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 **238**वी बैठक का कार्यवृत |

Subject: Minutes of the **238**th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की **238**वीं बैठक दिनांक 17.12.2025 को आयोजित की गयी थी। उक्त बैठक का कार्यवृत्त उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट https://www.nrpc.gov.in पर उपलब्ध है। यदि कार्यवृत पर कोई टिप्पणी हो तो कार्यवृत जारी करने के एक सप्ताह के अन्दर इस कार्यालय को भेजें |

The **238**th meeting of the Operation Co-ordination Sub-Committee (OCC) of NRPC was held on 17.12.2025. The Minutes of this meeting has been uploaded on the NRPC website https://www.nrpc.gov.in. Any comments on the minutes may kindly be submitted within a week of issuance of the minutes.

संलग्नक:यथोपरि।

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(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		bhagatsingh@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		cepso@upsldc.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	RRVPNL		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.rgtpp@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	ce-ppr@pspcl.in

		Company & State owned Distribution Company	
32	DHBVN	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	nomination awaited (md@dhbvn.org.in)
33	Ajmer Vidyut Vitran Nigam Ltd.		nomination awaited (md.avvnl@rajasthan.gov.in)
34	Purvanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (mdpurvanchalvvnl@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.,		niraj.gupta@apraava.com
40	Talwandi Sabo Power Ltd.		arun.kumar@vedanta.co.in
41	Nabha Power Limited		Durvesh.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	sojpdd@gmail.com
50	UT of Ladakh		cepdladakh@gmail.com
51	UT of Chandigarh		seelo-chd@nic.in

		Union Territory concerned out of the entities engaged in generation/	
52	NVVN	Nodal Agency appointed by the Government of India for coordinating cross-border power transactions	ceonvvn@ntpc.co.in
53	Tata Power Delhi Distribution Limited	Private Distribution Company in region (alphabetical rotational basis)	nomination awaited (sandeep.k@tatapower-ddl.com)
54	Gurgaon Palwal Transmission Limited	Private transmission licensee (nominated by central govt.)	(samriddhi.gogoi@indigrid.com)
55	PTC India Limited	Electricity Trader (nominated by central govt.)	nomination awaited (bibhuti.prakash@ptcindia.com)
56	ReNew Power Private Limited	RE Generating Company having more than 1000 MW installed capacity	sumant@renew.com
57	NTPC Green Energy Limited		rajivgupta@ntpc.co.in
58	Azure Power India Pvt. Limited		sunil.gupta@azurepower.com
59	Avaada Energy Private Limited		kishor.nair@avaada.com
60	Adani Green Energy Limited		chaitanya.sahoo@adani.com

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उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 237 वीं बैठक का कार्यवृत्त

The 238th OCC meeting of NRPC was held on 17.12.2025 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

The minutes of the 237th OCC meeting were issued on 08.12.2025. OCC forum confirmed the minutes of the meeting.

Decision of OCC Forum:

OCC forum confirmed the minutes of the meeting.

A.2. Status of action taken on decisions of the 237th 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 November 2025

Anticipated vis-à-vis Actual Power Supply Position (Provisional) for November 2025

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

- **Haryana**

The actual consumption of rural domestic load and Urban load for the month of Nov-25 has been 10% higher than Nov-24 on the peak day, i.e., 28th Nov 2025 and consumption for Agricultural and Industrial load in Nov-25 has been 7% higher than Nov-24 on the peak day.

MS, NRPC suggested that Haryana SLDC take into account the actual ground reality of Agricultural and industrial load to minimise the gap between actual and anticipated values.

- **Himachal Pradesh**

  Anticipation in Energy Requirement in respect of Himachal Pradesh for the month of November, 2025, was on the lower side due to dry weather conditions.

- **Rajasthan**

  Actual Energy requirement w.r.t. Anticipated Energy requirement for the month of November'2025 decreased by 11.3% due to less demand; however, the peak demand has increased by 5.1% w.r.t. Anticipated Peak Demand because of catering to more load in day hours with the approach of maximum utilization of the solar generation.

- **Uttar Pradesh**

  Actual energy consumption and maximum demand were lower than anticipated due to lower-than-normal temperatures and milder weather conditions in November 2025.

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

A.4.1. The maintenance programme of generating units and transmission lines for January 2026 was deliberated in the meeting on 15.12.2025.

A.5. Anticipated Power Supply Position in Northern Region for January 2026

The updated anticipated Power Supply Position for January 2026 is as below:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	120	350	No Revision submitted
	Requirement	173	341	
	Surplus / Shortfall	-53	9	
	% Surplus / Shortfall	-30.6%	2.6%	
DELHI	Availability	3110	6810	No Revision submitted
	Requirement	2766	6738	
	Surplus / Shortfall	344	72	
	% Surplus / Shortfall	12.4%	1.1%	
HARYANA	Availability	5580	9815	05-Dec-25

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Requirement	4927	9651	
	Surplus / Shortfall	653	164	
	% Surplus / Shortfall	13.3%	1.7%	
HIMACHAL PRADESH	Availability	1342	2380	09-Dec-25
	Requirement	1326	2400	
	Surplus / Shortfall	16	-20	
	% Surplus / Shortfall	1.2%	-0.8%	
J&K and LADAKH	Availability	1050	2460	No Revision submitted
	Requirement	2349	3737	
	Surplus / Shortfall	-1299	-1277	
	% Surplus / Shortfall	-55.3%	-34.2%	
PUNJAB	Availability	4510	10670	No Revision submitted
	Requirement	5511	10868	
	Surplus / Shortfall	-1001	-198	
	% Surplus / Shortfall	-18.2%	-1.8%	
RAJASTHAN	Availability	9200	19690	16-Dec-25
	Requirement	10200	19200	
	Surplus / Shortfall	-1000	490	
	% Surplus / Shortfall	-9.8%	2.6%	
UTTAR PRADESH	Availability	12245	23223	05-Dec-25
	Requirement	12090	23223	
	Surplus / Shortfall	155	0	
	% Surplus / Shortfall	1.3%	0.0%	
UTTARAKHAND	Availability	1433	2600	03-Dec-25
	Requirement	1449	2675	
	Surplus / Shortfall	-16	-75	
	% Surplus / Shortfall	-1.1%	-2.8%	
NORTHERN	Availability	38590	78400	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
REGION	Requirement	40791	80800	
	Surplus / Shortfall	-2201	-2400	
	% Surplus / Shortfall	-5.4%	-3.0%	

A.5.1. Representative of J&K SLDC informed that the shortfall would be met through Real time exchanges and Banking arrangements.

A.5.2. NRLDC representative stated that continuous load shedding is being observed in Uttarakhand, so UKSLDC may consider operating their Gama and Sravanthi Gas plants to meet their demand.

A.5.3. Representative of Rajasthan SLDC informed that the shortfall would be met through short-term contracts.

A.5.4. NRLDC representative stated that instead of relying on exchanges, Rajasthan may consider operating the Dholpur GPS to meet shortages. This would also help improve the voltage profile in the Rajasthan control area and reduce reactive drawl from the grid, thereby lowering reactive energy charges.

A.5.5. MS, NRPC advised the respective SLDCs to make requisite arrangements in advance to meet the demand, as power may not be available on exchanges during peak hours. She also emphasized that Rajasthan should consider operating the Dholpur GPS in view of the aforementioned benefits.

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 238th OCC, SLDCs were requested again to coordinate with respective Transmission Utilities of states/UTs and submit details about the updated status of 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 requested respective SLDCs to take up the matter of feeder finalization with the DISCOMs in their respective control areas. In case no response is received from the DISCOMs within the stipulated timeframe, the feeders may be identified at the SLDC level based on operational experience. The same shall also be communicated to the respective DISCOMs, with a copy to NRPC Secretariat (seo-nrpc@nic.in) before the next OCC meeting.

A.6.4. MS, NRPC further stated that a meeting would be convened subsequently with respective SLDCs and DISCOMs for implementation of ADMS, subject to submission of the identified feeders by all SLDCs.

A.7. NR Islanding scheme

A.7.1. EE(O), NRPC apprised the forum that in the 237th OCC, it was decided that one of the Islanding Schemes in NR will be identified for Simulated Island Operation Testing on a pilot basis by Solvina based on the comments received from SLDCs. In this regard, UPSLDC has submitted a proposal for testing on the Lucknow-Unchahar Islanding Scheme.

A.7.2. SE(O), NRPC stated that since no other proposal has been received from other states forum may agree for Simulated Island Operation Testing of the Lucknow-Unchahar on a pilot basis by M/s Solvina.

A.7.3. MS, NRPC stated that Simulated Island Operation Testing of the Lucknow–Unchahar IS may be carried out on a pilot basis by M/s Solvina. Further, she requested UPSLDC to coordinate with NTPC while planning the pilot testing with M/s Solvina.

A.7.4. NRLDC representative stated that with regard to Delhi IS, the Narela -Maharani Bagh section has been commissioned and the LILO of Mandola Section has been removed. Therefore, DTL may review the Islanding Scheme based on the current arrangement of feeders.

A.7.5. DTL representative informed that the proposal for revision of the Delhi IS has been prepared and would be submitted shortly for approval.

A.7.6. Punjab SLDC representative informed that two islanding schemes were approved by NRPC for the 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 a DPR regarding PSDF funding for RSD islanding scheme was submitted for PSDF funding recently. The total estimated cost of the 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 the 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. In the 238th OCC meeting, the Punjab SLDC representative apprised that PSTCL has

been informed about the procedure in the 27th SOCC meeting held on 20.11.25 and DPRs of said ISs from PSTCL are awaited for further process.

A.7.7. MS, NRPC suggested that Punjab SLDC submit the DPR for approval from NRPC and then the proposal can be further taken up with PSDF Secretariat for availing PSDF funding.

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

A.8.1. In the meeting, the NRPC representative apprised the forum about the coal stock position of generating stations in the Northern Region during the current month (till 10th December 2025).

A.8.2. The coal stock position of generating stations in the Northern Region, having critical stock, during the first ten days of December 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 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.9.8 In the 236th OCC meeting, MS NRPC asked Generators and HVDC/FACT owners to furnish the Testing schedule for 2025-26 in the format attached at Annexure-A.IV.a of the agenda to seo-nrpc@nic.in.

A.9.9 In the 238th OCC meeting NRPC Secretariat representative stated that the testing schedule for the next financial year needed to be submitted by 31st October as per IEGC 2023. However, the testing schedule is still awaited from most of the intra-state generating stations and NTPC. List of generating stations from which a periodic testing schedule is not received is attached as Annexure-A.III.

A.9.10 Representatives of UP SLDC, BBMB, Punjab SLDC, RVUNL, HP SLDC and IPGCL informed that they will submit the details shortly.

A.9.11 The NTPC representative stated that the testing schedule for their generating units is being prepared and would be submitted shortly.

A.9.12 MS, NRPC suggested that a letter may be sent to all the Generating Stations whose testing schedule is yet to be received to furnish the Testing schedule at the.

Decision of OCC Forum:

OCC forum decided that a letter may be sent to all the Generating Stations whose testing schedule is yet to be received to furnish the Testing schedule at the earliest in the format to seo-nrpc@nic.in.

A.10. Implementation of the AUFLS scheme in accordance with the report of the 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
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief	
Chandigarh	17	21	24	24	**86**
Delhi	334	400	467	467	**1668**
Haryana	586	704	821	821	**2931**
Himachal Pradesh	101	122	142	142	**507**
UT J&K & Ladhak	140	168	196	196	**700**
Punjab	645	773	902	902	**3223**
Rajasthan	853	1024	1194	1194	**4266**
Uttar Pradesh	1297	1557	1816	1816	**6486**
Uttarakhand	127	152	177	177	**633**
Total	**4100**	**4920**	**5740**	**5740**	**20499**

A.10.6. As per the information received from SLDC's of NR States/UTs the current relief quantum at different stages of AUFLS is mentioned below:

State/UT	Stage-1	Stage-2	Stage-3	Stage-4	Total

	49.4 Hz (5%)	49.2 Hz (6%)	49.0 Hz (7%)	48.8 Hz (7%)	
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief	
Chandigarh	NIL	NIL	NIL	NIL	**NIL**
Delhi	322	399	441	433	**1597**
Haryana	735	730	815	897	**3175**
Himachal Pradesh	432	365	183	97	**1077**
UT J&K & Ladakh	156	204	204	214	**778**
Punjab	584	715	855	859	**3014**
Rajasthan	893	1071	1152	1257	**4473**
Uttar Pradesh	2580	2188	2013	1757	**8538**
Uttarakhand	319	138	167	241	**865**
Total	**6021**	**5810**	**5930**	**5756**	**23518**

A.10.7. 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.10.8. 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.10.9. In the 237th OCC meeting forum asked Forum asked states to plan load relief as per the recommendations of the Task Force.

A.10.10. EE(O), NRPC informed that Rajasthan SLDC has submitted the feeder-wise, Stage-wise AUFLS load relief. He further mentioned that the information is still awaited from Delhi and Punjab.

A.10.11. Delhi SLDC representative stated that they will submit the information within a week.

A.10.12. Punjab SLDC representative informed that they will submit the details shortly.

A.10.13. EE(O), NRPC requested Punjab SLDC to submit the revised feeder-wise, Stage-wise AUFLS quantum.

A.10.14. MS, NRPC asked Delhi SLDC and Punjab SLDC to submit the revised feeder-wise, Stage-wise AUFLS quantum to NRPC before the next OCC meeting.

Decision of OCC Forum:

OCC forum asked Delhi SLDC and Punjab SLDC to submit the revised feeder-wise, Stage-wise AUFLS quantum to NRPC before the next OCC meeting.

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

A.11.1. EE(O), NRPC informed the forum that in 236th OCC meeting matter regarding monthly Review of LGBR for the next 11 months (Availability & Requirement) was discussed and it was agreed that NR States/UTs shall submit the data for the monthly Review of LGBR for the next 11 months including 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.11.2. He mentioned that in the 237th OCC meeting, the OCC forum requested NR States/UTs to submit the data for the monthly Review of LGBR for the next 11 months in the Google sheet to be shared by the NRPC Secretariat. As per the decision of the forum Google sheet link was shared along with the Agenda. The Google sheet link is mentioned below:

https://docs.google.com/spreadsheets/d/1LmYwSHcFCaRAniwHUIpoiWFwaFCmKnQjIPqFDvWYy1k/edit?gid=750082861#gid=750082861

A.11.3. He stated that details have been received from Delhi, Haryana, HP, Punjab, UP and Uttarakhand (details attached as **Annexure-A.IV**). He requested the remaining states, Rajasthan, J&K and Chandigarh to update the details.

A.11.4. MS, NRPC requested Rajasthan, J&K, and Chandigarh to update the data in the Google Sheet. Further, she requested the respective SLDCs to update the availability and requirement in the sheet on a monthly basis and any revised details arising due to short-term tie-ups may also be updated accordingly.

Decision of OCC Forum:

OCC forum asked Rajasthan, J&K, and Chandigarh to update the data in the Google Sheet. Further, the forum asked the respective SLDCs of NR to update the availability and requirement in the sheet on a monthly basis and any revised details arising due to short-term tie-ups may also be updated accordingly.

A.12. Deemed Availability for Planned Outages During Retrofitting of Electro-Mechanical relays, including Busbar and LBB Relays (agenda by Powergrid NR-3)

A.12.1. EE(O), NRPC apprised the forum that Powergrid NR-3 has submitted that as per CEA regulations on Technical Standards for Construction of Electrical Plants and Electric Lines Regulations, 2022 (dated 27.12.2022, page 166, clause 48.(1).(b)) and regulation 2010 “All major protection relays shall be of numerical type and communication protocol shall be as per IS-61850.” In line with these guidelines, the

existing relays, including Busbar and LBB relays, must be replaced with modern numerical relays supporting the IEC 61850 communication protocol.

A.12.2. Powergrid NR-3 has mentioned that for compliance with CEA Regulation, replacement of electromechanical Busbar and LBB relays has been undertaken. Retrofitting of LBB relays at Lucknow, Allahabad, Gorakhpur, Pithoragarh, and Sitarganj has been completed, while work at Mainpuri and Raebareli is pending. Busbar relay retrofitting at 400/220 kV Lucknow and 220/132 kV Sitarganj is complete, and work at other substations is either in progress or scheduled to start shortly.

A.12.3. Powergrid NR-3 representative mentioned that several POWERGRID substations commissioned over 20 years ago (before 2010) were equipped with electro-mechanical Busbar and LBB protection relays, such as those at 400/220 kV Lucknow, Gorakhpur, Prayagraj, Mainpuri, 220/132 kV Pithoragarh, 220 kV Raebareli, and 220/132 kV Sitarganj. These relays have limited settings, configurations, and features, including disturbance recording and event logging. They are now obsolete and no longer supported by the OEM. Therefore, upgrading them to the latest numerical IEDs is essential for system improvement, as well.

A.12.4. Powergrid NR-3 representative mentioned that the agenda was discussed in the meeting taken by MS, NRPC on 03.12.2025, wherein it was decided to consider the outages as a regulatory requirement (beyond control of licensee/ forced majeure) for replacement of electromechanical relays to numerical relays for substations commissioned before 2010. However, POWERGRID was asked to put up an agenda in OCC for the decision of approximately. time taken in replacement work.

A.12.5. Powergrid NR-3 representative mentioned that retrofitting a single LBB relay requires an outage of approximately 15–20 hours for the respective element, while retrofitting Busbar relays typically requires 35–40 hours of outage for each element. As the work is being carried out in conventional substations (around 20 years old), several constraints are encountered, such as:

- Space Constraints: Limited panel space with congested wiring and inter-panel connections necessitates extensive dismantling and rewiring.
- Panel Modifications: Cutting panels, installing new relays, rearranging existing relays, and performing Test Block and SEM work are critical and time-consuming tasks.
- Scheme/Drawing Issues: Old or deteriorated drawings, and in some cases, the unavailability of drawings, pose challenges.
- RTU Constraints: Non-reporting of critical monitoring signals is observed, requiring troubleshooting and rectification after shutdown.

Timewise detail for LBB relays Retrofitting Activities:

Activity	**Estimated Hours**

Isolation and Issuance of PTW	0.5 Hrs
CT Shorting & DC isolation after Shutdown	1 Hrs
Dismantling existing wiring & old LBB relay	2-3 Hrs
Panel Cutting and Installation of New LBB Relay	2-3 Hrs
Re-Wiring Termination as per approved Scheme	3-4 Hrs
Verification of new wiring as per approved scheme	0.5-1 Hrs
Configuration of Events & DRs and Integration with SCADA/NTAMC	1-2 Hrs.
LBB relay Testing as per controlled documents	2-3 Hrs
Signal verification with RTAMC/NTAMC	0.5-1 Hr
Result Review and Approvals	1-2 Hrs.
Rectification/Correction of reviewed observations	0.5-1Hr
Code Collection & Charging	1 Hr.
Total	**15-20 Hrs.**

Timewise detail for Buabar relays Retrofitting Activities:

Activity	**Estimated Hours**
Isolation and Issuance of PTW	0.5 Hrs
CT Shorting & DC isolation after Shutdown	2 Hrs
Dismantling existing wiring & old relays	7-8 Hrs
Panel Cutting and Installation of New Bus Bar PU A & PU B Relays	2-3 Hrs
Re-Wiring Termination as per approved Scheme	8-9 Hrs
CT TB Replacement Work	0.5 Hrs
Verification of new wiring as per approved scheme	1-2 Hrs
Configuration of Events & DRs and Integration with SCADA/NTAMC	1-2 Hr.

Bus Bar relay Testing as per controlled documents	4-5 Hrs
Signal verification with RTAMC/NTAMC	1-2 Hrs
Result Review and Approvals	1-2 Hrs.
Rectification/Correction of reviewed observations	2-3 Hrs
Code Collection & Charging	1 Hr.
Total	**35-40 Hrs.**

A.12.6. Powergrid NR-3 representative requested that in view of regulatory compliance, the following time may be allowed for replacement:

- **15–20 hours** for LBB relay retrofitting per element.
- **35–40 hours** for Busbar relay retrofitting per element.

A.12.7. EE(P), NRPC informed the forum that in WR for LBB relay retrofitting average time allowed for replacement is 15 hours as per records available on the WRPC website.

A.12.8. EE(P), NRPC enquired whether, in the case of a centralised scheme, the time required would be less compared to a decentralised scheme.

A.12.9. Powergrid representative informed that in the case of a centralised scheme, it takes around 30-35 hours for busbar retrofitting.

A.12.10. MS, NRPC enquired with other entities or states that have done relay retrofitting regarding how much time it takes.

A.12.11. The DTL representative informed that generally it takes around 24-30 hours, which may be reduced based on experience. He further mentioned that they have done retrofitting of relays without shutdown, also in certain cases.

A.12.12. The NRLDC representative stated that there is a disparity between different regions regarding providing deemed availability for relay retrofitting. In the Southern Region, there is a provision where entities are carrying out retrofitting work during the outage of line in AMP. So, on similar lines NR entities also can be advised to do retrofitting along with AMP of lines.

A.12.13. SE(O), NRPC asked POWERGRID to submit the list of stations that are commissioned before 2010 so that the possibility of combining relay retrofitting with AMP of lines can be explored.

A.12.14. Powergrid representative informed that distance relays of lines and relays of ICT may be replaced during their respective AMP, but busbar retrofitting requires the outage of all elements and therefore cannot be done in AMP of different elements (lines/ICT).

A.12.15. MS, NRPC stated that Powergrid must try to carry out the retrofitting work along with the line AMP. In case it is not possible, then a deemed availability request may be submitted along with reasoning.

A.12.16. She suggested Powergrid to submit the relevant documents for requesting deemed availability separately, DOCO, AMP Schedules of the lines and list of substations commissioned before 2010, eligible for retrofitting work based on the change of law.

Decision of OCC Forum:

OCC Forum approved LLB relay retrofitting time of 15 hours per element, bus-bar relay retrofitting time of 24 hours per element in case of centralised scheme, and 30 hours per element in case of decentralised scheme, subject to revision based on future experience. The Forum requested Powergrid to submit the list of stations eligible for bus-bar relay retrofitting along with the DOCO, AMP schedule of the concerned lines, in case of line relay retro-fitment.

A.13. Delay In Outages (Agenda by BKTL)

A.13.1. BKTL representative submitted that recurring delays in outages at BKTL SPV were observed, primarily due to multiple operational challenges. These delays have adversely impacted the optimal utilization of the scheduled outage period by the Licensee. Contributing factors include issues at the other end, grid constraints, and extended process timelines. A detailed summary of these instances is provided in Annexure-A.VI of Agenda.

A.13.2. BKTL presented to the forum the number of delays they have observed from the NRLDC and Powergrid side for July and August 2025, which is reducing their effective outage time. BKTL requested Powergrid and NRLDC to expedite the process and avoid delay in outages.

A.13.3. NRLDC representative submitted that:

- Shutdown code can be given within a few times of the outage request only in case it is a planned outage. There will always be some delay in case of emergency outage, especially for lines through which RE power is being evacuated.
- All the mentioned shutdowns in the list were emergency shutdowns and not planned shutdowns.
- BKTL has punched an outage request in the OMS portal for both ckts simultaneously on an emergency basis. However, code was issued for the second circuit when the first circuit got charged. Therefore, a delay appears in the second circuit.
- Emergency shutdowns are being facilitated in real-time based on grid conditions. Further, the outage of the 765kV line also involves code after review from the NLDC side.
- Transmission line outages in the RE complex are being facilitated on one by one basis during non-solar hours.

- Shutdown studies are being done by the Real-time security desk official of the NRLDC control room shift.

A.13.4. BKTL representative stated that the delay at the time of availing outages is not a major issue, but the delay at the time of charging of the lines reduces the availability of the line.

A.13.5. CGM, NRLDC asked Powergrid, as they have having majority of the lines in NR, whether they are also experiencing similar issues.

A.13.6. Powergrid representative informed that after receiving code from NRLDC, POWERGRID also issues the code immediately and it takes around 30-60 mins in execution. In one instance, there was a delay due to a high voltage issue, which was communicated to NRLDC.

A.13.7. Powergrid representative informed that in case of their lines it is also taking around 1-1:30 hours.

A.13.8. MS, NRPC stated that this matter was included in the Agenda in OCC to sensitise the utilities to work in a coordinated manner to improve system efficiency.

A.13.9. MS, NRPC advised NRLDC/NLDC to avoid the delay in issuance of codes for opening and closing of lines as well as carryout the maintenance activities by transmission utilities.

Decision of OCC Forum:

OCC forum advised NRLDC/NLDC to avoid the delay in in issuance of codes for opening and closing of transmission lines/*element and after issuance of the charging code, all the entities to work in a coordinated manner to improve system efficiency.*

A.14. Replacement of Damaged 400 kV Jack Bus Sections at Mandola & Ballabgarh Substations under ADDCAP (Agenda by Powergrid NR-1)

A.14.1. EE(O), NRPC apprised the forum that Powergrid NR-1 has submitted that the requirement for complete shutdown of 400 kV Bus–1 & Bus–2 at Mandola and Ballabgarh substations was placed earlier for carrying out the replacement of severely aged and damaged 400 kV jack bus sections. The matter was deliberated in earlier OCC meetings

- At Mandola, a shutdown was agreed with DTL consent & work was completed in the 400 kV bus system.
- At Ballabgarh, shutdown consent for the complete 400 kV bus sections was not provided by BBMB/HVPNL. Subsequently, work of Bus section 3& 4 completed, and a shutdown was approved for Bus sections 1& 2 in the recent OCC & same will be taken up after the consent of BBMB/HVPNL.

A.14.2. The existing jack buses have completed over 30+ years of service

- Ballabgarh commissioned in 1988
- Mandola was commissioned in 1990 and has deteriorated significantly, requiring urgent replacement to ensure safety, reliability, and operational continuity.

A.14.3. POWERGRID NR-I has informed that it has completed the replacement of damaged jack bus sections at Mandola & Ballabgarh 400 kV 3& 4. Moreover, replacement of damaged jack bus sections has been proposed for Bus sections 1&2.

The incurred cost includes:

- Supply of 400 kV jack bus conductor & hardware
- Replacement of clamps, tension fittings & accessories
- Tower/gantry strengthening (if required)
- Labour, T&P, shutdown coordination and safety measures
- Testing & commissioning activities

A.14.4. Powergrid informed that the total cost incurred is as follows:

Mandola Substation: - Rs 96,25,000/-
Ballabgarh Substation: - Rs 95,00,000/-

Total cost for replacement of Jack bus Conductor at Mandola & Ballabgarh Substation: - Rs 1,91,25,000/-

A.14.5. Powergrid requested for the following proposal:

- Approve the cost incurred under Additional Capitalization (AddCap) for the replacement of the deteriorated jack bus sections at 400 kV Mandola & Ballabgarh Substations.
- Acknowledge the criticality of timely execution considering the 30+ years of asset age and system safety requirements.
- Outages during complete bus shutdown may be considered deemed available, as the activity pertains to replacement of end-of-life equipment critical for reliable grid operation.

A.14.6. OCC forum noted the proposal of Powergrid regarding the replacement of Damaged 400 kV Jack Bus Sections at Mandola & Ballabgarh Substations. Further, deemed availability of shutdown required for replacement of jack buses would be decided after the Additional Capitalization approval by CERC.

Decision of OCC Forum:

OCC forum noted the proposal of Powergrid regarding the replacement of Damaged 400 kV Jack Bus Sections at Mandola & Ballabgarh Substations. Further, deemed availability of shutdown required for replacement of jack buses would be decided after the Additional Capitalization approval by CERC.

A.15. Details of Captive Generation in NR Region (Agenda by NRPC Secretariat)

A.15.1. EE(O), NRPC apprised the forum that MoP has directed all RPCs to contact the State Load Despatch Centres (SLDCs) in their respective region to get the details of Captive, Open Access & Rooftop Solar Generation of 500 kW and above at the earliest.

A.15.2. NRPC Secretariat vide mail dated 11.12.2025 requested all SLDCs of NR to send the requisite data as per the format Annexure-A.VII of the agenda to the GM Division (gmcea@nic.in) at the earliest, with a copy to NRPC (seo-nrpc@nic.in).

A.15.3. EE, NRPC informed that data has been received from UP, Uttarakhand, HP and Punjab.

A.15.4. NRLDC representative informed that due to the increased number of solar rooftop integration, there is rising uncertainty in capturing the Generation and Load demand. State-wise details of rooftop will enable in better demand forecasting and maintaining grid stability. He further stated that the details of captive generation will enable to know how much power they are injecting into the grid.

A.15.5. Rajasthan SLDC representative informed that currently they are facing issues in obtaining the details regarding rooftop solar from DISCOMs.

A.15.6. NRLDC representative stated that it was deliberated in the recent meeting in CEA that demand growth after integration of rooftop solar is not being captured properly while doing future planning. These details will enable in capturing the demand and future demand planning.

A.15.7. MS, NRPC requested all the SLDCs to take up the matter with their respective DISCOMs as the data is requested urgently from the Ministry of Power.

Decision of OCC Forum:

OCC forum requested all the SLDCs to take up the matter with their respective DISCOMs and furnish the requisite data monthly as per the format attached at Annexure-A.V

A.16. Table Agenda: Request for charging of 220/66KV, 50MVA ICT-2 at Drass Station (Agenda by LPDD)

A.16.1 LPDD representative apprised the forum that the Installation of 01 number 50 MVA, 220/66 kV ICT at Drass was approved in the 4th meeting of the Northern Regional Power Committee (Transmission Planning).

A.16.2 This ICT is being commissioned by POWERGRID on behalf of LPDD and shall be made ready for charging on 22.12.2025. However, due to a delay in the connection agreement and ICT charging is delayed.

A.16.3 Powergrid representative apprised that the ICT is ready for charging. Keeping in view of temperature as low as (-) 30 degrees, in the area, it is advisable to keep

ICT in charged conditions to prevent damage to the Transformer due to very low ambient Temperature in the area.

A.16.4 Powergrid representative informed the forum that there was lack of clarity regarding the ownership of the ICT which was clarified in a CEA meeting held on 12.12.2025 that the ownership will be with LPDD. The commissioning of ICT is being done by Powergrid as a consultancy project.

A.16.5 Powergrid representative further informed that the expected time for completing all procedural formalities is around two months; therefore, considering the harsh winter conditions in Ladakh, the forum may approve keeping the ICT in a charged condition to prevent transformer damage.

A.16.6 CTUIL representative informed that the connection agreement will be processed after the minutes of the aforementioned CEA meeting is issued. MoM of the said meeting is expected to be issued within a week.

A.16.7 NRLDC representative informed that the FTC approval will be provided after receiving the connection agreement from CTUIL.

A.16.8 Ladakh representative informed that, as they are not registered on the RLDC portal so they will be applying for FTC through JK SLDC.

A.16.9 MS, NRPC suggested LPDD to carry out the FTC formalities in the meantime, while CTUIL processes the connection agreement.

Decision of OCC Forum:

OCC forum asked CTUIL to provide the connection agreements as soon as minutes of CEA meeting are issued in the meantime LPDD was advised to complete the remaining formalities for FTC clearance to expedite the process.

खण्ड-ख: उ.क्षे.भा.प्रे.के. Part-B: NRLDC

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

NRLDC representative presented the monthly grid highlights for November 2025:

Demand met and Consumption details of NR

S.No.	Constituents	Max Demand met (in MW)	Date & Time of Max Demand met	All-time Max. Demand	Date & Time of All-time Max Demand met
1	Chandigarh	218	28-11-2025 07:00	482	18.06.24 at 15:28

2	Delhi	4486	28-11-2025 10:44	8656	19.06.24 at 15:06
4	Haryana	8626	28-11-2025 09:00	14662	31.07.24 at 14:30
3	H.P.	2239	26-11-2025 07:45	2273	17.01.25 at 09:00
5	J&K	3131	28-11-2025 08:00	3200	07.01.25 at 10:00
6	Punjab	9808	29-11-2025 10:45	16754	28.06.25 at 15:00
7	Rajasthan	17614	30-11-2025 09:00	19165	12.02.25 at 11:00
9	U.P.	19341	28-11-2025 18:18	31486	11.06.25 at 00:45
8	Uttarakhand	2297	28-11-2025 07:00	2910	11.06.25 at 22:00
10	Northern Region	63755	28-11-2025 10:00	91234	19.06.24 at 14:37

S.No.	Constituents	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)	All time Max consumption	Date of All time Max Consumption
1	Chandigarh	3.8	01-11-2025	3.55	9.3	12.06.2025
2	Delhi	82.9	01-11-2025	75.44	177.7	18.06.2024
4	Haryana	163.4	28-11-2025	151.84	293.4	30.07.2024
3	H.P.	37.8	26-11-2025	35.52	42.6	11.06.2025
5	J&K	65.2	28-11-2025	59.53	70.3	04.02.2025

6	Punjab	165.8	29-11-2025	147.52	366.8	21.07.2024
7	Rajasthan	338.3	29-11-2025	297.93	388.0	11.06.2025
9	U.P.	345.9	28-11-2025	323.06	658.7	17.06.2024
8	Uttarakhand	42.17	28-11-2025	40.74	62.1	14.06.2024
10	Northern Region	1233.1	28-11-2025	1135.137	2022.9	12.06.2025

- In November'25, the Maximum energy consumption of the Northern Region was 1233.1 MUs on 28th November'25 and it was 1.4% lower than November'24 (1248 MUs on 09th Nov, 24).

- In November'25, the Average energy consumption per day of the Northern Region was 1135.14 MUs and it was 2.5% lower than November'24 (1165 MUs/day)

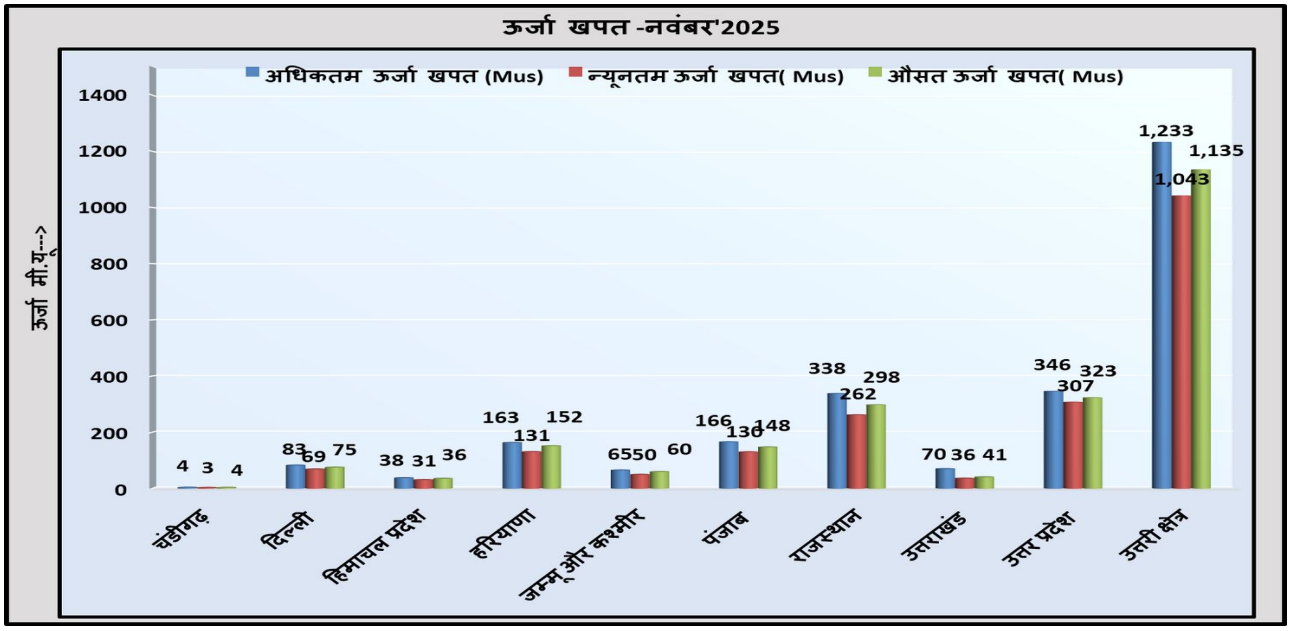
- In November'25, the Maximum Demand of Northern Region was 63755 MW on 28th November'25 @10:00 Hrs as compared to 61434 MW on 29th Nov'24 @10:43 Hrs.

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

क्षेत्र/राज्य	अक्टूबर- 2024	अक्टूबर - 2025	% अंतर
चंडीगढ़	3.6	3.5	-2.2%
दिल्ली	74.8	75.4	0.9%
हिमाचल प्रदेश	33.9	35.5	4.7%
हरियाणा	144.8	151.8	4.9%
जम्मू और कश्मीर	54.6	59.5	9.0%
पंजाब	143.6	147.5	2.7%

राजस्थान	320.2	297.9	-7.0%
उत्तराखंड	39.8	40.8	2.5%
उत्तर प्रदेश	349.5	323.1	-7.6%
उत्तरी क्षेत्र	1164.7	1135.1	-2.5%

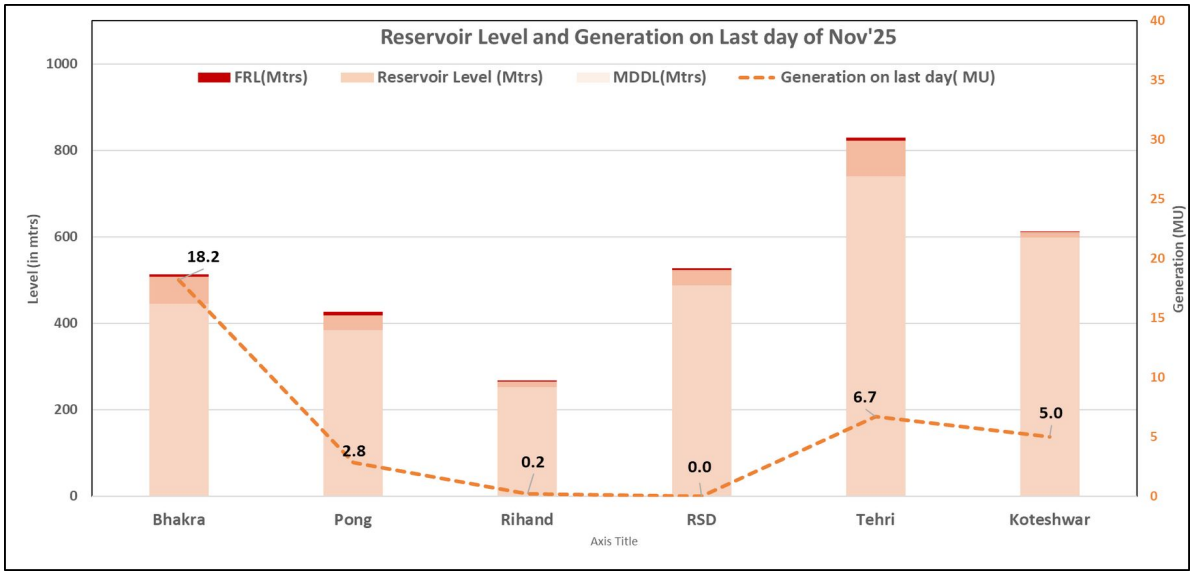
Energy Consumptions



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Nov'25	49.994	50.403 (28.11.25 at 06:02:20 hrs)	49.542 (01.11.25 at 18:14:40 hrs)	5.66	79.39	14.95
Nov'24	49.995	50.317 (02.11.24 at 11:04:20 hrs)	49.553 (27.11.24 at 17:18:50 hrs)	5.2	80.8	14.0

Reservoir Level and Generation on Last Day of Month



Reservoir Level on last day of November month				(Low: -ve)		(High: +ve)
Year	Bhakra	Pong	Rihand HPS	RSD	Tehri	Koteshwar
2025	508	418	265	523	823	611
2024	501	415	264.235	497	823.5	606
Diff (in m)	6.7	3.5	0.6	26.3	-0.5	5.4

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

B.2 Demand forecasting and resource adequacy related: CERC order dated 05.10.2025

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.

With reference to Clause 31(2) of the 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 Dec-2025 as per Clause 31(4) (a) & (b) of IEGC-2023 is shown below:

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

In accordance with the 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/1KWY4G9gTBLV5wTJkhGEIeRptKP-QbhjL?*

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

All SLDCs need 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 ahead and year-ahead basis.

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

NRLDC representative expressed concern that Haryana SLDC is not submitting data in formats, even after continuous follow-ups. MS NRPC also expressed concern and stated that only Haryana state is not sending data as per the format since the last few months, whereas all other states are sharing data as per format.

Haryana SLDC representative stated that they have taken up the matter with the concerned wing of the Power Purchase deptt. at a senior level. Power purchase deptt. has agreed to share the data as per the approved formats. Haryana SLDC also submitted that they have shared month-ahead and year-ahead data with NRLDC.

NRLDC representative informed that they have also carried out month month-ahead resource adequacy analysis on a regional basis for Jan 2026 as per data available at NRLDC through PRAS software. The results are attached as Annexure-B.I of the agenda.

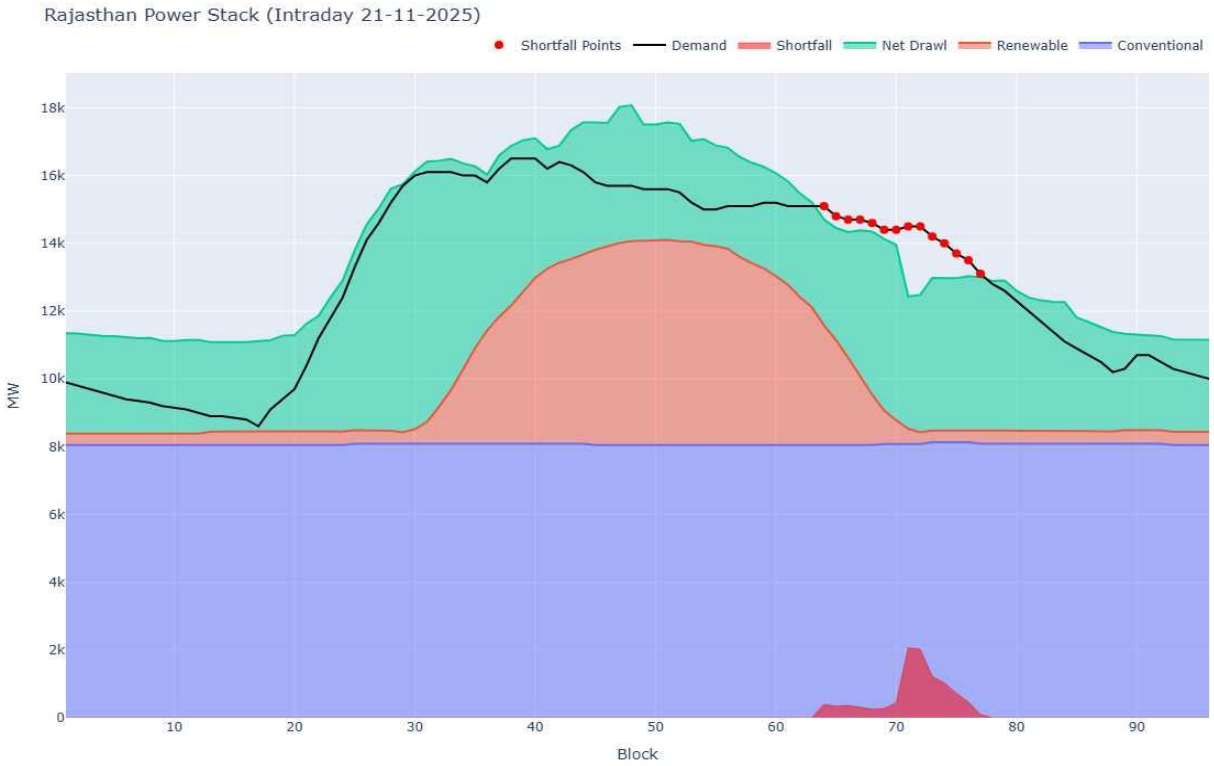
As per IEGC clause 31:

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

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



Sample email sent from NRLDC to SLDCs

Intra day Resource Adequacy Planning Advisory

NRLDC MIS
Fri 11/21/2025 12:46 PM
Reply all

To: LDRVPNL@RVPN.CO.IN; SE.LDRVPNL@RVPN.CO.IN; ce.ld@rvpn.co.in
Cc: Manoj Kumar Agarwal (मनोज कुमार अग्रवाल); Somara Lakra (सोमारा लाकरा); Sunil Kumar Aharwal (सुनील कुमार अहरवाल); P P Chand (पी पी चंद); Mahavir Prasad Singh (महावीर प्रसाद सिंह); NRLDC Scheduling; NRLDC SO 2; NRLDC SO

Download

Ma'am/Sir,

Please find attached the Intra-day Power Portfolio. Based on the projected demand supply scenario, as per the forecast data submitted by SLDCs and the drawal schedules, the power supply position is enclosed for reference.

In view of the above, it is requested to kindly ensure the following:

1. Adequate resource planning may be carried out to meet the forecasted demand and mitigate any anticipated shortfall.
2. Avoid overdrawl/underdrawl from the grid to maintain secure and reliable system operation.
3. During solar hours, where surplus resources are observed (as reflected in the attached graphs), states may explore opportunities to sell surplus power in the electricity markets to optimize resource utilization.
4. **It has been observed that the thermal generation forecast has been indicated as same across all time blocks, merely reflecting the total capacity of units on bar. States are requested to provide block-wise generation forecasts in line with the actual operational schedule planned, to facilitate realistic assessment of resource adequacy.**
5. Review the availability of generating units on bar and examine resource adequacy vis-à-vis demand, ensuring necessary planning and coordination in advance.

Disclaimer: This advisory is indicative and intended to facilitate proactive planning. All entities are requested to undertake an independent assessment at their end and initiate appropriate measures to ensure resource adequacy and system reliability.

सादर एवं धन्यवाद / Thanks and regards
NRLDC MIS Group
उत्तरी क्षेत्रीय भार प्रेषण केंद्र / Northern Regional Load Despatch Centre (NRLDC)
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड (ग्रिड इंडिया) / Grid Controller of India Limited (Grid-India)
(Erstwhile Power System Operation Corporation Limited/POSOCO)

However, it is being observed 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 the daytime.

Rajasthan SLDC expressed concern that procurement of power is being done by a separate division and day-ahead and intra-day adequacy can only be ensured if there is active involvement of power purchase departments.

OCC forum asked Rajasthan SLDC to take up the matter first at the state OCC level. All SLDCs were encouraged to have monthly OCC meetings with participation from DISCOMs, intrastate generators (including RE).

In the 238 OCC meeting, the OCC forum discussed that:

- ***NRLDC representative stated that as per CERC RNOD issued on 23.10.2025, demand forecasting and resource adequacy aspect was one of the crucial areas and there needs to be major improvement starting from the data submission part. Haryana SLDC was especially asked to regularly share the data as per the approved CERC timelines.***
- ***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 has developed 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 the NRLDC end.***
- ***States should submit an actual generation schedule and not generation availability as a flat/constant value throughout the day.***
- ***It was discussed that PRAS is open open-source tool and can be utilised at SLDC level also similar to being used at the NRLDC end. It was discussed that already one training program on resource adequacy and PRAS had already been done by NRLDC and another training program would be planned before the next OCC meeting.***
- ***Further, it was discussed that one representative from SLDC may visit NRLDC and develop code for each SLDC during one/two day interaction with the concerned SLDC. Accordingly, an online workshop on PRAS software is planned by NRLDC for all NR SLDCs before the next OCC meeting shortly.***

Further, CERC vide has issued a final order dated 05.10.2025 regarding 9/SM/2024. CERC has also issued Consolidated Record Notes of discussions held during the Workshop on addressing various challenges faced by the states in Operational

Planning for safe, secure, and reliable integrated operation of the power system dated 23.10.2025. The meeting for Northern region was held on 11.08.2025. The RNOD mentions the discussions held in the meeting on various points such as:

(i) Adequacy of workforce:

(ii) Training and Certification of the SLDC staff:

(iii) Backing down of intra-state thermal generating units:

(iv) Demand estimation and Resource Adequacy data submission:

(v) Alignment of the State Grid Code with IEGC 2023:

(vi) Implementation of SAMAST:

(vii) Fee and Charges Regulations for SLDCs:

In the 238 OCC meeting, MS NRPC stated that all concerned SLDCs may take necessary actions as discussed in previous OCC meetings. It was mentioned that special attention may be given by SLDCs to demand estimation and Resource Adequacy data submission and ensuring adequate manpower in SLDCs.

It was suggested that as per IEGC clauses, SLDCs also carry out day-ahead, week-ahead and month-ahead resource adequacy exercises and share their results with NRLDC. Further, all may take note of the recent CERC order dated 05.10.2025. All concerned SLDCs were asked to submit the actions taken at their end after the workshop organized by CERC.

Recently, JKPTCL informed that the process of recruitment of JEs is likely to get completed in the next two months; however, recruitment of other categories, new creations of staff in line with the work adequacy guidelines of MoP i.e. 103 staff members, shall take time.

Further, the NRLDC MIS team has also mailed to all NR SLDCs to submit actions taken on various action points arising from CERC's observations, along with the current status on each item. To facilitate uniform data submission, a format has been prepared and enclosed as Annexure B.II of the agenda.

Response has only been received from UP and Punjab SLDC.

OCC forum asked all SLDCs to take necessary actions as discussed above.

B.3 Database of transmission lines having terminal equipments rating lower than the transmission line conductor capacity

For conducting studies for assessment of inter-control-area transfer capability or any other related simulation studies, thermal ratings of lines as specified in CEA's Manual

on Transmission Planning Criteria 2023 are being considered as the safe capacity limit of lines based on anticipated ambient temperature.

However, it is being observed in a number of cases, such as in the RVPN control area, that the rating of terminal equipment is lower than the thermal capacity of the transmission line. This is leading to under-utilisation of line capacity due to limited switchgear rating and even leading to constraints in RE evacuation from the Western Rajasthan RE complex.

Some of the lines in the RVPN control area wherein this issue was observed are listed below:

- 400kV Bhadla-Bikaner D/C
- 400kV Jaisalmer-Kankani S/C
- 400kV Akal-Kankani S/C
- 400kV Akal-Jaisalmer S/C
- 400kV Suratgarh SCTPS-Babai D/C.

For these lines, thermal capacity is 1700MVA for design @ 75deg & 2180MVA for design @85deg. However, equipment rating is only 2kA, which translates to 1.732*400*2= 1385MVA only, thus limiting line power transfer capacity to 1385MVA only.

Similar issues were earlier observed at 400kV Mahendragarh, Dhanonda and Nawada substation in the HVPN control area.

Further as per information available with NRLDC in case of Vishnuprayag, terminal equipment of only 1kA has been installed whereas the line is having twin moose conductor. Therefore, the conductor can safely carry around 890MW of power, but due to a terminal equipment rating issue, the line can only be loaded up to 400*1.732*1 = 693MVA only thereby reducing line capacity in difficult hilly terrain.

Similar terminal equipment rating issues were also observed in 400kV lines from NJPC and Rampur, wherein the lines, such as 400kV NJPC-Panchkula D/C (further LILOed) and 400kV Rampura-Nallagarh sections of lines, have equipment rating is only 2kA, which translates to 1.732*400*2= 1385MVA only whereas transmission line has triple snowbird conductor.

The issue of lower line equipment rating has also been discussed in the past in 2018 in the NRPC-OCC level, wherein NPC had asked RPCs to furnish such details. It was requested that the terminal equipment ratings of STUs and other transmission licensees' transmission lines in the region may be compiled and furnished to Grid-India with a copy to NPC Division, CEA on a priority basis.

Subsequently, the agenda was discussed in a number of OCC meetings and transmission utilities were asked to submit the data.

As per the data available at NRLDC, following are few transmission lines in Northern region having terminal equipments of lower capacity than conductor capacity:

Name of Transmission line	Line length (km)	Owner	Conductor Type	Conductor Rating @45deg for 75deg design	Switch gear rating End-1 (MVA)	Switch gear rating End-2 (MVA)
400kV Bhadla-Bikaner D/C	189	RRVPNL	Quad Moose	1701	1386	1386
400kV Jaisalmer-Kankani S/C	177	RRVPNL	Quad Moose	1701	1386	1386
400kV Akal-Kankani S/C	223	RRVPNL	Quad Moose	1701	1386	1386
400kV Akal-Jaisalmer S/C	61	RRVPNL	Quad Moose	1701	1386	1386
400kV Suratgarh SCTPS-Babai D/C	245	RRVPNL	Quad Moose	1701	1386	1386
400kV Mahendragarh-Dhanonda D/C	5	ATIL	Quad Moose	1701	1386	1386
400kV Vishnuprayag-Muzaffarnagar S/C	280	UPPTCL	Twin Moose	850	693	NA
400kV Vishnuprayag-Alakhnanda D/C	109	UPPTCL	Twin Moose	850	693	NA
400kV Rampur-Nallagarh D/C	128	POWER GRID	Triple Snowbird	1275/ 1625*	1386	1386
400kV Jhakri-Gumma D/C	55	POWER GRID	Triple Snowbird	1275/ 1625*	1386	NA
400kV Gumma-Panchkula D/C	112	POWER GRID	Triple Snowbird	1275/ 1625*	NA	1386
400kV Jhakri-Rampur D/C	21	POWER GRID	Triple Snowbird	1275/ 1625*	1386	1386

*Considering ambient temp of 40deg (lower in Hilly areas)

In the 237 OCC meeting,

- MS NRPC stated that the lines listed above from NRLDC side are based on operational experience and accordingly, concerned transmission licensees may strongly take up for upgradation of terminal equipments. It was also mentioned that the line for which loading restriction has not been observed till date, their terminal equipment upgradation may be taken up subsequently.

- POWERGRID NR-2 representative stated that they are ready for switchgear upgradation, but SJVNL has expressed an inability to upgrade switchgear at their end due to the GIS substation.
- HVPNL representative stated that terminal equipment at their substations, such as Nawada, Dhanonda is being planned and likely to be completed before summer 2026.

In the 238 OCC meeting,

- POWERGRID representative confirmed that they are ready for switchgear upgradation works however, SJVNL has expressed concern and an inability for switchgear replacement work
- SJVNL representative stated that complete GIS equipments needs to be changed to upgrade switchgear. Further, as Rampur HEP is in tandem, the generation of Rampur would also be affected. The circuit breaker of NJPC has also been changed after commissioning.
- OCC members discussed that intrastate power is also being injected by generators of HP in the corridor. Further, the ambient temperature in HP area is on the lower side; a temperature of 40deg can be considered for determining line loadability. In case terminal equipment cannot be upgraded at SJVNL end, then same need to be submitted by SJVNL in written to NRLDC/NRPC.
- UP SLDC representative stated that input was received from Vishnuprayag HEP, with CT ratio given as 1200/1. It was mentioned that capacity of lines from Vishnuprayag HEP has been given as 550A per conductor which translates roughly to 763MVA. Other planned transmission line include 400kV Srinagar-Khandukhal D/C line, which is expected to relieve the loadings of lines from Vishnuprayag HEP.
- OCC asked UP SLDC to confirm the rating of the transmission line because, as per CEA transmission planning criteria, the capacity of 400kV twin moose lines is generally taken as 850-860 MVA. Moreover, this line should normally be passing through a lower ambient temperature.
- OCC asked Rajasthan SLDC to expedite terminal equipment upgradation of RRVPNL lines.
- OCC asked Haryana SLDC to expedite terminal equipment upgradation at Dhanonda & Nawada end before summer 2026.

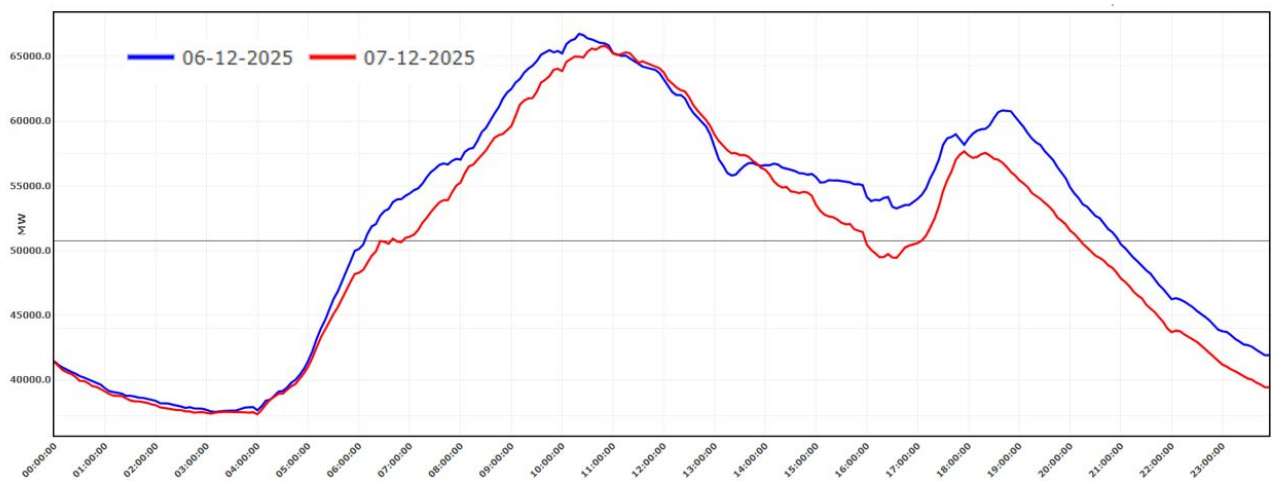
Given the issues arising due to limited switchgear rating in lines that have higher thermal capacity, OCC forum:

- Advised all utilities to furnish the details of lines having terminal equipments of lower capacity to Grid-India /CTUIL/NRPC for consideration in future studies and planning of actions well in advance.
- Asked to plan for uprating switchgear ratings in existing lines to avoid issues in RE evacuation/ facilitating shutdowns may be studied by concerned transmission line and bay equipment owners.

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

B.4 Winter preparedness measures 2025-26

Winter in the Northern region has started and shall continue till February end, and the challenges faced during these months are well known to all the utilities. During winter, the demand of NR states except Rajasthan and hilly states is on the lower side. With decreasing temperatures and festivals, the onset of winter also brings some severe challenges to NR grid operators. High ramp rate in demand during morning peak and evening peak is being observed, which is likely to get further steeper.



NRLDC representative stated that based on the detailed discussion held in last OCC meeting, the following actions were suggested:

- To carry out tap change exercise at 220kV and below voltage level. NRLDC had also reviewed tap position of 400/220kV Abdullapur, 765/400kV Mainpuri and 220/132kV Chandigarh (PG) substation. Further, a study based on the voltage profile of 400/220kV substations in NR for Nov 2025 has been done and the following tap changes are proposed:

Increase by 2 steps

- 400/220kV Amritsar(PG)
- 400/220kV Bhiwani(PG)
- 400/220kV Sambha(PG)
- 400/220kV Sonepat(PG)

Increase by 1 step

- 400/220kV Panchkula(PG)
- 400/220kV Bhiwani(PG)
- 400/220kV Nakodar(PSTCL)

Decrease by 2 steps

- 400/220kV Allahabad(PG)
- 400/220kV Hamirpur(PG)
- 400/220kV Panipat(BBMB)
- 400/220kV Deepalpur (Indigrid)
- 400/220kV Gr. Noida(UP)
- 400/220kV Lucknow(UP)

Decrease by 1 step

- 400/220kV Jalandhar(PG)
- 400/220kV Kaithal(PG)
- 400/220kV Bareilly(UP)
- 400/220kV Unnao(UP)

OCC approved tap change exercise at 400/220kV ICTs as proposed by NRLDC. Utilities were asked to carry out the tap change at the earliest. In case of outage requirement of ICTs for offline tap change, shutdown may be facilitated in real-time through the NRLDC control room, ensuring N-1 compliance of 400/220kV ICTs, so that the load supplied does not get affected.

- To ensure that all overflux settings of transformers and overvoltage settings of transmission lines are as per the approved protection philosophy of NRPC. (HVPNL, PSTCL (partial implementation), NTPC, ADANI, Uttarakhand, J&K are yet to confirm the implementation of revised overvoltage settings (latest PSC deliberations)
- It was requested that any planned commissioning of bus reactors may please be expedited.
- OCC expressed concern about the lack of progress of DTL reactors and asked them to expedite their work.
- Utilities to submit feedback on NRLDC reactive power document, including for line reactors, which can be used as bus reactors as per requirement.
- Utilities 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

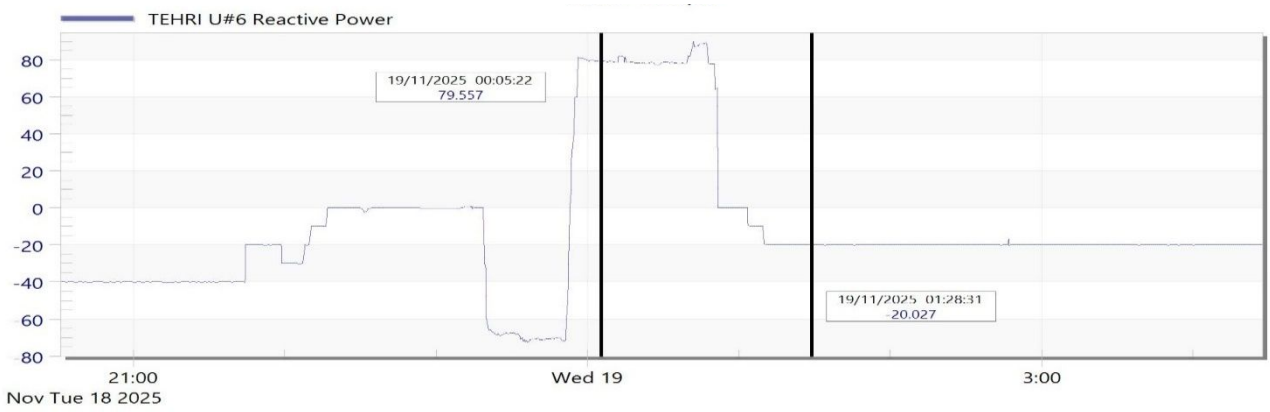
Regarding synchronous condenser mode of operation in the 237 OCC meeting, it was discussed that,

- 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 the Tehri Pumped Storage Plant generating units for synchronous condenser mode of operation. It was also confirmed that machines from both

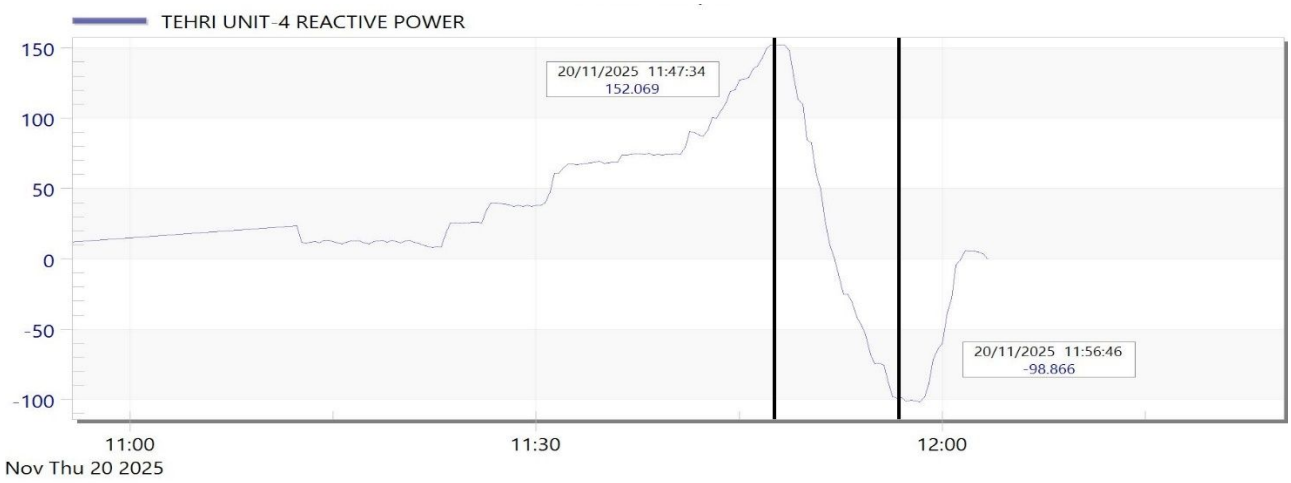
can be operated in synchronous condenser mode of operation simultaneously.

- BBMB representative confirmed through email regarding the availability of the Pong Hydroplant for synchronous condenser mode of operation.
- Punjab SLDC confirmed the availability of RSD Unit-3 for synchronous condenser mode of operation, as per the grid requirement. It was mentioned that RSD is taking measures to include other units also under synchronous condenser mode of operation and one more unit is likely to be available starting from the next winter season.
- NHPC representative stated that Chamera-II HEP is having ability to run as synchronous condenser mode of operation. Mock testing will be planned shortly in coordination with the concerned HEP.
- MS NRPC and CGM NRLDC stated that as now incentive is also being provided for reactive power support as per IEGC 2023, more hydro generators should come up for synchronous condenser mode of operation, which would also help to control grid voltages.
- OCC forum asked NRLDC and all concerned hydro stations to carry out mock testing in synchronous condenser mode of operation at the earliest.

Tehri PSP tested for synchronous condenser mode of operation on 19.11.2025:



Tehri HPP tested for synchronous condenser mode of operation on 20.11.2025:



In the 238th OCC meeting,

NHPC representative stated that only Unit-3 of Chamera-II would be under planned outage till 20th Jan 2026. After revival, the unit would be tested for synchronous condenser mode of operation.

OCC forum asked NHPC to plan the outage of Unit-3 of Chamera-II next year onwards, such that it is available for synchronous condenser mode of operation in Nov-Feb during winter.

Punjab SLDC stated that the synchronous condenser mode unit of RSD was under planned outage and the mock testing would be done shortly.

Chamera-II, RSD and Pong HEP were asked to carry out mock testing in synchronous condenser mode of operation at the earliest.

OCC forum encouraged other HEPs to explore the possibility of synchronous condenser mode of operation, as there is financial benefit also to HEPs in the form of reactive energy charges.

B.5 Insulator cleaning and replacement of damaged insulators/ porcelain insulator with polymer insulators

The importance of carrying out insulator cleaning and replacement of damaged insulators was discussed in past OCC meetings and recently in 56 TCC and 81 NRPC meetings held on 30th and 31st October 2025. Northern Regional power transmission lines are exposed to high pollution levels along their routes. Such pollution levels with the onset of the winter season lead to frequent tripping and finally to breakdown and

long outages of the transmission lines. These outages make the grid weak, thereby endangering the grid's reliability and security.

Therefore, in order to avoid/mitigate tripping of lines during foggy (smog) weather in the winter season, preventive actions like cleaning/washing of insulators, replacement of conventional insulators with polymer insulators have been recommended and are being taken every year.

This being a regular activity, all the transmission licensees in the Northern Region are being requested in monthly OCC and NRPC meetings to update line-wise data for insulator replacement and cleaning in the format attached as Annexure-B.III of the agenda. 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. Further, the same has also been requested through emails dated 24.11.2025, 01.12.2025 & 04.12.2025. ***Information has been received from PSTCL, PTCUL, UPPTCL and APL.***.

These tripping events were also discussed in past OCC and protection subcommittee meetings, wherein actions being taken at the utility end were also discussed. All concerned transmission licensees are requested 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 that have had past instances of tripping during foggy weather.
- Examination of Disturbance record/Event log data including analysis of any issues related to auto-reclosure operation (details also to be shared with NRLDC)
- Adequate manpower in control room during night shift of winter (vigilant and alert)

NRLDC representative stated that following transmission lines tripped recently during fog period:

Transmission lines tripped on morning of 15.12.2025

S.No	Element Name	Owner	Outage		Reason / Remarks	Insulator status	Washing status
			Date	Time			
1	220 KV Mandola(PG)-	DTL	15-12	04:15	Bus Bar Protection	NA	04.12.2025 S/D for

	South Wazirabad(DV) (DTL) Ckt-3		2025		Operated . Bus bar operated at South Wazirabad(DTL).		other reason
2	220 KV Mandola(PG)-South Wazirabad(DV) (DTL) Ckt-1	DTL	15-12-2025	04:15			
3	400 KV Sambhal_PRSTL -Badaune (UP) Ckt-2	UPPTCL	15-12-2025	04:34	Transient fault	NA	04.11.2025 S/D for other reason
4	220 KV Mandola(PG)-South Wazirabad(DV) (DTL) Ckt-2	DTL	15-12-2025	04:51	Phase to earth fault Y-N , Zone-1, Dist. 1.788km, Fault current 8.7kA from South Wazirabad(DTL).	NA	04.12.2025 S/D for other reason
5	400 KV Harduaganj - Sikandrabad (UP) Ckt-1	UPPTCL	15-12-2025	05:09	Phase to earth fault B-N , Zone-1, Dist. 69km, Fault current 2kA from Harduaganj.	NA	01.1.2025
6	220 KV Gazipur(DTL)-Noida Sec20(UP) (UP) Ckt-1	UPPTCL	15-12-2025	06:00	Phase to earth fault R-N	NA	NA
7	400 KV Aligarh(UP)-Khurja STPP (TH) (UP) Ckt-1	UPPTCL	15-12-2025	06:07	Insulator broken At 06;07 hrs 400 kv Aligarh to THDC khurja line tripped at Khurja End.	NA	NA
8	400 KV Harduaganj -	UPPTCL	15-12	07:05	Insulator broken At 7:05 hrs 400	NA	NA

	Aligarh (UP) Ckt-1		2025		kv Aligarh to Harduaganj line tripped at Aligarh end.		
9	400 KV Aligarh-Muradnagar_1 (UP) Ckt-1	UPPTCL	15-12-2025	07:34	Phase to Ground Fault B-N ZONE 1 DIST 12KM FAULT CURRENT 01KA B PHASE	NA	15.11.2025, 16.11.2025
10	220 KV Mandola(PG)-Gopalpur(DTL) (DTL) Ckt-1	DTL	15-12-2025	07:45	Phase to earth fault Y-N , Fault current 1.290kA from Gopalpur(DTL).	NA	13.11.2025

Transmission lines tripped on morning of 16.12.2025

S.No	Element Name	Owner	Outage		Reason / Remarks	Insulator status	Washing status
			Date	Time			
1	400 KV Bareilly-Unnao (UP) Ckt-1	UPPTCL	16-12-2025	00:15	Phase to earth fault B-N , Dist. 100km, Fault current 3.117kA from Unnao (UP).	Partial (15%)	14.11, 04.12 . Other reasons
2	400 KV Bareilly-Meerut (PG) Ckt-2	POWERGRID, POWERLINK	16-12-2025	03:07	Phase to earth fault R-N , Fault current 2.6kA,	Conventional	NA

					Dist. 159.210km from Meerut & Fault current 4.4kA, Dist. 90.29km from Bareilly.		
3	400 KV Suratgarh(RVUN)-Bikaner(RS) (RS) Ckt-1	RRVPNL	16-12-2025	03:23	Phase to earth fault R-N , Zone-1, Dist. 102.6km, Fault current 2.753kA from Bikaner & Dist. 27.44km, Fault current 9.0637kA from Suratgarh.	Conventional	NA
4	400 KV Muktsar-Makhu (PS) Ckt-1	PSTCL	16-12-2025	04:07	Phase to earth fault R-N , Fault current 8.15kA, Dist. 23.4km from Makhu & Dist.	Conventional (Ckt2 is polymer)	13.10, 23.10, 28.11

					65.4km, Fault current 3.6kA from Muktsar.		
5	765 KV Obra_C_TPS-Unnao (UP) Ckt-1	UPPTCL	16-12-2025	06:25	Phase to earth fault Y-N , Zone-1, Dist. 17km from Unnao (UP).	NA	20.11.2025-24.11.2025
6	400 KV Amritsar(PG)-Makhu(PS) (PSTCL) Ckt-1	PSTCL	16-12-2025	06:42	Phase to earth fault R-N , Fault current 8.49kA, Dist. 22.7km from Makhu & Dist. 41.2km, Fault current 6.46kA from Amritsar.	Conventional (Ckt2 is polymer)	22.11.2025-24.11.2025
7	765 KV Agra-Fatehpur (PG) Ckt-1	POWERGRID	16-12-2025	07:29	Phase to earth fault Y-N , Dist. 88km, Fault current 5.6kA from	Conventional	28.11.2025

					Fatehpur.		
8	765 KV Anpara_C(LAN)-Unnao(UP) (UP) Ckt-1	UPPTCL	16-12-2025	07:29	Phase to Ground Fault Y-N ZONE 1 Y PHASE EARTH FAULT LOCATION 17KM	Conventional	NA

Transmission lines tripped on morning of 17.12.2025

S.No	Element Name	Owner	Outage		Reason / Remarks	**Insulator status**	**Washing status**
			Date	Time			
1	400 KV Amritsar(PG)-Makhu(PS) (PSTCL) Ckt-1	PSTCL	17-12-2025	05:01	Phase to earth fault R-N , Fault current 9.78kA, Dist. 27.7km from Makhu & Dist. 36.4 km, Fault current 6.2kA from Amritsar.	Conventional (Ckt2 is polymer)	22.11.2025-24.11.2025
2	220 KV Panipat-Dhulkote (BB) Ckt-2	BBMB	17-12-2025	05:44	Phase to Phase Fault R-B , Dist. 39.04km, Fault current Ir 4.048kA, Ib 4.192kA from Dhulkote (BBMB).	NA	17.09, 30.10
3	400 KV Muzaffarnagar-Ataur (UP) Ckt-1	UPPTCL	17-12-2025	06:51	Auto-Reclosure Problem . Manually opened due to multiple A/R operations.	NA	15.10, 16.10, 10.11
4	400 KV Talwandi	PSTCL	17-12-	07:01	Phase to earth fault R-N ,	Conventional	23.10, 24-28.10,

	Saboo(PSG)-Nakodar(PSG) (PS) Ckt-1		2025		Zone-1, Dist. 39.1km, Fault current 6.47kA from Nakodar & Dist. 142.2km, Fault current 3.3kA from Talwandi Saboo.		27.11
5	400 KV Talwandi Saboo(PSG)-Dhuri(PS) (PS) Ckt-1	PSTCL	17-12-2025	07:28	Phase to Phase Fault Y-B , Zone-1, Dist. 64.02km from Dhuri(PS).	Partial (22%)	27.10
6	400 KV Shamli(UP)-Khurja STPP (TH) (UP) Ckt-1	UPPTCL	17-12-2025	08:50	Phase to Ground Fault R-N Fault Phase- R Phase Fault Current- 2.660 Kilo Amps fault location- 195.7 km Fault in Zone- Zone 3	NA	17-19.11.2025

CGM SO NRLDC expressed concern about the recent tripping of lines due to fog and mentioned that due to the tripping of two 765kV lines of UPPTCL, SPS had also operated, which resulted in tripping of two machines in the UP state. This tripping also lead to huge deviation by UP state control area.

MS NRPC also expressed concern on the same and asked all transmission utilities to carry out priority-wise cleaning and washing of insulators and also replacement to polymer insulators.

NRLDC representative stated that all utilities may make sure that transmission lines for which SPS has been implemented get their insulators changed to polymer on priority, if not done already.

UP SLDC representative stated that the list of lines for which washing and cleaning have been done has been shared with NRLDC. Further, the list of line having polymer insulators is being updated in coordination with STU. It was also mentioned that washing/cleaning has been carried out for the major 765kV lines of UPPTCL.

Punjab SLDC representative stated that the recent status on washing/cleaning and replacement to polymer insulator has been submitted to NRLDC. Further, pending washing & cleaning would be carried out before 15.01.2026.

MS NRPC and CGM NRLDC expressed concern and asked PSTCL to expedite washing and cleaning works.

Delhi SLDC representative stated that all their transmission lines have been changed to polymer insulators. Substation switchyards still have porcelain insulators.

Rajasthan SLDC representative stated that the status is being compiled in coordination with STU. Further, replacement to polymer insulators has been done in Sikar(PG)-Ratangarh line. Further polymer insulator replacement work is in progress for RAPP A- Debari line.

All other utilities were also asked to submit the latest status of insulator washing/cleaning and replacement to polymer insulators at the earliest.

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

B.6 Reactive power performance of thermal generators in the Northern region

During the winter season, demand of the Northern region is low and high voltages are a common phenomenon predominantly in Punjab, Haryana and the Delhi area. Even after several actions being taken by control centers, it is seen that there is persistent high voltage in the Northern region. The reactive power absorption by generators becomes an important resource that helps in managing high voltages in the grid. However, even after continuous follow-up in OCC meetings, it is seen that MVAR data telemetry is poor/ inaccurate from most of the generating stations. For some of the generators, it is seen that there is inadequate reactive power absorption based on their capability curve, especially during night hours***. The performance of generators in generation/absorption of reactive power for 16Nov2025-16Dec2025 is shown below:***

S.No.	Station	Unit No.	Capacity	Geographical location	MVAR capacity as per the	MVAR performance (-)	Voltage absorption above

					capability curve (on LV side)	**Absorption (+) Generation (HV side data)**	**(in KV)**
1	Dadri NTPC	1	490	Delhi-NCR	-147 to 294	-150 to 90	410
		2	490		-147 to 294	-150 to 90	410
2	Singrauli NTPC	1	200	UP	-60 to 120	-20 to 10	405
		2	200		-60 to 120	-15 to 10	408
		3	200		-60 to 120	-15 to 10	408
		4	200		-60 to 120	-20 to 10	407
		5	200		-60 to 120	Not on bar	Not on bar
		6	500		-150 to 300	-70 to 5	404
		7	500		-150 to 300	Not on bar	Not on bar
3	Rihand NTPC	1	500	UP	-150 to 300	-110 to 20	402
		2	500		-150 to 300	-90 to 50	405
		3	500		-150 to 300	-120 to 20	405
		4	500		-150 to 300	Not on bar	Not on bar
4	Kalisindh RS	1	600	Rajasthan	-180 to 360	-90 to 50	402
		2	600		-180 to 360	-140 to 30	402
5	Anpara C UP	1	600	UP	-180 to 360	-70 to 50	772
		2	600		-180 to 360	-100 to 60	772
6	Talwandi Saboo PB	1	660	Punjab	-198 to 396	-210 to 50	412
		2	660		-198 to 396	-180 to 0	412
		3	660		-198 to 396	-	-
7	Kawai RS	1	660	Rajasthan	-198 to 396	-100 to 50	404, 408
		2	660		-198 to 396	-130 to 50	400,406
8	IGSTPP Jhajjar	1	500	Haryana	-150 to 300	-120 to 100	410
		2	500		-150 to 300	Not on bar	Not on bar

		3	500		-150 to 300	-	-
9	Rajpura (NPL)	1	700	Punjab	-210 to 420	Data issue	
		2	700		-210 to 420		
10	MGTPS	1	660	Haryana	-198 to 396	-120 to 80	406
		2	660		-198 to 396	-140 to 90	406
11	Bawana	1	216	Delhi-NCR	-65 to 130	Not on bar	
		2	216		-65 to 130		
		3	216		-65 to 130		
		4	216		-65 to 130		
		5	253		-65 to 130		
		6	253		-65 to 130		
12	Bara PPGCL	1	660	UP	-198 to 396	-50 to 80	770, 775
		2	660		-198 to 396	-50 to 90	770, 775
		3	660		-198 to 396	Not on bar	Not on bar
13	Lalitpur TPS	1	660	UP	-198 to 396	-75 to 50	765
		2	660		-198 to 396	-40 to 60	768,775
		3	660		-198 to 396	-90 to 60	760, 765
14	Anpara D UP	1	500	UP	-150 to 300	-230 to 70	-
		2	500		-150 to 300	-80 to 10	762
15	Chhabra TPS	1	250	Rajasthan	-75 to 150	-50 to 60	417
		2	250		-75 to 150	-50 to 60	417
		3	250		-75 to 150	-50 to 50	412, 416
		4	250		-75 to 150	-	-
		5	660		-198 to 396	-120 to 100	405, 415
		6	660		-198 to 396	-80 to 100	412

All generating stations were requested to resolve any issues related to telemetry and make sure that MVAr absorption is as per grid requirement and the capability curve of the machine and there needs to be improvement in the performance of thermal machines in MVAR support compared to last year.

As per IEGC clause 39.(3),

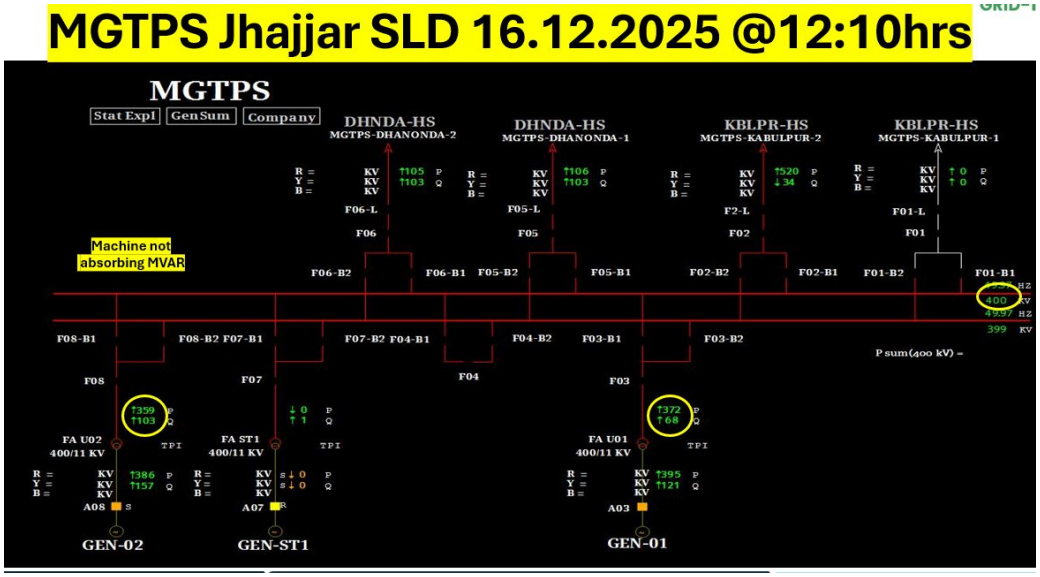
Quote

(3) All generating stations connected to the grid shall generate or absorb reactive power as per instructions of the concerned RLDC or SLDC, as the case may be, within the capability limits of the respective generating units, where capability limits shall be as specified by the OEM.

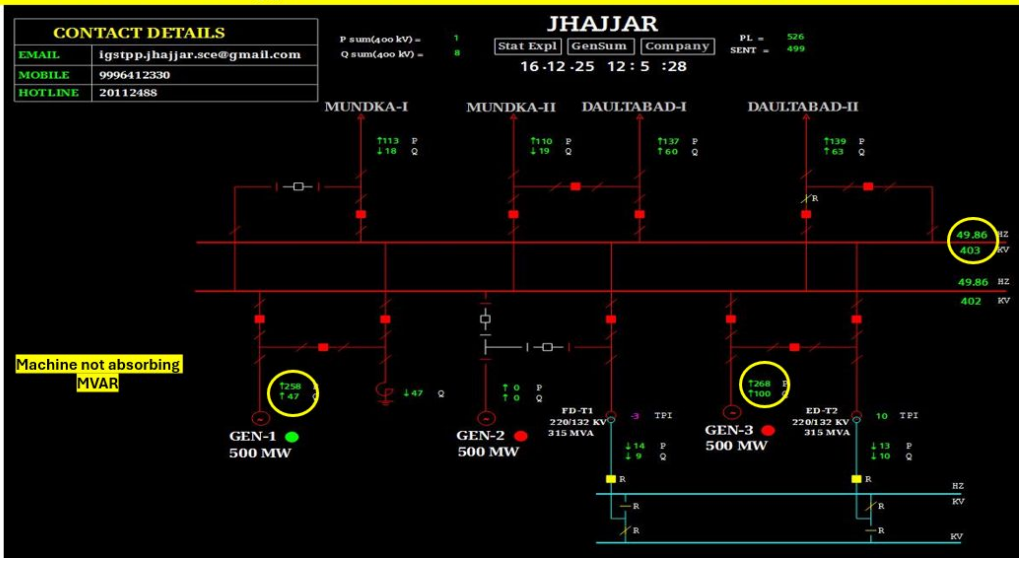
Unquote

Since with IEGC 2023 implementation, reactive energy performance also has a financial impact, it is desirable that all generating stations continue to support grid voltages by having reactive power performance as per their capability curve and grid requirement. Based on the performance of 16Nov2025-16Dec2025 following was discussed:

- Rajasthan SLDC to monitor performance of intrastate thermal units to obtain better voltage support during low voltage conditions in the grid. Kawai Units may provide more MVAR injection
- Dadri TPS & Talwandi Saboo absorbing MVAR upto 60% of their MW capacity
- IGSTPP Jhajjar & MGTPS Jhajjar have some more margin for MVAR absorption
- Data of 400kV Singrauli machines to be checked by NTPC
- Bara and Lalitpur TPS seem to be generating MVAR, which in turn is getting consumed by the Bus reactor.



IGSTPP Jhajjar SLD 16.12.2025 @12:10hrs

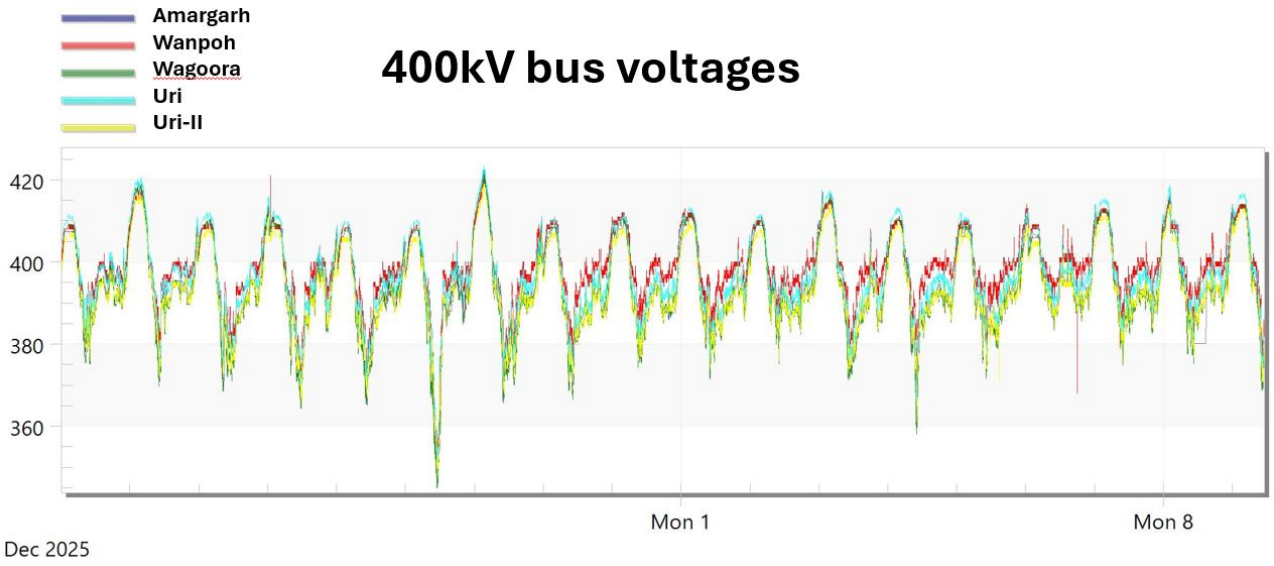


All generating stations were requested to resolve any issues related to telemetry and make sure that MVAr absorption is as per grid requirement and capability curve of machine. Generators may also set their Vsch (voltage set point) such that units are absorbing MVAR as per their capability and grid requirement with intimation to RLDC/SLDC.

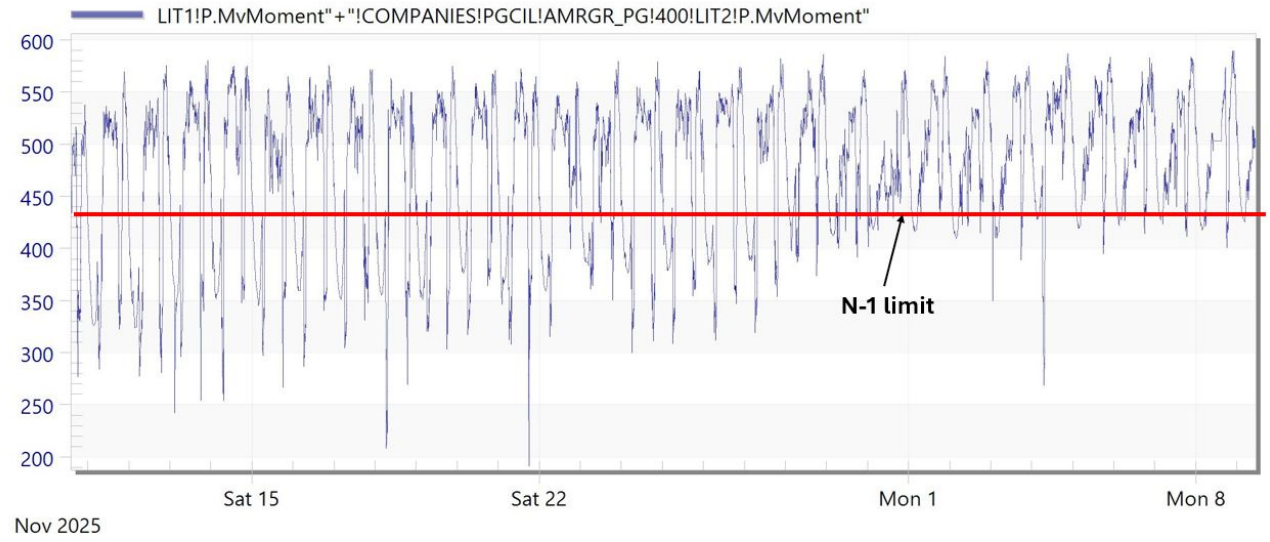
B.7 Severe Low voltages in J&K and N-1 violations

As expected, with the increase in winter, demand of J&K control area is on higher side and it is hovering around 3200MW. As the heating load is also picking up during early morning and night hours, the demand may further increase in the coming days. It has been observed that the 400kV as well as 220kV Bus voltages at various stations in Kashmir valley are remaining critically low also reaching 347kV and 178kV (well below the IEGC band i.e. 380KV & 198kV respectively) due to low hydro generation and heavy MVAR drawl from the ISTS nodes.

The low voltage is a perennial issue, and it has been deliberated in various meetings as well as in the recently held 56th TCC & 81 NRPC Meeting held on 30th & 31st October 2025 at Srinagar. Recent voltage plots of Amargarh, Wagoora, Wanpoh, Uri-1 and Uri-2 are shown below:



Further, loading of 400/220kV Amargarh ICTs for last one month is shown below:



J&K SLDC was requested to take appropriate measures:

- To maintain the 400kV & 220kV voltages within IEGC band in J&K control area to avoid any untoward incident.
- To ensure N-1 compliance of 400/220kV Amargarh ICTs

JKPTCL vide mail dated 16.12.2025 has informed that:

- ***Indigrid, is not under the control of JKPTCL; as such, BPC(PFCCL)/PIA(PGCIL) can only take productive and effective action to expedite commissioning of the Project. However, JKPTCL shall extend full cooperation wherever required.***
- ***Distribution utility KPDCL & JPDCL shall be asked to install capacitor banks in the 33/11 KV Receiving Stations.***

- ***For the installation of Capacitor Banks in the leftover Grid Substations without reactive devices, a source of funds shall be explored. However, JKPTCL pleaded that the sanction of PSDF Phase II is also necessary, wherein the installation of capacitor Banks forms one of the three main components of the Scheme, to cover the full quantity of Capacitor Banks required.***
- ***Additional Bus Bar Scheme in old 220kV Substations is being explored, as it involves space constraints. In this backdrop, detailed input, primitive for additional bus transfer shall be obtained from the field units of these old 220kV Substations and accordingly, final details shall be communicated to NRPC.***

OCC asked JKTPCL to expedite measures to improve the severe low-voltage issue in J&K grid.

B.8 Critical operation of Rajasthan Grid during the upcoming winter season:

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

In 56th TCC and 81st NRPC meetings held on 30th and 31st Oct 2025, RRVPNL representative informed that:

- ICT at Bikaner (Raj) would be commissioned by December 2025 and at Merta end of October, Jodhpur erection and commissioning under progress.
- 151 Capacitor banks under installation and covered areas which have low power factor viz. Bikaner(Raj).
- RRVPNL informed that DISCOMs have also planned the installation of capacitor but may not come up this winter.
- 880 MVAR capacitor bank installation by Dec 2025.
- NRLDC representative highlighted that 400 KV Hindaun –Alwar sub-station, Voltages reaching lows of 320 KV.
- MS (NRPC) advised RRVPNL to run Dholpur plants and take up with their higher management in view of the present grid condition
- Low Voltages in the system also lead to huge payment under reactive energy account.
- Capacitor bank should also be installed in Bhinmal area in view of low voltages.
- SPS implementation to be expedited in priority where SPS has not been installed.
- At Heerapura ICT would be commissioned this year and SPS may not be required.
- PGCIL informed that bay construction work is under progress at various locations and ICTs would be commissioned in next year.

- SPS can be installed at PGCIL sub-stations in one month timeline with feeders emanating from PG.
- Non-essential load may be shifted to Non-solar hours

Further, during 56th TCC and 81st NRPC meeting following decisions were made:

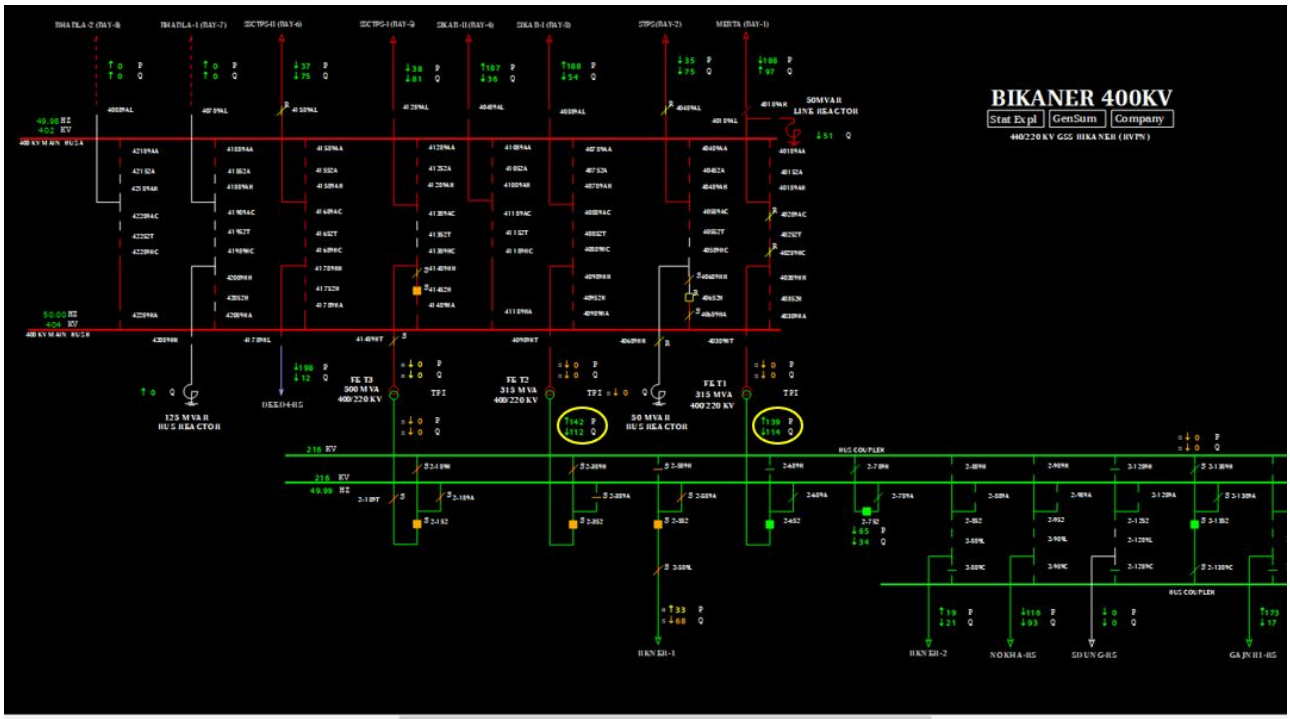
I. Forum advised RRVPNL to take corrective actions from load side if Voltages go below 0.90 pu to ensure safe and reliable grid operation.
II. RRVPNL was also advised to take up with their higher management for the running of Dholpur units this winter season to improve the Voltage profile.
III. RRVPNL to expedite the commissioning of ICTs where N-1 non-compliance is observed.
IV. Prioritise installation of capacitor banks in areas where low voltages and low power factor are observed.
V. Installation of SPS at locations where N-1 issues were observed and take up in the upcoming OCC and PSC meetings.
VI. Rajasthan SLDC/STU to ensure compliance of the grid connectivity standards of the intra-state generators that get connectivity to the grid of the state network.

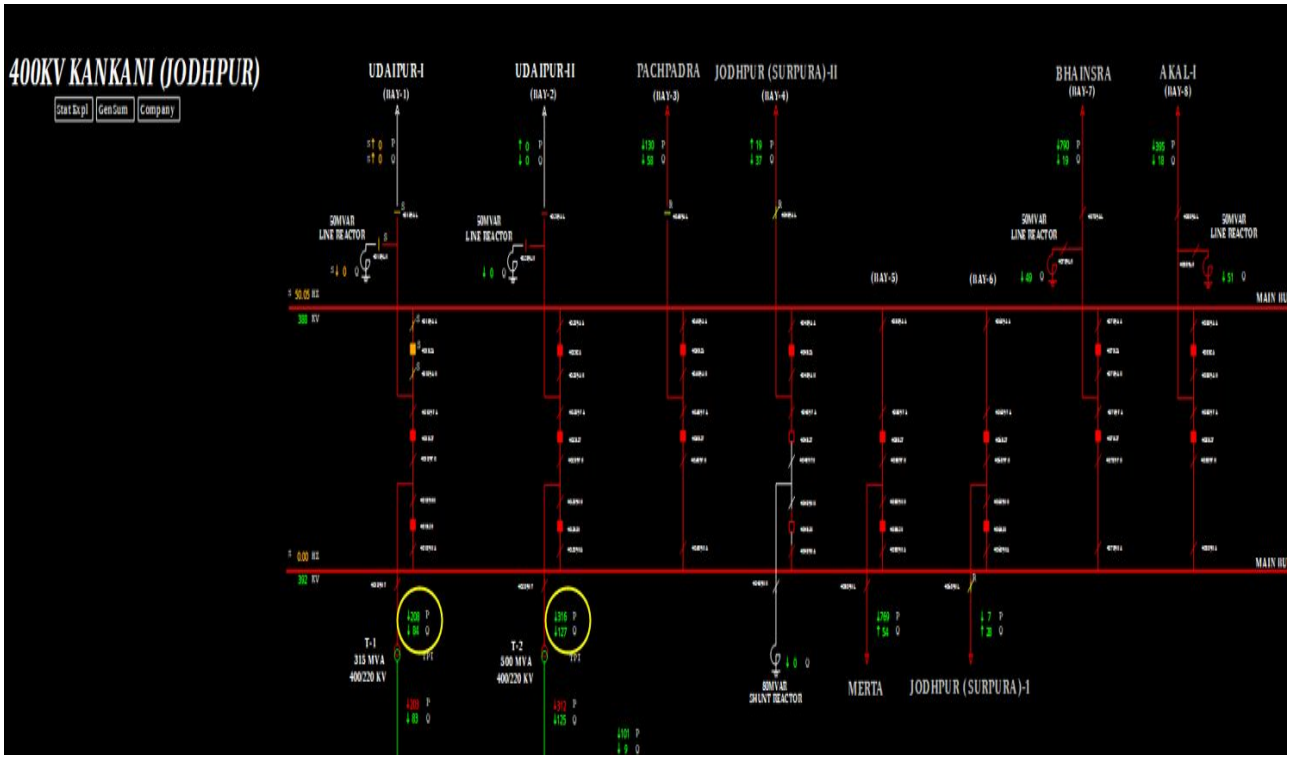
Rajasthan SLDC provided the following updates during the 237 OCC meeting:

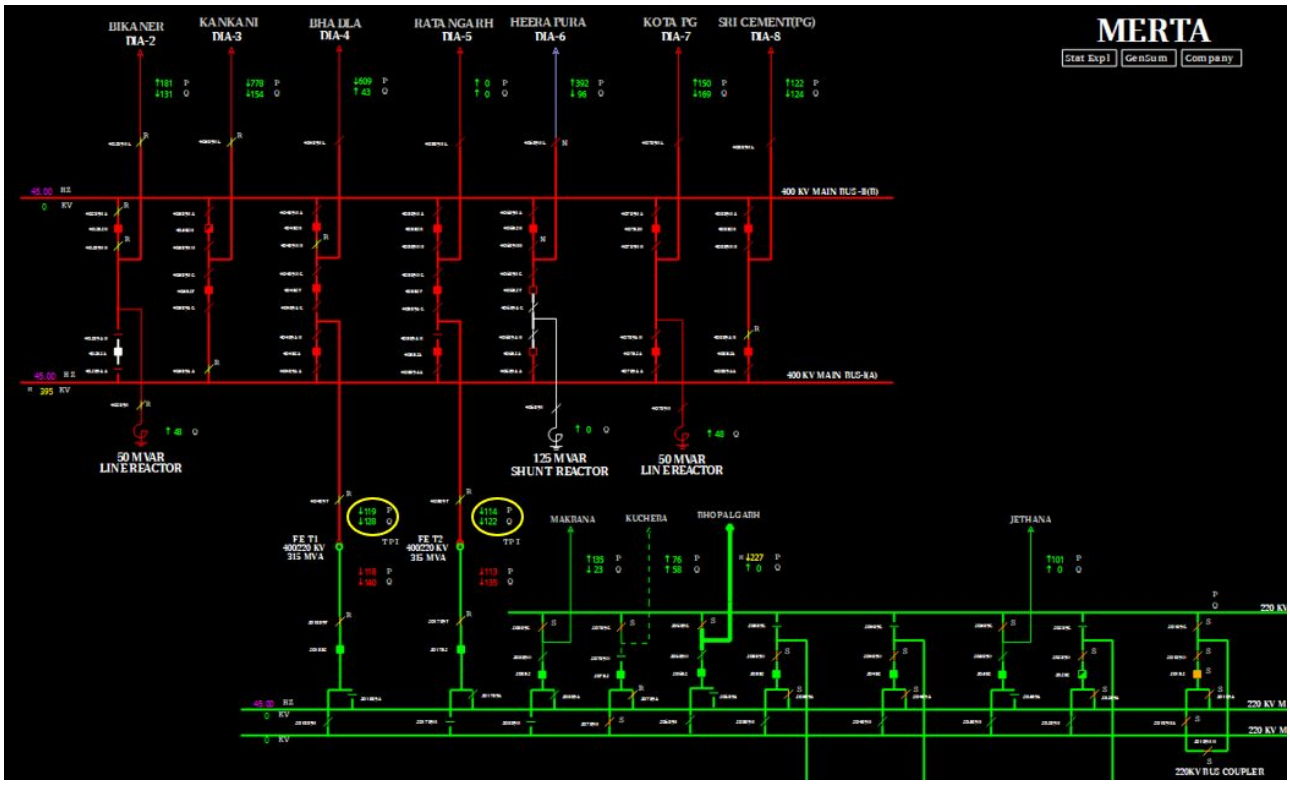
- New 400/220kV ICT at Merta is expected by end of Nov 2025
- New 400/220kV ICT at Bikaner is expected by end of Nov 2025
- New 400/220kV ICT at Heerapura is expected by end of Nov 2025
- New 400/220kV ICT at Jodhpur is expected by end of Dec 2025
- 151 Capacitor banks under installation and covered areas which have low power factor viz. Bikaner(Raj) would be commissioned by Dec 2025.
- RE generators are supporting grid and now injecting MVAr during day time to support grid voltages.
- RREC is also taking up with intrastate RE generators to comply with existing CEA regulations and provide reactive power support.

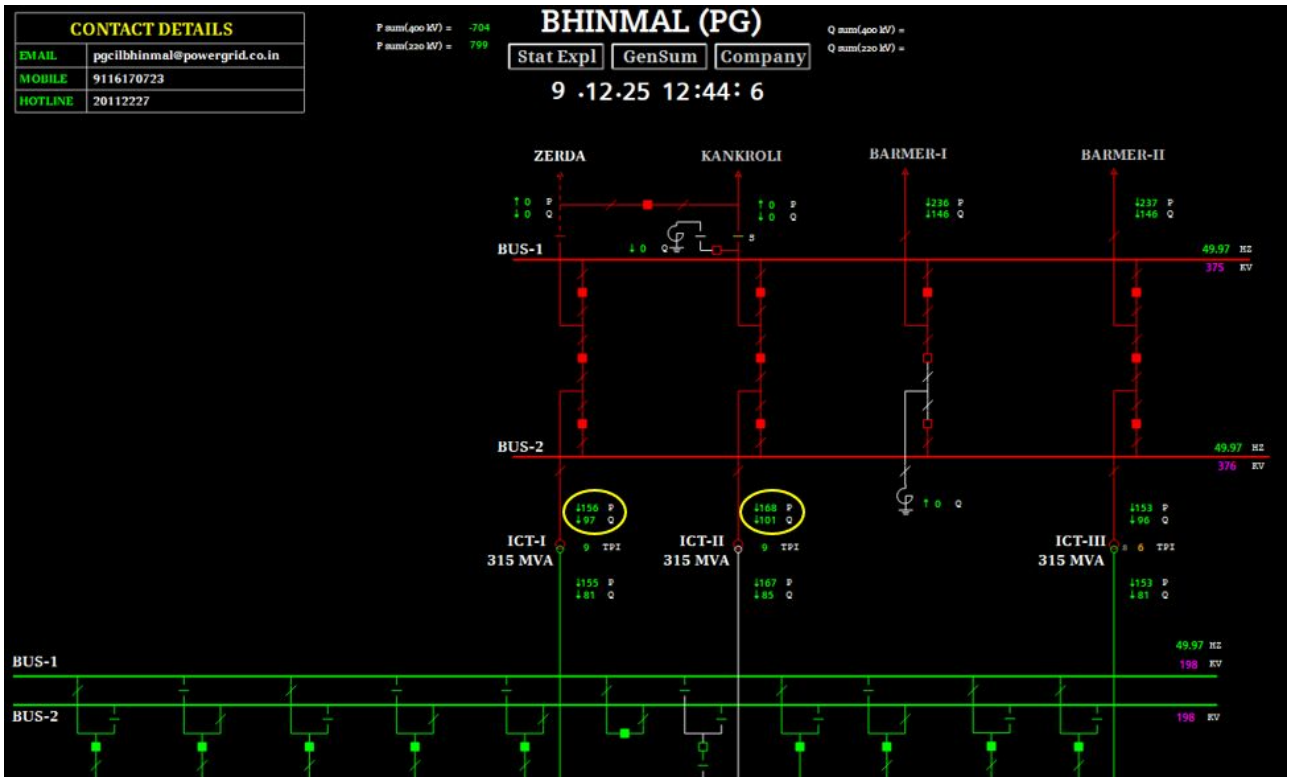
However, with the increased loadings in the transmission system, the operational issues have once again aggravated with poor power factor across different substations and also severe N-1 non-compliance of a number of 400/220kV ICTs in Rajasthan.

ICTs MW drawl, MVAr drawl, and S/s voltage for Solar hours 09 Dec 2025, 12:30hrs for some stations are shown below:

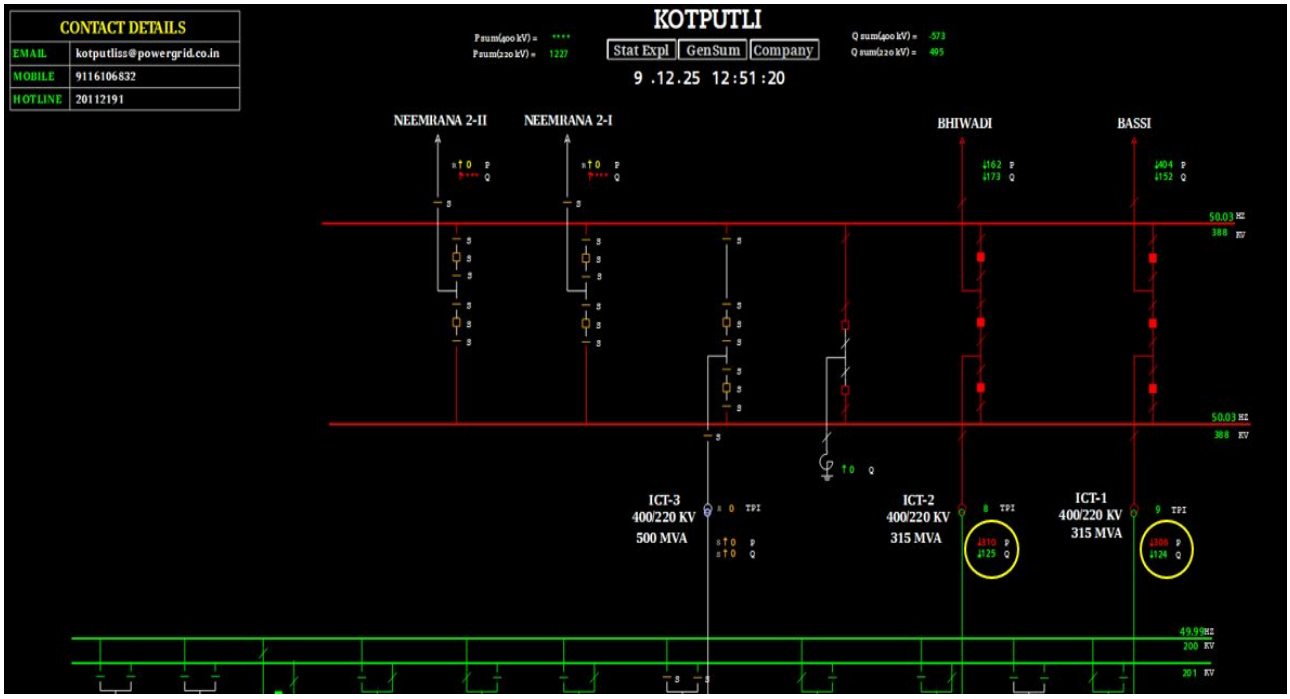

BIKANER 400KV
Stat Expl
GenSum
Company
125 MVAR BUS REACTOR
50 MVAR BUS REACTOR
50MVAR LINE REACTOR
Tue December 9 2025 12:41:51


400KV KANKANI (JODHPUR)
Stat Expl
GenSum
Company
UDAIPUR-I
(BAY-1)
UDAIPUR-II
(BAY-2)
PACHPADRA
(BAY-3)
JODHPUR (SURPURA)-II
(BAY-4)
BHAINSRA
(BAY-7)
AKAL-I
(BAY-8)
50MVAR LINE REACTOR
T-1
315 MVA
400/220 KV
T-2
500 MVA
400/220 KV
80MVAR SHUNT REACTOR
MERTA
JODHPUR (SURPURA)-I


MERTA
Stat Expl
GenSum
Company
BIKANER
DIA-2
KANKANI
DIA-3
BHADLA
DIA-4
RATANGARH
DIA-5
HEERAPURA
DIA-6
KOTA PG
DIA-7
SRI CEMENT(PG)
DIA-8
400 KV MAIN BUS-II(B)
400 KV MAIN BUS-I(A)
50 MVAR
LINE REACTOR
125 MVAR
SHUNT REACTOR
50 MVAR
LINE REACTOR
FE T1
400/220 KV
315 MVA
FE T2
400/220 KV
315 MVA
TPI
TPI
MAKRANA
KUCHERA
TIHOPALGARH
JETHANA
220 KV BUS COUPLER



Further, number of 400/220kV ICTs supplying power to Rajasthan are operating close to their rated limits without any n-1 compliance. For example, loading of 400/220kV Kotputli(PG) ICTs is show below where 315MVA ICTs seem to be over loaded.



List of a few 400/220 kV ICTs in Rajasthan with loading beyond N-1 limits (Loading observed

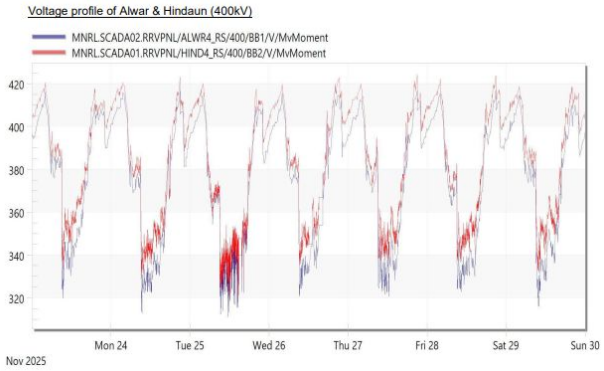
(09Dec 2025 @ 12:30hrs) are mentioned below.

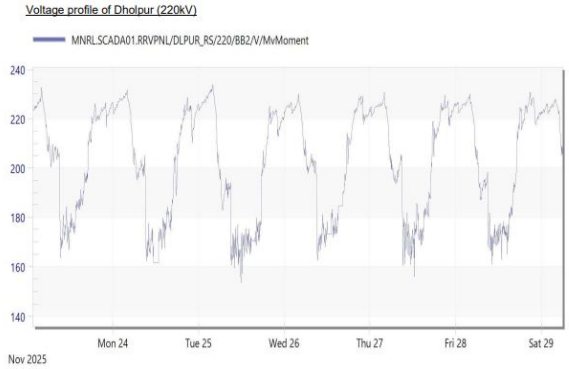
List of constrained 400/220kV ICTs in Rajasthan

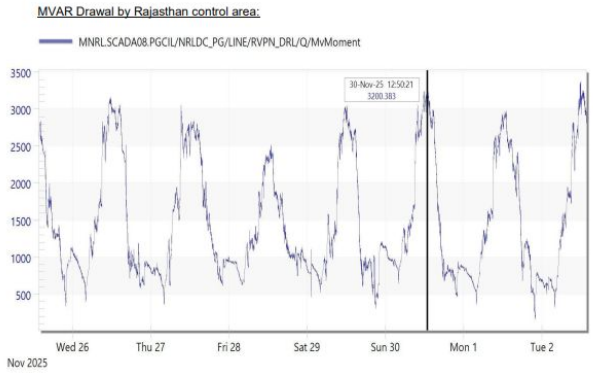
Constrained location	Status as available with NRLDC	Present Loading (MW)	N-1 contingency limit (MVA)
N-1 contingency of 3*315=945 MVA ICT at Bhiwadi(PG)	Additional 500MVA ICT approved in 29 CMETS on 17.05.2024	Data suspect	740
N-1 contingency of 2*315+500=1130 MVA ICT at Bassi(PG)	Additional 500MVA ICT has been approved. Same is anticipated by 14.12.2025.	800-900	730
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.	Less loading due to S/d of 220kV Neemrana-Behror D/C	590
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.	450-500	680
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..	900-1000	680
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.	600-650	670
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	600-650	380

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 Dec 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)	350-400	350
N-1 contingency of 3*250+315=1065 MVA ICT at Heerapura(RVPN)		600-700 (data to be checked)	890
N-1 contingency of 3*315 =945 MVA ICT at Chittorgarh (RVPN)		600-650	670
N-1 contingency of 2*315 =630 MVA ICT at Ajmer (RVPN)		550-600	370
N-1 contingency of 2*315 =630 MVA ICT at Merta (RVPN)		450-500	390
N-1 contingency of 2*315 =630 MVA ICT at Bikaner (RVPN)		400-500	410
N-1 contingency of 2*315=630 MVA ICT at Suratgarh(RVPN)		350-400	370
N-1 contingency of 3*315=945 MVA ICT at Ratangarh(RVPN)		600-700	640

400kV as well as 220kV Bus voltages at Alwar, Hindaun and 220kV voltage at Dholpur are remaining critically low (on the lower side of IEGC band). The 400kV bus voltages at Alwar and Hindaun are even touching precariously low levels of 320kV and 330kV, respectively. 220kV Dholpur voltage is also reaching a low of 160kV in recent days.







Further, huge MVAR drawl by Rajasthan control area from grid is observed with MVAR drawl reaching alarming levels of >3200 MVAR. It is also pertinent to mention here that excessive MVAR drawal from the Grid would also lead to payment of reactive charges into the pool by Rajasthan control area.

Rajasthan SLDC representative updated that the new 400/220kV ICT has been commissioned recently at Heerapura. Further, ICTs are expected at the other 400/220kV substations such as Merta, Bikaner and Jodhpur. Further, 500MVA ICTs are also expected at 400/220kV Ajmer, Ramgarh, Bhadla and Babai S/s also in next 2-3 months.

RRVPNL is in the process of implementing 800-900MVAr capacitor banks across the STU substations.

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)	Approved and to be implemented
2*315+500=1130 MVA ICT at Bassi(PG)	Approved and to be implemented
315+500=815 MVA ICT at Neemrana(PG)	Approved and to be implemented
2*500=1000 MVA ICT at Jaipur South(PG)	Approved and to be implemented
2*315+500=1130 MVA ICT at Sikar(PG)	Approved and to be implemented
3*315=945 MVA ICT at Kankroli(PG)	Approved and to be implemented
2*315=630 MVA ICT at Kotputli(PG)	Approved and to be implemented
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

NRLDC vide email dated 02.12.2025 has communicated that the stage-wise logic for SPS of ICTs at POWERGRID stations in Rajasthan control area was discussed in 64th PSC meeting held on 21.11.2025. The time delay logic proposed by Rajasthan was agreed and POWERGRID was requested to start the implementation process of the SPS at the designated stations.

Time delay for stages 1 and 2 of SPS was decided as:

1. Stage-1: 105% loading with 1 sec delay
2. Stage-2: 105% loading with 1.5 sec delay

POWERGRID was asked to implement the SPS at designated stations i.e., 400/220kV Kankroli(PG), Bassi(PG), Neemrana(PG), Kotputli(PG), Bhiwadi(PG), Jaipur South(PG) and Sikar(PG) at the earliest possible. POWERGRID agreed to implement the SPS on priority.

POWERGRID, RRVPNL and Rajasthan SLDC were asked to take necessary measures as discussed above.

B.9 State-wise transmission constraints during high demand season of 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 upto the mark and expeditious actions from transmission utilities are required so that minimal issues are observed at 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 expeditiously commissioned.

Punjab:

During OCC 238,

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 reassessing the ATC/TTC limit for paddy 2026. State state-level ATC/TTC committee has submitted the report to increase ATC/TTC by 11600/12100MW before paddy 2026 with subject to the condition of commissioning of some elements.

Haryana:

SPS proposals in Haryana

For SPS at 400/220kV Hissar(PG) ICTs:

During 238 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 the work is expected to be completed in next 3-4 months.

For SPS at 400/220kV Panipat ICTs:

During 237 OCC meeting, Haryana SLDC stated that they have taken up the matter with their TS-wing and would provide an update on SPS implementation at 400/220kV Panipat(BBMB) shortly after the meeting.

OCC forum expressed concern on slow progress and asked Haryana SLDC to expedite SPS implementation at 400/220kV Panipat(BBMB).

During 238 OCC meeting, OCC forum discussed that a separate meeting would be convened under NRPC to discuss the proposal of SPS at 400/220kV Panipat(BBMB).

Uttar Pradesh:

In 238 OCC meeting,

POWERGRID representative stated that 500 MVA ICT-4 at Allahabad is expected to be commissioned by January 2026.

It was also informed by the UPPTCL representative that the old 240MVA ICT at Obra is expected to be revived by Jan 2026 whereas 315MVA ICTs at Obra would be revived after some time due to the requirement of procurement of ICTs.

CTUIL was asked to plan for ICT capacity augmentation at 400/220kV Sohawal(PG)

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 Mar 2026.

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

POWERGRID representative stated that SPS at Agra(PG) would be commissioned by Jan 2026 end.

It was discussed 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 a monthly basis, where the response of some of the states needs improvement.

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	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	No	No	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

November 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Dec-25)		M-12 (Nov-26)		M-6 (May-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	No	Yes	No	No
Himachal	No	No	No	No	No	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	Submitted only Solar peak and evening peak case	No	No	No	No

December 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Jan-26)		M-12 (Dec-26)		M-6 (June-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						
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand						

Submitted after 8th of current month

Submitted in next month

During 238 OCC meeting,

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

Further, states 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.

Haryana, HP, Uttarakhand and Delhi were asked to improve the frequency of basecase data sharing with NRLDC.

ATC/TTC limits of states for the month of January 2026 are attached as Annexure-B.IV of the agenda. Utilities were requested to go through these limits and provide comments.

OCC forum asked utilities to take necessary actions as discussed above.

B.10 Bypass of 400kV Dadri-Maharanibagh and 400kV Maharanibagh-Ballabgarh at 400kV Maharanibagh

765/400 kV Narela Substation was energized on 01.10.2025 through the LILO of the 765 kV Meerut–Bhiwani line. Subsequently, all 765/400 kV ICTs, bus reactors, and both the 765 kV and 400 kV buses at Narela have been brought into service.

Following interconnections were recently commissioned:

- 765 kV Khetri–Narela D/c line
- 400 kV Narela–Maharanibagh M/c line

Before the implementation of above arrangement, assessment of the requirement to bypass the 400 kV Ballabgarh–Dadri lines at Maharanibagh and maintain radial connectivity of Maharanibagh with Narela at 400 kV was studied at NRLDC end.

Observations from fault level assessment studies:

a. In the Final arrangement with 400kV Dadri-Ballabgarh Not By-passed at 400kV Maharanibagh (i.e. connected), 3-Ph Fault current at 400kV Maharanibagh, 400kV Narela and 400kV Ballabgarh will increase by 10kA, 23kV and 4kA respectively, but still within 45kA, so no issue in these S/s. Further, it would also provide good fault level support at 765/400kV Narela S/s.

b. However, 3-Ph Fault current at 400kV Dadri NCR and 400kV Dadri (PG) will increase by 5kA at each S/s and it would be ~51kA and 50kA respectively***. Any issue in case of 50kA 3-Ph Fault current at 400kV Dadri S/s to be reviewed by PGCIL/NTPC.***

c. 3-Ph Fault current at 400kV Meerut S/s is 63kA in basecase itself, no major impact with By-passing 400kV Dadri-Ballabgarh at 400kV Maharanibagh.

d. Fault levels before commissioning of Narela system were:

		With bypass	Without bypass	
Fault levels (MVA)				
124014	[BALLABHGR-PG400.00]	30725.77	31035.63	1%
124027	[BALLABH_2ND	26431.13	29380.82	11%
144002	[MAHARANI	24081.48	34628.12	44%
154061	[DADR-NCR	36093.54	38454.57	7%
154118	[DADRI_PG	35508.13	37790.86	6%
Fault levels (kA)				
124014	[BALLABHGR-PG400.00]	44.35	44.79	1%
124027	[BALLABH_2ND	38.15	42.40	11%
144002	[MAHARANI	34.76	49.98	44%
154061	[DADR-NCR	52.09	55.50	7%
154118	[DADRI_PG	51.25	54.54	6%

e. With connection of only 400kV Ballabgarh-Maharanibagh line, following are fault levels:

		Fault levels (MVA)				
		Earlier arrangement of bypass (a)	Present arrangement w/o bypass (b)	Connection of only 400kV Ballabgarh-Mbagh ©	% change (b-a)	% change (c-a)

124014	[BALLABHGR-PG400.00]	30134	30475	30428	1.13%	0.98%
124027	[BALLABH_2ND	25799	28342	28126	9.86%	9.02%
144002	[MAHARANI	16104	28029	22346	74.05%	38.76%
144015	[NARELA_400	18222	27257	23311	49.58%	27.93%
154061	[DADR-NCR	32096	34503	30317	7.50%	-5.54%
154118	[DADRI_PG	31633	33968	29903	7.38%	-5.47%
		Fault current (kA)				
124014	[BALLABHGR-PG400.00]	43.5	44.0	43.9	1.13%	0.98%
124027	[BALLABH_2ND	37.2	40.9	40.6	9.86%	9.02%
144002	[MAHARANI	23.2	40.5	32.3	74.05%	38.76%
144015	[NARELA_400	26.3	39.3	33.6	49.58%	27.93%
154061	[DADR-NCR	46.3	49.8	43.8	7.50%	-5.54%
154118	[DADRI_PG	45.7	49.0	43.2	7.38%	-5.47%

Comments could not be received from NTPC and CTUIL during 238th OCC meeting.

MS NRPC suggested that since NTPC and CTUIL representatives have not provided any comments, the proposal of keeping 400kV Dadri-Maharanibagh-Ballabgarh to remain connected at 400kV Maharanibagh may be deliberated in next OCC meeting.

OCC forum agreed to discuss this agenda point in next OCC meeting.

B.11 Ensuring availability of hydro generators for AGC support

NRLDC has been continuously pursuing intra-state Generators and IPPs (Independent Power Producers) to implement Automatic Generation Control for balancing and improving the grid frequency profile. As a part of this ongoing initiative, a one-day capacity-building workshop was successfully organized by the Northern Regional Load Dispatch Centre (NRLDC) on 04th December 2025 at the NRPC Conference Hall for the benefit of Northern Region State Load Dispatch Centres (SLDCs), intra-state generating stations, and IPPs.

The primary objective of the workshop was to enhance stakeholder understanding of the technical requirements, regulatory provisions, and commercial mechanisms associated with the participation of intra-State generators in the Central Secondary Reserve Ancillary Services (SRAS) framework through AGC. During the workshop, detailed presentation was given by GRID-INDIA about how intra-State Generators can also participate under SRAS mechanism at central level and how it would be helpful to generators to earn additional revenue and help in improving reliable grid operation. Representatives from PPGCL-Bara, THDC-Khurja, and UP SLDC also shared valuable insights based on their successful AGC implementation experiences, providing practical perspectives to the participants.

However, recently it is being observed that some of the existing wired hydro stations in the Northern region are not keeping their units in AGC remote mode for all time. For example for 07 Dec 2025, it was reported that despite the availability of communication, the time for which the hydro stations participated in secondary frequency control was low, as shown below:

S.No.	Plant Name	% AGC Remote	% Onbar	% Communication Link Availability
1	BAIRASIUL	0	17	100
2	DHAULIGNGA	0	18	100
3	NJPC	28	26	100
4	TEHRI	33	29	100
5	CHAMERA2	37	23	100
6	SEWA2	52	16	100
7	CHAMERA1	72	14	100
8	RIHAND1	81	100	100
9	SINGRAULI	83	60	100
10	UNCHAHAR2	86	50	100

NLDC/NRLDC are pursuing with the stations to operate in AGC-remote mode whenever units are brought on bar.

OCC forum asked all generating stations to advise their control room personnel to keep their units in AGC remote mode whenever they are generating. This would enhance the quantum of regulating reserve in the grid for frequency control.

B.12 Mock testing of the islanding scheme and simulation studies

The 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 237 OCC meeting, the 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) (Need Review)	✅ Yes	✅ Yes	✅ Yes
Unchahar Islanding scheme(UP)	✅ Yes	❌ **No**	✅ Yes

During 238 OCC meeting,

UP SLDC representative stated that Unchahar islanding scheme basecases are being prepared. Data has been requested from field and some data is pending. Basecases would be shared with NRLDC by 31.12.2025.

NRLDC representative further stated that Bawana islanding scheme of Delhi needs review with upcoming network changes due to commissioning of 765/400kV Narela substation.

DTL representative stated that the scheme changes required due to reconfiguration would be implemented at the site.

OCC forum asked UP SLDC and Delhi SLDC to take necessary actions as discussed above.

B.13 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 the Self-audit report has been received from NHPC and Koteshwar THDC only for F.Y. 2023-24. As F.Y. 2024-25 has also been completed recently, all utilities in the Northern region are requested to carry out a self-audit exercise and share the report with NRLDC as per IEGC Clause 56.2(c).

As 31.07.2025 has already passed, it is requested that all concerned users of NRLDC may carry out their self-audit and submit a report to NRLDC at the earliest.

NRLDC communication in this regard to all concerned is attached as Annexe B.V of the 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.

NRLDC representative stated that self-audit reports are being received from some of the RE developers and Qualified Coordinating Agencies (QCA) but are still pending for NRLDC users which are part of OCC forum.

OCC asked all concerned to share their self-audit reports at the earliest.

B.14 Multiple element tripping events in Northern region in the month of November 2025:

A total of **07** grid events occurred in the month of November 2025 of which **3** are of GD-1 category **01** are of GI-2 Category and **03** are of GI-1 Category. The tripping report 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.VI of the agenda.

Maximum delayed clearance of fault observed in event of tripping event at 220/132/33kV Jammu(Gladni(J&K)) at 16:24 hrs on 11th November 2025 (As per PMU at Kishenpur(PG), R-B phase to phase fault converted to 3-phase fault was observed with delayed fault clearing time of 1040ms).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) was observed in a total of **02** events out of **13** grid events that occurred in the month. In **02** (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 that occurred in November 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 not been received.

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

NRLDC requested utilities to start preparing the detailed report of the tripping events as per the timeline mentioned in IEGC 2023 and share the report with NRLDC, NRPC and PSC forum. Remedial actions taken by constituents to avoid such multiple-element 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 OCC & PSC forum. Moreover, utilities may impress upon all concerned for providing the Preliminary Report, DR/EL & detailed report of the events to RLDC in line with the regulations.

B.15 Status of submission of DR/EL and tripping report of utilities for the month of November 2025:

The status of receipt of DR/EL and tripping report of utilities for the month of **November 2025** is attached at Annexure-B.VII of the 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 the status of November month it is evident that the reporting status of some of the constituents i.e., RE stations(ADANI, RENEW, SJVN), SLDC-HP, SLDC-PS, SLDC-J&K, SLDC-Delhi, BBMB, NTPC, NHPC, Sterlite and RAPS is not satisfactory and needs improvement. Further, persistent unsatisfactory reporting status of Punjab & J&K was also highlighted.

Punjab SLDC informed the forum that they requested PSTCL to take active for the compliance of above said agenda. PSTCL informed in 27th SOCC that software's are not available to all the field staff. Punjab SLDC requested PSTCL to purchase the software at the earliest for compliance of IEGC.

NHPC representative stated that some of the trippings were due to mechanical reasons, of which DR files are not recorded. Due to this, the status of NHPC is showing as unsatisfactory. NRLDC suggested marking such tripping as NA (not applicable) in DR section.

POWERGRID(NR-1) agreed to improve the DR/EL submission status of their respective control area.

UP SLDC stated that they are taking continuous follow-up and agreed to further improve the status.

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. 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 the timely submission of the information. It is requested that DR/EL of all the tripping shall be uploaded on Web Web-Based Tripping Monitoring System (TMS) "https://postda.nrldc.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.16 Mock testing of System Protection Schemes (SPS) in Northern Region

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.''

There are 58 numbers of System Protection Schemes (SPS) approved in the 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.

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.*

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

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

Punjab SLDC intimated that presently SPS installed at 220kV kV GGSSTP, Ropar is faulty. OEM M/s Synergy Systems & Solutions, Faridabad visited GGSSTP on 06.06.2025 for repair. After thoroughly inspecting the scheme, it is found that CPU card of PLC is faulty and same is not repairable as hardware used for the scheme is 13 years old. Moreover, this card is obsolete and not available with the firm. Hence installed SPS is declared beyond repair.
Considering present status of running of GGSSTP units on low plant factor and further connectivity of 220Kv substation with newly installed 400Kv substation during last year, it is felt that there will be no problem in evacuation of power through outgoing feeders. As a whole if a new SPS scheme is installed to replace faulty one at 220Kv substation, GGSSTP, Rupnagar, it will not serve the desired purpose. So there is no need for continuance of this scheme.

NRLDC representative also stated that evacuation network at Ropar TPS meets N-1-1 reliability criteria, the need for the SPS at Ropar appears redundant under the current network configuration.

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 recent operation of SPS on 21.05.2025 in 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 contingency. As per details received, SPS signal was sent to all the mapped stations from 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.

Discussion during 237th OCC meeting:

a) NRLDC requested NTPC Singrauli and POWERGRID to share the details of necessary corrective actions taken / planned to be taken to ensure healthiness of SPS system at Singrauli TPS and load stations.
b) Representative from NTPC informed that existing SPS system at Singrauli TPS is defective, procurement work has been initiated. NRLDC requested NTPC to share the tentative timeline for completion of work and to expedite the remedial actions for early restoration of SPS system at Singrauli TPS.
c) Regarding issues at load stations, POWERGRID agreed to take necessary actions in coordination with the site stations.
d) Further, NRLDC also informed that mock testing of SPS of HVDC Rihand-Dadri has been scheduled tentatively on 19.11.2025. Concerned members were requested to ensure the readiness and share the details of coordinators.

NRLDC representative informed the forum that SPS mock testing of HVDC RIhand-Dadri was conducted successfully on 19.11.2025. SPS command didn't receive at 220kV Muradnagar(UP), 220kV Merta(RS), 220kV Kota Sakatpura(RS), 220kV Dhanonda(HR) and Singrauli TPS(NTPC). SPS system at Rihand HVDC, Dadri HVDC and at remaining load and generating stations are healthy.

NRLDC requested POWERRGID, Singrauli(NTPC) and other concerned may share the details of actions taken / planned to be taken to rectify the issues in HVDC Rihand-Dadri SPS system.

Representative from NTPC informed that existing SPS system at Singrauli TPS is defective, procurement work has been initiated. NRLDC requested NTPC to share the tentative timeline for completion of work and to expedite the remedial actions for early restoration of SPS system at Singrauli TPS.

Regarding issues at load stations, POWERGRID agreed to take necessary actions in coordination with the site stations.

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 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 regular basis. The concern of grid security and reliability was also raised during request of shutdown of 765kV Anta-Phagi line. is requested to expedite 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, SLDC-Rajasthan representative informed that automatic load shedding of ~750 MW has been implemented.

During 236th OCC meeting, SLDC-Rajasthan confirmed that mock testing of the automatic load shedding part of the SPS has been conducted.

Discussion during 237th OCC meeting:

a) NRLDC representative requested Rajasthan to share the mock test report of the automatic load shedding part of the SPS.
b) RVPNL agreed to share the mock test report w.r.t. automatic load shedding part of the SPS at the earliest.

NRLDC representative stated that details w.r.t. SPS mock testing haven't been received yet. Rajasthan was requested to share the mock test report of the automatic load shedding part of the SPS..
RVPNL agreed to share the mock test report w.r.t. automatic load shedding part of the SPS at the earliest.

iii. **SPS of N.Jhajkri, 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 representative informed the forum that Karcham(JSW), through mail dated 08.12.2025, confirmed the incorporation of 400kV kala Amb-Abdullapur D/C in the SPS system; hence, case-6 is completely implemented now.
NRLDC requested HPPTCL to share the update w.r.t. replacement of the faulty communication card at Wangtoo(HP).
SLDC-HP representatives were not present during the meeting.

iv. **SPS of 765kV Agra-Gwalior D/C:** Mock testing of the SPS was conducted on 10.10.2025. During the testing, it was observed that there is a communication issue at Bhiwadi(PG), Bamnauli(DTL), Kota, Debari, Chittorgarh, Ratangarh, Nunamajra, Safidon, Ajitwal, Dandhari-II, and Ablowal substations.
NRLDC requested all the concerned states to submit the mock test report of their respective control area. Details have been received from Delhi, Rajasthan and Punjab. UP, BBMB, Haryana and POWERGRID have shared the partial details.
Further, POWERGRID was requested to share the details of actions taken/planned to be taken to resolve the issues in the SPS system.
During 237 OCC meeting, POWERGRID was requested to take expeditious corrective actions to rectify the issues and make the SPS healthy and operational at all the stations.

NRLDC stated that the mock test report has been communicated to all the concerned utilities via NRLDC letter dated 28.11.2025 and POWERGRID was requested for expeditious corrective actions and make the complete SPS system healthy and operational.

***NRLDC requested POWERGRID to share the details of actions taken/planned to be taken to rectify the issues in the 765kV Agra-Gwalior D/C SPS system**.*

POWERGRID agreed to take expeditious corrective actions to rectify the issues and make the SPS healthy and operational at all the stations.

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 the 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.

OCC forum requested members to conduct the mock testing of SPS in their respective control areas, 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.

Further, during 60th PSC meeting, it was decided that the SPS that are not required from a constraint point of view will not be disabled to keep the assets associated with SPS healthy and will be treated as "reserve SPS", as may be required during prolonged outages of any system element. In case of reserve SPS for transformers (where logic was based on "tripping" of the transformer) logic need to be modified based on "loading" of the transformer in place of "tripping" of the transformer.

The list of reserve SPS as on date are as follows:

i. SPS for Transformers at Ballabhgarh (PG)
ii. SPS for Transformers at Bamnauli (DTL)
iii. SPS for Transformers at 400KV Muzaffarnagar (UP)
iv. SPS for Transformers at 400KV Sultanpur (UPPTCL)
v. SPS for Transformers at 400KV Gorakhpur (UPPTCL)
vi. SPS for Transformers at 400KV Greater Noida (UPPTCL)

During 64th PSC meeting, MS-NRPC suggested that assets of "reserve SPS" can be used in new SPS to be commissioned and hence they may be removed from the existing SPS list. PSC forum suggested removing the above-mentioned 06 "reserve SPS" schemes.

SLDC UP informed that SPS for Transformers at 400KV Sultanpur (UPPTCL) and Gorakhpur(UPPTCL) is required as the loading exceeded (N-1) limit during the summer of 2025, hence SPS may be kept in service.
SLDC Delhi informed that SPS for Transformers at Bamnauli (DTL) may be kept in service until 315 MVA ICT is revived which currently is not in service.

Implementation of SPS in POWERGRID substations in the Rajasthan control area:

SPS stage-wise logic (received from Rajasthan) for SPS of ICTs at POWERGRID stations in Rajasthan control area was discussed in 64th PSC meeting. The time delay logic proposed by Rajasthan was found OK and POWERGRID was requested to start the implementation process of the SPS at the designated stations.

Time delay for stages 1 and 2 of SPS was decided as:

1. Stage-1: 105% loading with 1 sec delay
2. Stage-2: 105% loading with 1.5 sec delay

NRLDC, through mail dated 02.12.2025, requested POWERGRID to implement the SPS at designated stations i.e., 400/220kV Kankroli(PG), Bassi(PG), Neemrana(PG), Kotputli(PG), Bhiwadi(PG), Jaipur South(PG) and Sikar(PG) at the earliest possible.

NRLDC stated that in view of the ongoing peak load season in Rajasthan, these SPS need to be implemented at the earliest. POWERGRID and Rajasthan were requested to implement the above SPS at the earliest. Mock testing report of the SPS also need to be shared after implementation.

OCC forum requested POWERGRID and Rajasthan to implement the above SPS at the earliest and also share the Mock testing report of the SPS after implementation.

B.17 Mock trial run and testing of black start facilities at generating stations in the 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 source 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 rotation basis as per 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 blackstart 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 the agenda. Constituents are also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis.

NRLDC informed the forum about the present status of mock black start exercises conducted during 2025-26 in the Northern Region:

Sr. No.	Name of Generating station	Date of Mock Black Start Exercise conducted
1.	Parbati_III HEP	17.05.2025
2.	Sewa_II HEP	16.05.2025
3.	Rihand & Obra HEP(UP)	02.06.2025
4.	Ramgarh GPS	11.05.2025
5.	RSD HEP(Punjab)	01.12.2025
6.	Tehri HEP	11.11.2025

All the ISGS and states were requested to conduct the mock black start exercise of black start facilities at their end and share the mock test report after conducting the exercise.

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

- ***Share the report of testing of DG sets.***
- ***The plants that have not conducted the mock black start exercise since 2024 were requested to conduct the mock black start exercise on priority.***
- ***Share the tentative schedule of the mock black start exercise of generating stations in their respective control area.***
- ***SLDCs were requested to share the tentative schedule plan of the mock black start exercise of generating stations in their respective control area.***
- ***conduct dead bus charging after self-starting the generating station if a schedule with the load is not available.***

- ***Share the test report of the mock black start exercise conducted along with weekly DG testing on a 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 a quarterly basis.

B.18 Revision of document for Reactive Power Management of Northern Region:

NRLDC has been issuing 'Reactive Power document of Northern Region' on annual basis. Reactive Power Management document for Northern region was last revised on 31st Dec 2024 & updated document is available on NRLDC website in document section, the weblink of the same is as below:

https://nrldc.in/documents/Documents

The document is password-protected and the password has already been provided to all the NR constituents.

In view of the new addition/modification of transmission & generation elements in NR grid since Dec'24, the document is being reviewed for update.

Constituents were requested to share the details by 03.12.2025, however, details have been pending from all the SLDCs, BBMB, transmission licensees and other utilities.

NLRDC stated that details have been received from Karcham & Baspa HEP, Tehri HEP & Tehri PSP, Luni HEP, Gumma(HP) S/s, APCPL Jhajjar TPS, Singoli Bhatwari HEP, Budhil HEP, and Koldam HEP only.

NRLDC requested all the constituents/utilities to share the details w.r.t. your respective control area at the earliest possible time, so that the Reactive Power Document 2026 can be updated and compiled within the stipulated time.

It was also requested to all the states to prepare a Reactive Power Document for their respective control area also which will be helpful for Grid Operation.

OCC forum requested all the constituents to provide feedback, suggestions and updated information w.r.t. Reactive Power Document 2026 at the earliest possible.

B.19 Revision of document for System Restoration Procedure Document of Northern Region:

NRLDC has been issuing the '**System Restoration Procedure Document of Northern Region**' on an annual basis. The document was last revised on 31st Jan 2025 & updated document is available on NRLDC website in the document section, the weblink of the same is as below:

https://nrldc.in/documents/Documents

The document is password-protected and the password has already been provided to all the NR constituents.

In view of new addition/modification of transmission & generation elements in NR grid since Jan'25, the document is being reviewed for update.

NRLDC requested all the constituents/utilities to share the details w.r.t. your respective control area at the earliest possible, so that the System Restoration Procedure Document 2026 can be updated and compiled within the stipulated time.

It was also requested that all the states prepare a System Restoration Procedure Document for their respective control area also which will be helpful for Grid Operation.

OCC forum requested all the constituents to provide feedback, suggestions and updated information by 15th Jan 2025.

B.20 Revision of document for System Protection Scheme Document of Northern Region:

NRLDC has been issuing the '**System Protection Scheme Document of Northern Region**' on an annual basis. The document was last revised on 31st Jan 2025 & updated document is available on the NRLDC website in the document section, the weblink of the same is as below:

https://nrldc.in/documents/Documents

The document is password-protected and the password has already been provided to all the NR constituents.

In view of the new addition/modification of transmission & generation element in NR grid and revision in existing SPS, addition of new SPS and review of SPS, since Jan'25, the document is being reviewed for update.

NRLDC requested all the constituents/utilities to share the details w.r.t. your respective control area at the earliest possible time, so that the System Protection Scheme Document 2026 can be updated and compiled within the stipulated time.

OCC forum requested all the constituents to provide feedback, suggestions and updated information by 15th Jan 2025.

Status of action taken on decision of 237th OCC meeting of NRPC

S.N.	Agenda	Decision of 237th OCC meeting of NRPC	Status of action taken
1.	A.12. Interim charging (rated voltage) of 765 kV D/C Bhadla III Ramgarh line and Ramgarh SS (PS) (Agenda by Powergrid NR-1)	OCC forum agreed that the proposal may be reviewed after the charging of 765 KV Khetri- Narela DC line.	CTUIL representative informed that after the charging of 765 KV Khetri-Narela DC line, no load flow issue are observed in the proposed interim arrangement. Powergrid representative informed that to implement the interim arrangement shutdown of 765kV Bhadla- Bikaner (PG) Ckt-I would be required for 9 days and shutdown of 765kV Bhadla- Bikaner (PG) Ckt-II would be required for five days. NRLDC representative stated that the major issue likely with proposed shutdown of 765kV Bhadla-Bikaner D/C is n-1 non-compliance of 765/400kV Bhadla-II ICTs. Presently, the 4*1500MVA ICTs remain loaded upto 3500-4000MW which is expected to cross beyond the N-1 limits with the proposed shutdown of 765kV Bhadla-Bikaner D/C lines which normally carry 1300-1500MW on each ckt. NRLDC representative stated that Following NR-ISTS RE generation restriction would be

			required in case simultaneous shutdown of 765kV Bhadla-Bikaner (PG) D/C line is taken: □ Till shutdown of 400kV Bhadla-Bikaner D/C line (RRVPNL): 15000-15500MW □ After revival of 400kV Bhadla-Bikaner D/C line (RRVPNL): 18000MW Further, as there is reduction in SCR and might cause voltage oscillations after 765 kV Bhadla–Bikaner D/C line outage, there would be requirement for more MVAR support requirement from RE generators including intrastate generators. OCC forum discussed that shutdown may be facilitated by NRLDC after revival of 400kV Bhadla-Bikaner D/C line of RRVPNL. Shutdown was approved for 765kV Bhadla-Bikaner ckt 2 from 15:30hrs to 08:30hrs whereas other 765kV Bhadla-Bikaner ckt 1 can be continuously under outage for 9 days. The curtailment required to be communicated on D-3 basis by NRLDC.
2.	A.15. Utilisation of dynamic capability of SVCs and STATCOM to	OCC forum asked POWERGRID to provide inputs to CTUIL regarding	POWERGRID representative informed that two places have been

	maintain GRID voltage (Agenda by Powergrid NR-2)	suitable locations for installing SVCs based on space availability for long-term planning. Further, OCC forum agreed that CTUIL may carry out the study in coordination with J&K and POWERGRID to assess the requirement of reactive power devices in J&K.	identified one is at Wagoora station where land can be procured and second one is Delina near Amargarh station which belongs to J&K state. MS, NRPC suggested JK SLDC to explore installation of STATCOM at Delina Substation from their own fund. NRLDC representative suggested CTUIL to give technical inputs to JK SLDC regarding the STATCOM capacity needed to be installed at Delina Substation.
3.	A.16. Increase in fault level at 400/220KV Substation Ludhiana and Moga Substations (Agenda by Powergrid NR-2)	OCC forum asked CTUIL, NRLDC and POWERGRID to conduct a site visit before next OCC meeting to assess the feasibility of installation of Bus sectionalizer at Ludhiana and Moga Substations. Forum requested POWERGRID to coordinate and facilitate the site visit. Further, forum asked NRLDC and CTUIL to study jointly and suggest necessary measures for fault level control at these substations.	CTUIL representative informed that they have sought some inputs from PGCIL for study. If required, site visit would be planned shortly and update on this agenda would be provided in the next OCC meeting.
4.	AA.1 Action Taken Report with respect to the past recommendations of the Standing Committee of Experts on EHV Tower Failures (Agenda by NRPC Secretariat)	OCC Forum asked UPPTCL, RVPNL, NTPC, NRSS XXXVI and PGCIL to submit Action Taken Report with respect to the past recommendations of the Standing Committee to PSETD Division, CEA and NRPC at the earliest.	The matter was taken up for information of the forum.

Status of action taken on decision of 237th OCC meeting of NRPC

5.	AA.3 Details of allocation of Power to States and UTs of NR and tieups from Long Term arrangement for FY 2026-27 (Agenda by NRPC Secretariat)	OCC forum asked all SLDCs of NR to submit the details of allocation of Power to their control area and tie-ups from Long Term and Medium-Term arrangements along with banking and bilateral arrangements for FY 2026-27 within a week.	MS, NRPC informed that the data is being used for LGBR preparation which is sent to MoP and CEA. She asked HP and JK SLDC to send the data within a week. Representatives of JK and HP informed that they will submit within a week.

Follow up issues from previous OCC meetings

Annexure-A.II

<table>
<tr><td>1</td><td>Down Stream network by State utilities from ISTS Station</td><td>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.</td><td colspan="3">List of downstream networks is enclosed in Annexure-A.II.I.</td></tr>
<tr><td>2</td><td>Progress of installing new capacitors and repair of defective capacitors</td><td>Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.</td><td colspan="3">Data upto following months, received from various states / UTs:
◎ CHANDIGARH Sep-2019
◎ DELHI Sep-2025
◎ HARYANA Sep-2025
◎ HP Oct-2025
◎ J&K and LADAKH Not Available
◎ PUNJAB Oct-2025
◎ RAJASTHAN Oct-2024
◎ UP Nov-2025
◎ UTTARAKHAND Nov-2025
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Healthiness of defence mechanism: Self-certification</td><td>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”.</td><td colspan="3">Data upto following months, received from various states / UTs:
◎ CHANDIGARH Not Available
◎ DELHI Sep-2025
◎ HARYANA Sep-2025
◎ HP Sep-2025
◎ J&K and LADAKH Not Available
◎ PUNJAB Sep-2025
◎ RAJASTHAN Sep-2025
◎ UP Nov-2025
◎ UTTARAKHAND Sep-2025
◎ BBMB Sep-2025
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.</td></tr>
<tr><td>In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.</td><td colspan="3">Status:
◎ CHANDIGARH Not Available
◎ DELHI Increased
◎ HARYANA Increased
◎ HP Increased
◎ J&K and LADAKH Increased
◎ PUNJAB Increased
◎ RAJASTHAN Increased
◎ UP Increased
◎ UTTARAKHAND Increased
◎ BBMB Increased</td></tr>
</table>

<table>
<tr><td>4</td><td>Status of Automatic Demand Management System in NR states/UT's</td><td>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:</td><td>The status of ADMS implementation in NR is enclosed in Annexure-A.II.II.<table><tr><td>◎</td><td>DELHI</td><td>Scheme Implemented but operated in manual mode.</td></tr><tr><td>◎</td><td>HARYANA</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>HP</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Under implementation.</td></tr><tr><td>◎</td><td>UP</td><td>Scheme implemented by NPCIL only</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Scheme not implemented</td></tr></table></td></tr>
<tr><td>5</td><td>Status of availability of ERS towers in NR</td><td>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.</td><td>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.</td></tr>
<tr><td>6</td><td>Submission of breakup of Energy Consumption by the states</td><td>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></td><td>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>Oct-25</td></tr><tr><td>◎</td><td>HARYANA</td><td>Oct-25</td></tr><tr><td>◎</td><td>HP</td><td>Oct-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>Oct-25</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Aug-25</td></tr><tr><td>◎</td><td>UP</td><td>Oct-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</td></tr>
</table>

9	Reactive compensation at 220 kV/ 400 kV level at 5 substations			
	State / Utility	Substation	Reactor	Status
i	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.
ii	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.
iii	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.
iv	DTL	Electric Lane	1x50 MVAr at 220 kV	Under Re-tendering due to Single Bid
v	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'26	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 2026 subject to clearance from forest, Updated in 238th OCC by JKPTCL.
				• 220 kV New Wanpoh - Mattan D/c Line	-	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Mattan D/c Line. To be implemented through TBCB. yet to be awareded. Updated in 238th 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	-	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 . Updated in 238th 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 Shahajahanpur (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.Commisioned 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	The work is in progress after resolution of RoW as intimated in 238th OCC by HVPNL. **Status:** The status of work is as under:- Tower Foundation: 212/ 212 Nos. Tower Erection: 212/ 212 Nos Stringing: 49.844/ 50.049 Km. OPGW Stringing 29.352/50.049Km The firm has started the OPGW stringing work
				• 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 Pardesh on dated 09.03.2024. The work is in progress after resolution of RoW as intimated in 238th 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	Mar'26	220kV Jind PG - Jind D/C line commissioned. Further, 220kV Jind PG - Nain (HVPNL) D/C will be commissioned after completion of new 220kV Substation Nain (HVPNL) which is under construction. And likely to be comissioned by 15.03.2026.
11	400/220kV Tughlakabad GIS	Commissioned: 6 Under Implementation: 4	Utilized: 6 Unutilized: 0	• RK Puram – Tughlakabad (UG Cable) 220kV D/c line – March 2023.	Commissioned	Updated in 216th OCC by DTL
				• 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	

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	Mar'26	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 utilitsed 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 Aprroved: 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	Mar'26	Contract awarded on 08.08.23 to M/s Skipper with completion in December 25.Likely date of commissioning of the project has been revised as 31.03.2026 due to slow progress of the work by the firm. Updated in 238th 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	Mar'26	Issue related to ROW. Likely date of commissioning of the project has been revised as 31.03.2026 due to slow progress of the work by of the firm.
				• Prithla - Sector 89 Faridabad 220kV D/c line	Mar'26	Stringing is in progress at TL No.25 to 35 of Prithla - Sector 78 section as updated in 238th OCC by HVPNL
16	400/220kV Sonepat 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 Sonepat	Commissioned	Commissioned as updated by HVPNL in 233rd OCC
				• Sonepat - HSIISC Rai 220kV D/c line	Commissioned	Energization date: 31.05.2024 updated by HVPNL in 220th OCC
				• Sonepat - Kharkhoda Pocket A 220kV D/c line	Commissioned	Updated in 238th OCC by HVPNL. **Status:** Commissioned on dated 02.12.2025
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 Jallandhar 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 is under consideration with upcoming CMETS-NR as updated by PSTCL in 238th 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)- Maharajganj, 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	Jan'26	Revised target date as confirmed by concerned XEN TS, Panchkula.Updated in 238th 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	31.01.2026	Commissioning of 220kv S/C Amritsar -Patti S/c and 220kV Amritsar – Rashiana S/c may be done by 31.01.2026. Updated in 238th 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)	31.01.2026	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 238th 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 Bahardurgarh 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 competant authority of the HVPNL. Further, 06 no. Foundation has been casted.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	30.06.2026	Updated in 238th OCC by HVPNL. **Status:** RoW issues which are being resolved with the help of Duty Magistrate. NRPC secretariat requested HVPNL to submit the status of all the lines.
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 agrrement 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 237th OCC meeting, HPSDLC representative informed that vide letter dated 25.10.2025 they have requested HPSEBL to expedite the feeder list. However, reply of HPSEBL is awaited. Further, they have also requested MD, HPSEBL for a suitable date for a meeting in this regard.
4	PUNJAB	Scheme not implemented	In 238th OCC meeting, Punjab SLDC representative informed that testing of SCADA upgradation under ULDC phase III is underway. All the material may be commissioned by March-26 and implementation of logic of ADMS may be executed by Sept-26.
5	RAJASTHAN	Under implementation	RVPN has pilot tested the logic of ADMS which is to be implemented for Rajasthan. In 238th OCC meeting, RVPN informed that 357 nos. of circuit breakers have been mapped to ADMS, all 357 circuit breakers tested upto yard individually. Total 650CBs are to be mapped in phased manner.
6	UP	Scheme implemented by NPCIL only	In 238th 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. In 238th OCC meeting MS, NRPC requested all the SLDCs to submit the list of feeders within a week.She stated that a meeting will be convened with all the SLDCs for ADMS implementation subject to submission of identified feeders by all SLDCs.
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.

Annexure-A.II.III.

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 Ballabhgarh	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)

Annexure-III

List of generators who have not furnished the testing schedule for FY 2026-2027

Operator	Generating Unit	Installed Capacity	Tests for which schedule is to be furnished
ADANI POWER LTD.	KAWAI TPS (ADANI POWER) Unit 1	660	No schedule given
ADANI POWER LTD.	KAWAI TPS (ADANI POWER) Unit 2	660	No schedule given
ADPCL	ALLAIN DUHANGAN HPS Unit 1	96	No schedule given
ADPCL	ALLAIN DUHANGAN HPS Unit 2	96	No schedule given
AHPCL	ALAKNANDA HPS Unit 1	82.5	No schedule given
AHPCL	ALAKNANDA HPS Unit 2	82.5	No schedule given
AHPCL	ALAKNANDA HPS Unit 3	82.5	No schedule given
AHPCL	ALAKNANDA HPS Unit 4	82.5	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit L-1	126	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit L-2	126	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit L-3	126	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit L-4	126	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit L-5	126	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit R-1	157	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit R-2	157	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit R-3	157	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit R-4	157	No schedule given
BBMB	BHAKRA LEFT & RIGHT HPS Unit R-5	157	No schedule given
BBMB	GANGUWAL HPS Unit 1	27.99	No schedule given
BBMB	GANGUWAL HPS Unit 2	24.2	No schedule given
BBMB	GANGUWAL HPS Unit 3	24.2	No schedule given
BBMB	KOTLA HPS Unit 1	28.94	No schedule given
BBMB	KOTLA HPS Unit 2	24.2	No schedule given
BBMB	KOTLA HPS Unit 3	24.2	No schedule given
BBMB	DEHAR HPS Unit 1	165	No schedule given
BBMB	DEHAR HPS Unit 2	165	No schedule given
BBMB	DEHAR HPS Unit 3	165	No schedule given
BBMB	DEHAR HPS Unit 4	165	No schedule given
BBMB	DEHAR HPS Unit 5	165	No schedule given
BBMB	DEHAR HPS Unit 6	165	No schedule given
BBMB	PONG HPS Unit 1	66	No schedule given
BBMB	PONG HPS Unit 2	66	No schedule given
BBMB	PONG HPS Unit 3	66	No schedule given
BBMB	PONG HPS Unit 4	66	No schedule given
BBMB	PONG HPS Unit 5	66	No schedule given
BBMB	PONG HPS Unit 6	66	No schedule given
CLP India	MAHATMA GANDHI TPS (CLP JHAJJAR) Unit 1	660	No schedule given
CLP India	MAHATMA GANDHI TPS (CLP JHAJJAR) Unit 2	660	No schedule given
GAMA INFRAPROP PVT.	GAMA CCPP Unit GT-1	75	No schedule given
GAMA INFRAPROP PVT.	GAMA CCPP Unit GT-2	75	No schedule given
GAMA INFRAPROP PVT.	GAMA CCPP Unit ST	75	No schedule given
Greenko	BUDHIL HPS Unit 1	35	No schedule given
Greenko	BUDHIL HPS Unit 2	35	No schedule given
HP Sorang	HP SORANG HPS Unit 1	100	No schedule given
HPGCL	PANIPAT TPS Unit 6	210	No schedule given
HPGCL	PANIPAT TPS Unit 7	250	No schedule given
HPGCL	PANIPAT TPS Unit 8	250	No schedule given
HPGCL	RAJIV GANDHI TPS HISAR Unit 1	600	No schedule given
HPGCL	RAJIV GANDHI TPS HISAR Unit 2	600	No schedule given
HPGCL	DCR TPS YAMUNA NAGAR Unit 1	300	No schedule given
HPGCL	DCR TPS YAMUNA NAGAR Unit 2	300	No schedule given
HPPCL	KASHANG INTEGRATED HEP Unit 1	65	No schedule given
HPPCL	KASHANG INTEGRATED HEP Unit 2	65	No schedule given
HPPCL	KASHANG INTEGRATED HEP Unit 3	65	No schedule given
HPPCL	SAINJ HPS Unit 1	50	No schedule given
HPPCL	SAINJ HPS Unit 2	50	No schedule given
HPPCL	SAWRA KUDDU HEP Unit 1	37	No schedule given

HPPCL	SAWRA KUDDU HEP Unit 2	37	No schedule given
HPPCL	SAWRA KUDDU HEP Unit 3	37	No schedule given
HPSEB	LARJI HPS Unit 1	42	No schedule given
HPSEB	LARJI HPS Unit 2	42	No schedule given
HPSEB	LARJI HPS Unit 3	42	No schedule given
HPSEB	SANJAY HPS (BHABA) Unit 1	40	No schedule given
HPSEB	SANJAY HPS (BHABA) Unit 2	40	No schedule given
HPSEB	SANJAY HPS (BHABA) Unit 3	40	No schedule given
HPSEBL	GIRI BATA HPS Unit 1	30	No schedule given
HPSEBL	GIRI BATA HPS Unit 2	30	No schedule given
JAYPEE	CHURK TPS (JAYPEE) Unit NA	90	No schedule given
JKSPDC	BAGLIHAR HPS Unit 1	150	No schedule given
JKSPDC	BAGLIHAR HPS Unit 2	150	No schedule given
JKSPDC	BAGLIHAR HPS Unit 3	150	No schedule given
JKSPDC	BAGLIHAR II HPS Unit 1	150	No schedule given
JKSPDC	BAGLIHAR II HPS Unit 2	150	No schedule given
JKSPDC	BAGLIHAR II HPS Unit 3	150	No schedule given
JKSPDC	LOWER JHELUM HPS Unit 1	35	No schedule given
JKSPDC	LOWER JHELUM HPS Unit 2	35	No schedule given
JKSPDC	LOWER JHELUM HPS Unit 3	35	No schedule given
JKSPDC	UPPER SINDH-II HPS Unit 1	35	No schedule given
JKSPDC	UPPER SINDH-II HPS Unit 2	35	No schedule given
JKSPDC	UPPER SINDH-II HPS Unit 3	35	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 1	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 2	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 3	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 4	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 5	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 6	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 7	135	No schedule given
JSW ENERGY LTD.	JSW ENERGY (BARMER) TPP Unit 8	135	No schedule given
MEIL	ANPARA C TPS (LANCO) Unit 1	600	No schedule given
MEIL	ANPARA C TPS (LANCO) Unit 2	600	No schedule given
NLC+UPRVUNL	GHATAMPUR TPP Unit 1	660	No schedule given
NLC+UPRVUNL	GHATAMPUR TPP Unit 2	660	No schedule given
NLC+UPRVUNL	GHATAMPUR TPP Unit 3	660	No schedule given
NTPC	SINGRAULI STPS Unit 1	200	No schedule given
NTPC	SINGRAULI STPS Unit 2	200	No schedule given
NTPC	SINGRAULI STPS Unit 3	200	No schedule given
NTPC	SINGRAULI STPS Unit 4	200	No schedule given
NTPC	SINGRAULI STPS Unit 5	200	No schedule given
NTPC	SINGRAULI STPS Unit 6	500	No schedule given
NTPC	SINGRAULI STPS Unit 7	500	No schedule given
NTPC	RIHAND-I STPS Unit 1	500	No schedule given
NTPC	RIHAND-I STPS Unit 2	500	No schedule given
NTPC	RIHAND-II STPS Unit 3	500	No schedule given
NTPC	RIHAND-II STPS Unit 4	500	No schedule given
NTPC	RIHAND-III STPS Unit 5	500	No schedule given
NTPC	RIHAND-III STPS Unit 6	500	No schedule given
NTPC	UNCHAHAR-I TPS Unit 1	210	No schedule given
NTPC	UNCHAHAR-I TPS Unit 2	210	No schedule given
NTPC	UNCHAHAR-II TPS Unit 3	210	No schedule given
NTPC	UNCHAHAR-II TPS Unit 4	210	No schedule given
NTPC	UNCHAHAR-III TPS Unit 5	210	No schedule given
NTPC	UNCHAHAR-IV TPS Unit 6	500	No schedule given
NTPC	DADRI-I (NCTPP) Unit 1	210	No schedule given
NTPC	DADRI-I (NCTPP) Unit 2	210	No schedule given
NTPC	DADRI-I (NCTPP) Unit 3	210	No schedule given
NTPC	DADRI-I (NCTPP) Unit 4	210	No schedule given
NTPC	DADRI-II (NCTPP) Unit 5	490	No schedule given
NTPC	DADRI-II (NCTPP) Unit 6	490	No schedule given
NTPC	DADRI CCPP Unit GT-1	130.19	No schedule given
NTPC	DADRI CCPP Unit GT-2	130.19	No schedule given
NTPC	DADRI CCPP Unit GT-3	130.19	No schedule given

NTPC	DADRI CCPP Unit GT-4	130.19	No schedule given
NTPC	DADRI CCPP Unit ST-1	154.51	No schedule given
NTPC	DADRI CCPP Unit ST-2	154.51	No schedule given
NTPC	ANTA CCPP Unit GT-1	88.71	No schedule given
NTPC	ANTA CCPP Unit GT-2	88.71	No schedule given
NTPC	ANTA CCPP Unit GT-3	88.71	No schedule given
NTPC	ANTA CCPP Unit ST	153.2	No schedule given
NTPC	AURAIYA CCPP Unit GT-1	111.19	No schedule given
NTPC	AURAIYA CCPP Unit GT-2	111.19	No schedule given
NTPC	AURAIYA CCPP Unit GT-3	111.19	No schedule given
NTPC	AURAIYA CCPP Unit GT-4	111.19	No schedule given
NTPC	AURAIYA CCPP Unit ST-1	109.3	No schedule given
NTPC	AURAIYA CCPP Unit ST-2	109.3	No schedule given
NTPC	KOLDAM HPS Unit 1	200	No schedule given
NTPC	KOLDAM HPS Unit 2	200	No schedule given
NTPC	KOLDAM HPS Unit 3	200	No schedule given
NTPC	KOLDAM HPS Unit 4	200	No schedule given
NTPC	SINGRAULI SHEP Unit 1	8	No schedule given
NTPC	MEJA STPP Unit 1	660	No schedule given
NTPC	MEJA STPP Unit 2	660	No schedule given
NTPC	TANDA STAGE-2 TPS Unit 5	660	No schedule given
NTPC	TANDA STAGE-2 TPS Unit 6	660	No schedule given
NTPC	FARIDABAD CCGT Unit GT-1	137.758	No schedule given
NTPC	FARIDABAD CCGT Unit GT-2	137.758	No schedule given
NTPC	FARIDABAD CCGT Unit ST	156.08	No schedule given
NTPC	TANDA TPS Unit 1	110	No schedule given
NTPC	TANDA TPS Unit 2	110	No schedule given
NTPC	TANDA TPS Unit 3	110	No schedule given
NTPC	TANDA TPS Unit 4	110	No schedule given
PPCL	PPS-III BAWANA Unit GT-1	216	No schedule given
PPCL	PPS-III BAWANA Unit GT-2	216	No schedule given
PPCL	PPS-III BAWANA Unit GT-3	216	No schedule given
PPCL	PPS-III BAWANA Unit GT-4	216	No schedule given
PPCL	PPS-III BAWANA Unit ST-1	253.6	No schedule given
PPCL	PPS-III BAWANA Unit ST-2	253.6	No schedule given
PPCL	PPS-I PPCL Unit GT-1	104	No schedule given
PPCL	PPS-I PPCL Unit GT-2	104	No schedule given
PPCL	PPS-I PPCL Unit ST	122	No schedule given
PSPCL	ANANDPUR SAHIB-I HPS Unit 1	33.5	No schedule given
PSPCL	ANANDPUR SAHIB-II HPS Unit 2	33.5	No schedule given
PSPCL	GHTPS (LEHRA MOHBBAT) Unit 1	210	No schedule given
PSPCL	GHTPS (LEHRA MOHBBAT) Unit 2	210	No schedule given
PSPCL	GHTPS (LEHRA MOHBBAT) Unit 3	250	No schedule given
PSPCL	GHTPS (LEHRA MOHBBAT) Unit 4	250	No schedule given
PSPCL	RANJIT SAGAR DAM HPS Unit 1	150	No schedule given
PSPCL	RANJIT SAGAR DAM HPS Unit 2	150	No schedule given
PSPCL	RANJIT SAGAR DAM HPS Unit 3	150	No schedule given
PSPCL	RANJIT SAGAR DAM HPS Unit 4	150	No schedule given
PSPCL	GGSSTP ROPAR Unit 3	210	No schedule given
PSPCL	GGSSTP ROPAR Unit 4	210	No schedule given
PSPCL	GGSSTP ROPAR Unit 5	210	No schedule given
PSPCL	GGSSTP ROPAR Unit 6	210	No schedule given
RRVUNL	CTPP CHHABRA Unit 1	250	No schedule given
RRVUNL	CTPP CHHABRA Unit 2	250	No schedule given
RRVUNL	CTPP CHHABRA Unit 3	250	No schedule given
RRVUNL	CTPP CHHABRA Unit 4	250	No schedule given
RRVUNL	CSCTPP CHHABRA Unit 5	660	No schedule given
RRVUNL	CSCTPP CHHABRA Unit 6	660	No schedule given
RRVUNL	DHOLPUR CCPP (DCCPP) Unit GT-1	110	No schedule given
RRVUNL	DHOLPUR CCPP (DCCPP) Unit GT-2	110	No schedule given
RRVUNL	DHOLPUR CCPP (DCCPP) Unit ST	110	No schedule given
RRVUNL	JAWAHAR SAGAR HPS Unit 1	33	No schedule given
RRVUNL	JAWAHAR SAGAR HPS Unit 2	33	No schedule given
RRVUNL	JAWAHAR SAGAR HPS Unit 3	33	No schedule given

RRVUNL	KALISINDH TPS (KATPP) Unit 1	600	No schedule given
RRVUNL	KALISINDH TPS (KATPP) Unit 2	600	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 1	110	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 2	110	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 3	210	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 4	210	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 5	210	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 6	195	No schedule given
RRVUNL	KOTA TPS (KSTPS) Unit 7	195	No schedule given
RRVUNL	MAHI-I HPS BANSWARA Unit 1	25	No schedule given
RRVUNL	MAHI-I HPS BANSWARA Unit 2	25	No schedule given
RRVUNL	MAHI-II HPS BANSWARA Unit 1	45	No schedule given
RRVUNL	MAHI-II HPS BANSWARA Unit 2	45	No schedule given
RRVUNL	R P SAGAR HPS Unit 1	43	No schedule given
RRVUNL	R P SAGAR HPS Unit 2	43	No schedule given
RRVUNL	R P SAGAR HPS Unit 3	43	No schedule given
RRVUNL	R P SAGAR HPS Unit 4	43	No schedule given
RRVUNL	RAMGARH CCPP Unit GT-1	35.5	No schedule given
RRVUNL	RAMGARH CCPP Unit GT-2	37.5	No schedule given
RRVUNL	RAMGARH CCPP Unit ST-1	37.5	No schedule given
RRVUNL	RAMGARH CCPP Unit GT-3	110	No schedule given
RRVUNL	RAMGARH CCPP Unit ST-2	50	No schedule given
RRVUNL	SSTPS SURATGARH Unit 1	250	No schedule given
RRVUNL	SSTPS SURATGARH Unit 2	250	No schedule given
RRVUNL	SSTPS SURATGARH Unit 3	250	No schedule given
RRVUNL	SSTPS SURATGARH Unit 4	250	No schedule given
RRVUNL	SSTPS SURATGARH Unit 5	250	No schedule given
RRVUNL	SSTPS SURATGARH Unit 6	250	No schedule given
RRVUNL	SSCTPP SURATGARH Unit 7	660	No schedule given
RRVUNL	SSCTPP SURATGARH Unit 8	660	No schedule given
SJVNL	NAITWAR MORI Unit 1	60	No schedule given
SRAVANTHI ENERGY	KASHIPUR CCPP (SRAVANTHI ENERGY) Unit GT-1	75	No schedule given
SRAVANTHI ENERGY	KASHIPUR CCPP (SRAVANTHI ENERGY) Unit GT-2	75	No schedule given
SRAVANTHI ENERGY	KASHIPUR CCPP (SRAVANTHI ENERGY) Unit ST	75	No schedule given
THDC	KOTESHWAR HPS Unit 1	100	No schedule given
THDC	KOTESHWAR HPS Unit 2	100	No schedule given
THDC	KOTESHWAR HPS Unit 3	100	No schedule given
THDC	KOTESHWAR HPS Unit 4	100	No schedule given
THDC	KHURJA TPP Unit 1	660	No schedule given
THDC	KHURJA TPP Unit 2	660	No schedule given
UJVNL	CHIBRO (YAMUNA) HPS Unit 1	60	No schedule given
UJVNL	CHIBRO (YAMUNA) HPS Unit 2	60	No schedule given
UJVNL	CHIBRO (YAMUNA) HPS Unit 3	60	No schedule given
UJVNL	CHIBRO (YAMUNA) HPS Unit 4	60	No schedule given
UJVNL	CHILLA POWER HOUSE Unit 1	36	No schedule given
UJVNL	CHILLA POWER HOUSE Unit 2	36	No schedule given
UJVNL	CHILLA POWER HOUSE Unit 3	36	No schedule given
UJVNL	CHILLA POWER HOUSE Unit 4	36	No schedule given
UJVNL	KHODRI HPS Unit 1	30	No schedule given
UJVNL	KHODRI HPS Unit 2	30	No schedule given
UJVNL	KHODRI HPS Unit 3	30	No schedule given
UJVNL	KHODRI HPS Unit 4	30	No schedule given
UJVNL	MANERI BHALI-I HPS TILOTH Unit 1	30	No schedule given
UJVNL	MANERI BHALI-I HPS TILOTH Unit 2	30	No schedule given
UJVNL	MANERI BHALI-I HPS TILOTH Unit 3	30	No schedule given
UJVNL	MANERI BHALI-II HPS DHARASU Unit 1	76	No schedule given
UJVNL	MANERI BHALI-II HPS DHARASU Unit 2	76	No schedule given
UJVNL	MANERI BHALI-II HPS DHARASU Unit 3	76	No schedule given
UJVNL	MANERI BHALI-II HPS DHARASU Unit 4	76	No schedule given
UJVNL	RAMGANGA POWER HOUSE Unit 1	66	No schedule given
UJVNL	RAMGANGA POWER HOUSE Unit 2	66	No schedule given
UJVNL	RAMGANGA POWER HOUSE Unit 3	66	No schedule given
UJVNL	VYASI HEP Unit 1	60	No schedule given
UJVNL	VYASI HEP Unit 2	60	No schedule given

UPJVNL	OBRA HPS Unit 1	33	No schedule given
UPJVNL	OBRA HPS Unit 2	33	No schedule given
UPJVNL	OBRA HPS Unit 3	33	No schedule given
UPJVNL	RIHAND HPS Unit 1	50	No schedule given
UPJVNL	RIHAND HPS Unit 2	50	No schedule given
UPJVNL	RIHAND HPS Unit 3	50	No schedule given
UPJVNL	RIHAND HPS Unit 4	50	No schedule given
UPJVNL	RIHAND HPS Unit 5	50	No schedule given
UPJVNL	RIHAND HPS Unit 6	50	No schedule given
UPRVUNL	ANPARA TPS Unit 6	500	No schedule given
UPRVUNL	ANPARA TPS Unit 7	500	No schedule given
UPRVUNL	HARDUAGANJ TPS Unit 7	110	No schedule given
UPRVUNL	HARDUAGANJ TPS Unit 8	250	No schedule given
UPRVUNL	HARDUAGANJ TPS Unit 9	250	No schedule given
UPRVUNL	OBRA TPS Unit 9	200	No schedule given
UPRVUNL	OBRA TPS Unit 10	200	No schedule given
UPRVUNL	OBRA TPS Unit 11	200	No schedule given
UPRVUNL	OBRA TPS Unit 12	200	No schedule given
UPRVUNL	OBRA TPS Unit 13	200	No schedule given
UPRVUNL	OBRA-C STPP Unit 1	660	No schedule given
UPRVUNL	OBRA-C STPP Unit 2	660	No schedule given
UPRVUNL	PARICHHA TPS Unit 3	210	No schedule given
UPRVUNL	PARICHHA TPS Unit 4	210	No schedule given
UPRVUNL	PARICHHA TPS Unit 5	250	No schedule given
UPRVUNL	PARICHHA TPS Unit 6	250	No schedule given
UPRVUNL	HARDUAGANJ EXT-II TPS Unit 10	660	No schedule given
UPRVUNL	PANKI TPS EXTENSION Unit 1	660	No schedule given
Everest Power	MALANA-II HPS Unit 1	50	No schedule given
Everest Power	MALANA-II HPS Unit 2	50	No schedule given

	DELHI											
	Solar Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	6205	5344	5196	5455	6555	7790	8246	7957	7396	7142	6776	5400
Requirement (MW)	5500	5900	5100	4650	6250	8400	9100	8450	7300	7400	6250	4550
Deficit/Surplus (MW)	705	-556	96	805	305	-610	-854	-493	96	-258	526	850
Deficit/Surplus (%)	12.82%	-9.42%	1.88%	17.31%	4.88%	-7.26%	-9.38%	-5.83%	1.32%	-3.49%	8.42%	18.68%
	Evening Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	4727	4706	4704	4715	5954	7549	8151	8102	7440	7189	6799	4455
Requirement (MW)	4450	4700	4300	4550	6150	8300	8800	8100	7200	7350	5900	4224
Deficit/Surplus (MW)	277	6	404	165	-196	-751	-649	2	240	-161	899	231
Deficit/Surplus (%)	6.22%	0.13%	9.40%	3.63%	-3.19%	-9.05%	-7.38%	0.02%	3.33%	-2.19%	15.24%	5.47%
	MU											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MU)	3275	3523	3111	3569	4177	5346	5576	5722	5274	4933	3830	2564
Requirement (MU)	2400	2900	2300	2450	3300	4350	4750	4550	4150	4100	3300	2350
Deficit/Surplus (MU)	875	623	811	1119	877	996	826	1172	1124	833	530	214
Deficit/Surplus (%)	36.46%	21.48%	35.26%	45.67%	26.58%	22.90%	17.39%	25.76%	27.08%	20.32%	16.06%	9.11%

	HARYANA											
	Solar Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	11621	11286	11303	11365	12486	13212	14451	14451	14451	13628	12452	
Requirement (MW)	9725	9651	9986	9100	10178	13207	16268	16454	15313	13352	12104	
Deficit/Surplus (MW)	1896	1635	1317	2265	2308	5	-1817	-2003	-862	276	348	
Deficit/Surplus (%)	19.50%	16.94%	13.19%	24.89%	22.68%	0.04%	-11.17%	-12.17%	-5.63%	2.07%	2.88%	
	Evening Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	10334	9967	9982	10044	11165	11892	13130	13130	13130	12308	11132	
Requirement (MW)	8236	8613	8125	8043	10440	12594	14966	14843	14540	12685	11730	
Deficit/Surplus (MW)	2098	1354	1857	2001	725	-702	-1836	-1713	-1410	-377	-598	
Deficit/Surplus (%)	25.47%	15.72%	22.86%	24.88%	6.94%	-5.57%	-12.27%	-11.54%	-9.70%	-2.97%	-5.10%	
	MU											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MU)	4921	4927	4607	4774	5578	6616	7842	8392	7468	7349	6764	
Requirement (MU)	3027	2752	2340	2963	2711	2490	1859	1632	2557	1763	1780	
Deficit/Surplus (MU)	1894	2175	2267	1811	2867	4126	5983	6760	4911	5586	4984	
Deficit/Surplus (%)	62.57%	79.03%	96.88%	61.12%	105.75%	165.70%	321.84%	414.22%	192.06%	316.85%	280.00%	

	HIMACHAL PRADESH											
	Solar Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	2028	2136	1991	1830	1287	1954	2539	2851	3066	2646	1688	1155
Requirement (MW)	1897	1964	1990	1679	1689	1868	1958	1938	1795	1752	1683	1726
Deficit/Surplus (MW)	131	172	1	151	-402	86	581	913	1271	894	5	-571
Deficit/Surplus (%)	6.91%	8.76%	0.05%	8.99%	-23.80%	4.60%	29.67%	47.11%	70.81%	51.03%	0.30%	-33.08%
	Evening Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	1797	1827	1780	1792	1473	1868	2180	2362	2514	2402	1826	1310
Requirement (MW)	2121	2021	1943	1621	1573	1719	1807	1817	1682	1685	1696	1733
Deficit/Surplus (MW)	-324	-194	-163	171	-100	149	373	545	832	717	130	-423
Deficit/Surplus (%)	-15.28%	-9.60%	-8.39%	10.55%	-6.36%	8.67%	20.64%	29.99%	49.46%	42.55%	7.67%	-24.41%
	MU											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MU)	1276	1327	1147	1174	899	1335	1596	1863	1975	1690	1091	729
Requirement (MU)	1276	1326	1194	1158	1128	1295	1322	1346	1247	1191	1192	1177
Deficit/Surplus (MU)	0	1	-47	16	-229	40	274	517	728	499	-101	-448
Deficit/Surplus (%)	-0.03%	0.07%	-3.96%	1.41%	-20.29%	3.11%	20.73%	38.38%	58.38%	41.92%	-8.51%	-38.08%

	PUNJAB											
	Solar Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	10670	10572	10486	11465	13920	15299	15184	15826	14455	13508	9984	
Requirement (MW)	10868	10572	10486	11465	14667	17578	17873	17289	16639	13508	9984	
Deficit/Surplus (MW)	-198	0	0	0	-747	-2279	-2689	-1463	-2184	0	0	0
Deficit/Surplus (%)	-1.82%	0.00%	0.00%	0.00%	-5.09%	-12.97%	-15.05%	-8.46%	-13.13%	0.00%	0.00%	
	Evening Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	8871	8117	8144	10228	11490	13880	13800	13417	12516	12829	7943	
Requirement (MW)	8871	8117	8144	10228	12163	15865	16354	14734	14419	12829	7943	
Deficit/Surplus (MW)	0	0	0	0	-673	-1985	-2554	-1317	-1903	0	0	0
Deficit/Surplus (%)	0.00%	0.00%	0.00%	0.00%	-5.53%	-12.51%	-15.62%	-8.94%	-13.20%	0.00%	0.00%	
	MU											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MU)	4510	4689	5308	6047	7519	8176	8938	8511	7983	7058	4703	
Requirement (MU)	5511	4689	5308	6047	8075	9816	10939	9600	9556	7058	4703	
Deficit/Surplus (MU)	-1001	0	0	0	-556	-1640	-2001	-1089	-1573	0	0	0
Deficit/Surplus (%)	-18.16%	0.00%	0.00%	0.00%	-6.89%	-16.71%	-18.29%	-11.34%	-16.46%	0.00%	0.00%	

	UTTAR PRADESH											
	Solar Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	23501	24199	25065	26835	29894	30125	30766	29304	28269	29269	27447	23000
Requirement (MW)	21701	22590	21536	22466	22792	26959	31001	28193	26853	28265	24015	17823
Deficit/Surplus (MW)	1800	1609	3529	4369	7102	3166	-235	1111	1416	1004	3432	5177
Deficit/Surplus (%)	8.29%	7.12%	16.39%	19.45%	31.16%	11.74%	-0.76%	3.94%	5.27%	3.55%	14.29%	29.05%
	Evening Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	21161	21407	21259	20888	23866	25431	27384	27708	26507	26167	24359	24359
Requirement (MW)	21908	23402	21679	23278	27927	32176	34526	33087	32673	32491	28194	20176
Deficit/Surplus (MW)	-747	-1995	-420	-2390	-4061	-6745	-7142	-5379	-6166	-6324	-3835	4183
Deficit/Surplus (%)	-3.41%	-8.52%	-1.94%	-10.27%	-14.54%	-20.96%	-20.69%	-16.26%	-18.87%	-19.46%	-13.60%	20.73%
	MU											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MU)	15794	16067	14690	16280	18009	19750	19949	20211	19405	19005	18119	15939
Requirement (MU)	11128	12150	10596	12369	13967	17564	18525	18559	17569	17519	13087	10897
Deficit/Surplus (MU)	4666	3917	4094	3911	4042	2186	1424	1652	1836	1486	5032	5042
Deficit/Surplus (%)	41.93%	32.24%	38.64%	31.62%	28.94%	12.45%	7.69%	8.90%	10.45%	8.48%	38.45%	46.27%

	UTTARAKHAND											
	Solar Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	1668	1750	1608	1867	1519	1584	1872	2089	2144	2065	1404	
Requirement (MW)	2469	2534	2433	2055	2096	2621	2801	2443	2342	2293	2148	
Deficit/Surplus (MW)	-801	-784	-825	-188	-577	-1037	-929	-354	-198	-228	-744	
Deficit/Surplus (%)	-32.44%	-30.94%	-33.91%	-9.15%	-27.53%	-39.57%	-33.17%	-14.49%	-8.45%	-9.94%	-34.64%	
	Evening Peak (MW)											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MW)	1869	1881	1771	1838	1862	1843	2017	2195	2219	2323	2360	
Requirement (MW)	2335	2374	2283	2096	2344	2786	2872	2574	2503	2493	2442	
Deficit/Surplus (MW)	-466	-493	-512	-258	-482	-943	-855	-379	-284	-170	-82	
Deficit/Surplus (%)	-19.96%	-20.77%	-22.43%	-12.31%	-20.56%	-33.85%	-29.77%	-14.72%	-11.35%	-6.82%	-3.36%	
	MU											
Parameter	**Dec-2025**	**Jan-2026**	**Feb-2026**	**Mar-2026**	**Apr-2026**	**May-2026**	**Jun-2026**	**Jul-2026**	**Aug-2026**	**Sep-2026**	**Oct-2026**	**Nov-2026**
Availability (MU)	816	817	731	889	966	1232	1343	1558	1555	1470	1202	
Requirement (MU)	1408	1434	1241	1262	1444	1847	1910	1737	1678	1572	1492	
Deficit/Surplus (MU)	-592	-617	-510	-373	-478	-615	-567	-179	-123	-102	-290	
Deficit/Surplus (%)	-42.05%	-43.03%	-41.10%	-29.56%	-33.10%	-33.30%	-29.69%	-10.31%	-7.33%	-6.49%	-19.44%	

Note -	Medium term tender, Banking arrangement and other contracts are under process. However, the same has not been considered in the data provided as Medium Term tender of 500 MW is under consideration of UPCL, on which regulatory approvals are in process. The states are also in touch for banking as per requirement however, the LOIs of the same are not in place due to awaiting final approval of 500 MW medium term tender which is expected to commence from Jan - 2025. Other short term contracts will be decided as per final approval of 500 MW medium term tender.

Annexure-V

Captive Power Plant Generation (to be furnished by State Entity)							
S.No.	Name of State/Uts	Installed Capactiy of Captive Power Plants	Gross Generation	Net Generation	Electricity Utilization		
					Power Drawl from Grid	Injection of power to Grid	Captive Consumption
			(kwh)	(kwh)	(kwh)	(kwh)	(kwh)
1							
2							

Open Access Details			
S.No.	Name of State/UTs	Open Access Consumption	
		Included in Energy Requirement of State	Not included in Energy Requirement of State
		(kWh)	(kWh)
1			
2			

प्रचालन समन्वय उपसमिति की बैठक

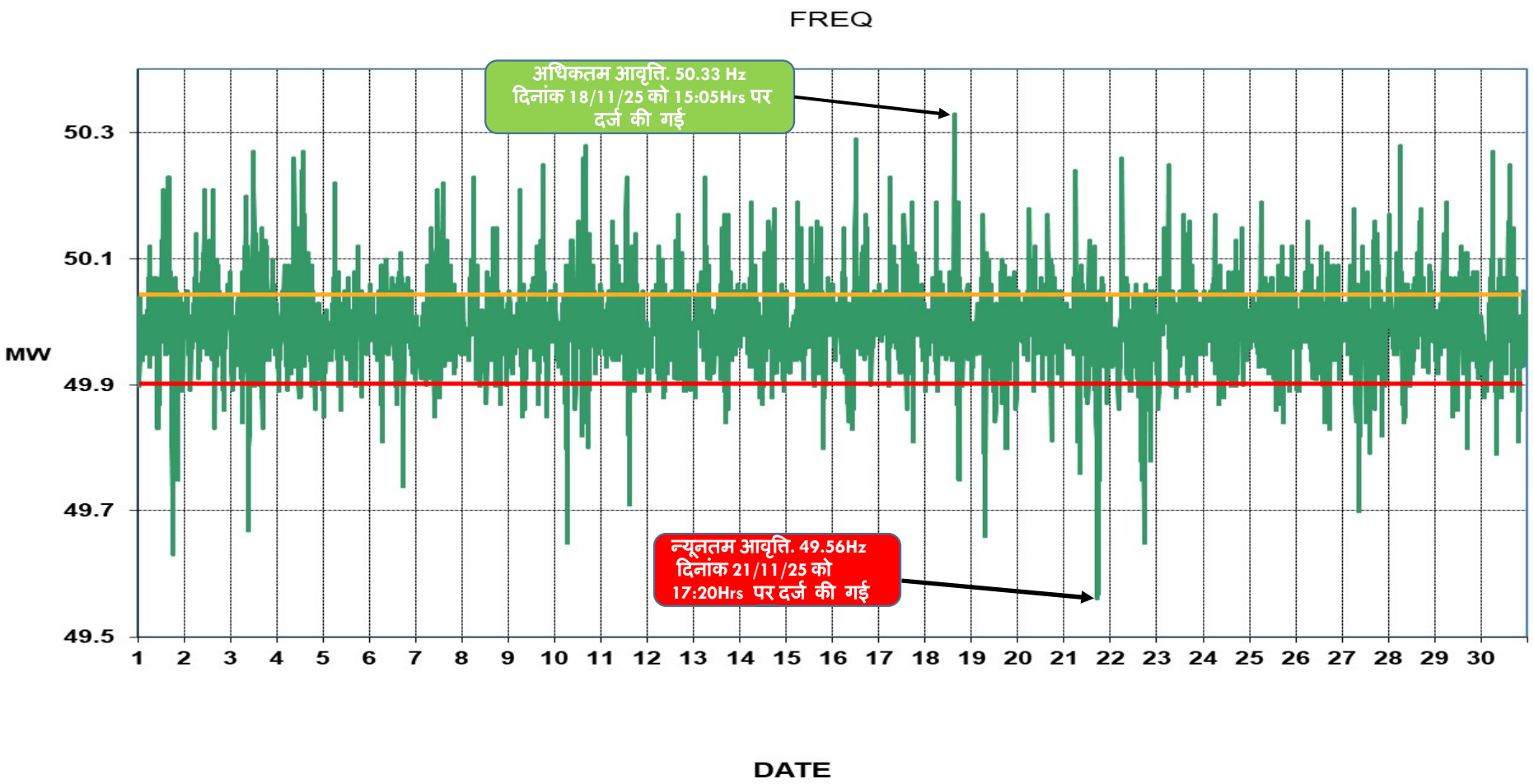
नवम्बर - 2025

NRLDC (Northern Regional Load Dispatch Centre),
New Delhi

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

ग्रिड-इंडिया GRID-INDIA

क्षेत्रीय OD/UD : अधिकतम आवृत्ति पर +458 MW(OD) न्यूनतम आवृत्ति पर : +347 MW(OD)



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

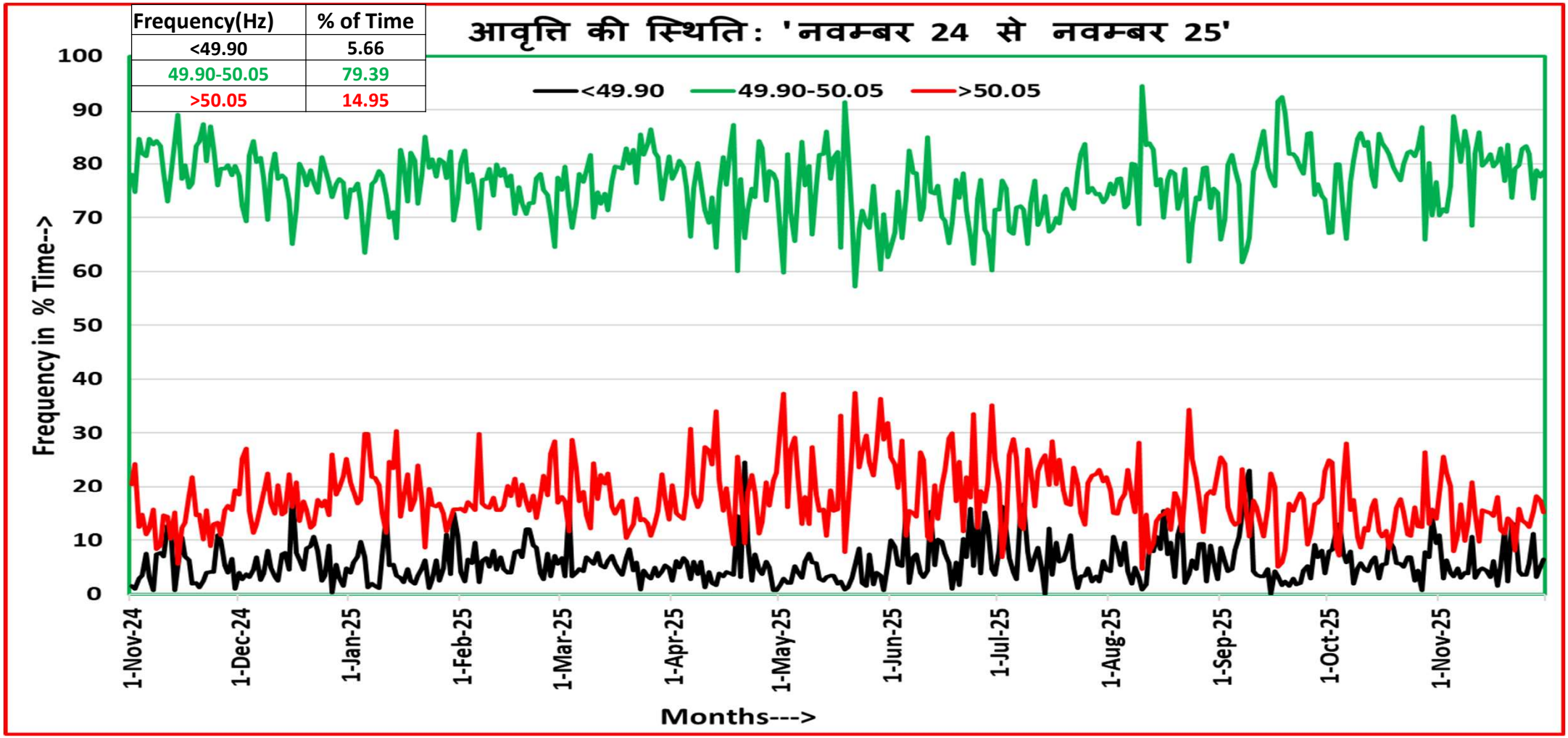
Del	+110
UP	+407
Raj	+131
Chd	+15
Pun	+08
Utt	- 68
HP	-08
JK	-71
Har	-64

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

Har	- 155
Raj	- 157
UP	- 164
Utt	- 42
Chd	-08
JK	00
Pun	+618
Del	+222
HP	+34

आवृत्ति की स्थिति: नवम्बर-2024 से 2025

Frequency(Hz)	% of Time
<49.90	5.66
49.90-50.05	79.39
>50.05	14.95



पिछले एक साल मे आवृत्ति की स्थिति

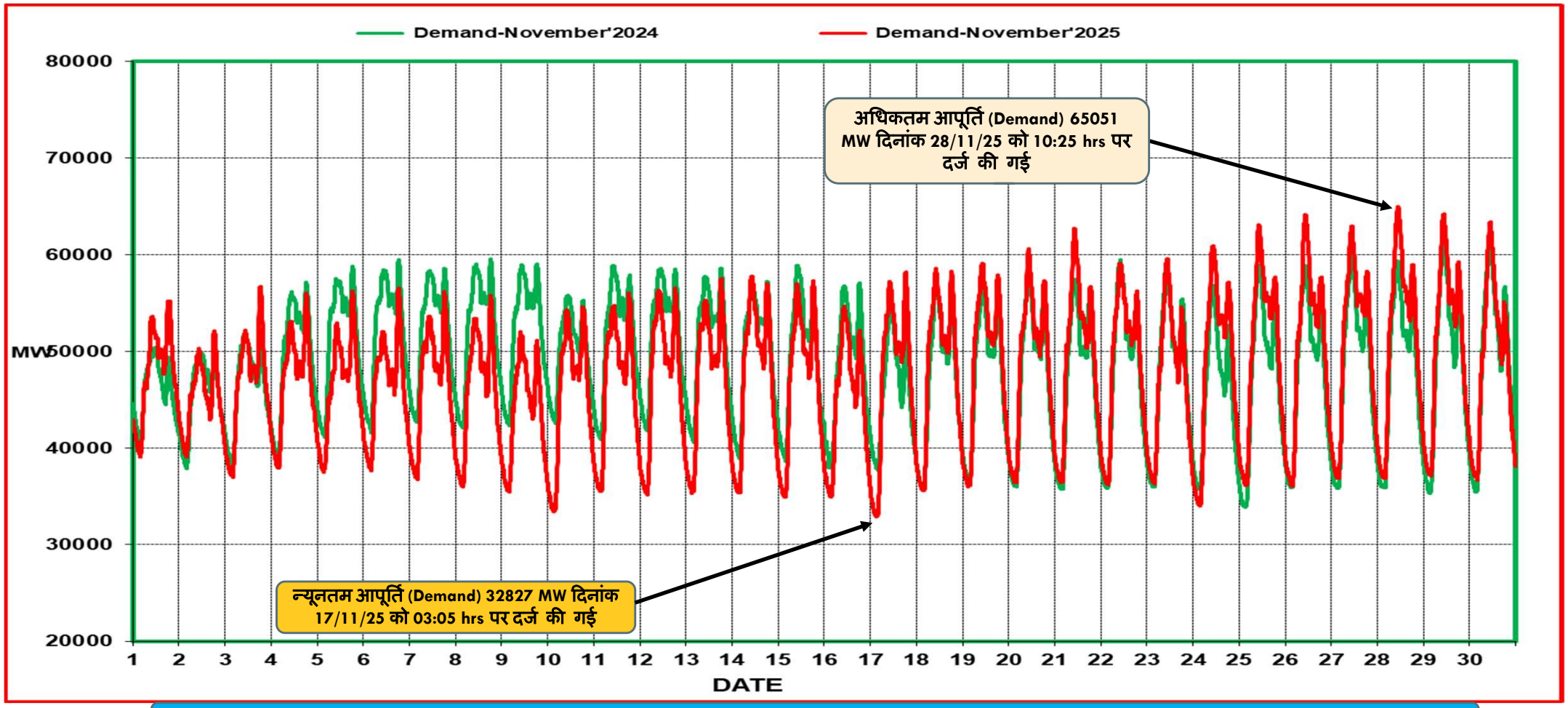
आवृत्ति बैंड	नवम्बर 2024	दिसंबर 2024	जनवरी 2025	फरवरी 2025	मार्च 2025	अप्रैल 2025	मई 2025	जून 2025	जुलाई 2025	अगस्त 2025	सितम्बर 2025	अक्टूबर 2025	नवम्बर 2025
< 49.7 Hz(%)	0.10	0.29	0.18	0.12	0.05	0.27	0.07	0.15	0.32	0.20	0.42	0.16	0.19
<49.8 Hz(%)	0.66	0.97	0.92	0.73	0.61	0.96	0.29	0.86	1.39	0.80	0.93	0.75	0.75
<49.9 Hz(%)	5.15	5.58	5.23	6.24	5.32	5.16	3.60	7.56	6.65	6.63	6.02	6.60	5.66
49.90-50.05 Hz(%)	80.80	76.45	76.05	75.35	77.89	75.64	73.30	71.85	72.89	76.22	78.33	78.59	79.39
50.05-50.10 Hz(%)	10.90	14.59	15.09	14.23	13.12	14.80	15.35	14.11	16.38	13.19	12.76	11.36	11.46
>50.10 Hz(%)	3.15	3.38	3.63	4.18	3.67	4.39	7.76	6.48	4.08	3.96	2.89	3.46	3.49
>50.20 Hz(%)	0.21	0.37	0.33	0.55	0.63	1.09	2.87	1.73	0.64	0.83	0.28	0.62	0.60
औसत आवृत्ति	49.995	49.998	49.998	49.999	50.001	50.004	50.015	50.002	50.003	49.999	49.996	49.993	49.994

नवम्बर -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 Nov'25)	दिनांक / समय	रिकॉर्ड अधिकतम मांग (in MW) (upto Oct'25)	दिनांक / समय	अधिकतम ऊर्जा खपत (MU) (in Nov'25)	दिनांक	रिकॉर्ड अधिकतम ऊर्जा खपत (MU) (Upto Oct'25)	दिनांक
पंजाब	9808	29-11-2025 10:45	16754	28.06.25 at 15:00	165.8	29-11-2025	366.8	21.07.2024
हरियाणा	8626	28-11-2025 09:00	14662	31.07.24 at 14:30	163.4	28-11-2025	293.4	30.07.2024
राजस्थान	17614	30-11-2025 09:00	19165	12.02.25 at 11:00	338.3	29-11-2025	388.01	11.06.2025
दिल्ली	4486	28-11-2025 10:44	8656	19.06.24 at 15:06	82.9	01-11-2025	177.7	18.06.2024
उत्तर प्रदेश	19341	28-11-2025 18:18	31486	11.06.25 at 00:45	345.9	28-11-2025	658.7	17.06.2024
उत्तराखंड	2297	28-11-2025 07:00	2910	11.06.25 at 22:00	42.17	28-11-2025	62.1	14.06.2024
हिमाचल प्रदेश	2239	26-11-2025 07:45	2273	17.01.25 at 09:00	37.8	26-11-2025	42.55	11.06.2025
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	3131	28-11-2025 08:00	3200	07.01.25 at 10:00	65.2	28-11-2025	70.3	04.02.2025
चंडीगढ़	218	28-11-2025 07:00	482	18.06.24 at 15:28	3.8	01-11-2025	9.28	12.06.2025
उत्तरी क्षेत्र #	63755	28-11-2025 10:00	91234	19.06.24 at 14:37	1233.1	28-11-2025	2022.9	12.06.2025

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

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

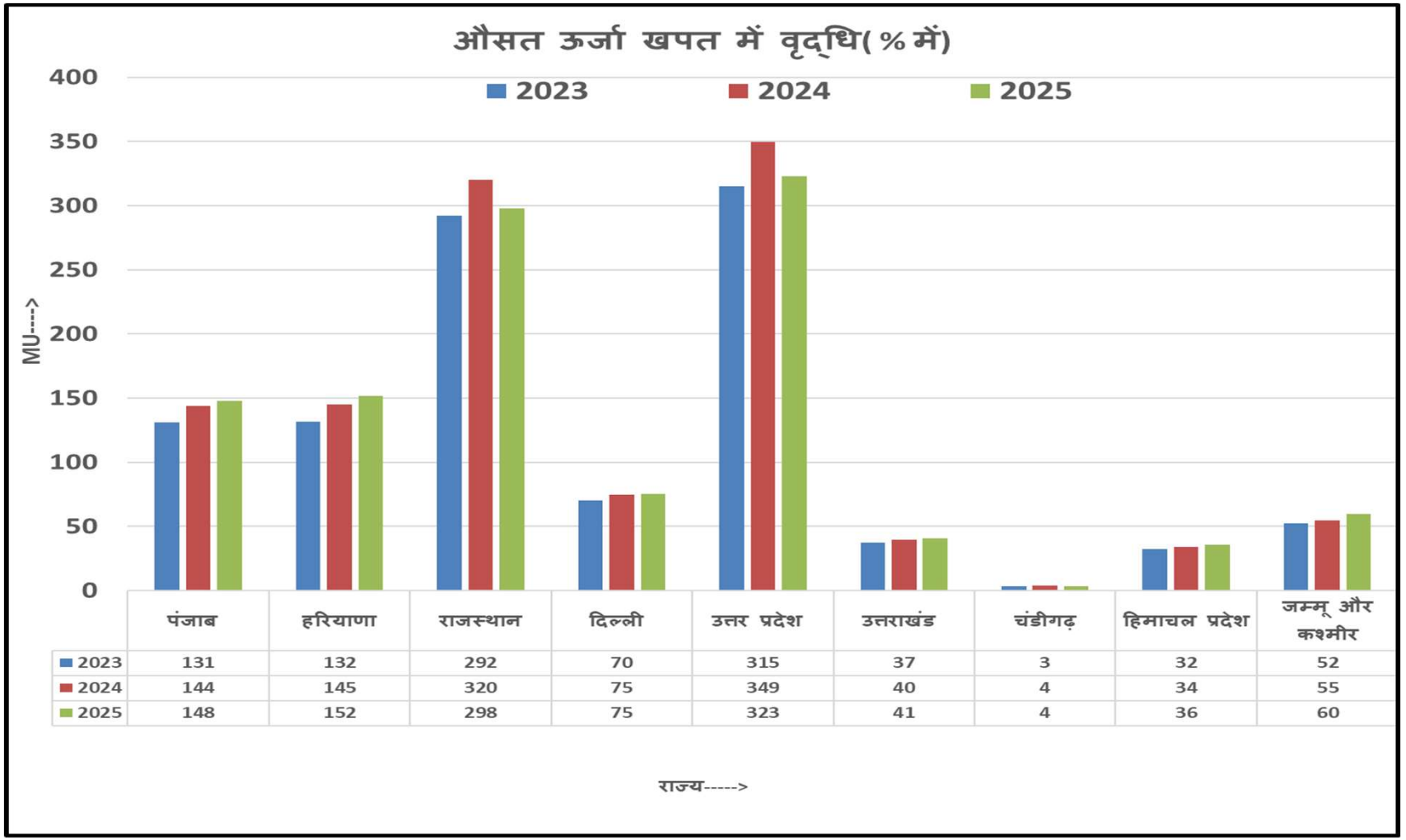


नवम्बर -2024 की तुलना में नवम्बर -2025 की औसत विद्युत आपूर्ति में 1111 MW कमी हुई

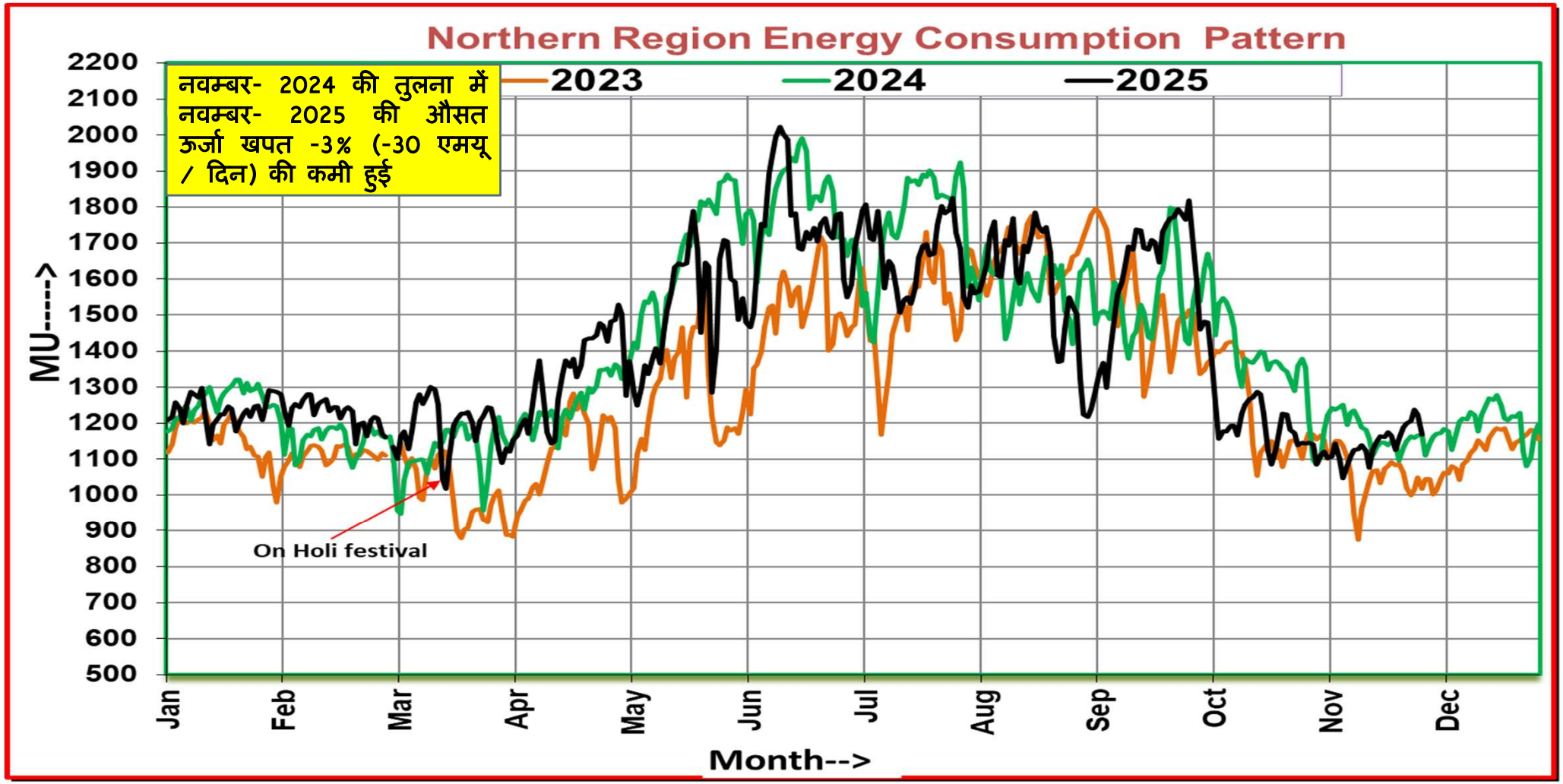
उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) नवम्बर-2025/ नवम्बर-2024 / नवम्बर-2023

राज्य	नवम्बर-2023	नवम्बर-2024	नवम्बर-2025	% वृद्धि (नवम्बर-2024 vs नवम्बर-2023)	% वृद्धि (नवम्बर-2025 vs नवम्बर-2024)
पंजाब	131	144	148	9.8%	2.7%
हरियाणा	132	145	152	9.9%	4.9%
राजस्थान	292	320	298	9.7%	-7.0%
दिल्ली	70	75	75	6.1%	0.9%
उत्तर प्रदेश	315	349	323	11.0%	-7.6%
उत्तराखंड	37	40	41	7.1%	2.4%
चंडीगढ़	3	4	4	7.1%	-2.2%
हिमाचल प्रदेश	32	34	36	5.2%	4.7%
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	52	55	60	4.5%	9.0%
उत्तरी क्षेत्र	1069	1169	1139	9.4%	-2.5%

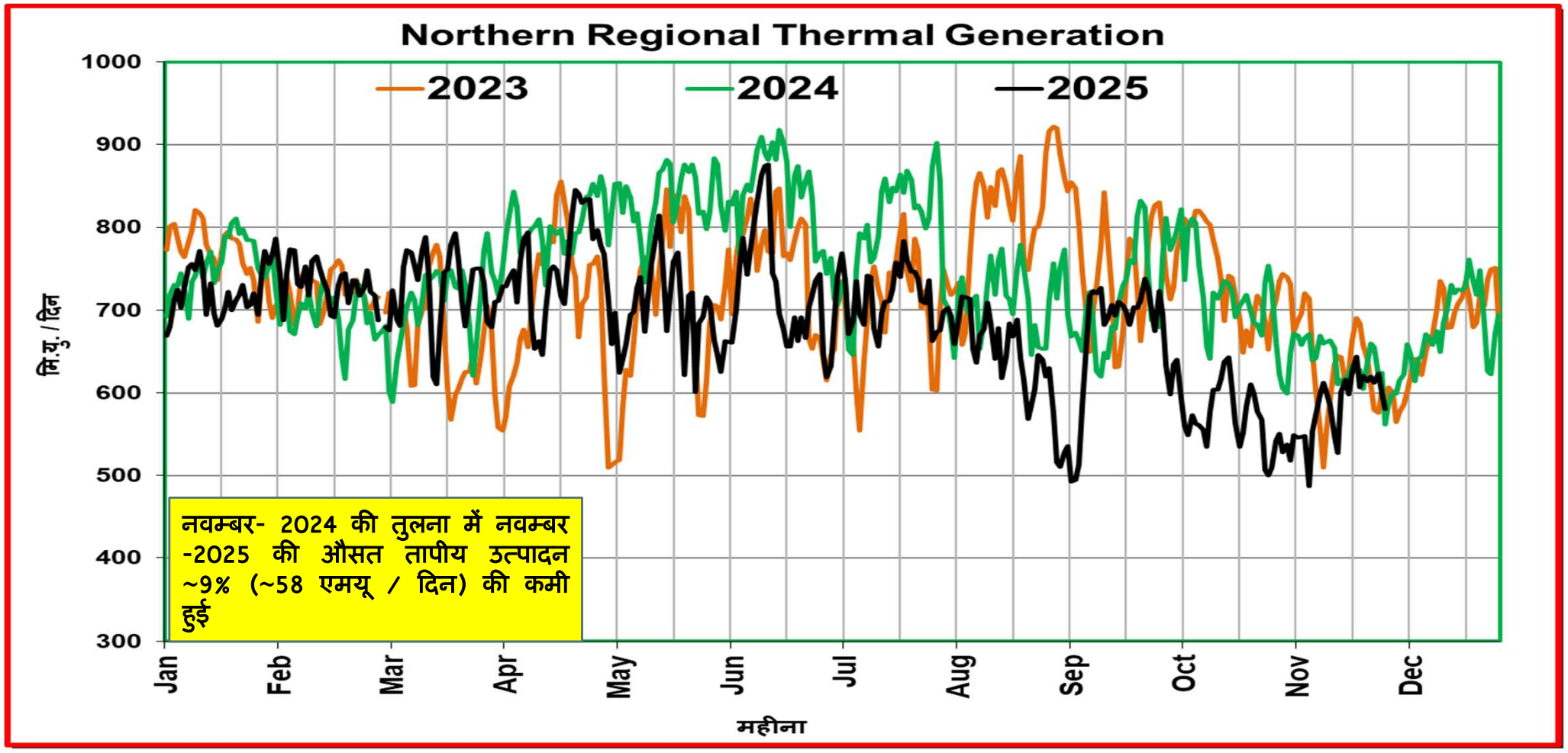
उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) नवम्बर-2025/ नवम्बर-2024 / नवम्बर-2023



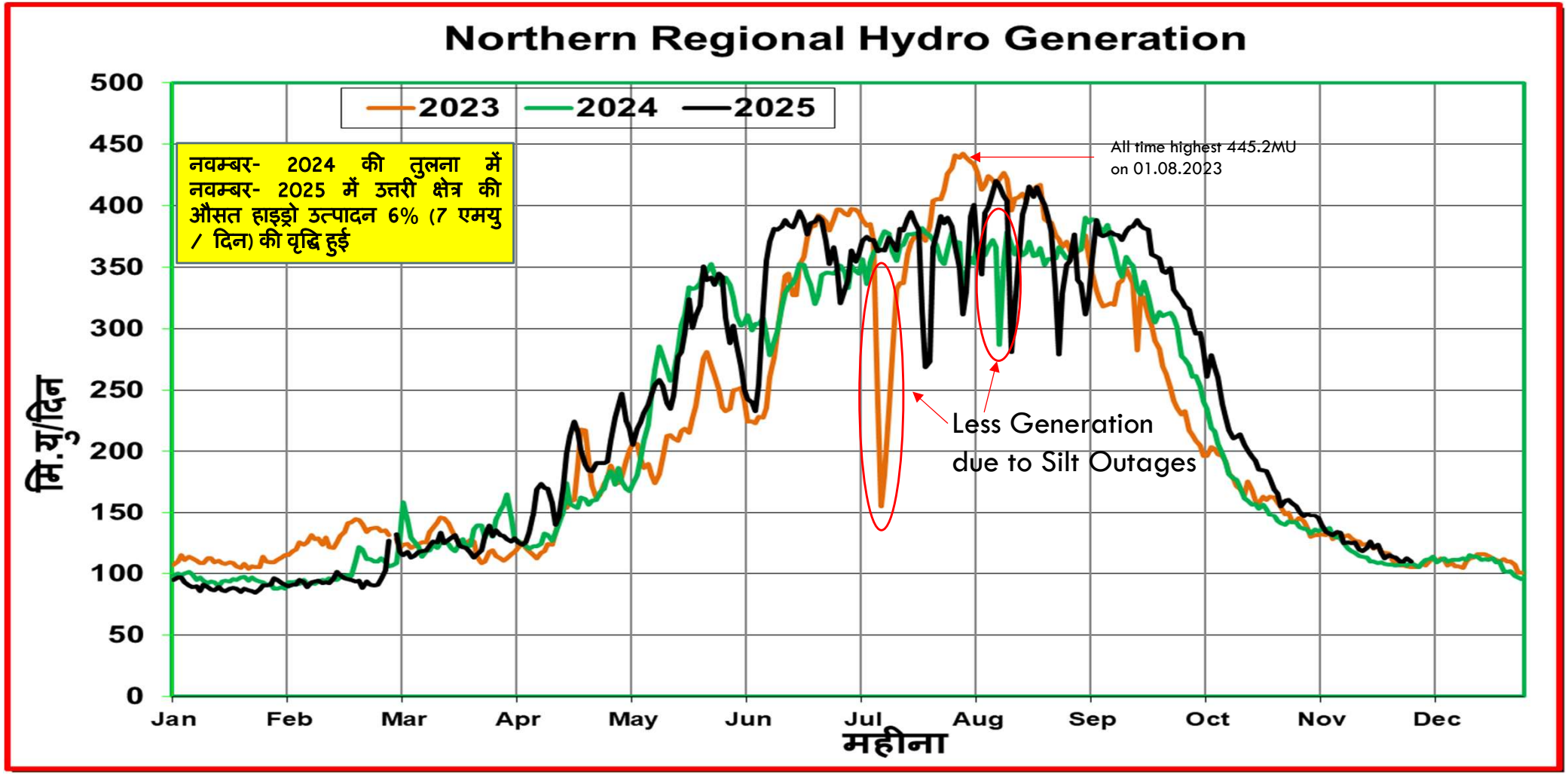
उत्तरी क्षेत्र की ऊर्जा खपत(MUs)



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



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



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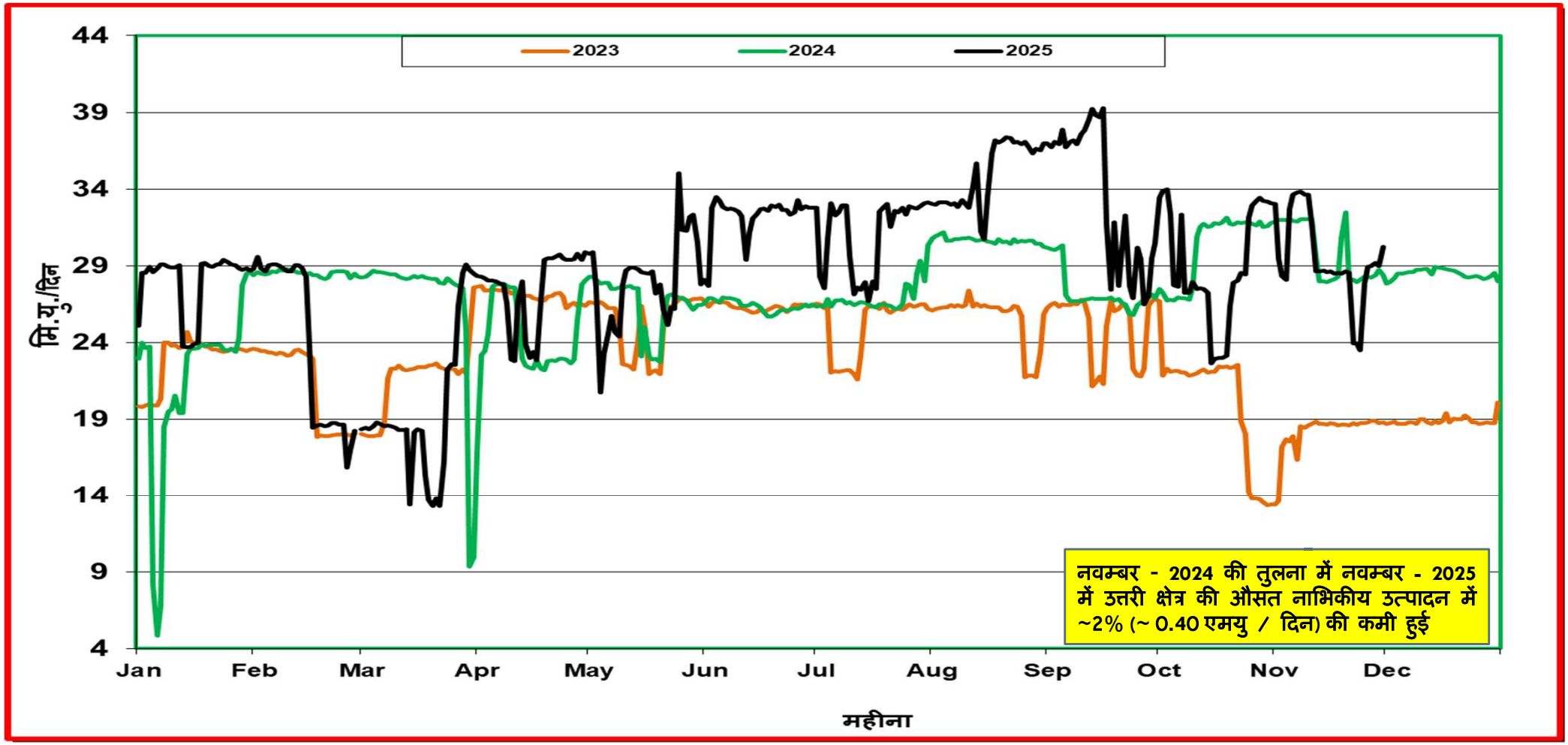
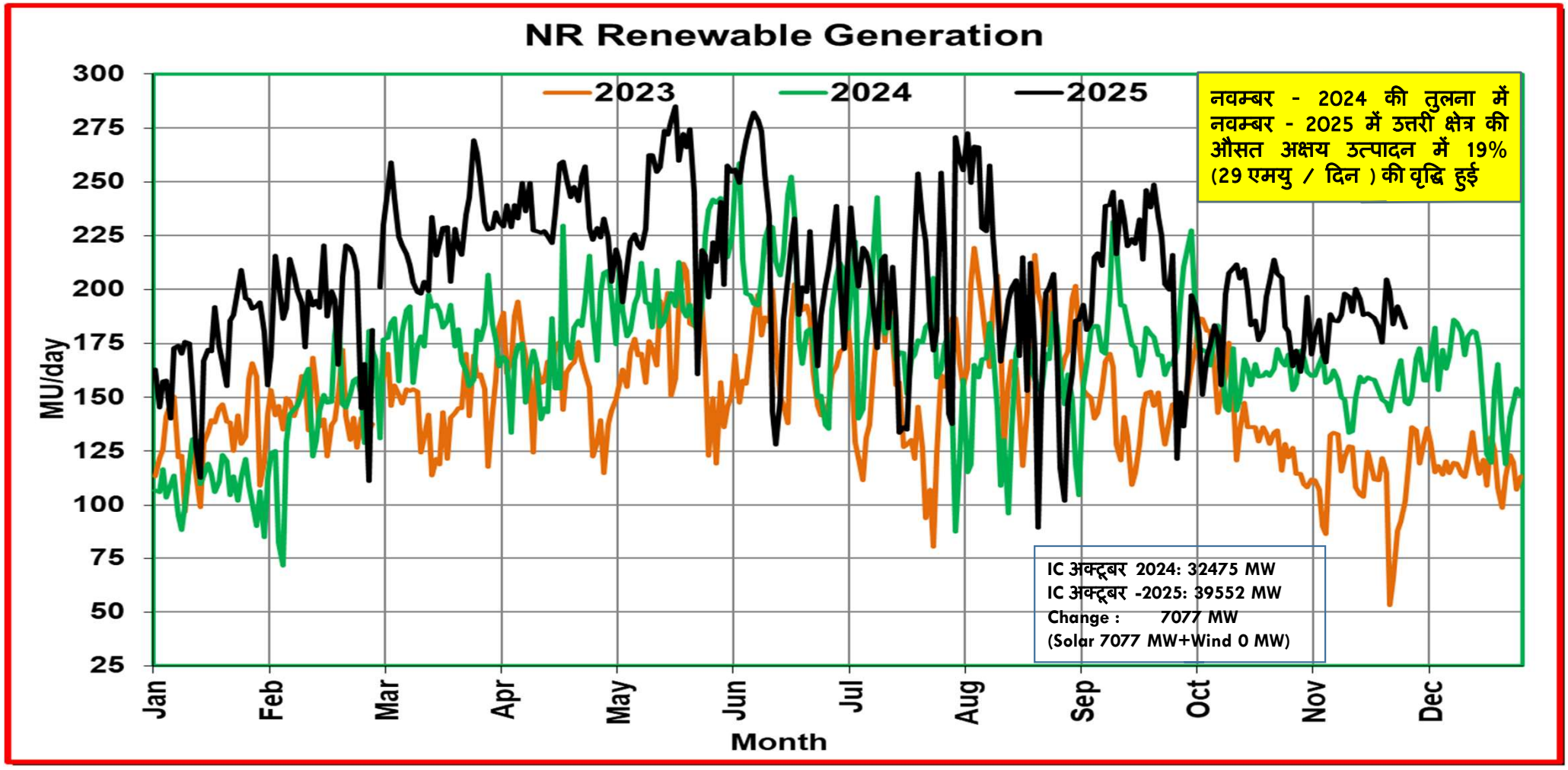
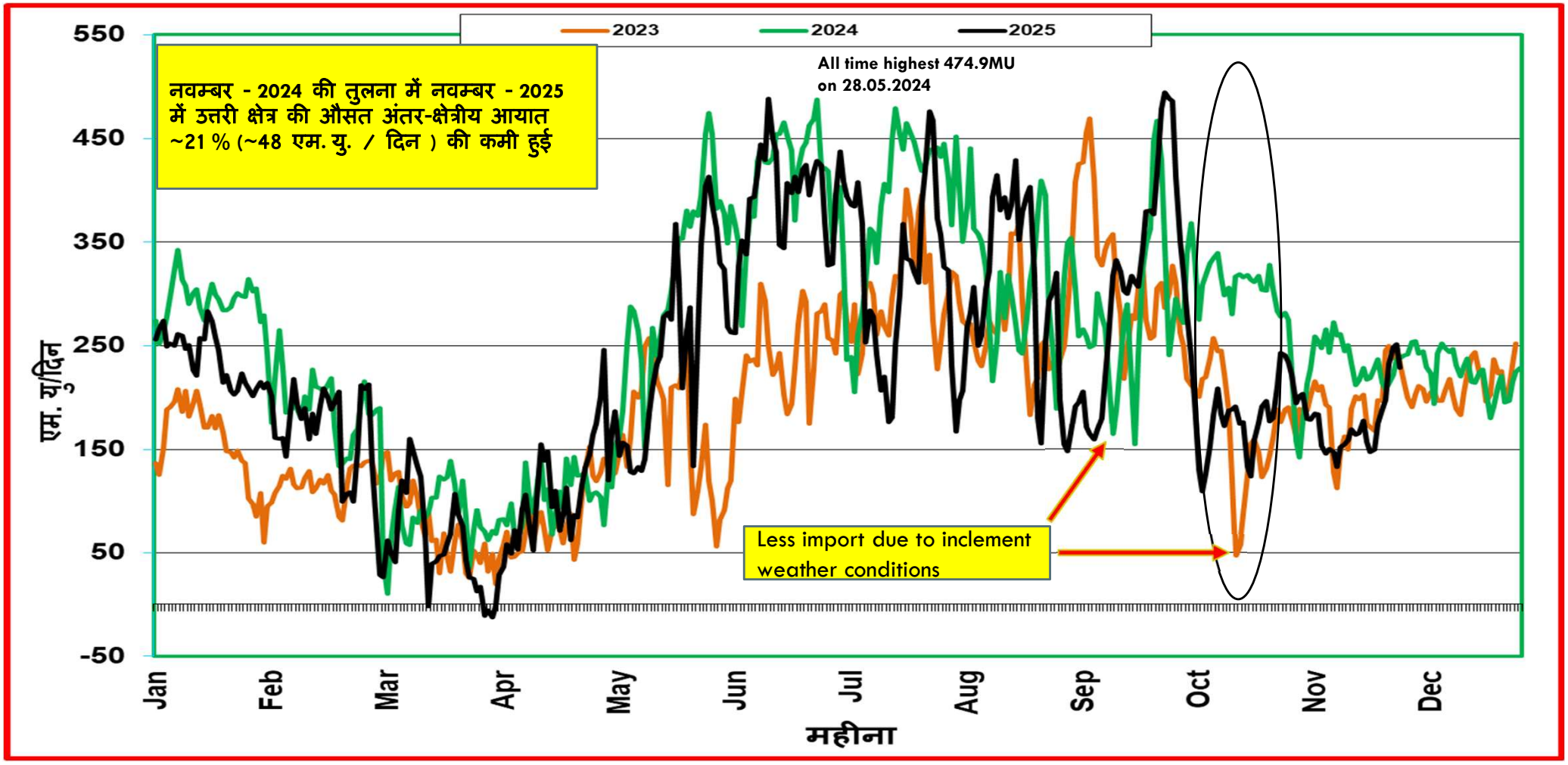


उत्तरी क्षेत्र की अक्षय (Renewable) उत्पादन की स्थिति (MUs/Day)



अंतर-क्षेत्रीय आयात(MUs/Day) की स्थिति



वास्तविक सारांश -
नवम्बर -2024 बनाम नवम्बर -2025

	नवम्बर-2024 (मि.यु. /दिन)	नवम्बर-2025 (मि.यु. /दिन)	नवम्बर माह में वृद्धि (मि.यु./दिन)
तापीय (Thermal) उत्पादन	637	579	-58
जलीय (Hydro) उत्पादन	120	126	7
नाभिकीय (Nuclear) उत्पादन	29.84	29.4	-0.4
अंतर-क्षेत्रीय (Inter-Regional) कुल आयात	228	180	-48
अक्षय (Renewable) उत्पादन	156	185	29

नवीकरणीय ऊर्जा की क्षमता
(VRE PENETRATION)

	अधिकतम दैनिक (MU) क्षमता			
	नवम्बर '2025		नवम्बर '2025 तक का रिकॉर्ड	
	अधिकतम % क्षमता	दिनांक	अधिकतम % क्षमता	दिनांक
पंजाब	4.25	16-11-2025	12.28	01-04-2020
राजस्थान	23.15	04-11-2025	36.47	22-10-2021
उत्तर प्रदेश	5.04	09-11-2025	6.03	05-03-2025
उत्तर क्षेत्रीय	17.83	17-11-2025	23.00	15-03-2025

OUTAGE SUMMARY FOR Nov-2025									
CONSTITUENTS	PLANNED (A)	FORCED OUTAGES (B=C+D)	EMERGENCY SHUTDOWNS (C)	TRIPPING (D)	PLANNED SHUTDOWNS (A/(A+C)) %	EMERGENY SHUTDOWNS (C/(A+C)) %	ESD SHUTDOWNS (C/B) %	TRIPPING (D/B) %	TOTAL OUTAGES (A+B)
POWERGRID	487	175	123	52	80%	20%	70%	30%	662
UPPTCL	281	96	48	48	85%	15%	50%	50%	377
RRVPNL	87	64	26	38	77%	23%	41%	59%	151
HVPNL	59	28	11	17	84%	16%	39%	61%	87
BBMB	55	20	9	11	86%	14%	45%	55%	75
PSTCL	104	20	12	8	90%	10%	60%	40%	124
DTL	22	12	8	4	73%	27%	67%	33%	34
PTCUL	4	12	4	8	50%	50%	33%	67%	16
HPPTCL	11	5	2	3	85%	15%	40%	60%	16
NTPC	4	12	7	5	36%	64%	58%	42%	16
PDD JK	4	2	0	2	100%	0%	0%	100%	6
ATIL	0	6	4	2	0%	100%	67%	33%	6
NRSS36	4	26	26	0	13%	87%	100%	0%	30

OUTAGE SUMMARY OF LAST FOUR MONTHS

MONTH	PLANNED	FORCED OUTAGES	EMERGENCY SHUTDOWNS	TRIPPING	% PLANNED as of total S/D	% EMERGENCY SHUTDOWNS as of total S/D	TOTAL OUTAGES
	(A)	(B=C+D)	(C)	(D)	(A/(A+C))	(C/(A+C))	(A+B)
Aug-25	602	885	404	481	59.84%	40.16%	1487
Sep-25	1000	1189	529	660	65.40%	34.60%	2189
Oct-25	924	794	421	373	68.70%	31.30%	1718
Nov-25	1411	564	334	230	80.86%	19.14%	1975

New Elements First Time Charged During Nov 2025

S. No.	Type of transmission element	Total No
1	Transformer	09
2	AC Lines	12
3	Solar plant	03
4	Bus Reactors	09
4	Harmonic filter	08
Total New Elements charged		41

Transformer

S.NO.	Agency/Owner	Sub-Station	ICT/GT/ST No.	Voltage Rating (kV)	Capacity (MVA)	Date of First Time Energization & Integration
1	TPJKPTL_UP	METRO DEPOT_GIS(TPJKPTL)	**1**	400/220/33kV	500	01-Nov-2025
2	TPJKPTL_UP	METRO DEPOT_GIS(TPJKPTL)	**2**	400/220/33kV	500	01-Nov-2025
3	ARERJ02PL	ARERJ02PL_SL_Ftg3	**1**	220/33kV	150	17-Nov-2025
4	ARERJ02PL	ARERJ02PL_SL_Ftg3	**2**	220/33kV	150	17-Nov-2025
5	ARERJ02PL	ARERJ02PL_SL_Ftg3	**3**	220/33kV	150	17-Nov-2025
6	UPPTCL	Unnao(UP)	**1**	400/220/33kV	500	25-Nov-2025
7	F4TL	Fatehgarh_IV(F4TL)	**1**	400/220/33kV	500	29-Nov-2025
8	F4TL	Fatehgarh_IV(F4TL)	**2**	400/220/33kV	500	29-Nov-2025
9	F4TL	Fatehgarh_IV(F4TL)	**3**	400/220/33kV	500	29-Nov-2025

AC Lines

S.NO.	Agency/Owner	Transmission Line Name	Line Length (km)	Conductor Type	Date of First Time Energization & Integration
1	POWERGRID	220kV Drass(PG)-Alusteng(PG)-1	245.303	800Sq MM XLPE Power Cable (11.767KM) Between Minamarg and Zozila	03-Nov-2025
2	DTL	400kV Bawana(DV)-Mandola(PG)-1	245.303	Quad Bersimis	27-Nov-2025
3	DTL	400kV Bawana(DV)-Mandola(PG)-2	13.306	Quad Bersimis	27-Nov-2025
4	RRVPNL	400kV Babai(RS)-Suratgarh SCTPS(RVUN)-1	245.303	Quad Moose	11-Nov-2025
5	RRVPNL	400kV Babai(RS)-Suratgarh SCTPS(RVUN)-2	245.303	Quad Moose	11-Nov-2025
6	ARERJ02PL	220kV ARERJ02PL_SL_Ftg3-Fatehgarh_III(PG)-1	13.306	HTLS	17-Nov-2025
7	POWERGRID	400kV Maharanibagh(PG)-Narela(PNTL)-2	58.37	Twin HTLS	25-Nov-2025
8	POWERGRID	400kV Maharanibagh(PG)-Narela(PNTL)-1	58.37	Twin HTLS	25-Nov-2025
9	POWERGRID	400kV Maharanibagh(PG)-Narela(PNTL)-3	58.37	Twin HTLS	27-Nov-2025
10	POWERGRID	400kV Maharanibagh(PG)-Narela(PNTL)-4	58.37	Twin HTLS	27-Nov-2025
11	F4TL	400kV Fatehgarh_III(PG)-Fatehgarh_IV(F4TL)-1	21	Twin HTLS	29-Nov-2025
12	F4TL	400kV Fatehgarh_III(PG)-Fatehgarh_IV(F4TL)-2	21	Twin HTLS	29-Nov-2025

Solar plants

S. NO.	Location/ Pooling Station	Owner/Unit Name	Unit No/Source	Capacity added (MW)	Total/Installed Capacity (MW)	Date of First Time Energization & Integration
1	Fatehgarh_III	ABC RENEWABLE ENERGY (RJ02) PRIVATE LIMITED(ARERJ02PL)	Solar	140.25	400	22-Nov-2025
2	Bikaner-II	SJVN Green Energy Ltd	Solar	100.56	1000	28-Nov-2025
3	Fatehgarh_III	ABC RENEWABLE ENERGY (RJ02) PRIVATE LIMITED(ARERJ02PL)	Solar	76.5	400	29-Nov-2025

Bus Reactors

S.NO.	Agency/Owner	Element Name	Voltage Level (kV)	Rating (MVAr)	Date of First Time Energization & Integration
1	TPJKPTL_UP	400kV, 125 MVAR Bus Reactor 1 at METRO DEPOT_GIS(TPJKPTL)	400kV	125	01-Nov-2025
2	KwTL	400kV, 125 MVAR Bus Reactor 1 at Kishtwar(GIS)	400kV	125	18-Nov-2025
3	POWERGRID	220kV, 25(3 * 8.33) Bus Reactor 220KV Bus Reactor-1 at Drass(PG)	220kV	25	18-Nov-2025
4	POWERGRID	220kV, 25(3*8.33) Bus Reactor 220KV Bus Reactor-2 at Drass(PG)	220kV	25	18-Nov-2025
5	RSDCL	220kV, 25 Bus Reactor 1 at RSDCL(PSS2)_SL_BHD2_PG	220kV	25	21-Nov-2025
6	PNTL	330 MVAR Switchable Convertable LINE_REACTOR of 765 KV Khetri-Narela Ckt-1 at Narela(PNTL)	765kV	330 MVAR	15-Nov-2025
7	PNTL	330 MVR Switchable Convertable LINE_REACTOR of 765 KV Khetri-Narela Ckt-2 at Narela(PNTL)	765kV	330 MVR	17-Nov-2025
8	PBSTL	240 MVAR Switchable Convertable LINE_REACTOR of 765kV D/C Bhadla-II Sikar-II Ckt-4 at Bhadla_II. at Bhadla_2 (PG)	765kV	240 MVAR	18-Nov-2025
9	PBSTL	240 MVAR Switchable Convertable LINE_REACTOR of 765kV D/C Bhadla-II Sikar-II Ckt-3 at Bhadla_II. at Bhadla_2 (PG)	765kV	240 MVAR	18-Nov-2025

Harmonic Filters

S.NO.	Agency/Owner	Element Name	Sub Capacitor Bank MVAR Rating	SUB-STATION	Voltage Level (kV)	Date of First Time Energization & Integration
1	Energizent_PPL	33kV, 3 MVAR Capacitor bank no-1 at Energizent_PPL_FTG3	1MVAr per Phase with Quality factor of 3 and Tuned Frequency 345Hz	Energizent_PPL_FTG3	33kV	05-Nov-2025
2	Nokh_SPPNL	33kV, 6MVAR Capacitor bank no-3 (Bay No 319 of PSS 2) at RSDCL(PSS2)_SL_BHD2_PG	4.5 MVAR and 1.5 MVAR Units (4.5 MVAR for arresting 5th Harmonics and 1.5 MVAR for arresting 11th Harmonics)	RSDCL(PSS2)_SL_BHD2_PG	33kV	11-Nov-2025
3	Nokh_SPPNL	33kV, 6MVAR Capacitor bank no-2(Bay No 312 of PSS 2) at RSDCL(PSS2)_SL_BHD2_PG	4.5 MVAR and 1.5 MVAR Units (4.5 MVAR for arresting 5th Harmonics and 1.5 MVAR for arresting 11th Harmonics)	RSDCL(PSS2)_SL_BHD2_PG	33kV	11-Nov-2025
4	Nokh_SPPNL	33kV, 6MVAR Capacitor bank no-1(Bay No 301 of PSS 2) at RSDCL(PSS2)_SL_BHD2_PG	4.5 MVAR and 1.5 MVAR Units (4.5 MVAR for arresting 5th Harmonics and 1.5 MVAR for arresting 11th Harmonics)	RSDCL(PSS2)_SL_BHD2_PG	33kV	11-Nov-2025
5	KHIDRAT_REPL	33kV, 4.060 MVAR Capacitor bank no-1 at KHIDRAT_REPL_SL_BKN2	High Pass Harmonic Filter of 4.06 MVAR with the Q-factor of 4 tuned for frequency 625 Hz	KHIDRAT_REPL_SL_BKN2	33kV	15-Nov-2025
6	ARERJ02PL	33kV, 7 MVAR Capacitor bank no-3 (Feeder no - 57) at ARERJ02PL_SL_Ftg3	7 MVAr, 5th order High pass filter with Quality factor of 2 and Cutoff Frequency 240 Hz	ARERJ02PL_SL_Ftg3	33kV	27-Nov-2025
7	ARERJ02PL	33kV, 7 MVAR Capacitor bank no-2 (Feeder no -23) at ARERJ02PL_SL_Ftg3	7 MVAr, 5th order High pass filter with Quality factor of 2 and Cutoff Frequency 240 Hz	ARERJ02PL_SL_Ftg3	33kV	27-Nov-2025
8	ARERJ02PL	33kV,7 MVAR Capacitor bank no-1 (Feeder no -01) at ARERJ02PL_SL_Ftg3	7 MVAr, 5th order High pass filter with Quality factor of 2 and Cutoff Frequency 240 Hz	ARERJ02PL_SL_Ftg3	33kV	27-Nov-2025