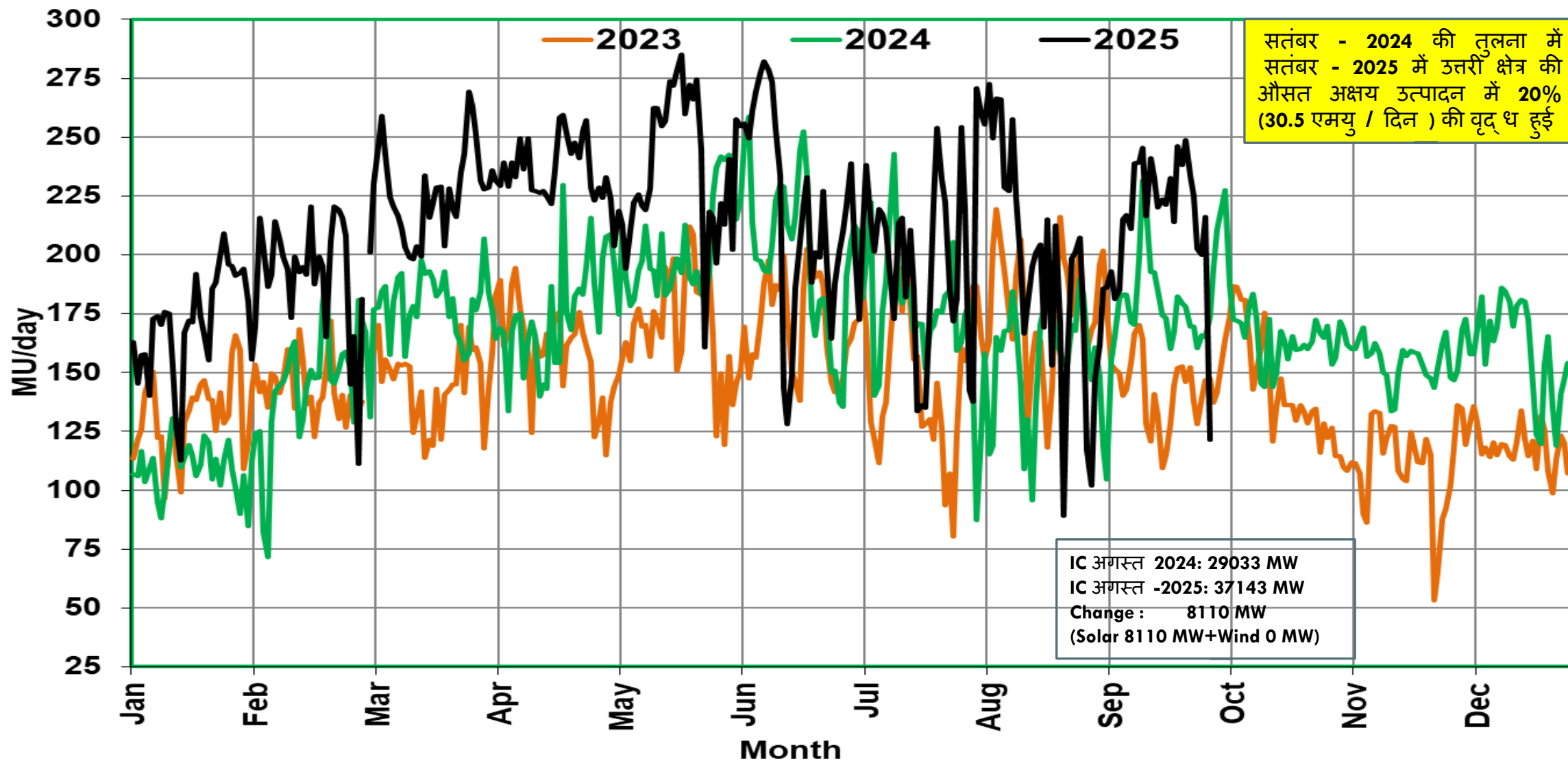


उत्तरी क्षेत्र की नाभिकीय उत्पादन की स्थिति (MUs/Day)

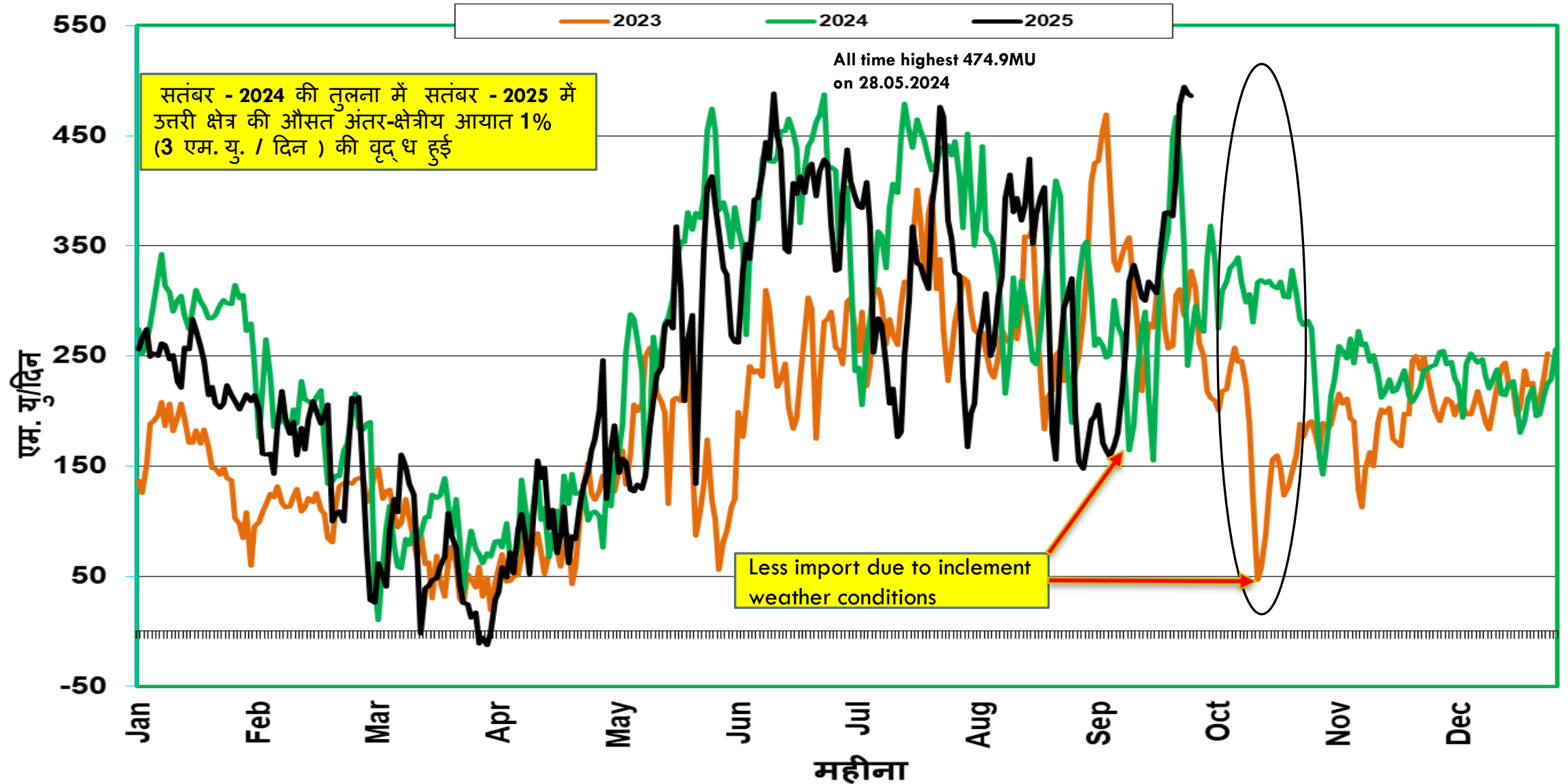


उत्तरी क्षेत्र की अक्षय (Renewable) उत्पादन की स्थिति (MUs/Day)

NR Renewable Generation



अंतर-क्षेत्रीय आयात(MUs/Day) की स्थिति



वास्तविक सारांश -
सितंबर-2024 बनाम सितंबर-2025

	सितंबर-2024 (म.यु. /दिन)	सितंबर-2025 (म.यु. /दिन)	सितंबर माह में वृद्धि (म.यु./दिन)
तापीय (Thermal) उत्पादन	711	656	-55
जलीय (Hydro) उत्पादन	342	360	17
नाभकीय (Nuclear) उत्पादन	27	27	6.5
अंतर-क्षेत्रीय (Inter- Regional) कुल आयात	288	291	3
अक्षय (Renewable) उत्पादन	173	211	39

नवीकरणीय ऊर्जा की क्षमता (VRE PENETRATION)

	अ धकतम दैनिक (MU) क्षमता			
	सतंबर '2025		सतंबर '2025 तक का रिकॉर्ड	
	अ धकतम % क्षमता	दिनांक	अ धकतम % क्षमता	दिनांक
पंजाब	3.62	03-09-2025	12.28	01-04-2020
राजस्थान	30.40	08-09-2025	36.47	22-10-2021
उत्तर प्रदेश	3.19	07-09-2025	6.03	05-03-2025
उत्तर क्षेत्रीय	15.49	08-09-2025	23.00	15-03-2025

OUTAGE SUMMARY FOR AUG-2025									
CONSTITUENT S	PLANNED (A)	FORCED OUTAGES (B=C+D)	EMERGENCY SHUT DOWNS (C)	TRIPPING (D)	PLANNED SHUT DOWNS (A/(A+C)) %	EMERGENCY SHUT DOWNS (C/(A+C)) %	ESD SHUT DOWNS (C/B) %	TRIPPING (D/B) %	TOTAL OUTAGES (A+B)
POWERGRID	312	323	184	139	63%	37%	57%	43%	635
UPPTCL	72	197	80	117	47%	53%	41%	59%	269
RRVPNL	66	80	37	43	64%	36%	46%	54%	146
HVPNL	24	50	16	34	60%	40%	32%	68%	74
BBMB	11	66	22	44	33%	67%	33%	67%	77
PSTCL	14	39	12	27	54%	46%	31%	69%	53
DTL	17	16	9	7	65%	35%	56%	44%	33
PTCUL	4	32	2	30	67%	33%	6%	94%	36
HPPTCL	6	25	5	20	55%	45%	20%	80%	31
NTPC	17	8	5	3	77%	23%	63%	38%	25
PDDJK	6	5	0	5	100%	0%	0%	100%	11
ESUCRL	2	0	0	0	100%	0%	0%	0%	2
Adani	38	16	10	6	79%	21%	63%	38%	54
NRSS XXIX	3	17	14	3	18%	82%	82%	18%	20
APCPL	0	1	1	0	0%	100%	100%	0%	1
Renew Power	2	2	0	2	100%	0%	0%	100%	4
PKTCL	2	4	3	1	40%	60%	75%	25%	6
TATA POWER	6	4	4	0	60%	40%	100%	0%	10
Total	602	885	404	481	60%	40%	46%	54%	1487

OUTAGE SUMMARY OF LAST FOUR MONTHS							
MONTH	PLANNED	FORCED OUTAGES	EMERGENCY SHUTDOWNS	TRIPPING	% PLANNED as of TOTAL S/D	% EMERGENCY SHUTDOWNS	TOTAL OUTAGES (A+B)
	(A)	(B=C+D)	(C)	(D)	(A/(A+C))	(C/(A+C))	
May-25	729	1379	482	897	60.2%	39.8%	2108
June-25	498	801	401	400	55.39%	44.60%	1299
July-25	634	860	412	448	60.60%	39.38%	1494
Aug-25	602	885	404	481	59.88%	40.15%	1487

New Elements First Time Charged During Sep 2025

S. No.	Type of transmission element	Total No
1	Transformer	1
2	Generating Units	1
3	Solar plant	4
4	Harmonic filter	12
Total New Elements charged		18



Transformer

S.No	Name of element	Owner	Voltage Level (HV/LV/Tertiary)	MVA Capacity	HV Station	Transformer Details	OLD MVA Capacity	Actual date of charging
1	765/400/33kV, 1500 MVA, 3x1-Phase, Siemens energy, ICT - 3 at Fatehgarh_III(PG)	PRTL	765/400/33kV	1500 MVA	Fatehgarh_III(PG)	New	NA	05-Sep-2025

Generating Units

S.No	Name of element	Owner	Voltage Level	Installed Capacity (MW)	MVA Capacity	Auxiliary Consumption	Actual date of charging
1	250 MW, 306 MVA 15.75 Make M/s GE Unit No 7 at 4x250 MW Tehri PSP(Stage 1)	THDC	15.75kV	250 MW	306 MVA	1.2 %	13-Sep-2025

Solar plant

S.No	Plant Name	Pooling Sub-station	Added Capacity (MW)	Total Capacity Charged(MW)	Total Installed Capacity of Plant(MW)	Type of RE	Solar ICR/Block No	Agency/ Owner	Actual date of charging
1	Nokh- NTPC	Bhadla_2	211.6	735	735	Solar	19	NTPC	14-Sep-2025
2	Karinsar Solar Plant NHPC Ltd(KSP_NHPC)	Bikaner_2	85.72	300	300	Solar	8	NHPC	19-Sep-2025
3	SJVN Green Energy Ltd	Bikaner_2	229.12	730.14	1000	Solar	32	SJVNGEL_BKN2	23-Sep-2025
4	Serentica Renewables India 5 Pvt Ltd (SRI5PL)	Bikaner_2	12	232	232	Solar	1	SERENTICA_RI5PL_Bik2	25-Sep-2025

Harmonic filter

S.No	Name of element	Owner	Voltage Level (in kV)	Type of Capacitor	Capacitor Bank No	Sub Capacitor Bank MVAR Rating	Capacitor MVAR Rating	Actual date of charging
1	Harmonic Filter Bank no-1 connected to Bay 63 at SJVN_GEL_SL_BKN2	SJVNGEL_BKN2	33kV	Harmonic Filter Bank	1	4.9th (5th Harmonic) High Pass Filter as per compliance sheet	15	15-Sep-2025
2	Harmonic Filter Bank no-2 connected to Bay 63 at SJVN_GEL_SL_BKN2	SJVNGEL_BKN2	33kV	Harmonic Filter Bank	2	10.9th (11th Harmonic) single Tuned Filter as per compliance sheet	15	15-Sep-2025
3	Harmonic Filter Bank no-3 connected to Bay 64 at SJVN_GEL_SL_BKN2	SJVNGEL_BKN2	33kV	Harmonic Filter Bank	3	10.9th (11th Harmonic) single Tuned Filter as per compliance sheet	15	15-Sep-2025
4	Harmonic Filter Bank, no-1 at RSDCL(PSS1)_SL_BHD2_PG	NTPC(Nokh Plot -1)	33kV	Harmonic Filter Bank	1	6MVAR and 1MVAR Unit (6 MVAR- For arresting 5th Harmonic and 1 MVAR- For arresting 13th Harmonic as per compliance sheet, Feeder No.-)	7	22-Sep-2025
5	Harmonic Filter Bank, no-2 at RSDCL(PSS1)_SL_BHD2_PG	NTPC(Nokh Plot -1)	33kV	Harmonic Filter Bank	2	6MVAR and 1MVAR Unit (6 MVAR- For arresting 5th Harmonic and 1 MVAR- For arresting 13th Harmonic as per compliance sheet, Feeder No.-)	7	22-Sep-2025
6	Harmonic Filter Bank, no-3 at RSDCL(PSS1)_SL_BHD2_PG	NTPC(Nokh Plot -1)	33kV	Harmonic Filter Bank	3	6MVAR and 1MVAR Unit (6 MVAR- For arresting 5th Harmonic and 1 MVAR- For arresting 13th Harmonic as per compliance sheet, Feeder No.-)	7	22-Sep-2025
7	Harmonic Filter Bank, no-2 at RSAPL_SL_FTHG3_PG	RENEW SURYA AAYAN PRIVATE LIMITED	33kV	Harmonic Filter Bank	2	Harmonic order -14.8	14.39	24-Sep-2025
8	Harmonic Filter Bank, no-1 at RSAPL_SL_FTHG3_PG	RENEW SURYA AAYAN PRIVATE LIMITED	33kV	Harmonic Filter Bank	1	Harmonic Order-14.8	9.081	24-Sep-2025
9	Harmonic Filter Bank, no-04 at RSRPL_Hyb_FTHG3_PG	RENEW SURYA ROSHNI PRIVATE LIMITED	33kV	Harmonic Filter Bank	04	Harmonic Order-18	4.439	26-Sep-2025
10	Harmonic Filter Bank, no-01 at RSRPL_Hyb_FTHG3_PG	RENEW SURYA ROSHNI PRIVATE LIMITED	33kV	Harmonic Filter Bank	01	Harmonic Order-18	4.439	26-Sep-2025
11	Harmonic Filter Bank, no-02 at RSRPL_Hyb_FTHG3_PG	RENEW SURYA ROSHNI PRIVATE LIMITED	33kV	Harmonic Filter Bank	02	Harmonic Order-18	3.81	26-Sep-2025
12	Harmonic Filter Bank, no-03 at RSRPL_Hyb_FTHG3_PG	RENEW SURYA ROSHNI PRIVATE LIMITED	33kV	Harmonic Filter Bank	03	Harmonic Order-18	10.53	26-Sep-2025

DEMAND FORECAST STATUS OF SLDC

- With reference to the Clause 31(2) of Central Electricity Regulatory Commission-IEGC Regulations, 2023 and the Operating Procedure of NRLDC prepared in accordance with the same, each SLDC has to furnish the demand estimation for day ahead, week ahead, month ahead (with time block wise granularity) and demand estimation for year ahead (with hour granularity). The sub-clause 31(2) (h) of IEGC-2023 states the following timeline for the submission of demand estimate data to RLDC.

Type of Demand Estimation	Timeline
Daily	10:00 hours of previous day
Weekly	First working day of previous week
Monthly	Fifth day of previous month
Yearly	30th September of previous year

- The following is the status regarding forecast data submission.

State/Entity	Day Ahead (As on Sep-25)	Week Ahead	Month Ahead (Oct 2025)	Year-Ahead(2026-27)
Punjab	As per Format	Demand and Resource not as per timeline	As per Format	Not received
Haryana	Demand and Resource not as per format	Only demand & irregular	Not received	Not received
Delhi	Demand and Resource not as per format	As per Format	As per Format	Not received
Rajasthan	As per Format but irregular	As per Format	As per Format	Not received
Uttar Pradesh	As per Format	As per Format	As per Format	Not received
Uttarakhand	Demand and Resource not as per format and irregular	As per Format	As per Format	Not received
Himachal Pradesh	As per Format	As per Format	As per Format	Not received
J&K and Ladakh (UT)	Demand and Resource not as per format & irregular	Not received	Not received	Not received
Chandigarh (UT)	As per Format	Not received	Not received	Not received

- All are requested to strictly follow the standard format provided along with the submission timeline.



धन्यवाद

Resource Adequacy

PRAS results- Northern Region
Month ahead for Nov-2025

Resource Adequacy - PRAS

- The Probabilistic Resource Adequacy Study (PRAS) for the month of Nov 2025 has been carried out for the Northern Region to assess the sufficiency of available generation resources to meet the projected demand under varying scenarios. The study was conducted using 1000 probabilistic scenarios, with median results presented to reflect expected system behavior under typical conditions.
- To evaluate the net load that must be met by dispatchable thermal generation, the projected regional demand for Nov 2025 was first estimated. From this demand, the expected contribution from non-thermal resources **solar, wind, hydro, and nuclear** was subtracted, based on historical generation profiles observed for these sources during the same period in past years. This approach ensures that the inherent variability and diurnal patterns of renewable generation are accurately captured in the analysis.
- For thermal generation, a detailed availability assessment was carried out using the following assumptions:

Planned Outages:

Unit-wise planned outages for the month of Nov 2025 were incorporated as per the data available in the latest LGBR. This reflects scheduled maintenance and other operational constraints known in advance.

Forced Outages:

A Monte Carlo simulation approach was adopted to model forced outages of thermal generating units. This stochastic simulation utilized historical outage and revival rates specific to each unit and capacity. The probabilistic nature of this method allows for modeling of unplanned events, enhancing the robustness of the adequacy assessment.

Two distinct scenarios were modeled to analyze the role of inter-regional power exchanges in meeting regional adequacy requirements:

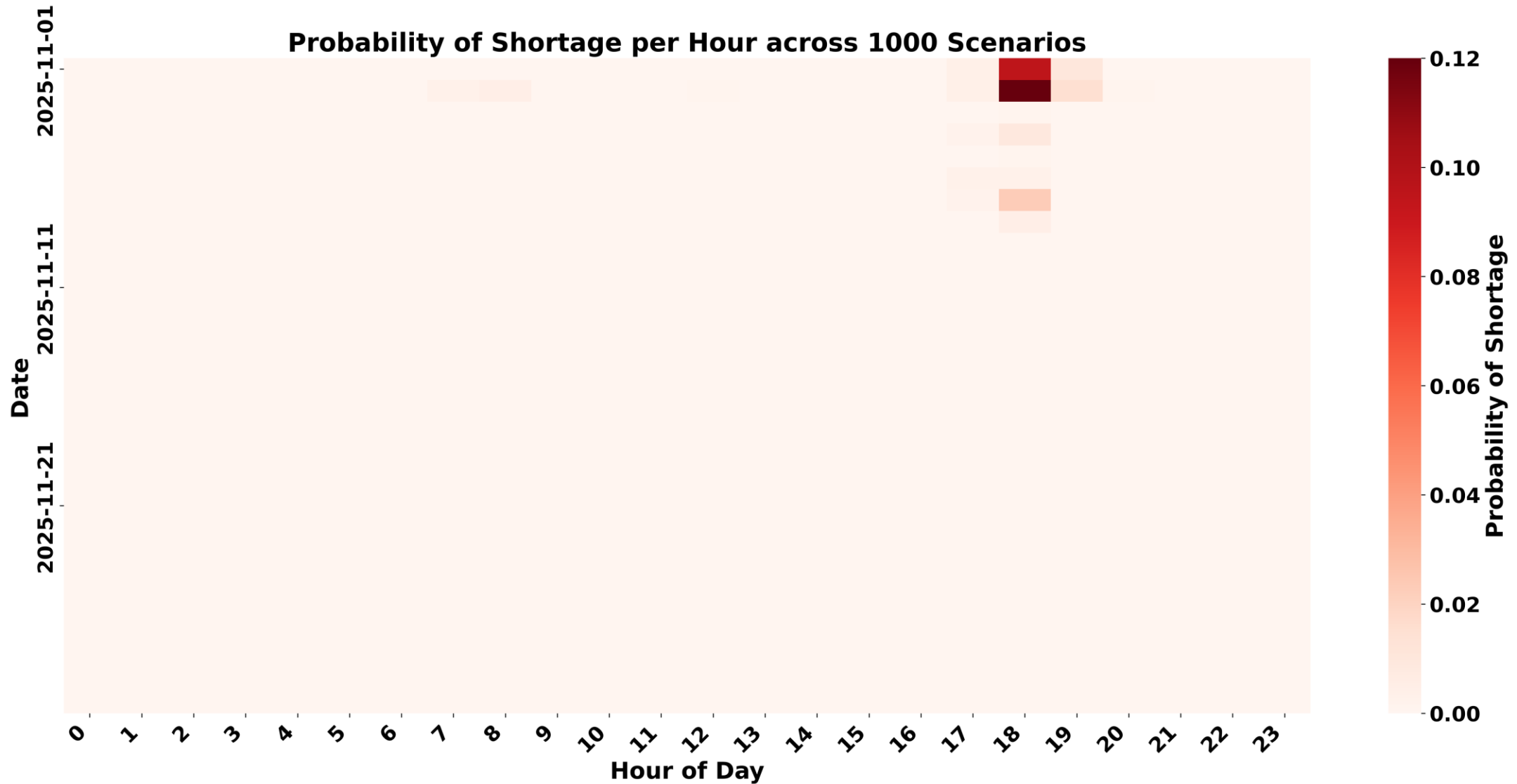
1. Scenario without Inter-Regional T-GNA Contracts

- In this base case scenario, no inter-regional transmission capacity contracted through T-GNA was modeled.
- Under this scenario, the study indicated higher Loss of Load Probability (LOLP) and increased Expected Unserved Energy (EUE), highlighting potential shortfalls due to the limited flexibility in accessing external generation.

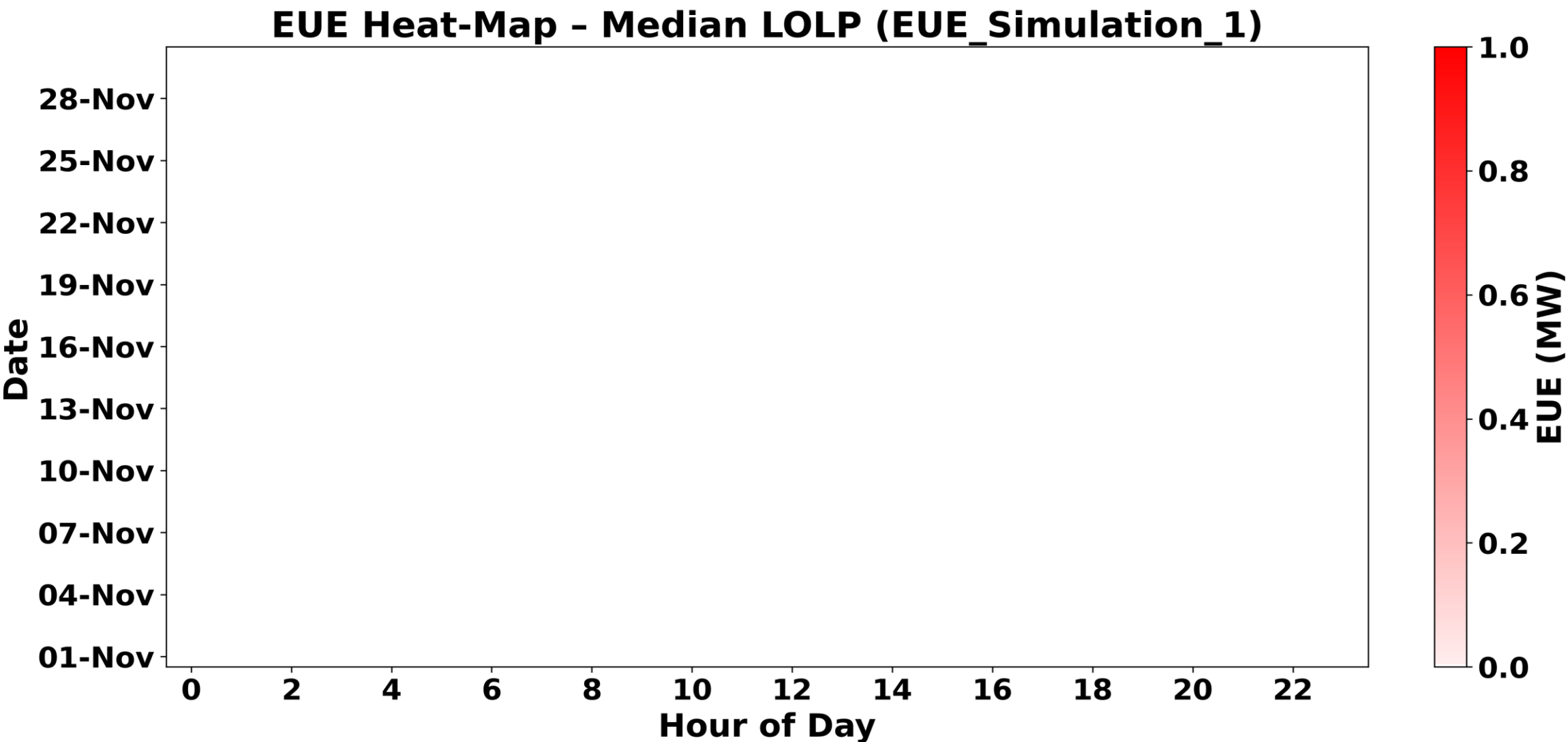
2. Scenario with Past-Year IR Flow Profile

- In the second scenario, the actual inter-regional power flow patterns from Nov 2024 were incorporated as a proxy for expected support in Nov 2025. This approach reflects realistic inter-regional exchange behavior under comparable seasonal conditions and operating constraints.
- This demonstrated a notable reduction in LOLP and EUE values, indicating enhanced adequacy due to the implicit support from neighboring regions.

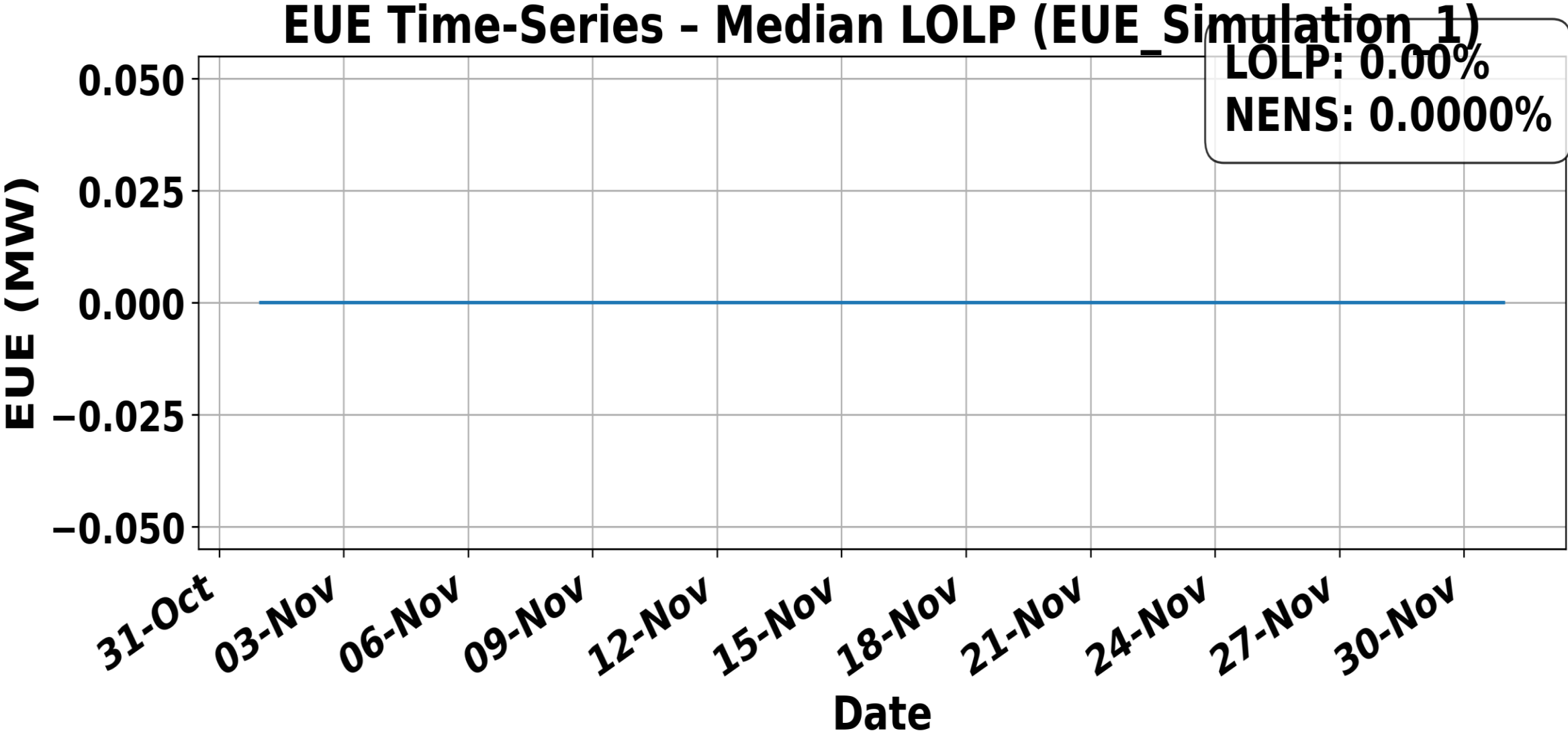
2. (A) Resource Adequacy results (with Nov 2024 IR schedule)



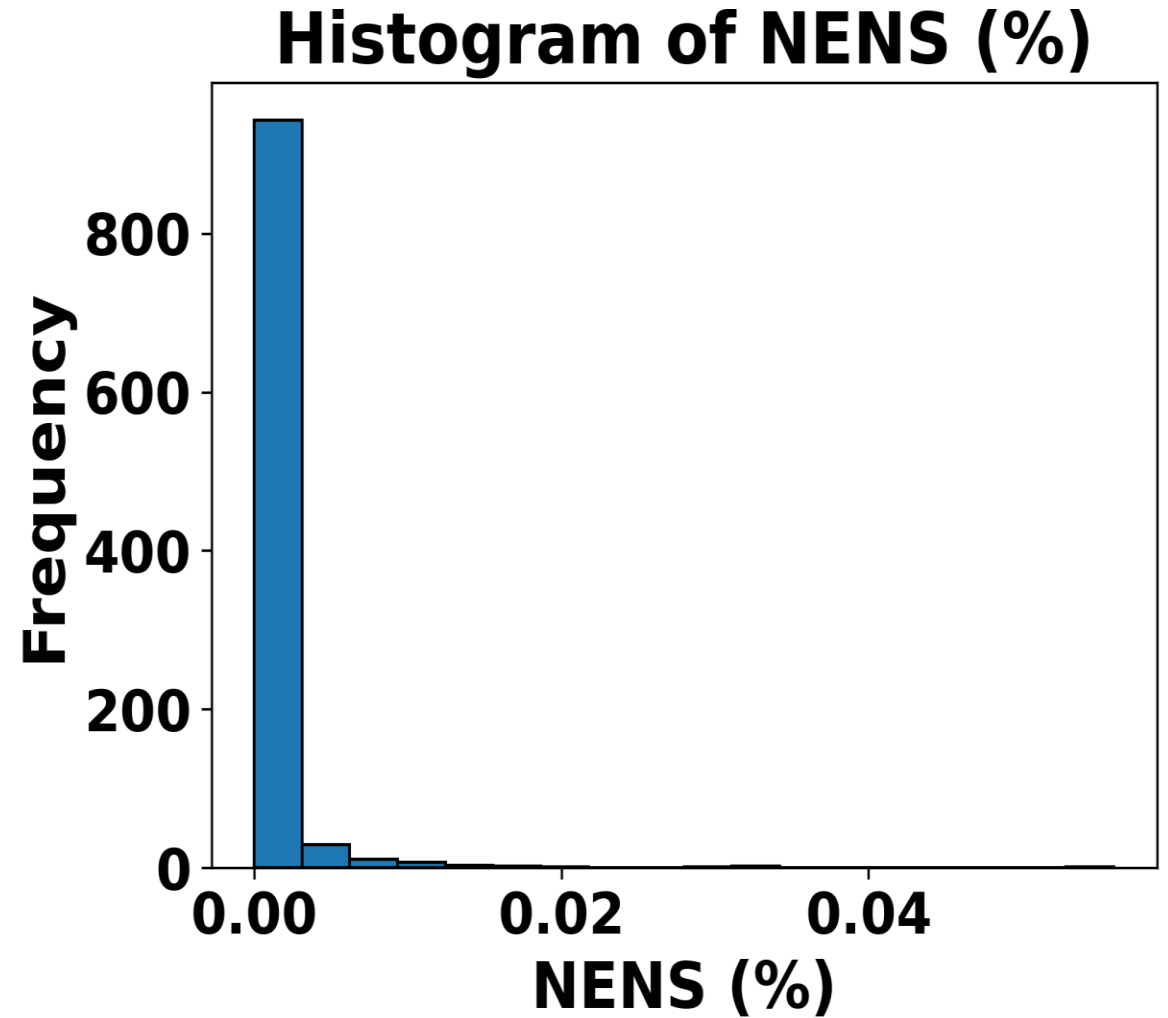
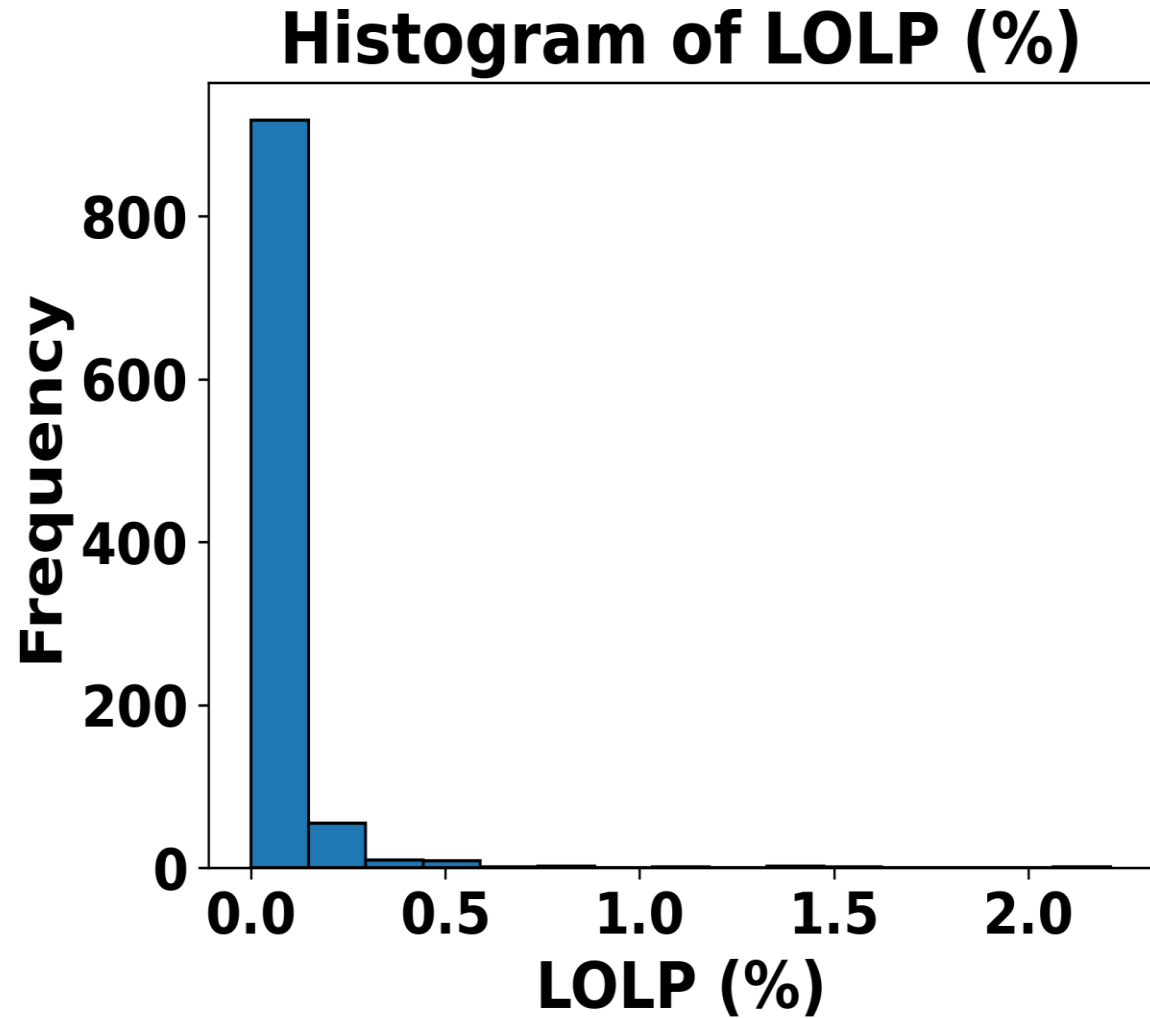
2. (B) Resource Adequacy results (with Nov 2024 IR schedule)



2.(C) Resource Adequacy results (with Nov 2024 IR schedule)



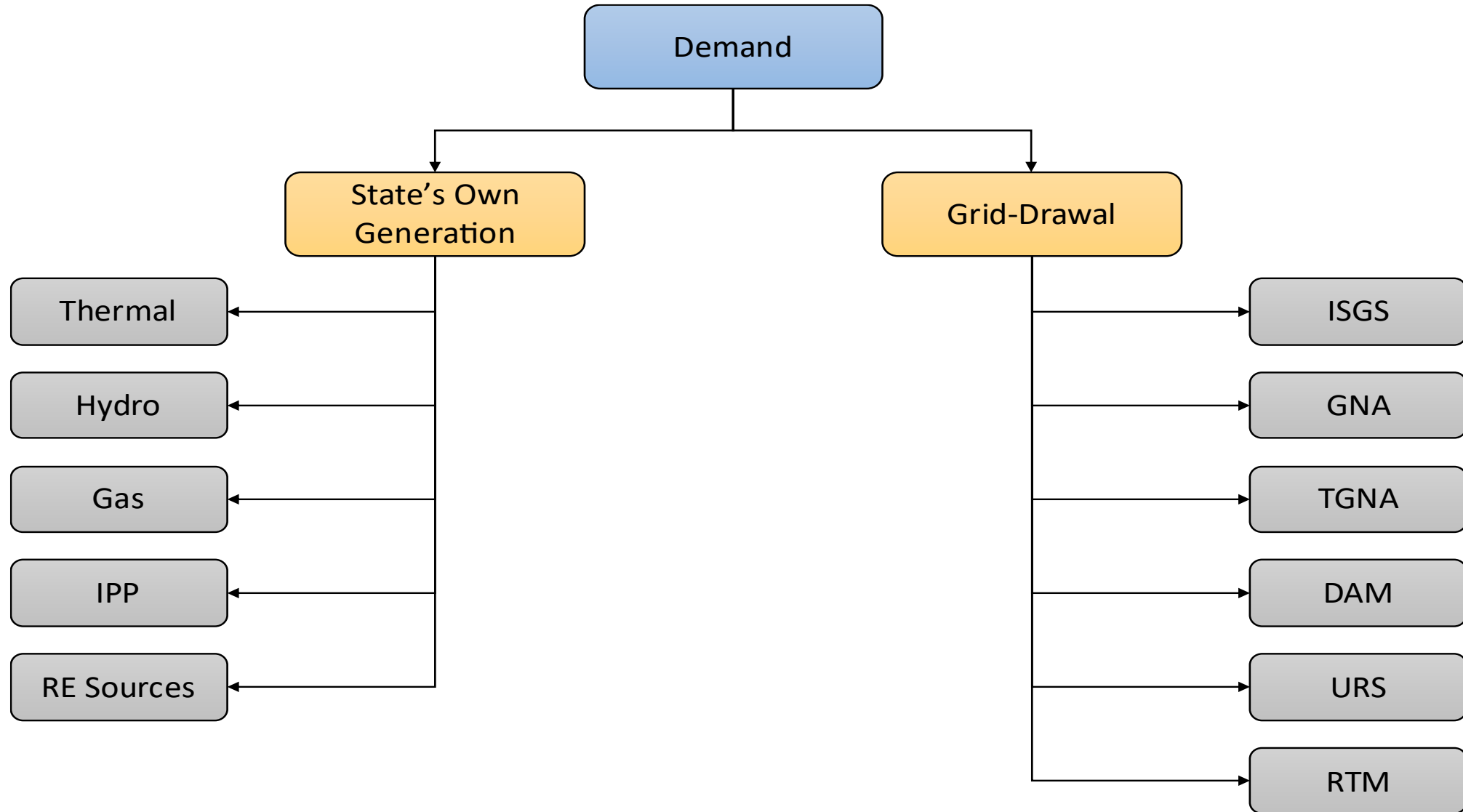
2. (D) Resource Adequacy results (with Nov 2024 IR schedule)



Way forward

- Inter-Regional Modeling will be undertaken by incorporating actual power flow data from WBES to improve the accuracy of inter-regional support estimation.
- Intra-Day and Day-Ahead Resource Adequacy Monitoring will be conducted using data submitted by the states, with integrated WBES data, as outlined in the subsequent slides.
- Month-Ahead PRAS Studies will be conducted at the state level.
- Week-Ahead and Year-Ahead PRAS Studies will be carried out at both regional and state levels.

RA Planning for Intra day and Day ahead



RA Planning for Intra day and Day ahead

The demand forecast and self-generation forecast, as currently submitted by the states via email, will be shifted to the designated portal in due course. For both day-ahead and intra-day monitoring, the drawl from the grid shall be considered as per WBES, as detailed below. Stacking of both demand and generation will provide a clear picture of shortage period.

ISGS	• Entitlement from each of the Generator in all the regions.
GNA	• Requisition Quantum of the buyer for each of the GNA Contracts (incl. REMC).
TGNA	• Scheduled Quantum from each of the T-GNA (including REMC) Contracts
DAM	• Net Scheduled Quantum from each of the Day-Ahead Market Exchange and Products (DAM, GDAM, HPDAM)
RTM	• Net Scheduled Quantum from each of the Real-Time Market Exchange.