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 **242**वी बैठक का कार्यवृत |

Subject: Minutes of the **242**nd OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की **242**वीं बैठक दिनांक 13.04.2026 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 **242**nd meeting of the Operation Co-ordination Sub-Committee (OCC) of NRPC was held on 13.04.2026. 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।

DHARMENDER KUMAR MEENA
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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 2026-27			
S. No.	**OCC Member**	**Category**	**E-mail**
1	NLDC	National Load Despatch Centre	nomination awaited (mkagarwal@grid-india.in)
2	NRLDC	Northern Regional Load Despatch Centre	ashokkr@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

OCC Members for FY 2026-27			
31	PSPCL	State Generating Company & State owned Distribution Company	ce-ppr@pspcl.in
32	UHBVN	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	nomination awaited (md@uhbvn.org.in)
33	Jaipur Vidyut Vitran Nigam Ltd.		nomination awaited (md@jvvnl.org)
34	Dakshinanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (md@dvvnl.org)
35	UPCL		cgmupcl@yahoo.com
36	HPSEB		cesysophpsebl@gmail.com
37	Adani Power Rajasthan Limited	IPP having more than 1000 MW installed capacity	Raguvendral.Dewra@adani.com
38	Apraava Energy Private Limited		niraj.gupta@apraava.com
39	Aravali Power Company Pvt. Ltd		amit.hooda01@apcpl.co.in
40	JSW Hydro Energy Limited		roshan.zipta@jsw.in
41	Lalitpur Power Generation Company Ltd		avinashkumar.ltp@lpgcl.com
42	MEIL Anpara Energy Limited		arun.tholia@meilanparapower.com
43	MEJA Urja Nigam Ltd.		amitkumarmaithil@ntpc.co.in
44	Nabha Power Limited		Durvesh.Yadav@larsentoubro.com
45	Neyveli Uttar Pradesh Power Limited (NUPPL) Ghatampur		ceo.nuppl@nlcindia.in
46	Prayagraj Power Generation Co. Ltd.		anurag.shukla@tatapower.com
47	Rosa Power Supply Company Ltd		Suvendu.Dey@relianceada.com
48	Talwandi Sabo Power Ltd.		arun.kumar@vedanta.co.in
49	XL Xergi Power Pvt. Ltd.	IPP having less than 1000 MW installed capacity (alphabetical	nomination awaited (vineet.singh@o2power.in)

OCC Members for FY 2026-27			
		rotational basis)	
50	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	sojpdd@gmail.com
51	UT of Ladakh		cepdladakh@gmail.com
52	UT of Chandigarh		seelo-chd@nic.in
53	NVVN	Nodal Agency appointed by the Government of India for coordinating cross-border power transactions	ceonvvn@ntpc.co.in
54	BRPL	Private Distribution Company in region (alphabetical rotational basis)	nomination awaited (abhishek.ranjan@reliancegroupindia.com)
55	NRSS-XXIX Transmission Ltd	Private transmission licensee (nominated by central govt.)	(lokendra.ranawat@indigrid.com)
56	Shree Cement Limited	Electricity Trader (nominated by central govt.)	nomination awaited (shyam.khandelwal@shreecement.com)
57	Adani Green Energy Limited	RE Generating Company having more than 1000 MW installed capacity	sanjay.bhatt@adani.com
58	Avaada Energy Private Limited		kishor.nair@avaada.com
59	Azure Power India Pvt. Limited		sunil.gupta@azurepower.com
60	NTPC Green Energy Limited		ceongel@ntpc.co.in
61	ReNew Power Private Limited		sumant@renew.com
62	SJVN Green Energy		ceo.sgel@sjvn.nic.in

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The 242nd OCC meeting of NRPC was held on 13.04.2026 through VC.

MS, NRPC welcomed all the participants of NR power utilities to the 242nd OCC Meeting. She urged all SLDCs, DISCOMS and STUs to ensure preparedness for the upcoming summer season through reserves, proper voltage, reactive power, preventive maintenance and system management as the upcoming summer from May to September 2026 is expected to be severe in Northern Region.

She highlighted the concern of tripping of Champa Kurukshetra and requested Powergrid to ensure preventive maintenance and abide by the recommendations of the committee.

खण्ड-क:उ.क्षे.वि.स. PART-A:NRPC

A.1. Confirmation of Minutes

A.1.1. Minutes of the 241st OCC meeting were issued on 09.04.2026. The OCC forum may confirm the minutes of the meeting.

A.1.2. Representative of SLDC Rajasthan mentioned that due to the operation of only partial elements of the 765 kV GSS Beawar Scheme, the 400 kV S/C Merta–Heerapura line is operating in an overload condition. Accordingly, to mitigate overloading of the 400 kV Merta–Heerapura line, until LILO of both circuits of the 765 kV D/C Ajmer–Chhittorgarh line at 765 kV GSS Beawar is completed, LV side of the 765/400 kV transformers at Beawar may be kept in an open condition. Further, the 400 kV S/C Merta–Kota (PG) line shall be maintained in closed condition through the 400 kV bus of 765 kV GSS Beawar.

A.1.3. MS, NRPC asked NRLDC to examine the Rajasthan SLDC proposal.

Decision of OCC Forum:

OCC Forum confirmed the minutes of the 241st OCC meeting.

A.2. Status of action taken on decisions of 241st 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 March 2026

Anticipated vis-à-vis Actual Power Supply Position (Provisional) for March 2026

Reasons submitted by States/UTs for significant deviation of actual demand from anticipated figures during March 2026 are as follows:

- **Delhi**

  Delhi witnessed partly cloudy skies and very light rain in the 2nd fortnight of March 2026, resulting in lower peak demand than anticipated. However, overall energy consumption remained higher than expected due to the warmer weather during the 1st fortnight of March 2026.

- **Haryana**

  The reduction in peak demand during March 2026 is primarily attributable to weather conditions. Out of 31 days, 10 days experienced Cloudy, Semi-Cloudy, Rainy, or Windy weather, which contributed to the negative variation in peak demand.

- **Himachal Pradesh**

  Anticipation in Energy Requirement & Peak demand in respect of Himachal Pradesh for March, 2026 was on the lower side due to the festive impact on the first week, along with adverse weather conditions prevailing in the State during the second half of the month, resulting in an overall reduction in energy requirement and peak demand.

- **Rajasthan**

  The Actual Peak Demand and Actual Energy requirement w.r.t. Anticipated Peak Demand and Anticipated Energy requirement for the month of March'2026 decreased by 6.7% and 15.1% respectively due to the temperature not picked-up as expected because of rains due to Western disturbance in the state.

A.3.1. MS, NRPC emphasized the need for all States to improve their forecasting practices, noting that inaccurate forecasting may lead to grid instability.

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

A.4.1. The maintenance programme of generating units and transmission lines for the month of May 2026 was deliberated in the meeting on 09.04.2026.

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

The updated anticipated Power Supply Position for May 2026 is as follows:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	220	510	No Revision submitted
	Requirement	207	487	
	Surplus / Shortfall	13	23	
	% Surplus / Shortfall	6.1%	4.7%	
DELHI	Availability	5775	8526	10-Apr-26
	Requirement	4350	8400	
	Surplus / Shortfall	1425	126	
	% Surplus / Shortfall	32.8%	1.5%	
HARYANA	Availability	7610	16150	No Revision submitted
	Requirement	6616	13606	
	Surplus / Shortfall	994	2544	
	% Surplus / Shortfall	15.0%	18.7%	
HIMACHAL PRADESH	Availability	1343	2307	29-Apr-26
	Requirement	1085	1866	
	Surplus / Shortfall	258	441	
	% Surplus / Shortfall	23.8%	23.6%	
J&K and LADAKH	Availability	2330	4310	No Revision submitted
	Requirement	1708	3024	
	Surplus / Shortfall	622	1286	
	% Surplus / Shortfall	36.4%	42.5%	
PUNJAB	Availability	6980	15720	No Revision submitted
	Requirement	6987	15110	
	Surplus / Shortfall	-7	610	
	% Surplus / Shortfall	-0.1%	4.0%	
RAJASTHAN	Availability	10520	22580	10-Apr-26

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Requirement	9920	17500	
	Surplus / Shortfall	600	5080	
	% Surplus / Shortfall	6.0%	29.0%	
UTTAR PRADESH	Availability	15750	30600	6-Apr-26
	Requirement	15750	30600	
	Surplus / Shortfall	0	0	
	% Surplus / Shortfall	0.0%	0.0%	
UTTARAKHAND	Availability	1581	2770	4-Apr-26
	Requirement	1612	2875	
	Surplus / Shortfall	-31	-105	
	% Surplus / Shortfall	-1.9%	-3.7%	
NORTHERN REGION	Availability	52096	102400	
	Requirement	48425	92700	
	Surplus / Shortfall	3671	9700	
	% Surplus / Shortfall	7.6%	10.5%	

A.5.1. 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.

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. OCC Forum requested all SLDCs to discuss the matter in State OCC meetings or similar forums at the state level and coordinate with the respective DISCOMs for identification of feeders for ADMS implementation. SLDCs were also advised to identify the feeders based on their operational experience, in cases where the list is not provided by the respective DISCOMs and share the same with their DISCOMS for their consent and thereafter submit it to the NRPC Secretariat and NRLDC.

A.6.3. EE(O), NRPC apprised the forum that the matter regarding availability of ERS towers in the NR region was deliberated in the 240th OCC Meeting, wherein all transmission

utilities in NR were requested to furnish updated voltage-level-wise cumulative transmission line length (ckm) and ERS availability, including location and utilization status, as per the prescribed format. However, the updated information has been received only from J&K, Powergrid NR1 and Rajasthan.

A.6.4. MS, NRPC informed the forum that ERS deployment is a critical issue and is being monitored at the Ministry level. She requested all the transmission utilities of NR to submit the status of availability of ERS towers as per prescribed guidelines to NRPC Secretariat within 15 days and further to indicate the alternative arrangements made in case of any shortfall, considering the requirement of ERS during critical shutdowns, disaster situations, or war-like scenarios.

A.6.5. She further suggested that licensees with CKM less than 500 km should tie up with other licensees well in advance to enable effective utilization of ERS during critical situations.

A.7. NR Islanding scheme

A.7.1. Regarding Jodhpur– Barmer–Rajwest Islanding Scheme, RRVPNL representative informed that as per the decision of 77th NRPC Meeting regarding cost optimisation, they have revised the cost estimate, which is currently under approval.

A.7.2. Regarding the Agra Islanding Scheme, UPPTCL representative informed the forum that the proposal has been approved by the PSDF Secretariat for funding in a 70:30 ratio and has also been approved by the UPPTCL Board.

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 6th April 2026).

A.8.2. The coal stock position of generating stations in the Northern Region, having critical stock, during the first six days of April 2026 is NIL.

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

A.9.1 NRPC representative stated that Regulation 40 (1) of CERC (IEGC) Regulations, 2023 stipulate that there shall be periodic tests, as required under clause (3) of this Regulation, carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies, as well as ensuring desired performance during an event in the system.

A.9.2 The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests

shall be carried out even earlier, if advised by SLDC or RLDC or NLDC or RPC, as the case may be.

A.9.3 Further, Regulation 40(1)(b) stipulate that “All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance.”

A.9.4 Extract of IEGC 2023 clause 40,

“40. PERIODIC TESTING

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

(2) General provisions

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

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

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

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

(3) Testing requirements

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

TABLE 9 : TESTS REQUIRED FOR POWER SYSTEM ELEMENTS

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

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

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

A.9.7 In view of this, a Google sheet was prepared and it was requested that the testing plan for the next five financial years be updated in the sheet provided at the earliest, as per the requirement of IEGC 2023 and the decision of the 73rd NRPC meeting.

A.9.8 EE(O), NRPC informed that a letter has been issued in this regard to all the state generators and NR ISTS renewables for submitting their testing schedule for the next five financial years. All SLDCs were requested to take up this with all the generators in their control area to provide information at the earliest.

A.9.9 EE(O), NRPC stated that, as per IEGC 2023, the testing schedule for the next financial year was required to be submitted by 31st October 2025. The testing schedule is still awaited from the intra-state generating stations of Rajasthan and UPRVUNL.

A.9.10 List of generating stations from which a periodic testing schedule is not received is attached as Annexure-A.IV.c of the agenda.

A.9.11 MS, NRPC asked respective SLDCs to coordinate with their respective intra-state generating stations to furnish the pending testing schedules at the earliest.

A.9.12 MS, NRPC asked all the SLDCs and ISTS Generating Stations whose testing schedule is yet to be received to furnish Testing schedule at the earliest in the format attached at Annexure-A.IV.a of the agenda to seo-nrpc@nic.in.

Decision of OCC Forum:

OCC forum asked all the SLDCs and ISTS Generating Stations whose testing schedule is yet to be received to furnish the testing schedule at the earliest in the format attached at Annexure-A.IV.a of the agenda to seo-nrpc@nic.in.

A.10. Monthly Review of LGBR for the next 11 months (Availability & Requirement) (Agenda by NRPC Secretariat)

A.10.1. 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.10.2. EE(O), NRPC informed that in the 237th OCC meeting, the OCC forum requested NR States/UT's to submit the data for the monthly Review of LGBR for the next 11 months in the Google sheet to be shared by NRPC Secretariat.

A.10.3. EE(O), NRPC informed that details have been received from all the states of NR except J&K and Chandigarh.

A.10.4. He further informed that data submitted for rolling LGBR is not being periodically updated by the concerned states, leading to inconsistencies and deviations that have also been observed in the data submitted to NRPC and NRLDC.

A.10.5. MS, NRPC advised to consider the LGBR for FY 2026-27 as the base data and subsequently all SLDCs to update details of bilateral transactions, banking arrangements, and short-term tie-ups as and when finalized, so that the actual quantum of surplus/deficit is accurately reflected in the LGBR.

A.10.6. She further advised all SLDCs to ensure the correctness of the data being submitted, as the same is shared with CEA and may affect future planning decisions.

Decision of OCC Forum:

OCC forum advised to consider the LGBR for FY 2026-27 as the base data and subsequently all SLDCs to update details of bilateral transactions, banking arrangements, and short-term tie-ups as and when finalized, so that the actual quantum of surplus/deficit is accurately reflected in the LGBR.

A.11. Data Collection for Monitoring Pan-India Captive Generating Capacity (Agenda by NRPC Secretariat)

A.11.1. EE(O), NRPC apprised the forum that GM division, CEA, has informed that in the meeting taken by the Secretary (Power) on 17.12.2025, it was decided that the State Chief Electrical Inspectors (CEIs) / State Load Despatch Centres (SLDCs) shall act as the nodal agencies for the collection of Captive Generation & Open Access data for their respective States.

A.11.2. Further, it was decided that the Regional Power Committees (RPCs) shall act as the nodal coordinating agencies for consolidation and compilation of the data at the regional level and shall forward the same to the GM Division, CEA, for All-India level compilation on a monthly basis.

A.11.3. In this regard, all the SLDCs of the NR Region have been requested to kindly submit the requisite details (in the attached format) for each month (starting from December 2025 onwards) by the 7th of the following month in the format attached at Annexure-A.V of the agenda to the NRPC Secretariat at seo-nrpc@nic.in.

A.11.4. EE (O), NRPC apprised the forum that a portal for data collection from the states has already been developed and is currently operational. However, complete data is not being furnished by the states on the portal; therefore, until the portal captures complete monthly data, captive generation data is also being collected in parallel by the NRPC Secretariat through email.

A.11.5. He further informed that, for the month of March 2026, captive generation data has been received from HP, Delhi, Uttarakhand, and Punjab.

A.11.6. He requested all the states to provide the data on a monthly basis by 7th of the succeeding month and in case of non-receipt of data from the respective DISCOMs/CEIs the same shall also be communicated to NRPC Secretariat.

A.11.7. SE(O), NRPC asked all the SLDCs to coordinate with their respective DISCOMs and CEIs and submit the requisite information about Captive Generation & Open Access data for each month by the 7th of the following month as per the CEA-prescribed format.

Decision of OCC Forum:

OCC forum directed SLDCs to coordinate with their respective DISCOMs and CEIs and submit the requisite information about Captive Generation & Open Access data for each month by the 7th of the following month as per the CEA-prescribed format.

A.12. Analysis of Partial Outages of Thermal Power Plants (Agenda by NRPC Secretariat)

A.12.1 EE(O), NRPC apprised the forum that a meeting was held by Member (GO&D), CEA on 28th Jan, 2026 to discuss the partial outages of thermal power plants and its related issues.

A.12.2 In the said meeting, RPCs were directed to review monthly in the OCC meeting the station-wise major incidences of partial outages in the last month and seek remedial measures from the concerned generating stations.

A.12.3 Details of generating stations in NR that had reported incidences of partial outage in March'26 is attached as Annexure-A.VI of the agenda.

A.12.4 MS, NRPC requested the generating stations having partial outages due to technical reasons to make efforts to rectify the addressable issues, so that the units can operate at maximum capacity during the summer season. She further stated that the generating stations currently under RSD should also undertake remedial measures to ensure maximum generation during the peak summer period.

Decision of OCC Forum:

OCC forum directed the generating stations having partial outages due to technical reasons to make efforts to rectify the addressable issues, so that the units can operate at maximum capacity during the summer season. Forum further advised that generating stations currently under RSD should also undertake remedial measures to ensure maximum generation during the peak summer period.

A.13. Requirement of 240MVAr line reactor (Non Switchable) at Phagi end after LILO of 765kV Phagi-Gwalior D/c line at Dausa S/s (Agenda by CTUIL)

A.13.1. Powergrid representative informed that the Line Length of 765kV Gwalior Phagi (RRVPNL) line was 310km with a total 480 MVAr line reactors { 240 MVAr (Non Switchable) at Phagi, RRVPNL + 240 MVAr at Gwalior S/s }. Recently, LILO of 765kV Gwalior Phagi (RRVPNL) ckt-1&2 lines was carried out at the new 765kV Dausa Substation. After implementation of this LILO arrangement, the new Line Length is :

1. 765kV Phagi (RRVPNL) Dausa ckt-1&2 line = 91 KM & same has shunt compensation of total 240 MVAr { 240 MVAr (Non Switchable) at Phagi, RRVPNL }.
2. 765kV Dausa Gwalior ckt-1&2 line = 283 KM & same has shunt compensation of total 480 MVAr { 240 MVAr at Dausa S/s + 240 MVAr at Gwalior S/s}.

A.13.2. With new Line length of 91kM of 765kV Phagi (RRVPNL) Dausa ckt-1&2 line seems to be over-compensated Line due to presence of "Non Switchable" 240 MVAr, 765kV Line Reactor at Phagi, RRVPNL & undesirable problem of Ferro-resonance condition may occur in this short line in case of occurrence of any Line fault / AR condition.

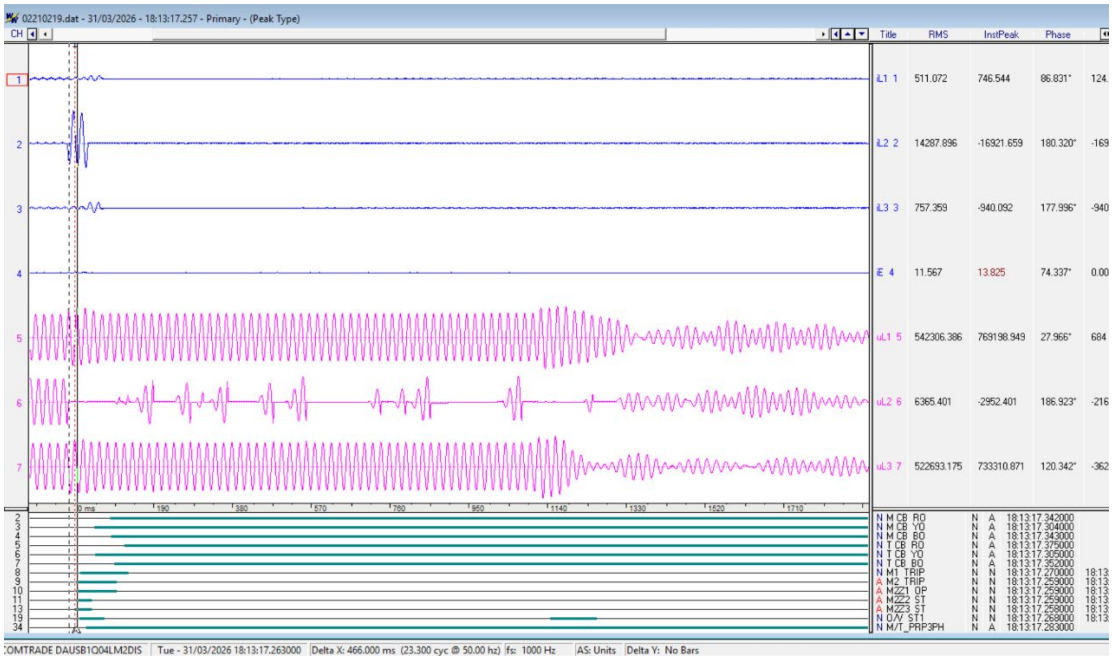
A.13.3. In this regard, Powergrid has also requested CTUIL to review & confirm the following in new Lines (after LILO) for ensuring the healthiness of 765kV Switchyard Elements :

1. Whether the existing 765kV 240 MVAR Line Reactor at 765kV Phagi Substation needs **to be kept "in service" or to be taken "out of service"** (to avoid probable ferro-resonance) in the new 765kV Phagi (RRVPNL) Dausa ckt-1&2 lines ?

2. Whether the 765kV 240 MVAR Line Reactor at 765kV Phagi Substation needs **to be converted "Non-Switchable" to "Switchable"** by installation of a new 765kV circuit breaker at 765kV Phagi Substation?

A.13.4. He informed that, as per the preliminary study, space is available for the installation of a 765kV Circuit Breaker for the above conversion.

A.13.5. He further informed that recently, during the occurrence of a single-phase to ground (Y-E) fault in new 765kV Phagi (RRVPNL) Dausa ckt-2 line at 31/03/2026, 18:13:17 hrs, an undesirable situation of Ferro-resonance condition was seen & same led to the presence of High system voltage (542 kV or 122% of Vph-E) in phase - R, B. Such High system voltage (542 kV or 122% of Vph-E) may prove to be detrimental for life of substation equipments.



A.13.6. Powergrid requested CTU to take up the matter with NLDC for taking 765kV ,240 MVAR Line Reactor in 765kV Dausa ckt-1 & Ckt-2 lines out of service at Phagi end to avoid re-occurrence of undesirable situation of Ferro-resonance condition & high system voltage (122%) during Line Fault / Auto-reclosing condition in new 765kV Phagi (RRVPNL) Dausa ckt-1 line & ckt-2 line.

A.13.7. NRLDC representative stated that, considering line length with LILO implementation, the line reactor can be made switchable if space is available, and it may be kept out till it is made switchable. Further, after making it a switchable line reactor, in case of (Single Pole Auto Reclose) SPAR, the line reactor can be tripped through extending the command. Such a scheme is already implemented in ER, WR.

A.13.8. CTUIL representative stated that, considering the RE injection at the Phagi substation, a reactor will be required for compensation. However, until the reactor is converted into a switchable line reactor or bus reactor, it should be kept out of service.

A.13.9. Rajasthan SLDC representative submitted that currently two 240 MVAR reactors are available at the Phagi substation; however, high voltage levels of up to 800 kV are being observed. Therefore, reactors will be required during night hours and light load conditions to maintain the voltage levels.

A.13.10. MS, NRPC requested RVPNL to confirm the status of space availability for converting the 765 kV, 240 MVAR line reactor at the 765 kV Phagi Substation from “non-switchable” to “switchable.” Further, the feasibility of relocating the line reactor for use as a bus reactor at Phagi Substation may also be explored.

A.13.11. RVPNL representative stated that they will confirm the availability of space.

Decision of OCC Forum:

OCC forum requested RVPNL to confirm the status of space availability for converting the 765 kV, 240 MVAR line reactor at the 765 kV Phagi Substation from “non-switchable” to “switchable.” Further, the feasibility of relocating the line reactor for use as a bus reactor at Phagi Substation may also be explored.

A.14. Compensation for Technical Minimum Load (TML) (Agenda by RVUNL):

A.14.1. EE(O), NRPC apprised the forum that RVUNL has submitted that in compliance to Clause No. 5(3) of the CEA (Flexible Operation of Coal-based Thermal Power Generating Units) Regulations, 2023, the SLDC issued a schedule for generation up to 55 % Technical Minimum Load (TML) to SSCTPS, Suratgarh units from 25 Oct 2024. However, no compensation was granted in the true-up of ARR of FY 2024-25 for loss in Station Heat Rate (SHR), Auxiliary Power Consumption (APC) and Specific Oil Consumption (SOFC) arising due to partial loading of machines on account of SLDC backdown.

A.14.2. The Central Electricity Regulatory Commission (CERC) has allowed compensation for deterioration in SHR, APC and SOFC on account of load dispatch (LD) backdown with effect from 01.04.2024. Accordingly, RVUNL has requested the Rajasthan Electricity Regulatory Commission (RERC) to allow similar compensation for losses due to partial loading on account of SLDC back down in the state of Rajasthan, in line with CERC regulations.

A.14.3. After continuous follow-up with the regulator for granting compensation in SHR, APC and SOFC for losses due to LD backdown, RERC has issued an order dated 06.03.2026 titled **"Compensation for Part Load Operation for the Generating Stations Below the Normative Level of Operation."** This order provides for compensation for losses due to partial loading of machines on account of SLDC backdown in Rajasthan, in line with CERC regulations.

A.14.4. It is pertinent to mention that RVUNL plants (SSCTPP, CSCTPP, and KaTPP) have been operating continuously at 55% load since 25.10.2024, whereas compensation, as per the RERC order, shall be allowed only after 06.03.2026. Relevant extract from RERC Order dated 06.03.2026 (Page No. 12, Point No. 49) is reproduced below:

*"**The Commission clarifies that it is a well-settled principle of law that generally compensation, taxes, or levies should not be given retrospective effect. Accordingly, the date of applicability of such compensation shall be expressly specified in the procedure to be issued by the SLDC after due approval of the Commission**".*

A.14.5. However, CERC has allowed similar compensation for generating stations vide Gazette Notification dated 04.02.2025 with retrospective effect, i.e., from 01.04.2024. In contrast, RERC has not permitted such compensation on a retrospective basis.

A.14.6. In view of the above, RVUNL has requested that any order issued by CEA/NRPC for improving grid stability or performance of generating stations, which is also applicable to State Electricity Boards, may kindly include a provision that implementation by SLDC should be undertaken only after approval/acceptance by the respective State Regulator, i.e., RERC.

A.14.7. NRLDC representative stated that, generally, a draft version of regulations/ standards is issued on the website before final issuance of regulations by CEA/CERC. RVUN may regularly monitor CEA/CERC websites and provide their comments at the draft stage itself for suitable incorporation.

A.14.8. MS, NRPC stated that stipulating such conditions in the Regulations may not be feasible, as it may cause delays in the implementation of Regulations that are framed considering grid stability and security. She further suggested that any contingencies arising while operating at technical minimum levels by the GENCOs may be submitted to CEA in coordination with SLDCs for suitable exemptions.

A.14.9. She further suggested that Rajasthan SLDC submit to RERC instances of CERC compensation orders implemented in a retrospective manner, and that, on similar lines, compensation to Rajasthan GENCOs may also be considered retrospectively.

A.14.10. Rajasthan SLDC representative stated that they will examine the feasibility of allowing compensation in a retrospective manner, along with preparing the compensation procedure for Rajasthan GENCOs, and submit the same to RERC.

Decision of OCC Forum:

OCC forum suggested that Rajasthan SLDC submit to RERC instances of CERC compensation orders implemented in a retrospective manner, and that, on similar lines, compensation to Rajasthan GENCOs may also be considered retrospectively.

A.15. Ramp Rate - Stablization period between two blocks (Agenda by RVUNL)

A.15.1. RVUNL has informed that the provisions of the RERC (Rajasthan Electricity Grid Code) Regulations, 2024, related to ramp rates (similar to the IEGC Regulations, 2023, as specified under Regulation Nos. 24(3)(b)(ii & iv) and 45(9)(a)(i)), are reproduced below:

"Definitions: 'Ramp Rate' means the rate of change of a generating station output expressed in %MW per minute."

"29.3.2 (ii) Ramp-up from fifty-five (55) percent of MCR to MCR at a ramp rate of at least one (1) percent of MCR per minute, in one step or two steps (with stabilization period of 30 minutes between two steps) and sustained operation at MCR for one (1) hour".

"29.3.2 (iv) Ramp-down from MCR to fifty (55) percent of MCR at a ramp rate of at least one (1) percent of MCR per minute, in one or two steps (with stabilization period of 30 minutes between two steps)".

"50.4.2 Coal or lignite fired plants shall declare a ramp up or ramp down rate of not less than 1% of ex-bus capacity corresponding to MCR on bar per minute."

A.15.2. As per the above-referred Regulation Nos. 29.3.2(ii), 29.3.2(iv), and 50.4.2 of the RERC (Rajasthan Electricity Grid Code) Regulations, 2024, a ramp-up/ramp-down rate of 12.5 MW per minute (considering an ex-bus capacity of 1250.7 MW of SSCTPS Units) is applicable during the ramp-up process from fifty-five percent (55%) of MCR to MCR and during the ramp-down process from MCR to fifty-five percent (55%) of MCR, with a stabilization period of 30 minutes between two consecutive steps.

A.15.3. Presently, SLDC is issuing directions for ramp-up/ramp-down in three consecutive blocks. For example, SSCTPS units are operating at 700 MW (under backdown), and ramp-up instructions issued by LD are to increase generation to 887.5 MW after the first block (from 700 MW), 1075 MW after the second block, and 1250.7 MW after the third block (within 45 minutes). This indicates that no stabilization period is being provided between successive steps. Due to this, significant thermal stress is imposed on the units, and the inability to meet the requirements results in substantial penalties.

A.15.4. Sometimes SLDC give schedule of Ramp down and ramp up in consecutive 6 block, like 1250.7 MW to 627 MW in 45 min and then 627 MW to 1250.7 MW in 45 Min. On dated 03.04.2026, SLDC give schedule as mentioned below-

S No.	Block No.	Block time	Ex-bus energy (MW)
1	88	21:45 to 22:00	1250.7
2	89	22:00 to 22:15	1064
3	90	22:15 to 22:30	877
4	91	22:30 to 22:45	690
5	92	22:45 to 23:00	627
6	93	23:00 to 23:15	814.6
7	94	23:15 to 23:30	1002.2
8	95	23:30 to 23:45	1189.8
9	96	23:45 to 24:00	1250.7

A.15.5. To implement flexible operation in line with CEA gazette notification, RVUN float tender to achieve 40% TML and desired ramp rates in consecutive blocks, but M/s BHEL submits a deviation that “these trials will be conducted with a maximum load change of 3% per minute for 5 minutes in a single ramp test due to manual addition and removal of mills. Sufficient stabilization time will be provided between each ramp trials. No addition and withdrawal of mills should be attempted during ramps.” From the BHEL offer it is also clear that stabilization period is required after each one block / Ramp up/down, even after modifications

A.15.6. RVUNL has requested that the necessary directions be issued to SLDC, Rajasthan, to implement a 30-minute hold between two consecutive steps as a stabilization period during scheduling of ramp-up/ramp-down at the STOMS (Eltrix) portal for RRVUNL units.

A.15.7. RVUNL has further requested that necessary directions may also kindly be issued to SLDC, Rajasthan, to consider the mean value of energy for scheduling of the block for ramp rate as per the definition of ramp rate mentioned in CERC/RERC regulations.

A.15.8. Rajasthan SLDC representative stated that ramp-up and ramp-down schedules are being issued for grid balancing in case of RE variation, and that the stabilisation requirement mentioned in the regulations is intended for testing purposes, not for scheduling.

A.15.9. MS, NRPC stated that, as per CEA Regulations, flexible ramp-up and ramp-down rates have been specified based on generation levels. She enquired from NRLDC regarding the methodology adopted for issuing ramping schedules to ISGS generators.

A.15.10. NRLDC representative stated that, as per IEGC, in scheduling of Central Generating Stations, ramp rates submitted by ISGS plants on D-1 basis are being taken into consideration. No ISGS thermal generating unit has highlighted any issue in meeting 1% ramp rate.

A.15.11. RVUNL stated that Rajasthan SLDC is not considering the machine capability declared by the OEM while issuing ramp-up and ramp-down schedules to the generators.

A.15.12. MS, NRPC requested RVUNL to share OEM recommendations with Rajasthan SLDC, indicating the technical limits beyond which constraints may arise, so that SLDC can consider the same while issuing schedules.

A.15.13. EE(C), NRPC suggested that, since the matter pertains to intra-state generators, it may be taken up in the State OCC Meeting, and Rajasthan SLDC and RVUNL may mutually resolve the issue.

A.15.14. MS, NRPC also advised RVUNL to take up the matter in the State OCC Meeting and, if required, seek further technical guidance from CEA.

A.15.15. RVUNL further stated that, as per the definition of ramp rate given in CERC/RERC grid regulations, **'Ramp Rate' means the rate of change of a generating station output expressed in %MW per minute**. Accordingly, in the case of SSCTPS Suratgarh units (2 × 660 MW), if the station is delivering 1000 MW ex-bus power to the grid in the current time block, then at a 1% ramp rate, the ex-bus energy is presently being calculated based on the scheduled generation at the end of the block—i.e., 1187.5 MW in case of ramp-up. However, this is not practically achievable, as the average load during the block would be approximately 1093.75 MW. However, SLDC gives the Scheduled Generation (SG) 1187.5 MW instead of 1093.75 MW for that particular block. A similar issue arises in the case of ramp-down conditions.

A.15.16. Accordingly, RVUNL requested that scheduled generation (energy) for such time blocks be computed based on the actual/average MW during the block rather than the end-of-block generation value.

A.15.17. EE(C), NRPC stated that a similar issue has been raised earlier by intra-state generators in UP, and suggested that the matter—whether to consider actual/average MW or end-of-block generation—may be deliberated in the Commercial Sub-Committee meeting.

A.15.18. MS, NRPC suggested that RVUNL take up the issue of stabilisation time in the State OCC Meeting for mutual resolution with Rajasthan SLDC. She further stated that the issue of considering actual/average MW versus end-of-block generation may be discussed in the Commercial Committee of NRPC to arrive at a consensus with stakeholders.

Decision of OCC Forum:

OCC forum suggested that RVUNL take up the issue of stabilisation time in the State OCC Meeting for mutual resolution with Rajasthan SLDC. OCC forum further stated that the issue of considering actual/average MW versus end-of-block generation may be discussed in the Commercial Committee of NRPC to arrive at a consensus with stakeholders.

A.16. 40% TML of unit#8 of SSCTPP (Agenda by RVUNL)

A.16.1 RVUNL has submitted that the 660 MW Unit-8 of Suratgarh Supercritical Power Plant, operated by Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL), has been identified for participation in the pilot project for operating thermal units at 40% of rated load in line with national flexibility enhancement initiatives.

A.16.2 In pursuance of the directives, RVUNL has undertaken detailed technical assessments to enable stable operation of the unit at such low loads. During these assessments, several technical constraints and operational challenges have been identified, particularly concerning boiler stability, combustion system limitations, milling system constraints, emissions compliance, and control system tuning at reduced loads. Operating the unit at 40% load in the current configuration poses risks to equipment health, safety, and reliability.

A.16.3 To address these issues, RVUNL has consulted the Original Equipment Manufacturer (OEM). The OEM has submitted a detailed proposal outlining the necessary engineering modifications, retrofits, and control system upgrades required for safe and sustainable operation of the unit at 40% load. As per the proposal, the tender has been floated, and a deviation has been received from the OEM, M/s BHEL. The same has been examined and is currently at the stage of finalization. The only pending issue pertains to the booking of expenditure. As per CEA guidelines, the expenditure may be allowed as part of the capital cost; however, as per the recent decision of CERC, any expenditure incurred prior to approval shall not be admissible. Accordingly, the matter has already been taken up with RERC, and upon approval, the work order will be issued.

A.16.4 At present, both units are operating continuously at around 51–52% load, as against the targeted 40% for Unit-8 and 55% for Unit-7. Supercritical units are designed to operate continuously at the Benson point plus 5% of TMCR load (for BHEL units, the Benson point is around 40%; therefore, the minimum feasible operating load is approximately 45%). Without modifications, the units are presently operating at around 51–52% of rated capacity.

A.16.5 The bid has been received, and RVUNL is in the process of finalizing a time-bound implementation plan in coordination with the OEM. The modification works involve major system interventions and will require planned shutdowns, procurement cycles, installation, testing, and performance validation. The tentative timeframe for completion of the modification package is 12 months from the date of commencement.

A.16.6 Considering the above, and to prevent any operational risks or equipment damage, it is not feasible to operate the unit at 40% load until completion of the OEM-recommended modifications. In view of this, it is requested that an extension of 12 months from the date of approval may kindly be granted, and Order No. 1194 dated 13.10.2025 may please be withdrawn for SSCTPS, Suratgarh Unit-8. This will help avoid the imposition of daily penalties for generation exceeding scheduled limits. Typically, the scheduled generation is around 627 MW, whereas the units are achieving approximately 645–650 MW.

A.16.7 RVUNL assures that, upon completion of the modification works, the unit will fully participate in the pilot project and extend all necessary cooperation to CEA in achieving the national objective of enhancing the operational flexibility of thermal power units.

A.16.8 RVUNL has therefore requested kind consideration and approval of the above and is allowed at least 12 months.

A.16.9 NRLDC representative stated that MTL support is to be provided in accordance with the Central Electricity Authority (Flexible Operation of Coal-Based Thermal Power Generating Units) Regulations, 2023. Accordingly, any exemption sought in this regard may be requested from the CEA.

A.16.10 He further stated that, under the present grid conditions, there is significant under drawl by Rajasthan, as highlighted in the NRLDC agenda point, and flexible support from intra-state thermal plants up to maximum levels is desirable, which would also help in minimizing DSM charges of Rajasthan State.

A.16.11 MS, NRPC stated advised RVUNL to approach CEA for extension of the timeline.

Decision of OCC Forum:

OCC forum advised RVUNL to approach CEA for extension of the timeline.

A.17. Support for supply of 500 MVA ICT at Jind Sub Station against the CTUIL Intimation for grant of 99 MW GNARE as a Bulk Customer to connect to ISTS directly at 400/220 kV Jind (PG) S/s in Haryana (Agenda by PGHPL)

A.17.1. M/s PGHPL submitted that CTUIL has issued the intimation for grant of 99 MW GNARE to M/s Panipat Green Hydrogen Private Limited (PGHPL) as a Bulk Customer seeking to connect to ISTS directly at 400/220 kV Jind (PG) S/s in Haryana vide its Intimation Order dated 27.03.2026.

A.17.2. As per Regulation 12.5 of CERC GNA Regulations, 2022; the augmentation of 1X500 MVA, 400/220 kV ICT at Jind (PG) S/s is under the scope of PGHPL. Our target Commissioning schedule of the Green Hydrogen Plant is by March 2027, for which the construction and commissioning of the transmission line from Jind (PG) Substation is planned as below:

Sr. No.	Activity	Target Completion Date
1	Check Survey	April, 2026
2	Tower Foundation – Initial 50%	April - May, 2026
3	Tower Foundation – Final 50%	October - November, 2026
4	Tower Erection	December, 2026
5	Conductor Stringing	February, 2027
6	Commissioning and Final Charging	February, 2027
7	Generation of Green Hydrogen	March, 2027

A.17.3. In pursuance of the directives, RVUNL has undertaken detailed technical assessments to enable stable operation of the unit at such low loads. During these assessments, several technical constraints and operational challenges have been identified, particularly concerning boiler stability, combustion system limitations, milling system constraints, emissions compliance, and control system tuning at reduced loads. Operating the unit at 40% load in the current configuration poses risks to equipment health, safety, and reliability.

A.17.4. In order to meet the project timelines, we request your kind support in facilitating the allocation of 1 × 500 MVA ICT from the existing Order pool, with delivery aligned by December 2026, to enable timely execution of the required augmentation works.

A.17.5. The Project is of strategic national importance, being **India's first mega-scale Green Hydrogen project** under the National Green Hydrogen Mission and is expected to contribute significantly towards the national objectives under the **Panchamrit commitments** of the Hon'ble Prime Minister. **Timely commissioning of the Project is therefore critical.**

A.17.6. PGHPL requested OCC forum to facilitate allocation of the ICT for augmentation at the Jind (Powergrid) substation by PGHPL.

A.17.7. NRLDC representative stated that PGHPL may take up with Transmission utilities for providing ICT on loan basis through bilateral discussions.

A.17.8. MS, NRPC enquired from CTUIL whether there is a requirement of a 500 MVA ICT at Jind Substation for a connectivity of 99 MW and whether the ICT would be fully utilised in such a scenario.

A.17.9. CTUIL representative stated that, based on system studies deliberated in the CMETS meeting, upon connection of the 99 MW bulk consumer at Jind Substation, the existing three ICTs would become N-1 non-compliant. Accordingly, as per CERC regulations, the bulk consumer is required to bear the responsibility for augmentation of a new ICT at the substation.

A.17.10. MS, NRPC requested all the states and Powergrid to confirm the availability of any spare ICT that could be utilised by PGHPL, considering the criticality of the project.

A.17.11. PGCIL representative stated that no spare ICT is currently available with them.

A.17.12. MS, NRPC enquired whether ICT provided to RRVPNL by PGCIL has been returned.

A.17.13. RVPNL representative stated that one PGCIL ICT has been provided to RVUNL, and is presently connected at Jodhpur S/s. ICT procured by RRVPNL is expected to be commissioned by July 2026, after which the PGCIL's ICT will be returned.

A.17.14. PGCIL representative stated that the ICT provided to RVPNL is their asset, and any decision regarding its provision to PGHPL will be taken by their Corporate Office.

A.17.15. In view of the national significance of the project—India's first mega-scale Green Hydrogen initiative under the National Green Hydrogen Mission—and the approximately 36-month lead time required for procuring new ICT, MS NRPC recommended that Powergrid consider providing ICT, to be returned by RVPNL to PGHPL, on a loan basis. The ICT may be extended on terms similar to those outlined in the NRPC-approved guidelines for the diversion of RPC-approved cold spares (transformers and reactors) to regional constituents.

A.17.16. Further, MS, NRPC advised PGHPL to approach the Powergrid Corporate Office regarding provision of the ICT once returned by RVPNL, in line with the deliberations of the OCC meeting.

Decision of OCC Forum:

i. OCC forum recommended that Powergrid to consider providing ICT, to be returned by RVPNL to PGHPL, on a loan basis.

ii. Further, forum advised PGHPL to approach the Powergrid Corporate Office regarding provision of the ICT once returned by RVPNL, in line with the deliberations of the OCC meeting.

A.18. Retrospective revision of Deemed GNA of Tanakpur HEP from 94 MW to 94.2 MW (Agenda by NHPC)

A.18.1. NHPC has informed that as per Clause 18.1(g) of the GNA Regulations, 2022, deemed GNA equivalent to the installed capacity was to be granted to Central Generating Stations (CGS). In line with the above, CTUIL had published the list of CGS entities along with the proposed deemed GNA on its website in October 2022 and April 2023 (after notification of the 1st amendment). The installed capacity of Tanakpur HEP was considered as 94 MW, as per NRPC CGS allocation orders. Accordingly, deemed GNA of 94 MW was proposed by CTUIL and communicated to NHPC vide letter dated 31.10.2022. The matter was further deliberated in the 22nd CMETS (NR) meeting held on 21.08.2023. Subsequently, based on stakeholder consultations, the list of deemed GNA grantees was finalised, and CTUIL vide letter dated 25.09.2023 granted deemed GNA of 94 MW to Tanakpur HEP.

A.18.2. As per Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) (First Amendment) Regulations, 2023 publication date 07.02.2023 (effective date 01.10.23) Amendment to Regulation 12 of the Principal Regulations:

For a generating station including ESS and captive generating plant, transmission deviation shall be net metered ex-bus injection, in a time block in excess of GNA of such entity.

A.18.3. Since the above amendment became effective from 01.10.2023 (lean hydro season), the initial variation in regional transmission charges was marginal and was considered negligible. However, over time, it was observed that the variation was attributable to the consideration of GNA as 94 MW instead of the actual installed capacity of 94.2 MW.

A.18.4. Thereafter, NHPC vide email dated 11.09.2025 requested CTUIL for revision of deemed GNA from 94 MW to 94.2 MW, citing the installed capacity as per CEA letter dated 20.09.1996. Further, the matter was deliberated in the 41st CMETS (NR) meeting held on 10.10.2025, wherein it was decided to revise the deemed GNA to 94.2 MW. Accordingly, CTUIL revised the deemed GNA to 94.2 MW vide letter dated 12.11.2025, with effectiveness from the date of issuance of the letter i.e. 12.11.2025.

A.18.5. NHPC further pursued the matter for revision of the effective date of GNA corresponding to the installed capacity; however, CTUIL advised that the issue may be taken up with NRPC for consideration.

A.18.6. The installed capacity of a generating station is a fundamental technical and regulatory parameter that forms the basis for grant of connectivity, allocation of General Network Access (GNA), scheduling, energy accounting, and transmission planning and commercial settlement. Even a marginal deviation in the recorded capacity can lead to inconsistencies in operational planning, commercial settlements, and regulatory compliance. In the present case, the actual installed capacity of Tanakpur HEP is 94.2 MW, as authenticated by CEA and consistently reflected in all NRPC records.

A.18.7. Further, since the regulatory framework for transmission deviation became effective from 01.10.2023, alignment of GNA with the correct installed capacity from this date is technically justified and regulatorily consistent. The delay in correction has led to avoidable financial and accounting discrepancies, which may also attract audit observations.

A.18.8. In view of the above, NHPC has proposed that:

1. The installed capacity of Tanakpur Power Station may be considered as 94.2 MW for all GNA-related purposes.
2. The deemed GNA may be treated as 94.2 MW w.e.f. 01.10.2023 (i.e., from the effective date of the relevant CERC amendment), instead of 12.11.2025, to ensure consistency and avoid audit observations.

A.18.9. EE(C), NRPC stated that GNA quantum for generators is determined based on their connectivity and is not dependent on the share allocation by NRPC, which only provides the beneficiary share percentage from respective generators.

A.18.10. CTUIL representative informed that the GNA quantum of 94 MW has been effective from 01.10.2023 along with the first amendment to the Sharing Regulations. Prior to

allocation of GNA quantum, CTUIL had requested generators to confirm their installed capacity, based on which GNA was to be assigned. However, despite multiple communications, no information was received from NHPC. Subsequently, in September 2025, a request from NHPC for revision of GNA quantum from 94 MW to 94.2 MW was received.

A.18.11. He further stated that, based on NHPC's request, the GNA quantum was revised to 94.2 MW on a prospective basis, and revision of GNA in a retrospective manner does not fall under CTUIL's purview.

A.18.12. NHPC representative requested the forum to consider revision of GNA quantum to 94.2 MW on a retrospective basis, citing potential audit objections.

A.18.13. EE(C), NRPC stated that NHPC should have approached CTUIL earlier for revision of GNA quantum. He further noted that retrospective revision would entail revision of RTDA accounts from October 2023 onwards, which is not feasible. Accordingly, the revision of GNA quantum to 94.2 MW should be applicable only on a prospective basis.

A.18.14. MS, NRPC stated that the revised GNA quantum shall be applicable only on a prospective basis.

Decision of OCC Forum:

OCC forum noted that the revised GNA quantum shall be applicable only on a prospective basis.

A.19. Replacement of 420kV 80MVAR Line reactor of 400kV Ballabgarh-Kanpur-1 line at Ballabgarh end under Add-Cap 2024-2029 (Agenda by PGCIL)

A.19.1. PGCIL has informed that 400/220kV Ballabhgarh (PG) is connected to 400/220kV Kanpur (PG) through 01 No. 400kV S/C Kanpur (PG)-Ballabgarh (PG) CKT-1 (Line Length- 386.307Km) and 01 No. 400kV D/C Kanpur Ballabgarh CKT-2 & 3 (Line Length- 372.536Km each). Due to the longer lines, all 3 Circuit have been provided with non-switchable 80MVAr Line Reactors at both ends.

A.19.2. 400kV, 80MVAR, MELCO (Japan) Make Line Reactor installed in 400kV S/C Ballabgarh-Kanpur-1 line at Ballabgarh end is commissioned since 03.10.1988 (Year of Manufacture– 1987) in the above line. After serving a life of more than 35 years, rise in fault gases is being observed in DGA samples from 2021 onwards. The DGA of the above is being done on three monthly basis & gases are showing increasing trend. Ethane (C2H6) is very high as compared to the permissible limit of 65ppm (Result of last few DGA samples enclosed).

A.19.3. Further the 400 kV Bushings (OIP type) used in above reactor is non standard and similar spares is not available due to obsolescence. It is also pertinent to mention that approval for replacement of 400kV S/C Ballabgarh-Kanpur-1 line at Kanpur end due to rising trend of DGA gases has been provided in 70th NRPC meeting held in Nov'23.

A.19.4. As aforementioned line reactor has already completed 35 years of service life and based on current DGA, there are chances of its sudden failure. 400kV S/C Kanpur Ballabhgarh Line is a long line and operation of the same without line reactor at each end is very difficult and could result in overvoltage conditions in the line.

A.19.5. In view of the above and to avoid major failure & to prevent consequential damage, POWERGRID proposed to replace the existing 420kV 80MVAR MELCO make reactor with new reactor under Add-Cap 2024-2029.

A.19.6. EE, NRPC informed that POWERGRID has submitted that approval for replacement of line reactor for 400kV S/C Ballabgarh-Kanpur (Ckt-1) line at Kanpur end due to rising trend of DGA gases has been provided in 70th NRPC meeting held in Nov'23.

A.19.7. Further, POWERGRID has highlighted the maintenance and spare challenges associated with these line reactor as the 400 kV Bushings (OIP type) used in above reactor is non-standard and similar spares is not available due to obsolescence.

A.19.8. CTU stated that a line reactor is essential, as without it, the line voltage could rise to 42kV if the line is energized/charged from the opposite end during a shutdown or line trip. The voltage rise will be substantially reduced to about 14kV with a line reactor.

A.19.9. MS, NRPC stated that replacement of 80MVAR Line reactor of 400kV S/C Kanpur Ballabhgarh Line (Ckt-1) at Ballabgarh end can be recommended as the reactor has already completed its useful life,

Decision of OCC Forum:

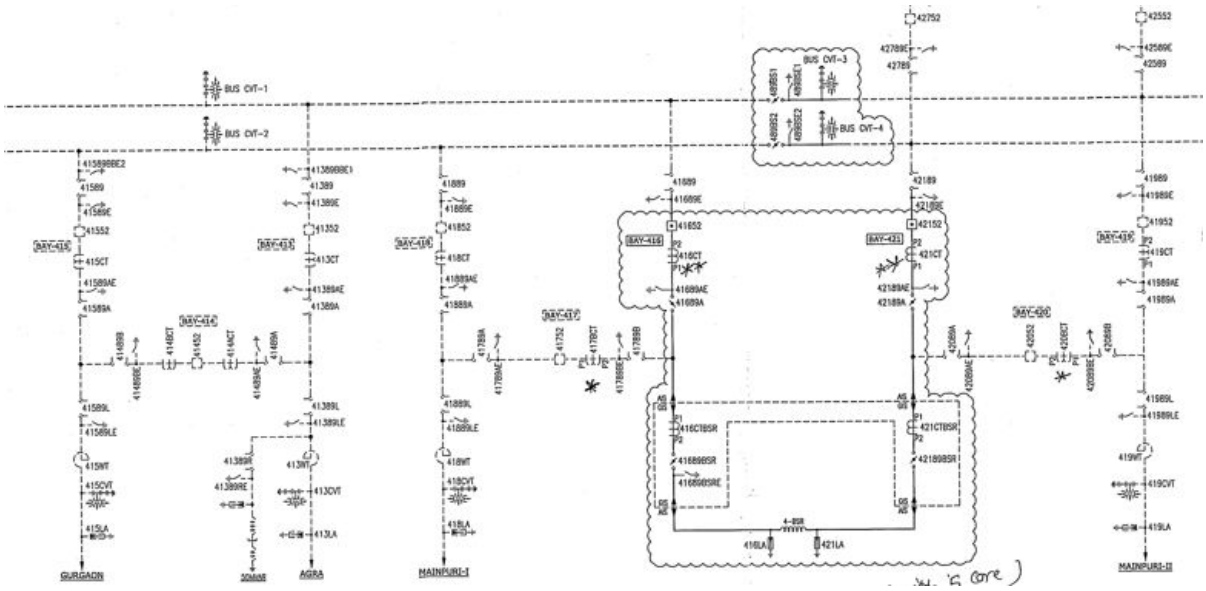
OCC forum recommended for replacement of 80MVAR Line reactor of 400kV S/C Kanpur Ballabhgarh Line (Ckt-1) at Ballabgarh end.

A.20. Upgradation of existing 2000 Amps rated 420 kV isolators & CTs with 3150 Amps in 400 kV Bus Series Reactor Dia at Ballabgarh Substation (Agenda by PGCIL)

A.20.1. PGCIL representative informed that 400 kV, 225 MVAR Bus Series Reactor (rated for 2500 Amps) has been commissioned at Ballabgarh for reducing the short circuit fault level by splitting 400 kV Bus-1 &2 at Ballabgarh SS in 2018. The Bus Series reactor has been installed in 400 kV Mainpuri-1 & 2 Dia at Ballabgarh which was having provision of future bay prior to implementation of Bus Series Reactor. The 400 kV Delhi Ring main lines i.e. 400 kV Ballabgarh-Dadri Ckt-1,400 kV Ballabgarh-Nawada and 400 kV Ballabgarh-Tughlakabad Ckt-1&2 are connected on either side of Bus Series Reactor resulting in current flow in tune of 1200-1800 Amps through Bus Series Reactor.

A.20.2. During installation of Bus series reactor the equipment were provided with current rating of 3150A in main bay only, while the other equipment in the dia i.e. Tie bay and Mainpuri -I & II line main bay were continued with old equipment having current rating of 2000 A(Mainpuri line bays commissioned in 2005). It has been observed in last 02-03 years that frequent hot spots are observed in existing 2000 Amps isolators installed

in Mainpuri-1 & 2 main/tie bays at Ballabgarh due to increased loading through Bus Series Reactor. The SLD of effected portion if illustrated below :-



A.20.3. Considering the increased load flow through Mainpuri-1&2 Dia due to installation of Bus Series Reactor by splitting of 400 kV Bus, upgradation of existing equipment's of 400 kV Mainpuri main & tie bays is necessary for smooth operation of Ballabgarh Substation. Following equipment's installed in 400 kV Mainpuri Dia at Ballabgarh is proposed to be replaced from existing 2000 Amp continuous rating to 3150 Amp rating

Sr no	Equipment	Nos	Rate (in Lakhs including GST)	Amount
1	420 kV 2000 Amp Isolator	08 (Sets)	30	240
2	420 kV 2000 Amps CTs	12 (nos)	10.5	126
Total cost estimate for bay equipment upgradation				366

A.20.4. Considering the increased load flow through Mainpuri-1&2 Dia due to installation of Bus Series Reactor by splitting of 400 kV Bus, upgradation of existing equipments of 400 kV Mainpuri main & tie bays at estimated cost of Rs 3.66 Cr (inclusive of GST) under Additional Capitalisation is put up for deliberation of the forum by PGCIL.

A.20.5. MS, NRPC enquired from CTUIL whether there is still a requirement of a series reactor at the substation.

A.20.6. CTUIL representative recommended equipment upgradation, stating that with the increase in fault level, installation of a series reactor would be required. He further added that issues may arise in the circuit breaker with the existing equipment in the event of a system fault.

A.20.7. MS, NRPC enquired whether the proposal pertains to equipment upgradation or additional capitalisation.

A.20.8. PGCIL representative stated that, considering the system requirement and the fact that the equipment is more than 20 years old, they would proceed with decapitalisation followed by equipment upgradation under additional capitalisation.

A.20.9. NRLDC representative requested PGCIL to share relevant data to enable studies regarding the requirement for equipment upgradation.

A.20.10. MS, NRPC requested PGCIL to submit the relevant data based on which the requirement for upgradation can be studied, and thereafter, the proposal may be taken up for approval in the NRPC forum.

Decision of OCC Forum:

OCC forum directed PGCIL to submit the relevant data based on which the requirement for upgradation can be studied, and thereafter, the proposal may be taken up for approval in the NRPC forum.

A.21. Augmentation of Transformation capacity at 400 KV Sikar-1 substation by 400/220 KV 500 MVA 4th ICT along with associated bay (Agenda by PGCIL)

A.21.1. EE(O), NRPC informed that PGCIL has submitted that :

1) For Augmentation of transformation capacity at Sikar-1 substation, 01 nos. 400/220 KV 500 MVA transformer along with associated bays has been approved.
2) Due to space constraint in 220 KV switchyard, it is not possible to construct any additional bays at 220 KV level at Sikar substation.
3) Presently 02 nos. of line bays i.e. bay no. 211 and 212 which are commissioned in year 2012 are available at Sikar SS and are presently on no load due to the non-availability of line.
4) For the installation of subject ICT, out of these two 220 kV line bays, one line bay may be converted to ICT bay for the installation of ICT

A.21.2. Considering the space constraint, PGCIL has proposed to consider for conversion 01 Nos. 220 KV line bay (idle charged on load) into transformer bay.

A.21.3. NRLDC representative stated that 220kV line bay charges might likely be borne by RRVPNL and RRVPNL may share their plan for utilization of vacant 220kV bays.

A.21.4. RVPNL representative stated that they had a requirement of six bays, which are already being utilised by RVPNL, and that the two bays under reference do not belong to them.

A.21.5. CTUIL representative stated that the ownership of the bays should first be confirmed, based on which the future course of action may be decided.

A.21.6. MS, NRPC requested PGCIL to confirm the ownership of the bays so that the matter may be deliberated in the next OCC meeting.

Decision of OCC Forum:

OCC forum directed PGCIL to confirm the ownership of the bays so that the matter may be deliberated in the next OCC meeting.

A.22. High loading on 400 kV Jhatikara–Bamnauli line during the peak demand period in the summer months (Agenda by NRPC Secretariat)

A.22.1. EE(O), NRPC apprised the forum that NRLDC vide letter dated 25.03.2026 (attached at Annexure-A.VII of agenda) informed that as summer is approaching, it is anticipated that electricity demand in Delhi may cross 9GW during the upcoming summer months. Considering this high-demand scenario, a load flow study for the Delhi power system has been carried out jointly by Delhi SLDC and NRLDC based on the following assumptions:

1. Delhi demand crossing 9000 MW in the daytime.
2. 1500 MVA-05th ICT at Jhatikara PG would be commissioned by May 2026.

A.22.2. The following are the observations as per the result of the load flow study:

1. The loading of 400 KV Jhatikara-Bamnauli line is reaching up to 2200 MW under N-1 conditions of 400 IXV Jhatikara-Dwarka line during the day peak hours.
2. The additional ICT at Jhatikara PG relieves the existing N-1 non-compliance issue (Jhatikara — Bamnauli/Dwarka section).

A.22.3. Even though the existing N-1 non-compliance issue of Jhatikara ICTs (Jhatikara — Bamnauli/Dwarka section) is getting relieved with the commissioning of additional ICT, the loading on 400 KV Jhatikara-Bamnauli line would further increase and tripping of this line may lead to cascade tripping in Delhi area.

A.22.4. Also, the sensitivity of Delhi load on 400 KV Jhatikara-Bamnauli line loading is observed to be approx. 12%. Under no gas generation scenario in Delhi, the TTC/ATC for the upcoming summer months is assessed to be 7600/7450 MW, without considering for the N-1 non-compliance of 400 KV Jhatikara-Bamnauli line. If the N-1 non-compliance of 400 KV Jhatikara-Bamnauli line is considered, the TTC/ATC of Delhi would reduce drastically to 4750/4650 MW.

A.22.5. Further, if the existing SPS for take care of N-1 contingency of transformers at Jhatikara PG is mapped to manage the loading of 400 KV Jhatikara-Bamnauli line, it would provide limited relief, increasing the TTC/ATC to 5900/5800 MW (increase of 1150 MW).

A.22.6. In view of the above constraints, Delhi SLDC is requested to take immediate measures viz. deployment of SPS, load re-arrangement etc. for facilitating in maintaining the drawl capacity of Delhi in the upcoming summer months.

A.22.7. MS, NRPC enquired from CTUIL whether any study had been carried out regarding the loading on Jhatikara Substation.

A.22.8. CTUIL representative informed that the loading on Jhatikara–Bamnauli corridor had presently increased to about 1800 MW due to the delay in commissioning of the two circuits at Jhatikara–Dwarka end; otherwise, the loading would have remained around 1200 MW. He further stated that the two lines were expected to be commissioned by December 2026.

A.22.9. Delhi SLDC representative added that, apart from the non-availability of lines, another reason for high loading was the injection of substantial RE power flowing from Jhatikara to Bamnauli and further towards Dwarka and Tughlaqabad, leading to high loading during daytime.

A.22.10. NRLDC representative stated that if each circuit could be loaded up to 2000 MW, there would be no issue of high loading on Jhatikara–Bamnauli line. However, in real-time operation, hotspots were being observed on the lines, which restricted loading limits and needed to be considered in operational planning.

A.22.11. He requested PGCIL and Delhi SLDC to confirm the maximum permissible loading of the lines for operation during the upcoming summer season.

A.22.12. MS, NRPC requested PGCIL and Delhi SLDC to inform the loading limits of the lines to NRLDC so that NRLDC could review its study, and the matter could be further deliberated to arrive at possible solutions.

Decision of OCC Forum:

OCC forum requested PGCIL and Delhi SLDC to inform the loading limits of the lines to NRLDC so that NRLDC could review its study, and the matter could be further deliberated to arrive at possible solutions.

A.23. Special Protection Scheme (SPS) for 220/ 132 kV Tahliwal Substation (LILO of 220 kV Bhakra—Jamalpur line) (Agenda by HPPTCL)

A.23.1. HPPTCL has informed that they are constructing the 220/132 kV Tahliwal Substation in District Una, Himachal Pradesh, through LILO of the 220 kV Bhakra—Jamalpur D/C line to cater the grouping load demand of Una and the upcoming Bulk Drug Pharma Park. The total load requirement of the Pharma Park has been assessed at about 120 MVA, whereas the drawal through the proposed LILO arrangement is constrained. Further, HPPTCL has planned a long-term solution through the construction of a 220 kV D/C transmission line from Nehrian to Una (-35 km) with a source from 400/220 kV Hamirpur substation; however, the said system is expected to take 2-3 years for implementation. In the interim, an immediate load requirement of about 50 MVA (40 MVA for Pharma Park and 10 MVA load growth) is required to be met in a time-bound manner, necessitating early commissioning of Tahliwal substation with controlled drawl.

A.23.2. The scheme of Tahliwal substation and associated LILO has been deliberated in various forums, and the requirement of SPS has been mandated in the 148th BBMB PSC meeting and approved in the 69th NRPC meeting. Further, PSTCL has accorded concurrence to the scheme subject to implementation of SPS to ensure adherence to drawl limits and to prevent any inadvertent power flow under contingency conditions, thereby making SPS an essential pre-requisite for operationalization of the substation.

A.23.3. In line with the above, HPPTCL has formulated the SPS philosophy to ensure secure and compliant operation of the system, wherein (i) automatic tripping of 220/132 kV ICT at Tahliwal shall be initiated in case of outage of the 220 kV Bhakra—Tahliwal circuit to prevent any drawl from Jamalpur side, (ii) alarm shall be generated at 45 MVA loading to enable operator intervention for Managing Load, and (iii) tripping of the 132 kV side of ICT shall be enforced in case of violation of the 55 MVA loading limit for more than 1 Minute.

A.23.4. HPPTCL has requested for deliberation and decision so that the same can be implemented prior to commissioning of the Tahliwal Substation.

A.23.5. NRLDC representative stated that the proposal can be approved and mock-testing report can be submitted in protection subcommittee meeting of NRPC. However, as discussed earlier, as per CEA regulation there is need to have a double bus or 2 main bus or 2 main bus and 1 transfer bus scheme for 220 kV Tahliwal sub-station. Same may be ensured or exemption sought from CEA.

A.23.6. MS, NRPC requested HPPTCL to submit the mock testing report once the scheme is implemented.

Decision of OCC Forum:

OCC forum requested HPPTCL to submit the mock testing report once the scheme is implemented.

A.24. Proposal for Installation of STATCOM / Filter Bank for Voltage Control at Kurukshetra Substation or Nearby Station (Agenda by PGCIL)

A.24.1. PGCIL has informed that the 400 kV Kurukshetra Substation is experiencing frequent and significant voltage fluctuations due to varying reactive power demand, changing network configurations, and operational switching conditions, particularly associated with HVDC power flow variations.

A.24.2. Despite the availability of multiple reactive power compensation devices, including 500 MVAR TCR, 2×125 MVAR reactors, and 80 MVAR reactor, the voltage profile continues to remain highly dynamic and often exceeds permissible operating limits. These variations are adversely affecting system stability, equipment life, and operational reliability.

A summary of recent operational data is presented below:

Sr. No	Date	Min. Voltage	Max. Voltage	HVDC Load	Thyristor Controlled Reactor	(125*2)MVAR Reactor	80MVAR Reactor	Switching OUT of 400kV Lines
1	02-Jan-26	400kV	427kV	(1500-4000)MW	540MVAR	IN	IN	3
2	03-Jan-26	400kV	421kV	(2000-3000)MW	530MVAR	IN	IN	4
3	04-Jan-26	404kV	430kV	(1000-2000)MW	530MVAR	IN	IN	4
4	05-Jan-26	398kV	425kV	(1000-4000)MW	290MVAR	IN	IN	4
5	06-Jan-26	400kV	426kV	(2000-4000)MW	290MVAR	IN	IN	3
6	07-Jan-26	394kV	422kV	(2000-4000)MW	250MVAR	IN	IN	4
7	11-Feb-26	401kv	424kV	(2000-4000)MW	431MVAR	IN	IN	4
8	12-Feb-26	407kV	427kV	3000MW	471MVAR	IN	IN	4
9	14-Feb-26	396kv	424kV	(2000-5000)MW	490MVAR	IN	IN	4
10	19-Feb-26	401kV	427kV	(2000-4500)MW	566MVAR	IN	IN	4
11	20-Feb-26	404kV	426kV	(1000-2500)MW	567MVAR	IN	IN	3
12	21-Feb-26	391kV	421kV	(2000-4000)MW	498MVAR	IN	IN	4
13	25-Feb-26	397kV	423kV	(2000-4000)MW	531MVAR	IN	IN	4
14	18-Nov-25	404kV	426kV	2000MW	539MVAR	IN	IN	4

A.24.3. It is evident that even with maximum reactive absorption and line outages during off-peak hours, voltage remains difficult to control. These fluctuations frequently lead to unwanted alarms, operational constraints, and difficulties in filter bank switching, impacting overall system performance.

A.24.4. To address these issues, it is proposed to install a Static Synchronous Compensator (STATCOM) along with suitable harmonic filter banks at Kurukshetra or at a strategically selected nearby node.

Objective

- Maintain voltage within permissible grid limits under all operating conditions
- Provide fast and dynamic reactive power compensation
- Improve voltage stability and system reliability
- Reduce frequent switching of transmission lines and reactive devices
- Enhance power quality and minimize harmonic disturbances

Existing System Challenges

- Voltage variation in the range of ~394 kV to 430 kV
- Continuous operation of 500 MVAR TCR at full capacity, indicating a reactive power imbalance
- Ineffectiveness of existing shunt reactors even under full utilization
- Frequent switching of 400 kV lines for voltage control, leading to:
    - Increased stress on GIS equipment
    - Higher maintenance requirements for circuit breakers and disconnectors
- Operational issues such as:
    - Spurious alarms

    - Inhibition of harmonic filter switching (e.g., D-Type filter bank ~165 MVAR)
- Voltage instability during varying HVDC loading conditions

Proposed Solution

Installation of STATCOM (Preferred Solution)

- Proposed Rating: ±300 to ±500 MVAR (subject to detailed studies)
- Location: Kurukshetra Substation or nearby electrically strong node

Key Features:

- Fast response time (<1 cycle)
- Continuous and smooth reactive power control
- Effective operation under both high and low voltage conditions
- Capability to provide both capacitive and inductive compensation
- Improved transient and dynamic voltage stability

Technical Benefits

- Stabilization of voltage at 400 kV bus within statutory limits
- Reduction in dependency on:
    - TCR operation
    - Transmission line switching
- Enhanced life and reliability of GIS equipment
- Improved coordination and availability of filter banks
- Reduction in transmission losses
- Compliance with grid code requirements for voltage and harmonics
- Prevention of HVDC pole tripping due to voltage/reactive power disturbances

Implementation Plan

- Conduct detailed studies:
    - Load flow analysis
    - Transient stability studies
    - Harmonic analysis
- Finalization of STATCOM rating and configuration
- Identification of optimal installation location (Kurukshetra or nearby node)
- Site survey and space availability assessment

A.24.5. Considering the persistent voltage fluctuations, limitations of existing compensation systems, and increasing operational challenges, installation of a STATCOM along with suitable harmonic filter banks is strongly recommended at Kurukshetra or a nearby substation. This solution will provide fast, dynamic, and reliable voltage control, reduce operational constraints, and significantly enhance grid stability. It will also minimize

unnecessary switching operations and prevent undesirable HVDC pole tripping and voltage-related disturbances, ensuring secure and efficient system operation

A.24.6. MS, NRPC requested CTUIL and NRLDC to furnish their comments on the proposal of installation of dynamic compensation at Kurukshetra or a nearby substation by PGCIL.

A.24.7. CTUIL representative stated that Kurukshetra already has an HVDC terminal and installation of another power electronic device, such as STATCOM may not be feasible. He further informed that adequate space was not available at nearby substations for STATCOM installation; therefore, the proposal requires further study to arrive at a suitable solution.

A.24.8. NRLDC representative stated that installation of STATCOM in proximity to the HVDC terminal requires detailed study due to possible interaction issues. He suggested that a synchronous condenser near Kurukshetra may be a better option. Alternatively, installation of bus reactors (2x125 MVAr) along with TCR of (-500 MVAr) may also be considered for controlling high voltage scenarios.

A.24.9. MS, NRPC requested CTUIL to carry out a study for voltage control at HVDC Kurukeshtra substation and suggest a feasible solution in the next OCC meeting for further deliberations.

Decision of OCC Forum:

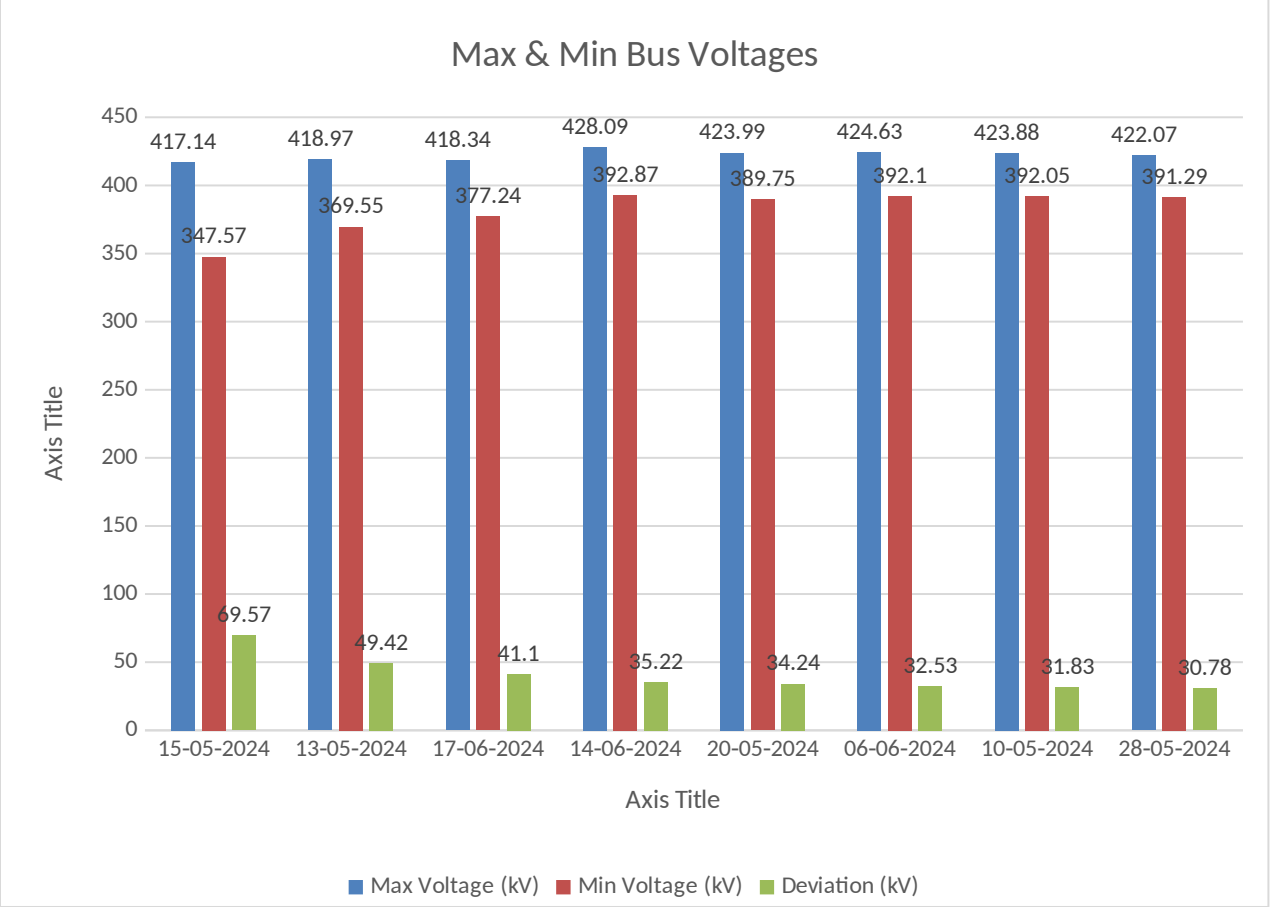
OCC forum requested CTUIL to carry out a study for voltage control at HVDC Kurukeshtra substation and suggest a feasible solution in the next OCC meeting for further deliberations.

A.25. Proposal for suitable Rated Dynamic Reactive Power Compensation at 400 kV Bhiwadi Substation (Agenda by PGCIL)

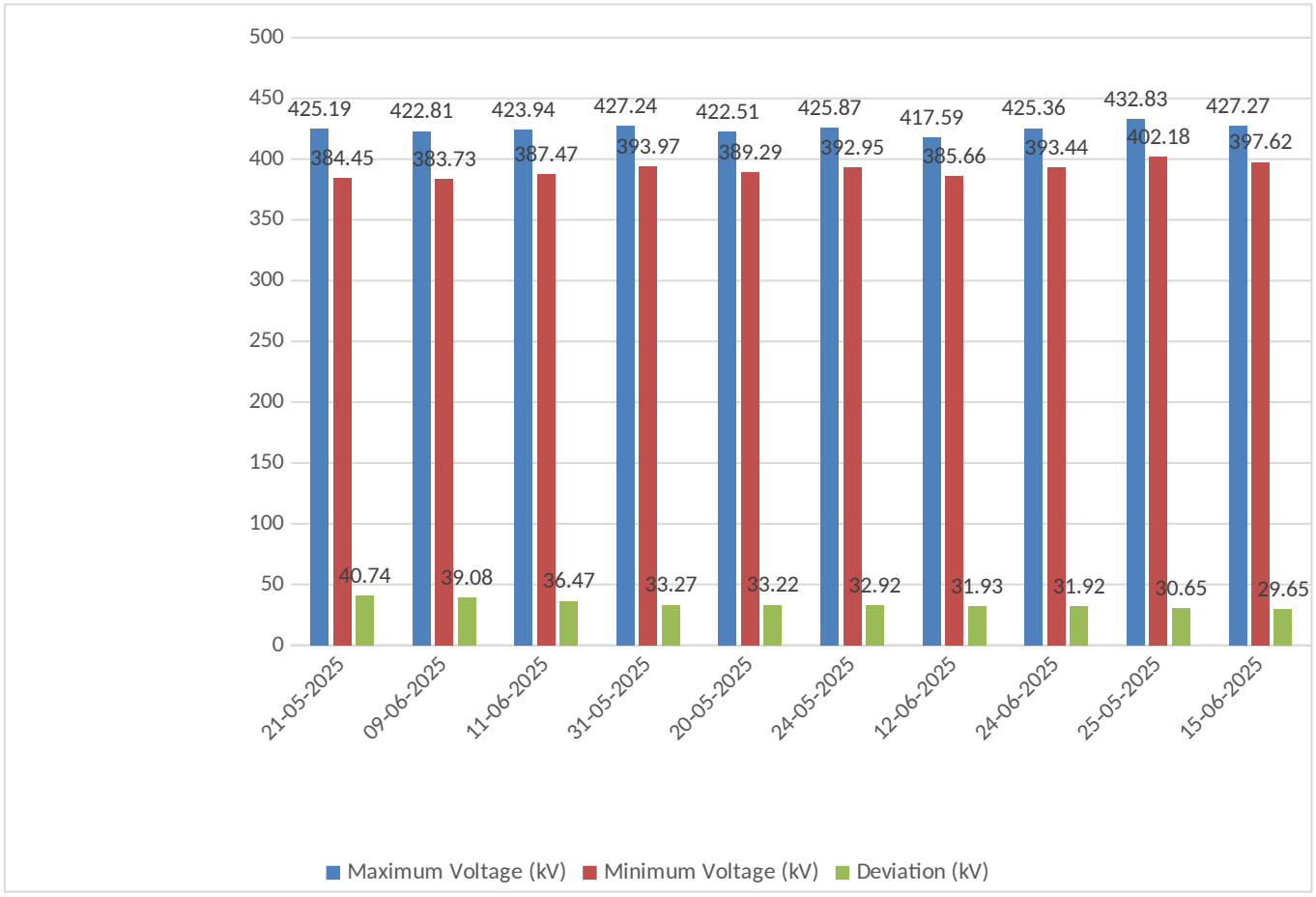
A.25.1. PGCIL has informed that the 400 kV Bhiwadi–Khetri D/C transmission line, charged on 25.06.2023, serves as an evacuation corridor for renewable energy (RE) generation from Rajasthan. After the commissioning of this line, 400 kV Bhiwadi substation has been experiencing considerable voltage variations under varying system conditions, particularly during the summer months with high RE injection.

A.25.2. SCADA voltage trend analysis reveals frequent and wide voltage fluctuations at the 400 kV Bhiwadi bus, as indicated in the attached trend graph. These fluctuations are predominantly observed during daytime hours corresponding to peak solar generation. The existing fixed reactive compensation has limited capability to address rapid and large voltage variations, resulting in repeated voltage excursions beyond specified limits and posing operational challenges.

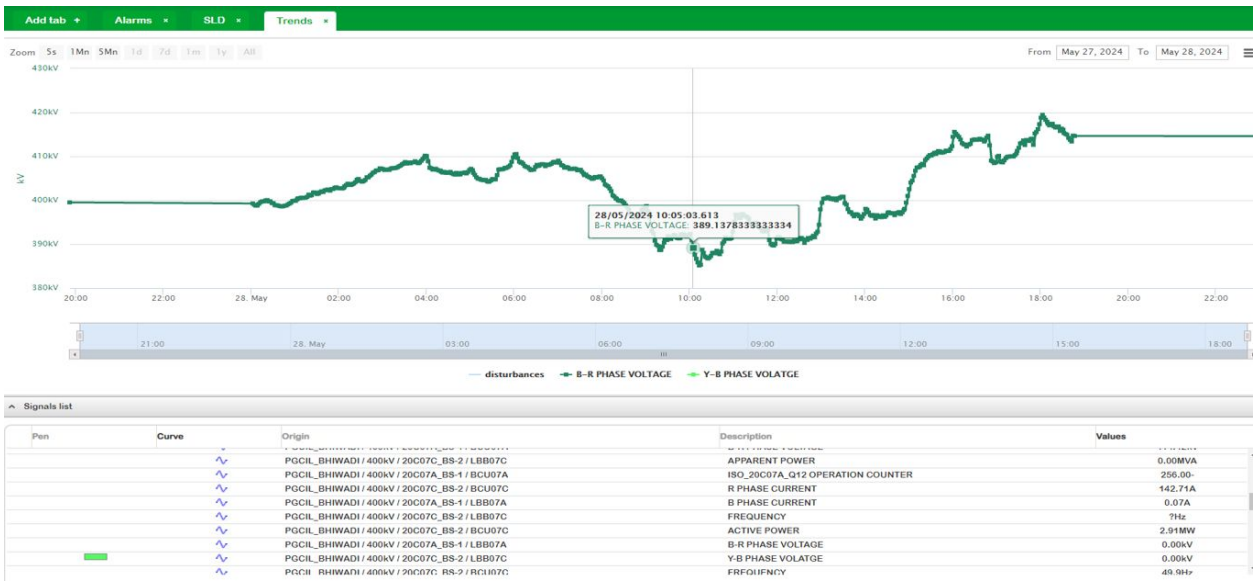
May-June-2024



May -june 2025



Day wise fluctuation is shown below



Constraints in HVDC Operation due to wide voltage variations: -

A.25.3. The wide voltage variations at 400 kV bus at Bhiwadi result in operational constraints of HVDC. The brief of constraints is provided below: -

(i) Auxiliary power is a critical requirement of HVDC system for valve cooling, ventilation, converter transformer colling etc. The voltage variation results in excessive reactive power consumption in auxiliary loads resulting in further voltage drop/increase in inductive current leading to trigger of overload protection. The HVDC poles are vulnerable due to dependency on auxiliary supply voltages and few instances of HVDC pole trippings has been observed due to activation of thermal overload/overvoltage in valve/transformer cooling system.

(ii) The wide voltage variations result in excessive operations for on load tap changers leading to wear & tear and ageing

A.25.4. In order to ensure grid security and compliance with specified voltage limits, provision of dynamic reactive power support at 400 kV Bhiwadi substation is essential. A fast acting device capable of both reactive power absorption and injection is required to effectively manage voltage fluctuations arising from intermittent RE generation.

A.25.5. PGCIL proposed that the requirement of installation of a suitable-rated STATCOM at 400 kV Bhiwadi substation may be reviewed by the Forum. Installation of STATCOM shall enable continuous and rapid voltage control, improve overall system stability, and mitigate over-voltage / under-voltage issues associated with RE-connected transmission corridors.

A.25.6. CTUIL representative stated that interaction issues between HVDC and STATCOM, if installed, may also arise at Bhiwadi substation; therefore, the proposal requires further study. He further requested PGCIL to confirm the availability of space at the substation for the installation of STATCOM and synchronous condenser.

A.25.7. NRLDC representative stated that installation of STATCOM near an HVDC terminal requires a detailed study due to possible interaction issues and, accordingly, a synchronous condenser may be a better option. He further informed that LCC-based HVDC for the Bhadla-III–Fatehpur link is also under implementation. In this regard, CTUIL may consider additional dynamic compensation devices so that such issues are mitigated at the planning stage itself, as the HVDC link would directly originate from the RE pooling substation.

A.25.8. MS, NRPC requested CTUIL to carry out a study for voltage control at all three HVDC substations i.e. Kurukeshtra, Bhiwadi and Bhadla-III and suggest a feasible solution in the next OCC meeting for further deliberations.

Decision of OCC Forum:

OCC forum requested CTUIL to carry out a study for voltage control at all three HVDC substations i.e. Kurukeshtra, Bhiwadi and Bhadla-III and suggest a feasible solution in the next OCC meeting for further deliberations.

A.26. LILO of 400 kV Delhi Ring main Ckt. at 400 kV switchyard of 765/400 kV Narela Substation for relieving the load of 765/400 kV Jhatikra Substation (Agenda by PGCIL)

A.26.1. PGCIL has informed that at present, 765/400 kV Jhatikra Substation Caters approx. 55-65% of the total Delhi load through 04 Nos. of 400KV Lines namely 02 Nos. of Mundka, 01 No. of Dwarka and 01 No. of the Bamnauli line. With the complete commissioning of 765/400 kV Narela Substation, including 04 ckts to Maharanibagh Substation, the loading situation at Jhatikra Substation in not going to reduce significantly. Further, any major outage incident at Jhatikra 765 kV level may result in significant load loss in Delhi in peak solar hours.

A.26.2. To increase the reliability of power transmission to Delhi & reduce disproportionate loading of Jhatikra, LILO of 400 kV Delhi Ring main ckt at 400 kV Switchyard at Narela may be considered for discussion. 400 kV Mundka-Bawana Line (part of 400 kV Delhi Ring main unit) is passing approximately 11 kms from Narela Substation. Additionally, 400 kV Bawana-Bahadurgarh & 400 kV Bawana-Bhiwani D/C line is passing approximately 04 kms from Narela Substation. Space for LILO of 400 kV D/C line is available at Narela Substation.

A.26.3. LILO of any of the above D/C lines (400 kV Mundka-Bawana D/c and 400 kV Bawana-Bahadurgarh & 400 kV Bawana-Bhiwani D/C line) at Narela will result in alternate RE power injection in Delhi 400 kV Ring main ckt, resulting in an increase of reliability of power transmission to Delhi. The above agenda was deliberated in 236th OCC meeting held in Oct'25 and the following was the decision of the forum: -

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

A.26.4. Considering the criticality of load relieving of Jhatikara Substation, the decision on the above may be expedited by the forum.

A.26.5. DTL representative suggested that a joint study may be carried out with CTUIL for the proposal. He further suggested that the PGCIL Bawana–Bahadurgarh line may be considered for LILO.

A.26.6. NRLDC representative stated the following:

• Additional 400 kV line appears to be required, considering the high loading of 400 kV lines emanating from Jhatikara. CTUIL may carry out the suggested studies, and any data required would be shared by NRLDC.

• Right of Way (ROW) issues should be clearly identified before approval of any proposal, as the 400 kV Jhatikara–Dwarka D/C line has remained delayed for many years due to ROW constraints.

A.26.7. CTUIL representative stated that, as per their study, no load relief was being observed on the Jhatikara–Bamnauli line. However, the proposal of LILO may be explored for providing an additional feed, considering Delhi's future power supply requirements.

A.26.8. He further stated that the proposal for relieving the loading of 765/400 kV Jhatikara Substation would be taken up for discussion in the next joint study meeting.

A.26.9. MS, NRPC requested CTUIL to suggest suitable solutions for reducing the loading on Jhatikara Substation.

A.26.10. CTUIL representative stated that the loading on Jhatikara Substation may be relieved after commissioning of the Jhatikara–Dwarka line. He further informed that a sectionalizer scheme is also being planned at the substation, after which load relief may be achieved by next summer.

A.26.11. MS, NRPC requested CTUIL to provide a stipulated timeline within which the study results would be submitted.

A.26.12. The CTUIL representative stated that the study report would be submitted by the end of May.

Decision of OCC Forum:

OCC forum requested CTUIL to carry out a joint study for the proposal aimed at relieving the loading of 765/400 kV Jhatikara Substation and submit the report to the forum.

A.27. Enhancement of capacity of 400 kV Hissar-BBMB-Bawana transmission system by replacement of existing moose conductor with HTLS conductor (Agenda by PGCIL)

A.27.1. PGCIL has informed that 400 kV Hissar-BBMB-Bawana transmission system, with 400 kV Hissar-Bawana & 400 kV Hissar-BBMB & 400 kV BBMB- Bawana system was commissioned in 1995 under the Moga-Hissar-Bhiwani Transmission system. All the 400 kV transmission system lines were commissioned as twin moose configuration with a power transmission capacity (thermal loading of 800 MW on each circuit).

A.27.2. Subsequently, the original transmission system has been LILO at several grid substations with the enhancement of grid networks. The 400 kV Hissar-Bawana line has been LILO at Bhiwani Substation and 400 BBMB-Bawana Line has been LILO at Kabulpur & Bahadurgarh Substation. The connection of grid substations in the transmission corridor has resulted in increased power flow through the above transmission system

A.27.3. This transmission system passes through heavily polluted areas having brick kilns throughout the route, resulting in heavy chemical deposition on insulators & hardware fittings. The porcelain insulators have been replaced with polymer insulators around 15 years ago however, pollution effects have weakened hardware fittings, conductors and mid-span joint severely.

A.27.4. Above pollution effect, along with ageing and increased power flow, has resulted in frequent breakdown of the above transmission system feeding power to Delhi. Around 08 no breakdown due to hardware fittings & conductor failure has been reported in the above line in the last year, which makes the system less reliable. As the reasons of failure is beyond reasonable control (ageing of conductors and towers due to pollution), replacement of the existing corridor with HTLS conductor and replacement of defective towers at a cost estimate of Rs 197 Crores is proposed to be considered for approval

A.27.5. The above agenda has been put up in 233rd OCC meeting in July'25 and the following was the decision of forum: -

"OCC forum asked CTU to conduct the study within 15 days and thereafter the agenda may be taken up in the upcoming CMETS meeting"

A.27.6. PGCIL representative stated that considering the repeated disruption in transmission elements connected to Delhi, the status of the above may be deliberated by forum.

A.27.7. NRLDC representative informed that loading data had been shared with CTUIL in February 2026 from the NRLDC side. He stated that CTUIL may carry out the suggested studies, after which the agenda may be discussed in CMETS.

A.27.8. CTUIL representative stated that, as per the loading data provided by NRLDC, the maximum loading on all four lines was up to 600 MW, and only for a particular instant was loading of 680 MW observed on the Bawana–Bhiwani line.

A.27.9. PGCIL representative stated that maximum loading of around 700–800 MW had been observed on the Bahadurgarh–Bawana and Bawana–Bhiwani lines, for which reconductoring of the lines is required. He further stated that some towers had become defective and would need to be replaced during upgradation of the lines.

A.27.10. CTUIL representative requested PGCIL to share the loading data of the lines for the last three years, based on which a study could be carried out for the reconductoring proposal.

A.27.11. MS, NRPC requested PGCIL to share the loading data with CTUIL and requested CTUIL to carry out the study and provide recommendations on the reconductoring proposal.

Decision of OCC Forum:

OCC Forum requested PGCIL to share the loading data with CTUIL and requested CTUIL to carry out the study and provide recommendations on the reconductoring proposal.

A.28. Implementation of 220kV Ring system by M/s DTL for redundancy in the power transmission system (Agenda by PGCIL)

A.28.1. PGCIL has informed that interconnection of 220kV transmission in 220 kV ring mode is essential for ensuring smooth power transmission in Delhi. The 400 kV transmission system for Delhi is already connected in a ring main with quad bersimis transmission lines and availability of 220 kV ring main system in Delhi is essential for ensuring power transmission in case of any inadvertent outage of 400 kV Grid substation.

A.28.2. Powergrid representative requested DTL to ensure the availability of 220 kV ring main system in Delhi in the upcoming summer.

A.28.3. Delhi SLDC representative stated that, at present, there is no redundancy in their system for shifting of the entire load of 400 kV Substation to another substation. He requested PGCIL to ensure necessary preparedness to avoid any such contingency in the system.

A.28.4. PGCIL representative stated that a ring system presently exists at the 400 kV level, and a similar arrangement may be required at the 220 kV level.

A.28.5. Delhi SLDC representative informed that parallel transmission arrangements exist at some sections of the 220 kV network. However, at other stations, where cascading and tripping issues may arise, such arrangements cannot be provided. He further stated that the possibility of implementing such a system is further reduced due to RE integration.

A.28.6. MS, NRPC requested PGCIL to ensure the healthiness of its 400kV Substations to avoid any such contingency in the system.

A.29. Return of spare 400/220 kV 315 MVA ICT provided by POWERGRID to DTL & RVPNL. (Agenda by PGCIL)

A.29.1. PGCIL has informed that 04 nos 400/220 kV 315 MVA ICTs have been provided to DTL by POWERGRID in last 05 years as per the request of DTL for ensuring load management in National Capital Delhi. 03 out of 04 ICTs provided were POWERGRID assets and 01 no ICT is RPC spare to meet regional contingencies. All the ICTs provided to DTL were on a non-chargeable basis in view of the critical situation of maintaining an uninterrupted power supply in National Capital Delhi.

A.29.2. In addition to DTL, ICTs have been provided to other Utilities on a non-chargeable basis. The present details of ICTs provided to other utilities is provided below: -

S. No.	ICT provided to other Utilities	Diverted from	Diverted to	Date	Status
1	BHEL Make 315 MVA 400/220 KV ICT	Ludhiana (POWERGRID)	Mundka (DTL)	Apr-23	Not returned.

2	BHEL Make 315 MVA 400/220 KV ICT	Ludhiana (POWERGRID)	Jodhpur GSS - Surpura (RVPNL)	Nov-23	Not returned.
3	CGL Make 315 MVA 400/220 KV ICT	Mandola (POWERGRID)	Bawana (DTL)	Jan-22	Not returned.
4	BHEL Make 315 MVA 400/220 KV ICT	Mandola (POWERGRID)	Tikrikalan (DTL)	Feb-20	Not returned.
5	BHEL Make 315 MVA 400/220 KV ICT	Ballabgarh (POWERGRID)	Tikrikalan (DTL)	Mar-24	Not returned.
6	BHEL Make 315 MVA 400/220 KV ICT	Bawana (POWERGRID)	Bamnauli (DTL)	Mar-26	Under transit to Bamnauli

A.29.3. In addition to ICTs provided to DTL, 01 no 400/220 kV 315 MVA ICT was provided to RVPNL from Ludhiana in Nov'23 as per the request of RVPNL for ensuring load management in Western Rajasthan.

A.29.4. POWERGRID Northern Region operation encompasses approximately 58,805 Ckt Kms of Transmission lines, 96 substations and transformation capacity of 2,11, 327 MVA. The Northern Region is critically important with substantial renewable capacity of around 69.9 GW. At present, due to diversion of the majority of spare 315 MVA ICT to DTL and other utilities, there are no spare transformers of similar capacity in Northern Region -I. This situation poses serious concern regarding the availability & reliability of ISTS Grid.

A.29.5. In the above context, PGCIL has requested that the return of 05 nos 400/220 kV 315 MVA ICTs provided to DTL & 01 no 400/220 kV 315 MVA ICT provided to RVPNL may be deliberated by forum for ensuring available of availability of spares for the smooth operation of Northern Grid.

A.29.6. RVPNL representative stated that their ICT is expected to be commissioned by July 2026, after which the ICT would be returned to Powergrid.

A.29.7. DTL representative stated that the stipulated date regarding the return of the ICT by them had already been deliberated in the 53rd CCM of NRPC.

A.29.8. MS, NRPC requested RVPNL and DTL to spare the ICTs at the earliest. She further stated that, in the event of delay in returning the ICTs by the agreed date as decided in the OCC and CCM meetings, suitable penalty as per regulations may be imposed on the concerned entities.

Decision of OCC Forum:

OCC Forum requested RVPNL and DTL to return the ICTs at the earliest. The forum further stated that, in the event of a delay in returning the ICTs by the agreed date as

decided in the OCC and CCM meetings, a suitable penalty as per regulations may be imposed on the concerned entities.

A.30. Upgradation of existing 2000 Amps rated 420 kV isolators & CTs with 3150 Amps in 400 kV Bus Series Reactor Dia at Ballabgarh Substation (Agenda by PGCIL)

A.30.1. Detailed deliberation provided in item no. A.20.

A.31. N-1 Contingency Violation at 400/220 kV Dehradun Substation and Requirement of Additional ICT(500MVA) (Agenda by PGCIL)

A.31.1. PGCIL has informed that the Dehradun 400/220 kV Substation is presently installed two 400/220 kV, 315 MVA Interconnecting Transformers. As per the prevailing planning and operational criteria, under N-1 contingency, the loading on the ICTs should remain within its rated capacity of 315 MVA.

A.31.2. Analysis of the ICT loading pattern (enclosed) indicates that during summer peak conditions, the combined loading on the two ICTs frequently exceeds 315 MVA. In the event of an N-1 contingency (outage of one ICT), the entire station load would be transferred to the remaining ICT, resulting in overloading beyond permissible limits and thereby leading to violation of the N-1 criterion.

A.31.3. Further, continuous load growth is being observed at Dehradun Substation, particularly during the summer months, owing to increasing demand. In addition, 220 kV D/C Mori–Dehradun transmission line (232 ckm) is planned in future by PITCUL, which, upon commissioning, is expected to further increase power flow and demand at Dehradun Substation.

A.31.4. At present, the N-1 reliability criterion is not being met at Dehradun Substation during peak demand periods. This has rendered the substation highly vulnerable to transformer outages, posing a significant risk to system reliability and continuity of supply.

A.31.5. Considering existing summer peak loading pattern, Persistent N-1 non-compliance, Projected load growth, and Upcoming transmission additions, PGCIL has proposed one additional 400/220 kV, 500 MVA ICT at Dehradun Substation to meet future capacity requirements and ensure compliance with the N-1 contingency criterion.

A.31.6. NRLDC representative stated that the loading of 400/220 kV Dehradun ICTs is presently within N-1 security criteria limits. He further stated that studies for ICT capacity augmentation may be carried out by PTCUL/CTUIL considering future scenarios with additional 220 kV lines from Dehradun substation.

A.31.7. CTUIL representative stated that they would undertake a study on the ICT augmentation proposal. He further stated that concurrence of PTCUL would also be required, as the augmentation cost would be borne by them.

A.31.8. MS, NRPC requested CTUIL and PTCUL to carry out the studies for ICT capacity augmentation at 400/220 kV Dehradun Substation, considering future 220 kV lines from Dehradun Substation.

Decision of OCC Forum:

OCC Forum requested CTUIL and PTCUL to carry out the studies for ICT capacity augmentation at 400/220 kV Dehradun Substation, considering future 220 kV lines from Dehradun Substation.

A.32. Review of LC Ferro-Resonance Condition in 765kV Dausa Phagi (RRVPNL) ckt-1 & ckt-2 lines: (Agenda by PGCIL)

A.32.1. Detailed deliberation provided in item no. A.13.

A.33. Review of LC Ferro-Resonance Condition in 400kV JAIPUR South Dausa ckt-1 & ckt-2 lines (Agenda by PGCIL)

A.33.1. PGCIL has informed that after LILO (in March-2026) of 400kV JAIPUR South Agra D/c lines at 765/400kV Dausa substation, new 400kV JAIPUR South Dausa ckt-1&2 lines have become over-compensated Line {having Line length of 71 kM & shunt compensation of Non-Switchable 50 MVAr, 400kV Line Reactor at JAIPUR South end}.

A.33.2. During opening operation (for voltage regulation) of 400 kV Jaipur South–Dausa Ckt-1 line at 22:59:39 hrs on 06/Oct/2025, oscillating voltage of ~120 kV was observed in R & B phases, causing voltage imbalance & flow of unbalance current as 30 A current in R & B phase, 7A in Y phase & 17 A in neutral of windings of 400kV Line Reactor. This condition arises from overcompensation of the shortened line. This further led to resulting in operation of NGR Bypassing Protection Scheme & closing of NGR Bypassing isolator of Non-Switchable 50 MVAr, 400kV Line Reactor at JAIPUR South end.

A.33.3. After review of the matter, NRLDC control room advised that the concerned Non-switchable 400kV Line reactors may be kept “out of service” at Jaipur South end to avoid the ferro-resonance phenomenon. Accordingly, Non-Switchable 50 MVAr, 400kV Line Reactor of 400kV Dausa ckt-1 & ckt-2 lines at JAIPUR South end are kept in “out of service” condition since 11.10.2025 as per NRLDC Instruction.

A.33.4. In view of this PGCIL has proposed the following for consideration:

i) Converting the “Non-Switchable” 400kV, 50 MVAR shunt Line Reactor to “Switchable” (if required for Voltage regulation) shunt Reactor at JAIPUR South end.

ii) Providing “Deemed availability” of said 02 no. of 400kV, 50 MVAR Line Reactors at JAIPUR South end.

A.33.5. PGCIL stated that, as per the preliminary study, space is available for the installation of a new 400 kV Circuit Breaker and 145 kV Circuit Breaker for implementation of the NGR bypassing scheme for the above conversion.

A.33.6. NRLDC representative stated that, as the lines are getting over-compensated (beyond 100%), line reactors may not be required. He further suggested that CTUIL may consider relocating these line reactors to any other nearby ISTS location for use as bus reactors/line reactors or maintaining them as regional spares.

A.33.7. CTUIL representative stated that, presently, the reactors may be kept out of service. In the meantime, PGCIL may provide its comments regarding space availability for conversion into either switchable line reactors or bus reactors, based on which CTUIL would carry out the study and submit its recommendations.

A.33.8. MS, NRPC requested PGCIL to confirm whether space is available for conversion into switchable line reactors or bus reactors, and thereafter CTUIL to provide its recommendations.

Decision of OCC Forum:

OCC Forum requested PGCIL to confirm the availability of space for conversion of 400kV, 50 MVAR shunt line Reactor at JAIPUR South end into switchable line reactors or bus reactors, and thereafter CTUIL to carry out the study and submit its recommendations for further decision.

A.34. Post facto approval for Shutdowns 765 kV Phagi–Gwalior Ckt-1 &2 related to LILO at Dausa: (Agenda by PGCIL)

A.34.1. PGCIL has informed that shutdown of the following lines were taken for the tapping work of 765 kV Phagi–Gwalior Ckt-1 &2 related to LILO at Dausa approved in 5th NCT meeting dated 02.09.2021

Name of the Element	Shutdown Time	Restoration Time	Reason of Outage	Remarks
765KV Phagi-Gwalior Ckt-1	28.12.2025 09:36	06.01.2026 00:18	to complete the LILO tapping point work at Dausa LILO approved in 5th NCT meeting dated 02.09.2021	LILO works as per the approved scheme commissioned on 00:18 hrs/06.01.2026. Shutdown was initially approved upto 31.12.25 and Post facto extension approval is requested upto 06.01.2026 due to adverse weather and site constraints.

765KV Phagi-Gwalior Ckt-2	27.02.2026 11:15	10.03.2026 02:34	to complete the LILO tapping point work at Dausa LILO approved in 5th NCT meeting dated 02.09.2021	LILO works as per the approved scheme commissioned on 02:34 hrs/10.03.2026. Shutdown was initially approved upto 02.03.2026, extension approval accorded upto 10.03.2026.

A.34.2. PGCIL has requested post facto approval for Shutdowns 765 kV Phagi–Gwalior Ckt-1 &2 related to LILO work at Dausa.

A.34.3. EE(O), NRPC informed that extension of shutdown of 765KV Phagi-Gwalior Ckt-2 was approved upto 10.03.2026. However, extension of the shutdown of 765KV Phagi-Gwalior Ckt-1 was not requested by PGCIL.

A.34.4. PGCIL representative informed that the extension of shutdown for 765 kV Phagi–Gwalior Ckt-1 was inadvertently not requested.

A.34.5. MS, NRPC stated that extension of shutdown of 765KV Phagi-Gwalior Ckt-1 upto 06.01.2026 may be deemed approved. She further requested PGCIL that, in case a shutdown extension is required for inter-regional as well as intra-regional outages, the same should be applied for in advance for approval. Further, she stated that in future, such request for post facto approval of shutdown shall not be considered, as there is no provision for post facto outage approval.

Decision of OCC Forum:

OCC Forum accorded deemed approval for extension of shutdown of 765KV Phagi-Gwalior Ckt-1 up to 06.01.2026. Further, PGCIL was requested to apply in advance for any shutdown extension required in case of inter-regional as well as intra-regional outages. Further, in future, such requests for post facto approval of shutdown shall not be considered as there is no provision for post facto outage approval.

A.35. Revision of Delhi islanding scheme (Agenda by NRPC Secretariat)

A.35.1. In 241st OCC meeting, it was decided that the revised Delhi Islanding Scheme would be implemented from Dadri TPS. Further, it was decided that a meeting to be conducted by NRPC with NRLDC, NTPC, DTL Delhi SLDC and POWERGRID to finalize the proposal of the revised Delhi Islanding Scheme.

A.35.2. Accordingly, a meeting was held on meeting held on 20.03.2026 (15:00 hrs) to deliberate upon and finalize the operational framework and implementation roadmap for the Delhi Islanding Scheme based on Dadri-II generation (Minutes of the meeting is attached at Annexure-A.VIII of the agenda). In this meeting, it was decided that

i. NTPC Dadri, DTL, and SLDC Delhi to submit requisite technical details\ simulation file to NRLDC by 25 March 2026.
ii. DTL, POWERGRID, and NTPC to examine the healthiness of existing UFR relays and the feasibility of revising UFR feeder tripping settings from 47.9 Hz to 48.1 Hz for all feeders except the feeder at 400kV Maharanibagh - Ballabhgarh line (to be tripped at 47.9 Hz) and submit details to NRLDC by 25th March, 2026.
iii. RLDC to carry out dynamic stability studies within four working days of receipt of inputs and propose updated islanding logic and relevant technical details\ simulation files for review and finalization at RPC forum.
iv. Upon approval of finalized logic by RPC forum, concerned utilities shall implement the islanding scheme on or before 20th April, 2026.

A.35.3. Thereafter, DTL had submitted proposal of revised Delhi islanding scheme which was again discussed in a meeting held on 07.04.2025 with NRLDC, NLDC, DTL, Delhi SLDC, NTPC and PGCIL (Minutes of the meeting is attached at **Annexure-A.III**).

A.35.4. In the said meeting, SLDC Delhi raised concerns regarding island stability in case of Dadri unit operating at technical minimum under high load conditions and suggested provisioning of additional ~30 MW load for UFR-based shedding post island formation.

A.35.5. DTL agreed to identify and wire the requisite load at 220 kV Lodhi Road substation. NRLDC/NLDC concurred that the same will improve the probability of successful island formation.

A.35.6. Subsequently, has submitted Draft Revised Delhi Islanding Scheme after incorporating additional load shedding of 30MW in the post-islanding scenario as suggested in the above meeting.

A.35.7. PGCIL representative intimated that the proposal has been implemented from their end.

A.35.8. DTL representative stated that the proposal would also be implemented from their end by 13.04.2026.

A.35.9. Delhi SLDC representative stated that the load-generation balancing has been completed and only the island network mapping is pending, which would be completed by 20.04.2026.

A.35.10. SE, NRPC stated that mock testing of the islanding scheme also needs to be completed by 20.04.2026.

A.36. Table Agenda: Proposal for installation of Battery Energy Storage Systems (BESS) as Integrated Energy Storage Systems (IESS) for safe and reliable operation of the grid, at existing ISTS substations of POWERGRID and its subsidiaries in Northern Region (Agenda by POWERGRID)

A) Background:

A.36.1. CERC vide its notification dated 20.03.2026 has issued the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2026. The major change brought out in the latest amendment is the introduction of the Integrated Energy Storage System (IESS) as a separate asset, in existing generating stations and ISTS.

Quote

Regulation 3A(8): *"'**Integrated energy storage system**' means the energy storage system co-located with the generating station or the transmission system, as the case may be, connected to a common bus-bar through the electrical system of existing generating station or the transmission system, as the case may be, and **for the purpose, including safe and reliable operation of the grid or for deferring the transmission investment and for enhancing the flexible operation of the generating station**, as the case may be, as per the requirement of the National Load Despatch Centre or beneficiaries or the designated ISTS customers, as the case may be."*

Unquote

A.36.2. Battery Energy Storage System (BESS) as an IESS, can provide the following **Ancillary Services for safe and reliable operation of the grid,** thereby strengthening reliability of grid operation and increasing efficiency of operation**:**

a) **Frequency response:** BESS with fast ramping & bi-directional capability can provide:
   i. **Primary Reserve Ancillary Service (PRAS)**
   ii. **Secondary Reserve Ancillary Service (SRAS)**
   iii. **Tertiary Reserve Ancillary Service (TRAS)**
b) **Dynamic voltage & reactive power** support, and
c) **Grid-forming functions**, including **synthetic inertia** emulation, **black start** support and for damping the magnitude of **voltage oscillations**.

A.36.3. POWERGRID submitted that GRID-INDIA also evaluated 20 MW/40 MWh BESS under SRAS as a pilot project, as per the consultation paper dated 31/12/2025. It has been concluded that BESS is technically well-suited for Automatic Generation Control (AGC), owing to its very high ramping capability, near-instantaneous response, and ability to provide both SRAS-Up (discharging) and SRAS-Down (charging).

A.36.4. For the implementation of BESS by a transmission licensee under RTM, the following procedure has to be complied with under the Regulation:-

Quote

Regulation 29B*. "Additional Capitalization on account of integrated energy storage system with the transmission system :* *(1) A transmission licensee required to incur additional capital expenditure in the existing transmission system for an integrated energy storage system shall share its proposal with all long-term transmission customers or the Designated ISTS Customers of the region, concerned Regional Power Committee, Central Transmission Utility, and the concerned Regional Load Despatch Centre, for their consideration and seek response within 30 days."*
Unquote

A.36.5. The methodology of claiming tariff against installation of IESS is given in the latest amendment as follows: -

Quote
Regulation 9(3a) *"In case an integrated energy storage system is installed with the generating station or unit thereof, transmission system or its sub-station, an application shall be made for the determination of supplementary tariff (fixed storage charges with or without variable energy charges) based on the actual capital expenditure duly certified by the Auditor".*
Unquote

A.36.6. The procedure for charging, scheduling, and dispatch of electricity and energy account for the IESS is given below:

Quote

Regulation 74:
"(2) The procedure for charging, scheduling, and dispatch of electricity and energy account for the integrated energy storage system shall be prepared by:

……

(b) the National Load Despatch Centre in consultation with the designated ISTS customers, respective Regional Power Committee and Regional Load Dispatch Centre, consistent with the Grid Code for integrated energy storage system with the transmission system.

(3) In case of an integrated energy storage system with the generating station, the surplus stored energy can be made available to the National Load Dispatch Centre to use under ancillary services. In case of stored energy of an integrated energy storage system with the transmission system, the priority of usage will be decided by the National Load Despatch Centre."

Unquote

B) Proposal:

A.36.7. Rajasthan has been witnessing very rapid renewable energy (RE) integration, with installed RE capacity having crossed 44GW (25GW for ISTS). Further, RE potential in Rajasthan has been declared for about 230 GW. Increasing RE penetration has created significant challenges for grid operation and stability. Low SCR is observed at various pooling stations in Rajasthan. Several instances of voltage oscillations have been observed due to inadequate voltage control response from IBRs and unstable operation under weak grid conditions, etc. thereby leading to a clamour to add new transmission lines.

A.36.8. In this context, Installation of Battery Energy Storage Systems at strategic locations in NR, would support safe, stable and reliable operation of grid, by providing frequency support, dynamic voltage and reactive power support, damping the oscillations by synthetic inertia emulation and black start capability in the Grid Forming Mode(GFM).

A.36.9. Accordingly, POWERGRID proposes to install **BESS** as **IESS** for safe and reliable operation of the grid and to support India's RE integration targets. The details of proposed installations at existing substations of POWERGRID and its subsidiaries in the Northern Region, under RTM mode are as follows: -

Sl.No.	**Station Name**	**Owner**	**Proposed BESS capacity (in MW/MWh)**
1	Kanpur	POWERGRID	250/1000
2	Bhadla-III	PBIIITL	250/1000
3	Bikaner-III	PBNTL	250/1000
	Total		**750/3000**

A.36.10. Justification**:** Following reasons have been considered for selection of substations for BESS:

A.36.11. **Bhadla-III & Bikaner-III S/s:** These are among the major pooling stations facilitating integration of large amount of Renewable Energy (predominantly Solar) in Northern Region. The NR grid (especially Rajasthan) is observing several operational issues such as voltage oscillations, low frequency oscillations, steady-state voltage variations, angular stability issues etc. BESS with grid forming capabilities provides

frequency support, dynamic voltage & reactive power support, damping the magnitude of voltage oscillations, synthetic inertia and black start capabilities. Installing BESS at these important RE pooling stations of Bhadla-III & Bikaner-III shall support secure and reliable operation of the Northern grid. Sufficient land for the proposed capacity is available at these substations.

A.36.12. **Kanpur S/s**: Kanpur is a very important substation at the midst of the Northern Grid, supplying power to a major industrial hub in the vicinity. At Kanpur, earlier a ±140 MVAr SVC has supported the voltage and maintained the dynamic stability in the Northern Grid. After retirement of the SVC, it is proposed to install a BESS as an active grid balancing asset, that can provide fast voltage support along with other ancillary functions, for safe and reliable operation of the Northern Grid. It can provide the desired frequency regulation, voltage support and short-term reserve services within the emergency response times. It shall also help smooth the intermittency of renewable energy, facilitating grid operation. In addition to all above, adequate land is available for establishing the BESS at the substation.

A.36.13. A 4-hour storage capacity is proposed in the BESS, due to the following reasons:

i. Flexibility: 4-hour/1-cycle can be split into multiple partial discharges as per grid requirement to maintain the grid safety & reliability.
ii. Facilitating ramp rate during the shoulder periods of solar up to the evening peak load period.
iii. Prioritizing battery health and lower augmentation risk over useful life of 15 years, assuming ~6500 cycles over contract life (≈1 cycle/day)
iv. Long-duration evening peak support and RE firming.

A.36.14. POWERGRID stated that, considering the recent pricing trends of Li-Ion-based BESS installation, the tentative cost of BESS is about Rs. 1.2-1.8Cr./MWh (excluding cost of land and O&M), and accordingly, the total cost for the project is estimated at **Rs. 3600-5400 crore**. The implementation period for the proposed IESS will be **18 months**. After implementation of the proposed IESS, POWERGRID and its subsidiaries shall approach CERC for determination of tariff under RTM mechanism as per the actual project cost incurred.

A.36.15. Regarding recovery of these charges, Clause (3) of Regulation 78 of CERC Tariff Regulations stipulates that the transmission charges determined for IESS shall be

shared by the beneficiaries or long-term customers or the designated ISTS customers, as the case may be, in accordance with CERC Sharing Regulations.

A.36.16. Powergrid explained that 250MW/ 1000MWh BESS each at 3 no. existing substations in NR are proposed to be installed as IESS for safe and reliable operation of the Grid under provisions of 2nd Amendment to CERC Tariff Regulations, 2024. Accordingly, these IESS are proposed for utilization by Grid-India as ancillary services.

A.36.17. Powergrid stated that as per provisions of 2nd Amendment, a petition will be filed by it before Hon'ble Commission for in-principle approval for installation of BESS as transmission assets.

A.36.18. Powergrid apprised that an amendment to the Sharing Regulations is expected in due course.

A.36.19. NRLDC opined that the grid will benefit more if the proposed BESS is installed at in Rajasthan than in Kanpur. Accordingly, forum advised Powergrid to work out the location, replacing Kanpur S/s as the proposed IESS location.

A.36.20. NRLDC was requested to take up the matter with NLDC for expediting the preparation of the procedure for charging, scheduling, and dispatch of electricity and energy accounts for the integrated energy storage system.

A.36.21. MS, NRPC stated that the proposal requires further deliberations. She asked PGCIL to share the detailed proposal to NRDC and CTU for comments.

Decision of OCC Forum:

OCC form noted that the proposal requires further deliberations. Forum asked PGCIL to share the detailed proposal to NRDC and CTU for comments.

A.37. Suitable guidelines/Regulations for GNA of variable Pump Storage Machine for Tehri PSP in view of technical constraints and operational requirements in Pump mode.

A.37.1. THDC representative informed that Long Term Access (LTA) and Connectivity for 1000 MW were granted to Tehri PSP vide PGCIL letters No. C/CTU-Plg/LTA/N/THDC dated 18.12.2015 and No. C/CTU-Plg/CON/N/THDC respectively (Copies of letters enclosed as **Annexure-A.IV**). Subsequently, CTUIL vide letter No. CTU/NR/TILTP/GNA dated 31.10.2022 intimated that, as per Regulation 18.1(f), the 1000 MW LTA shall be considered as deemed GNA (copy of letter enclosed as **Annexure-A.V**).

A.37.2. Connection details (FORMAT-CONN-TD-4) for 1000 MW (plus allowed overload capacity) were issued by CTUIL to Tehri PSP vide letter No. C/CTU/N/05/THDC/2200000800/Amend-2 dated 12.09.2025 (copy enclosed as **Annexure-A.VI**).

A.37.3. During real-time operation since COD of the first Tehri PSP unit in June 2025, it has been observed that the minimum pumping power remained above 250 MW during the period from 22.08.2025 to 16.12.2025. It is to further apprise that Tehri PSP machines cannot be operated below 250 MW in Pumping mode as per the design capability of PSP machines and Tehri Reservoir Head conditions for an approximate duration of 4.5 months (tentatively from Mid-August to December) in a year. However, this duration of such operating limitation may vary depending upon the prevailing head conditions during the year. During this period, it is not technically possible to run the machine below 250 MW in pumping mode as per the pump characteristics of PSP machines.

A.37.4. Presently three units of Tehri PSP are under commercial operation and COD of fourth unit is expected by second week of April 2026. Consequently, when all four units will operate in pumping mode as per their design capability, the aggregate drawal from the grid will exceed the currently sanctioned GNA of 1000 MW. Due to this operational constraint during the aforesaid period, Tehri PSP will become liable for Regional Transmission Deviation Charges on account of GNA constraints. However, such drawl shall remain within the permissible connectivity limit, i.e. 1000 MW plus 10% overload.

A.37.5. It is pertinent to mention that GNA of Generating plants is derived from plant capacity mentioned in their respective LTA, however, operational capacity of PSP in pump mode is normally higher than generating mode. This technical requirement necessitated the higher operational capacity for PSP, generally at given head the operational capacity in Pump & Turbine mode are different, for PSP Head vs Capacity. This operational requirement of PSP is not specifically covered in existing regulations viz. IEGC, GNA Regulations etc.

A.37.6. Apart from the above, Tehri PSP Units may be operated above 250 MW in pumping mode as per design capability of machines for further duration of 4 to 5 months in a year due to high head. It is evident that Tehri PSP Units may be operated above 250 MW in pumping mode for a duration of approximate 9 months in a year subject to prevailing Tehri Reservoir head conditions.

A.37.7. Accordingly, CTUIL was requested vide letter dated 03.03.2026, to consider enhancement of the GNA quantum to 1100 MW (275 MW × 4) for Tehri PSP throughout the year avoid Regional Transmission Deviation Charges, strengthen grid security, and ensure optimal utilization of the Tehri PSP units for the majority of the year (Copy of letter has been enclosed for reference as **Annexure-A.VII**).

A.37.8. However, in the meantime, after multiple follow-ups with CTUIL, it has been advised by them to submit an application through the National Single Window System (NSWS) for enhancement of GNA for Tehri PSP for scrutiny at CTUIL's end.

A.37.9. The Forum may kindly deliberate and provide guidance on the following:

a) **Enhancement of GNA to 1100 MW for Tehri PSP** in view of technical and operational constraints as per the Tehri reservoir operational cycle.

b) **Alternatively, consideration of waiver or suitable relaxation of Regional Transmission Deviation Charges**, arising due to inherent technical constraints, until appropriate regulatory provisions are established.

c) **Recognition of Pumped Storage Plants as a distinct category** under the regulatory framework, particularly in respect of differing requirements in pumping and generating modes.

d) **Way forward for addressing the regulatory gap**, including necessary amendments to existing regulations to accommodate PSP-specific operational characteristics

A.37.10. CTUIL representative stated that, as per the GNA Regulations, GNA connectivity to any generator can be accorded up to the higher of the maximum drawal or injection into the grid. However, the GNA presently granted to Tehri PSP is limited to its installed capacity of 1000 MW.

A.37.11. He requested THDC to submit an application for revision of the GNA quantum up to their maximum drawal requirement, upon which CTUIL would process the request accordingly.

A.37.12. MS, NRPC requested THDC to submit its request for revision in GNA quantum to CTUIL, and CTUIL may expedite the process of granting revised GNA. She further stated that the revised GNA granted by CTUIL would be applicable in prospective manner.

Decision of OCC Forum:

OCC Forum directed THDC to submit its request for revision in GNA quantum to CTUIL, and CTUIL was requested to expedite the process of granting revised GNA. The Forum further noted that the revised GNA would be applicable in prospective manner.

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

B.1 NR Grid Highlights for Mar 2026

B.1.1 Demand met and Consumption details of NR

S. No.	Constituents	Max Demand met (in	Date & Time of Max	All time Max.	Date & Time of All time Max

		MW)	Demand met	Demand	Demand met
1	Chandigarh	228	10-03-2026 19:00	482	18-06-2024 at 15:28
2	Delhi	4580	13-03-2026 12:00	8656	19-06-2024 at 15:06
4	Haryana	8822	02-03-2026 09:45	14662	31-07-2024 at 14:30
3	H.P.	2060	18-03-2026 08:00	2310	09-01-2026 at 09:15
5	J&K	3188	03-03-2026 19:00	3362	07-01-2026 at 10:00
6	Punjab	11127	06-03-2026 12:00	16754	28-06-2025 at 15:00
7	Rajasthan	17264	02-03-2026 09:30	19282	09-01-2026 at 09:00
9	U.P.	22314	29-03-2026 20:24	31486	11-06-2025 at 00:45
8	Uttarakhand	2315	28-03-2026 19:00	2910	11-06-2025 at 22:00
10	**Northern Region**	63286	07-03-2026 10:00	91234	19-06-2024 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	4.3	10-03-2026	3.7	9.3	12.06.2025
2	Delhi	93.4	13-03-2026	82.6	177.7	18.06.2024
4	Haryana	181.3	10-03-2026	33.7	293.4	30.07.2024

3	H.P.	38.3	18-03-2026	154.9	42.9	04.02.2026
5	J&K	59.5	20-03-2026	54.3	70.3	04.02.2025
6	Punjab	185.3	11-03-2026	158.6	366.8	21.07.2024
7	Rajasthan	327.7	07-03-2026	273.8	388.0	11.06.2025
9	U.P.	432.7	10-03-2026	40.6	658.7	17.06.2024
8	Uttarakhand	44.9	10-03-2026	387.6	62.1	14.06.2024
10	**Northern Region**	1338.5	10-03-2026	1189.9	**2022.9**	**12.06.2025**

B.1.2 In March'26,

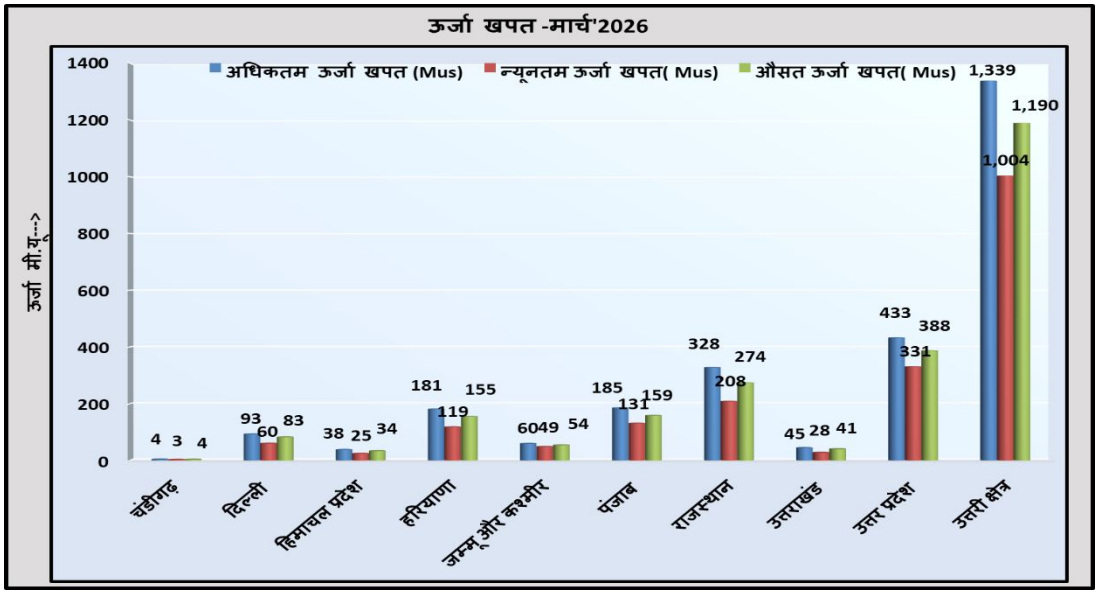
- Maximum energy consumption of Northern Region was 1338.5 MUs on 10th March'26 and it was 3.3% higher than March'25 (1296 MUs on 11th Mar'25).
- Average energy consumption per day of Northern Region was 1189.9 MUs and it was 0.41% higher than March'25 (1185 MUs/day)
- Maximum Demand met of Northern Region was 63286 MW on 07th March'26 @10:00 Hrs as compared to 65384 MW on 10th Mar'25 @10:00 Hrs.

Comparison of Average Energy Consumption (MUs/Day) – March '25 vs March '26

क्षेत्र/राज्य	मार्च - 2025	मार्च - 2026	% अंतर
चंडीगढ़	3.5	3.7	5.7%
दिल्ली	74.9	82.6	10.3%
हिमाचल प्रदेश	33.2	33.7	1.5%
हरियाणा	146.7	154.9	5.6%
जम्मू और कश्मीर	59.5	54.3	-8.8%
पंजाब	159.1	158.6	-0.3%
राजस्थान	299.3	273.8	-8.5%

उत्तराखंड	39.7	40.6	2.3%
उत्तर प्रदेश	369.1	387.6	5.0%
उत्तरी क्षेत्र	1184.8	1189.9	0.4%

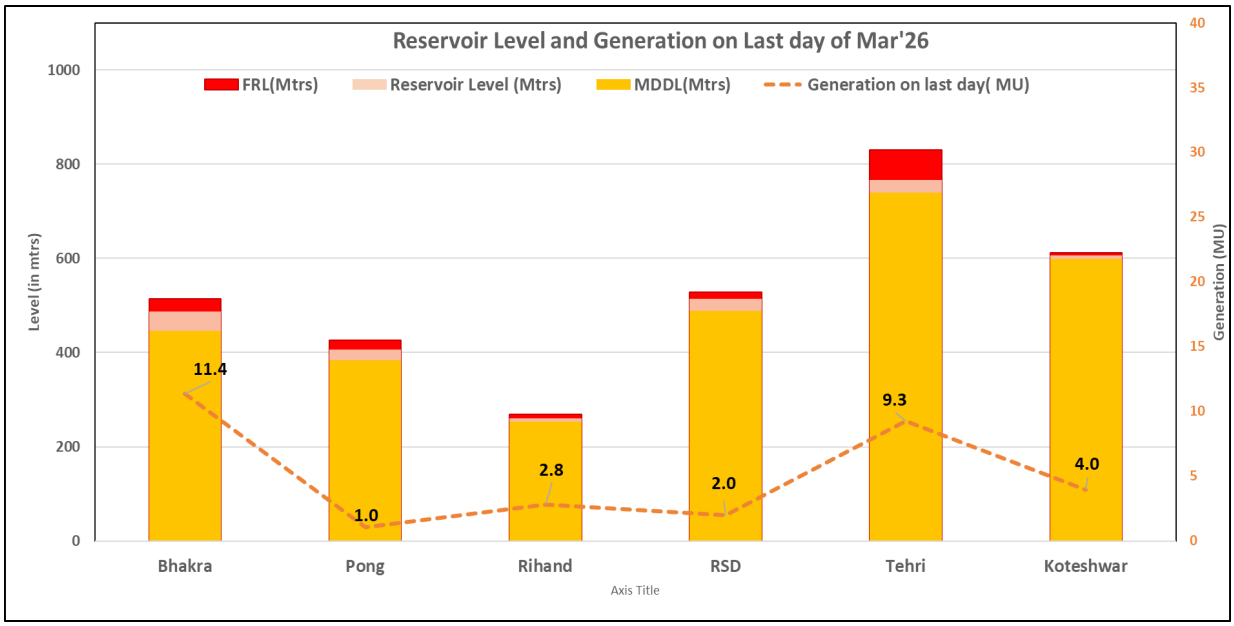
Energy Consumptions



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Mar' 26	50.004	50.497 (13.03.26 at 13:01:40 hrs)	49.420 (03.03.26 at 18:52:20 hrs)	6.22	74.26	19.52
Mar' 25	50.001	50.456 (05.03.25 at 13:11:40 hrs)	49.618 (30.03.25 at 00:07:10 hrs)	5.32	77.89	16.79

Reservoir Level and Generation on Last Day of Month



Reservoir Level on last day of March month (Low: -ve) (High: +ve)

Year	Bhakra	Pong	Rihand HPS	RSD	Tehri	Koteshwar
2026	487.39	411.56	260.87	514.48	766.36	606.65
2025	473	395	259	495	764	611
Diff (in m)	14.39	16.56	1.87	19.48	2.36	-4.35

Detailed presentation on grid highlights of Mar'2026 as shared by NRLDC in OCC meeting is attached as Annexure-B.I.

B.2 SPS proposals in Rajasthan and review of SPS for Chhabra-Kawai Kalisindh complex

B.2.1. As discussed in previous OCC meetings, majority of 400/220kV ICTs in Rajasthan state (both interstate as well as intrastate) are N-1 non-compliant during high demand season. As the implementation of additional ICT at some of ISTS locations is not envisaged in near future, it was decided to implement SPS at these locations. List of N-1 non-compliant ISTS 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*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)	Implemented

B.2.2. **During 242 OCC meeting,**

- *POWERGRID representative informed that SPS has been implemented at all these substations of POWERGRID. Only SPS implementation at 400/220kV Kankroli(PG) is pending.*
- *OCC asked POWERGRID to submit mock-testing report for all SPS implemented within one week.*
- *Rajasthan SLDC representative stated that any shutdown requirement for Kankroli ICT may be planned during evening hours.*
- *OCC forum asked POWERGRID to expedite the works.*

Review of SPS for Chhabra-Kawai Kali sindh complex

During 242 OCC meeting,

B.2.3. NRLDC representative stated that a major grid event was observed on 04.04.2026 wherein multiple transmission element tripping was observed in Anta-Chhabra complex. Firstly, 400 KV Hindaun-Chhabra Ckt tripped at 15:42 hrs due to inclement weather as reported by Rajasthan SLDC. Thereafter, 765 KV Anta-Phagi Ckt-1 tripped on B-N fault at 16:29 hrs from Anta end only and 765/400 KV 1500 MVA ICT 1, 2 and 3 at ANTA(RS) tripped at 16:34 hrs. Due to tripping of all 3 ICTs at 765 kV Anta (RS), SPS operated, leading to tripping of 660 MW Chhabra SCTPS unit-2. Outage of 400 kV Hindaun-Chhabra Ckt and subsequent tripping all ICTs at 765/400 kV Anta led to over-loading of remaining evacuation lines i.e. 400 KV Bhilwara-Chhabra Ckt and 400kV Chhabra-Anta(bypass)-Kota line operating beyond thermal limit.

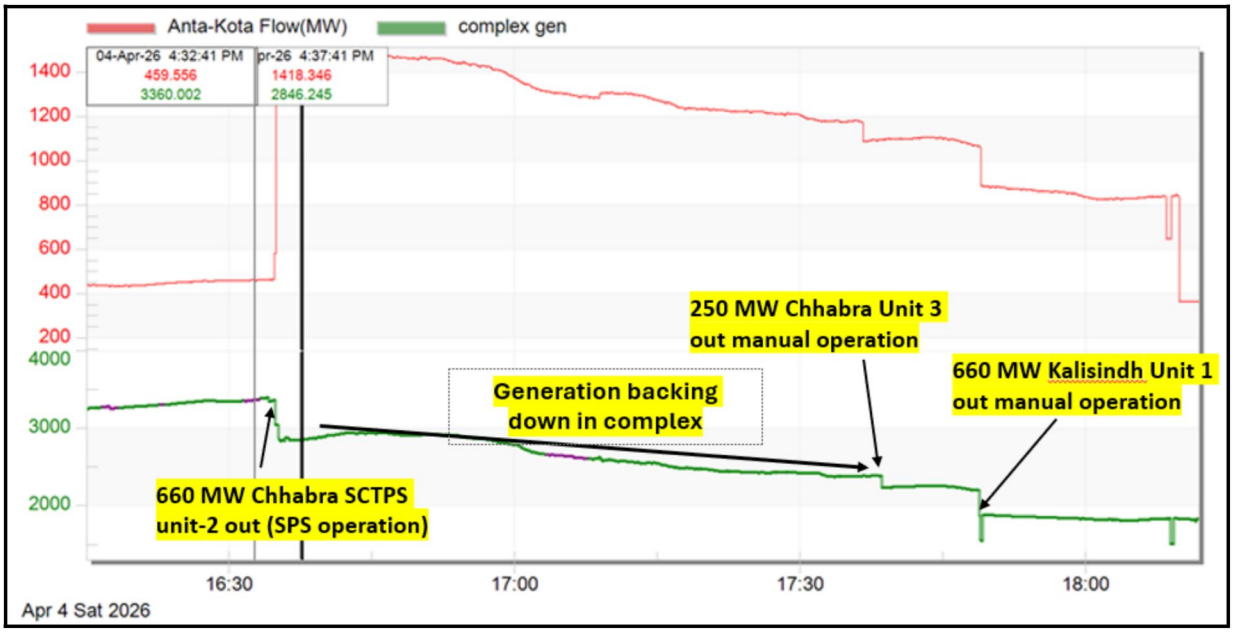
B.2.4. Outage of 400 kV Hindaun-Chhabra Ckt and subsequent tripping all ICTs at 765/400 kV Anta led to over-loading of remaining evacuation lines i.e. 400 KV Bhilwara-Chhabra Ckt and 400kV Chhabra-Anta(bypass)-Kota line operating beyond thermal limit. Subsequently generation of all units operating on-bar in the complex were reduced to technical minimum.

B.2.5. Following actions were taken by NRLDC and SLDC Rajasthan after the event:

- Backing down generation at Chhabra-Kawai-Kalisindh complex immediately to control over-loading of 400 KV Bhilwara-Chhabra Ckt and 400kV Chhabra-Anta(bypass)-Kota line.
- Subsequently generation of all units operating on-bar in the complex were reduced to technical minimum.

- 250 MW Chhabra U-3 and 660 MW Kalisindh U-1 were taken off bar by Rajasthan at 17:37 hrs and 17:49 hrs respectively.

B.2.6. Plot below shows the line loading of 400kV Chhabra-Anta(bypass)-Kota line after the event, wherein it can be clearly seen that the line loading exceeded its thermal limit for significant duration of time and line was operated at very high loading (loading increased from 450MW to more than 1400MW). Telemetry of 400kV Chhabra-Bhilwara line for the given period is not available at NRLDC end.



B.2.7. Following is the existing SPS logic in the complex:

Chhabra, Kawai and Kalisindh TPS Complex

1. **Case-1:** N-1-1/N-2 of 765/400 kV Anta ICTs

   Action: Trip one unit of 660 MW at Chhabra SCTPS to limit the flow on the remaining ICT with in safe range

2. **Case-2**: N-1 of Anta-Phagi 1 & 2

   Action: No action required

3. **Case-3:** N-1-1/ N-2 of Anta-Phagi 1 & 2

   Action-1: One unit each at Kawai, Chhabra, Kalisindh and Chhabra SCTPS shall be tripped through SPS.
   Action-2: Automatic load shedding of 750 MW in Rajasthan control area (to avoid overloading of WR-NR corridor as well as to avoid over drawl by Rajasthan)

B.2.8. As per the grid event, 3 no. 765/400kV Anta ICTs have tripped for which system has not been planned nor SPS was enabled. However, given the possibility of such instances in future and the load flow after tripping of 3 no. 765/400kV Anta ICTs being

similar to N-2 contingency of 765kV Anta-Phagi D/C line, the condition of N-3 contingency of 765/400kV Anta ICTs may be wired as Case-3 of already existing logic.

B.2.9. Further, SPS with monitoring loading of 400kV lines from Chhabra such as Chhabra-Hindaun/ Chhabra-Anta-Kota/ Chhabra-Bhilwara in real-time and tripping units/necessary backdown till 400kV lines loading is less than 850MW may be designed by RRVPNL and Rajasthan SLDC.

B.2.10. RRVPNL representative stated that:

- *Suggestion from NRLDC side shall be included in revised SPS for complex. Further, with LILO of 400kV Kalisindh-Anta one line at 400kV Sangod, few other changes are also to be done in existing SPS scheme.*
- *Complete revised scheme shall be discussed with Rajasthan SLDC and shall be put up for approval of OCC forum in next OCC meeting.*

B.2.11. NRLDC representative enquired whether tripping of unit is hardwired, i.e. in case of outage of one unit at one of the substation, whether other unit can also trip through SPS operation.

B.2.12. Rajasthan SLDC representative confirmed that SPS logic is manually set at each generating station in case of planned outage/ prolonged forced outage of one or more unit. That means for example, if one unit at Chhabra is already under outage, no unit shall be tripped at Chhabra even after SPS operation.

B.2.13. Adani representative submitted that after tripping of 765/400kV Anta all three ICTs, the flow on 765kV Anta-Phagi D/C lines would have reduced to zero. RRVPNL can also monitor loading of these two lines, and extend signal for SPS operation in case of tripping of 2no. Anta-Phagi lines or 3no.s 765/400kV Anta ICTs.

Decision of OCC Forum:

OCC forum asked RRVPNL and Rajasthan SLDC to submit the revised SPS scheme.

B.3 Huge deviation by the Rajasthan state control area

B.3.1. As per IEGC clause 44.3(c), State Load Despatch Centre in discharge of its functions under the Act and for stable, smooth and secure operation of the integrated grid, shall be responsible for balancing demand and supply to minimize Area Control Error (ACE) for the State. NRLDC has also been asking constituents to maintain load generation balance and messages are also regularly issued from real-time operators to the under-drawing/ over-drawing constituents. Further, NRLDC has been proactively carrying out hydro moderation of ISGS plants in addition to TRAS down support from NLDC to arrest high frequency.

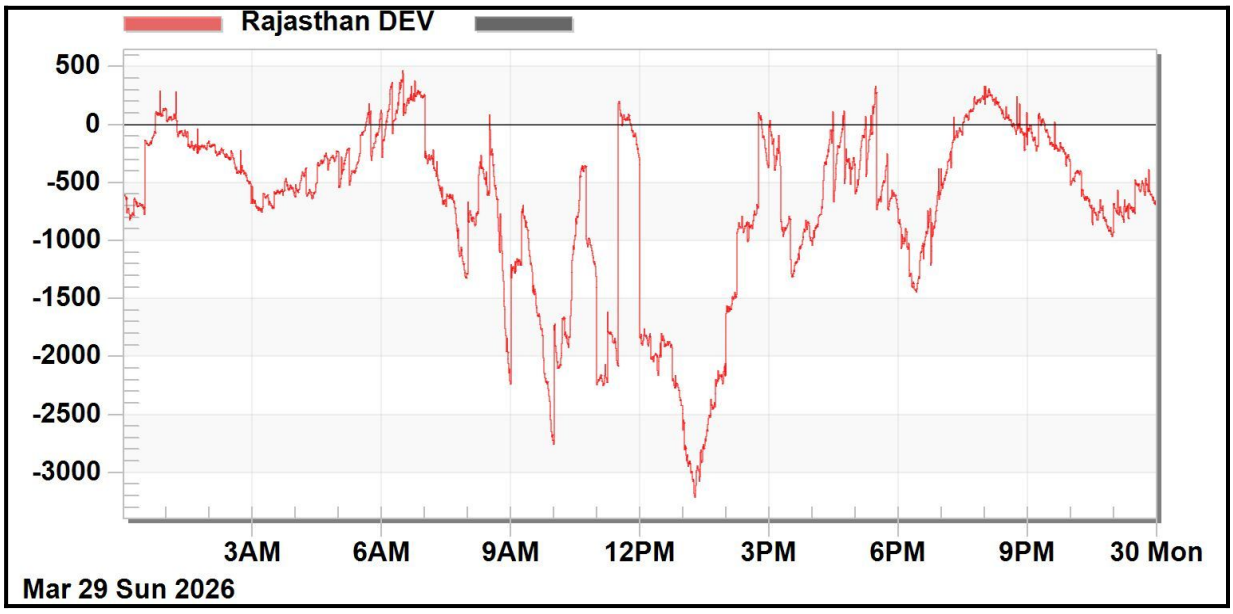
B.3.2. During 242 OCC meeting, NRLDC representative stated that it is being observed that Rajasthan state due to less state demand in March 2026 is heavily under-drawing during the daytime when solar generation is high. The details of daily under-drawl (MU) and max. under-drawl based on 5 minutes average telemetered data i.r.o. Rajasthan state control area for few days of March 2026 is given below:

Rajasthan Deviation and grid frequency for March 2026

Date	Deviation/UI [Overdrawl (+) Under drawl (-)] MUs	Max Under-drawl (in MW) during 09-15 hrs of day
29-03-2026	-16.64	3192
04-03-2026	-12.08	1876
22-03-2026	-11.75	2867
20-03-2026	-11.54	2226
15-03-2026	-11.35	1720
19-03-2026	-10.49	2506

B.3.3. Plots for deviation by Rajasthan state control area for 29-03-2026 (most recent event) are shown below wherein it can be clearly seen that Rajasthan state was heavily under drawing from the grid during the day time.

B.3.4. Such



large deviations from schedule and high-frequency operation of grid are a threat to the system security.

B.3.5. To avoid continuous high frequency operation in the grid, following actions may be ensured during real-time grid operation and maintaining drawl close to schedule:

- Generation backing down in coal fired thermal stations to 55% of Maximum Continuous Rating (MCR) loading of the units on bar at the generating station after deducting the normative Auxiliary Energy Consumption plus Auxiliary

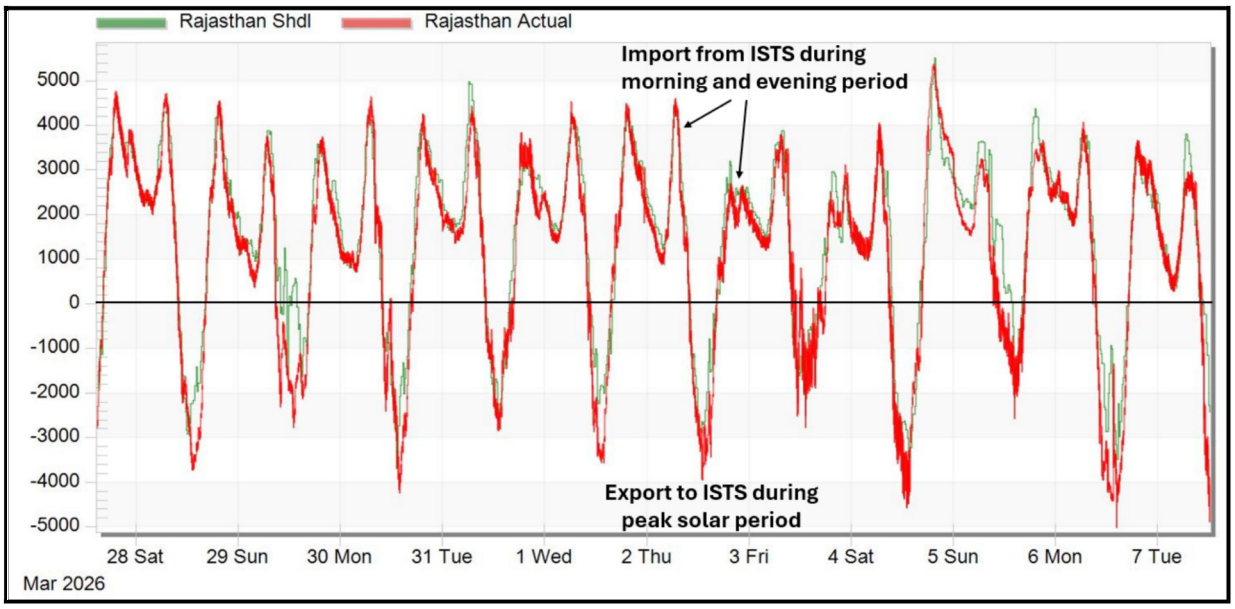
Energy Consumption compensation as per the provisions of the Grid Code as per merit order based on variable charges.

- SLDC may take up with SERC for providing suitable compensation for oil support for thermal plants backing down to 55% of their MCR.
- Portfolio management through sale of power in T-GNA.
- Lifting of planned load shedding, curtailments, if any.
- Downward revision of requisitions from ISGS as per merit order on request of beneficiaries.
- Generation reduction at hydro stations having storage capability.

B.3.6. There is need for further improvement in load generation balancing and maintaining drawl close to schedule by Rajasthan SLDC.

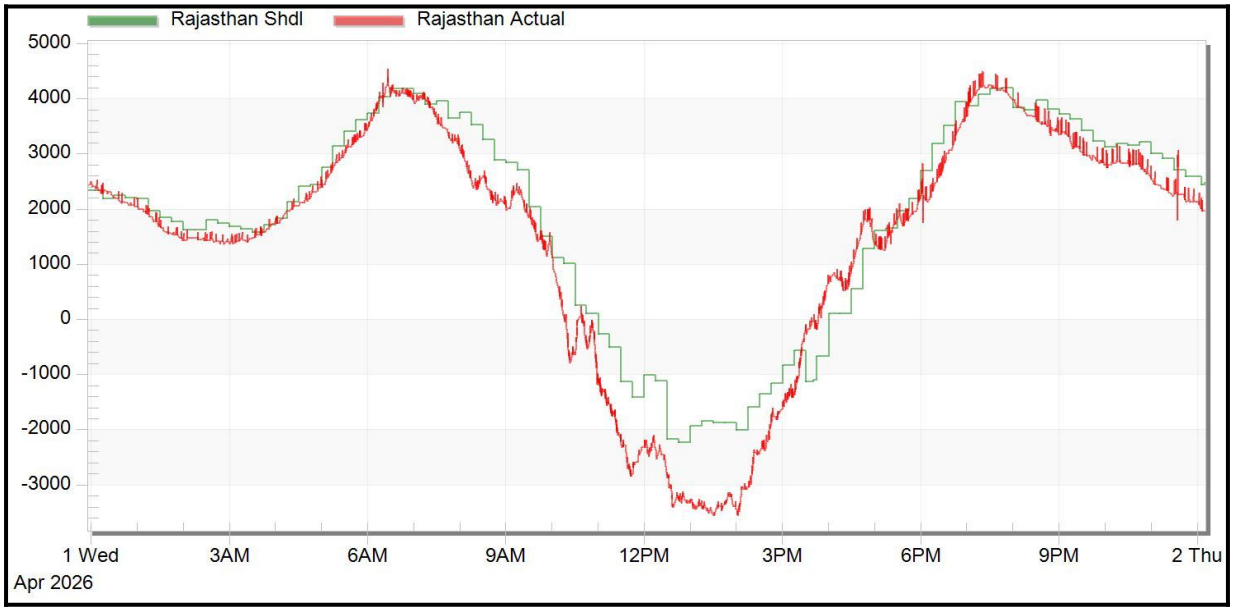
B.3.7. Due to the concentration of huge RE power in Rajasthan the state is exporting power to the ISTS system during day-time. Rajasthan state needs to carry out study for adopting a balanced energy mix strategy—combining renewable and conventional sources—to meet rising power demand and ensuring grid stability.

B.3.8.



Diurnal schedule and actual drawl by Rajasthan from ISTS for sample day (1st April 2026) is shown below:

B.3.9.



NRLDC representative stated that Rajasthan state needs to carry out study for adopting a balanced energy mix strategy—combining renewable and conventional sources—to meet rising power demand and ensure grid stability.

B.3.10. **Rajasthan SLDC representative informed that:**

- During high solar hours, 10-15 hrs, even after backing down intrastate thermal generators to 55%, the state is not able to utilise the solar and wind generation within the state.
- Power is being sold in DAM/RTM also, which is why state is getting a negative schedule, still, managing state portfolio is becoming very challenging.

B.3.11. **NRLDC representative stated that:**

- As can be seen from the plot attached here, Rajasthan is selling power in DAM/RTM and in case the power is not cleared, the schedule of Rajasthan state shows a sudden jerk as is visible at 11:30hrs and 12:00hrs of 29th March 2026.
- Bidding by Rajasthan in the market should be such that there are no sudden jerks in the schedule of state and state is able to manage their drawl close to the schedule.
- Rajasthan SLDC needs to expedite to develop a compensation mechanism similar to ISGS RE plants so that in case there is excess power in the grid, solar generators may be asked to back down with suitable compensation or variable charges as per the existing PPA rate be provided to them making backing down financially viable.
- In this way state can also save on the DSM charges payable by the state to the pool. Immediate actions are required from Rajasthan side as the issuance of implementation of this mechanism shall take time.

B.3.12. MS NRPC also expressed concern and asked Rajasthan SLDC to take necessary actions to manage their drawl from the grid.

Decision of OCC Forum:

OCC forum asked Rajasthan SLDC to take necessary actions to manage their drawl from the grid, including mechanisms for intrastate ancillary services.

B.4 Shifting of Rihand-III to NR for maximising NR import during high demand season

B.4.1. The agenda for the opening of 400kV Singrauli-Anpara line and shifting of Rihand Stage-III generating units to Northern region was discussed in 50th TCC & 74th NRPC meetings held in Raipur on 28.06.2024 & 29.06.2024 respectively. Forum decided that joint meeting would be convened with participants from NRPC, WRPC, CEA-PSPA I, CTUIL, NRLDC, WRLDC, NLDC, NTPC, POWERGRID, UP SLDC, UPPTCL, UPRVUN and Lanco Anpara. After detailed deliberations in the meeting on 09.07.2024, all members agreed that to enhance NR import ATC/TTC limit during high demand season, Rihand-III generation to be evacuated from:

- Rihand-III connected to NR: May-Sep
- Rihand-III connected to WR: Rest of the months of the year

B.4.2. Shifting of Rihand-III generation to Northern region reduces the loading of 765kV Vindhaychal-Varanasi D/C, due to which NR was able to import higher power from WR without major constraint. ATC/TTC limits on WR-NR corridor and NR import are increased after the shifting exercise, which facilitates NR states to import higher power during the summer months. Relief of 120 MW in the loading of each circuit of 765 kV V'chal – Varanasi D/C with shifting of Rihand-3 generation to NR is observed.

Sl No.	Corridor	Time Period	Increase in TTC due to shifting of Rihand from WR to NR (MW)
1	NR Import	00-09	2700
		09-15	400
		15-16	0
		16-24	2700
2	WR->NR	00-09	2450
		09-15	400
		15-16	0
		16-24	2450

B.4.3. As similar demand and line loading pattern is expected when NR imports high power from WR during summer 2025 & summer 2026 months especially during non-solar hours, it was discussed (in the meeting held on 09.07.2024) that there may be requirement of such changeovers for next 2-3 high demand seasons till approved transmission system of establishment of 765/400kV Prayagraj and 765/400kV Robertsganj is implemented. (approved by 52nd TCC & 77th NRPC Meeting held on 27-28 December 2024)

B.4.4. Rihand-III generation was evacuated through the Northern region from 14.08.2024 till Oct 2024. Thereafter, when the demand of the Northern region reduced and the shutdown of HVDC Rihand-Dadri was to be provided, Rihand-III generation was shifted back to Western region on 04.11.2024.

B.4.5. Similarly, Rihand-III generation was evacuated through NR from 27.05.2025 till Oct 2025. Thereafter, when the demand of Northern region reduced and the shutdown of HVDC Rihand-Dadri was to be provided, Rihand-III generation was shifted back to Western region on 22.11.2025.

Decision of OCC Forum:

OCC forum approved the shifting of Rihand-III to NR in May 2026 so that, the exercise is carried out swiftly for the benefit of NR states.

B.5 Sharing of ATC/TTC assessment and basecase with NRLDC

B.5.1. All NR states except Chandigarh UT are sharing basecase and ATC/TTC assessment with NRLDC. OCC has advised all states to timely declare TTC/ATC for prospective months and revise the figures as per the requirement.

B.5.2. 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".

B.5.3. Detailed roles and responsibilities for State Load Dispatch Centers in various timelines of the approved procedure are provided in the table below.

Purpose	S No	Action of Stakeholder	Responsibility	Submission to	Data/ Information Submission Time line
1. Revision 0 TTC/ATC Declaration for Month 'M'	1 (a)	Submission of node wise Load and generation data along with envisaged scenarios for assessment of transfer capability Assessment of TTC/ATC of the import/export capability of the state and intra-state system and sharing of updated network simulation models	SLDC	RLDC	10th Day of 'M-12' month
	1 (b)	Declaration of TTC/ATC of the intra- state system			26th Day of 'M-12'

		by SLDC in consultation with RLDC			month
2. Interconnection Studies for elements to be integrated in the month 'M'	2 (a)	Submission of node-wise load and generation data & sharing of network simulation models for intra-state elements coming in the next six months	SLDC	RLDC	8th Day of 'M- 6' month
	2 (b)	Sharing of inter-connection study results			21st Day of 'M-6' month
3. Month Ahead TTC/ATC Declaration & Base case for Operational Studies for Month 'M'	3 (a)	Submission of node wise Load and generation data along with envisaged scenarios for assessment of transfer capability	SLDC	RLDC	8th Day of 'M- 1' month
		Assessment of TTC/ATC of the intra- state system and sharing of updated network simulation models			
	3 (b)	Declaration of TTC/ATC of the intra- state system in consultation with RLDC	SLDC	RLDC	22nd Day of 'M-1' month

B.5.4. **ATC/TTC assessment sharing 11 months in advance**

The procedure mentions that:

"*SLDCs in consultation with RLDCs shall declare the import and export TTC, ATC, and TRM of the individual control/bid areas within the region in accordance with Regulation 44 (3) of the Grid Code 2023. RLDCs shall assess the import and export TTC, TRM and ATC for the group of control/bid areas within the region (if required). The computed TTC, TRM and ATC figures shall be published on the website of respective SLDCs and RLDCs, along with the details of the basis of calculations, including assumptions, if any,* ***at least eleven (11) months in advance****. The specific constraints indicated in the system study shall also be published on the website*."

B.5.5. **Sharing of Data and study results for interconnection studies**

As per **Regulation 33 of IEGC 2023,**

(9) Each SLDC shall undertake a study on the impact of new elements to be commissioned in the intra-state system in the next six (6) months on the TTC and ATC for the State and share the results of the studies with RLDC.
(10) Each RLDC shall undertake a study on the impact of new elements to be commissioned in the next six (6) months in (a) the ISTS of the region and (b) the intra-state system on the inter-state system and share the results of the studies with NLDC.

(11) NLDC shall undertake a study on the impact of new elements to be commissioned in the next six (6) months in (a) the inter-regional system, (b) cross-border link and (c) intra-regional system on the inter-regional system.

B.5.6. In line with the above, utilities are required to share the list of elements/LGB data/interconnection study results etc as per the approved procedure, which are expected to be commissioned within next six months. This needs to be practised as a monthly exercise on a regular basis.

TTC/ATC of state control areas for (M-1) basis

B.5.7. As discussed in previous OCC meetings, most of the NR states except Ladakh and Chandigarh U/Ts are sharing basecase and ATC/TTC assessment with NRLDC.

B.5.8. OCC has advised all states to timely declare TTC/ATC for prospective months and revise the figures as per requirement. ATC/TTC limits of states for the month of May 2026 are attached as Annexure-B.II of the agenda. Utilities are requested to go through these limits and provide comments.

B.5.9. To encourage participation from SLDCs regarding basecase preparation and ATC/TTC assessment, two workshops have been conducted from Grid-India/NRLDC side. One workshop was conducted 31.08.2023 before the finalization of the procedure and another on 10.01.2024 to involve further participation from SLDCs. Subsequently, a workshop was organized on 9-11 December 2024 at NRLDC for all SLDCs under the initiative of FOLD.

B.5.10. Although all SLDCs are now involved in preparation of basecase & ATC/TTC assessment, it is seen that the timelines as per CERC approved procedure are not being followed and the number of times basecases are not received from SLDC side.

B.5.11. Still, it is being observed that the response from some SLDCs is not as per the desired levels. The latest status till March 2026 is shown below:

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
DL	No	No	Yes	Yes	No	No
HR	Yes	Yes	No	Yes	No	No
HP	No	No	No	No	No	No
JK	Yes	Yes	Yes	Yes	Yes	Yes
PN	Yes	Yes	Yes	Yes	Yes	Yes
RJ	Yes	Yes	Yes	Yes	Yes	Yes
UP	Yes	Yes	Yes	Yes	Yes	Yes
UK	No	only Solar peak and evening peak	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
DL	No	No	Yes	Yes	No	No
HR	Yes	Yes	Yes	Yes	No	No
HP	No	No	No	No	No	No
JK	Yes	Yes	Yes	Yes	Yes	Yes
PN	Yes	Yes	Yes	Yes	Yes	Yes
RJ	Yes	Yes	No	No	No	No
UP	Yes	Yes	Yes	Yes	Yes	Yes
UK	No	No	No	No	No	No

January 2026 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Feb-26)		M-12 (Jan-27)		M-6 (July-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
DL	No	No	Yes	Yes	No	No
HR	Yes	Yes	Yes	Yes	No	No
HP	No	No	No	No	No	No
JK	Yes	Yes	Yes	Yes	Yes	Yes
PN	Yes	Yes	Yes	Yes	Yes	Yes
RJ	only Solar peak	only Solar peak	No	No	No	No
UP	Yes	Yes	Yes	Yes	Yes	Yes
UK	No	No	No	No	No	No

February 2026 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Mar-26)		M-12 (Feb-27)		M-6 (August-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
DL	No	No	No	No	No	No
HR	Yes	Yes	Yes	Yes	Yes	Yes
HP	Yes	Yes	Yes	Yes	Yes	Yes
JK	Yes	Yes	Yes	Yes	Yes	Yes
PN	Yes	Yes	Yes	Yes	Yes	Yes
RJ	No	No	No	No	No	No
UP	Yes	Yes	Yes	Yes	Yes	Yes
UK	No	No	No	No	No	No

March 2026 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Apr-26)		M-12 (Mar-27)		M-6 (Sep-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
DL	No	No	No	No	No	No
HR	Yes	Yes	Yes	Yes	Yes	Yes
HP	No	No	No	No	No	No
JK	Yes	Yes	Yes	Yes	Yes	Yes
PN	Yes	Yes	Yes	Yes	Yes	Yes
RJ	Yes	Yes	Yes	No	Yes	No
UP	Yes	Yes	Yes	Yes	Yes	Yes
UK	No	No	No	No	No	No

April 2026 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (May-26)		M-12 (Apr-27)		M-6 (Oct-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
DL			Yes	Yes	Yes	Yes
HR	Yes		Yes		Yes	
HP						
JK	Yes	Yes	Yes	Yes	Yes	Yes
PN						
RJ						
UP	Yes	Yes	Yes	Yes	Yes	Yes
UK						

Submitted after 8th of current month

Submitted in next month

B.5.12. **NRLDC representative stated that as can be seen from the above table:**

- HP, Delhi and Uttarakhand SLDCs are not regularly submitting PSSe basecases and need to regularly share the updated basecases
- Other states such as J&K, Punjab, Rajasthan and UP are regularly sharing the basecases but are submitting after the mandated timeline dates on few occasions.
- Accordingly, all SLDCs are requested to share basecase as well as ATC/TTC assessment as per CERC approved procedure timelines.

B.5.13. Haryana SLDC representative stated that latest basecase along with ATC/TTC enhancements have been shared with NRLDC. However, the ATC/TTC increase is subject to certain planned works including SPS implementation at 220kV Hissar(BBMB) for 400/220kV Hissar(PG) ICTs. However, the implementation of SPS has been put on hold due to objections from PSTCL even though SPS was approved in OCC forum.

B.5.14. NRLDC representative stated that in the virtual meeting convened on 09.04.2026 between NRLDC, Punjab SLDC and Punjab planning team, it was discussed that major issue with wiring of 220kV Hissar-Sangrur line is overloading of 220kV Ludhiana-Dhandharikalan D/C line.

B.5.15. As per studies carried out in June 2026 scenario, with NR demand beyond 90GW, it is observed that loading of 220kV Ludhiana-Dhandharikalan D/C line increases by about 50MW each ckt in case of SPS operation.

B.5.16. Loading of 220kV Ludhiana-Dhandharikalan was in range of 140-160MW for most of the time in 2025 on each ckt. Therefore, if same loading pattern is observed this year, even though SPS operates loading of 220kV Ludhiana-Dhandharikalan would reach maximum of 200MW each ckt which is well within safe limits.

B.5.17. However, Punjab SLDC has submitted that there has been additional 160MVA ICT commissioned at Dhandharikalan recently, and accordingly loading is expected to be higher this year and will remain approx. 200MW on each ckt on continous basis with no further margin.

B.5.18. NRLDC representative proposed that the approved SPS from the OCC forum may be implemented by BBMB/POWERGRID and a joint meeting may be convened in last week of May/first week of June (just before NR load rises sharply), by NRPC with participants from HVPNL, PSTCL, POWERGRID, BBMB and NRLDC to discuss other solutions based on the loading pattern observed in May 2026.

B.5.19. Haryana SLDC representative stated that non-wiring of SPS at Hissar(PG) should not restrict ATC/TTC limits of Haryana state from June onwards.

B.5.20. NRLDC representative stated that Haryana SLDC may put up this point in the upcoming TCC/NRPC meeting or next OCC meeting and accordingly, the forum may deliberate on the request from Haryana SLDC.

B.5.21. POWERGRID representative stated that 500MVA ICT at Hissar(PG) is not expected before July 2026.

Decision of OCC Forum:

OCC forum asked all SLDCs to share basecase as well as ATC/TTC assessment as per CERC approved procedure timelines. Utilities were requested to go through the ATC/TTC limits for May 2026 and provide comments. POWERGRID was asked by OCC forum to expeditiously commission 500MVA ICT-4 at Hissar(PG) so that requirement of SPS is not there.

B.6 SPS for Champa-Kurukshetra HVDC

B.6.1. There have been unplanned load loss that has taken place in two events related to simultaneous all poles outage of HVDC Champa-Kurukshetra namely,

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

B.6.2. The recommendations of Committee formed under Member (GO&D), CEA] to analyse 17th June 2024 are attached as Annex-B.III of agenda. NRLDC has been continuously pursuing with NR states to take measures for reactive power support at local level so that reactive power exchange from ISTS is minimal. However, as per discussions held in OCC meetings, no major progress is being reported. There is huge MVAR drawl by NR states during May-Sep months.

B.6.3. Accordingly, in 233 OCC meeting it was agreed to implement a SPS scheme which can shed loads in case of simultaneous outage of all poles of HVDC Champa-Kurukshetra. Since, identification and wiring of new load groups may be difficult for implementation in short time frame and further utilities have also expressed concerns in identifying further new feeders for UFR or other load shedding schemes, it was suggested to utilise the wired loads of existing Agra-Gwalior SPS scheme. Signal of multiple HVDC pole outage can be extended from Kurukshetra station to Agra SPS scheme and some load relief can be obtained. The automatic disconnection of wired loads post outage of multiple HVDC Poles at Kurukshetra may provide some relief and may help in containing the voltages till suitable static and dynamic compensation devices are commissioned.

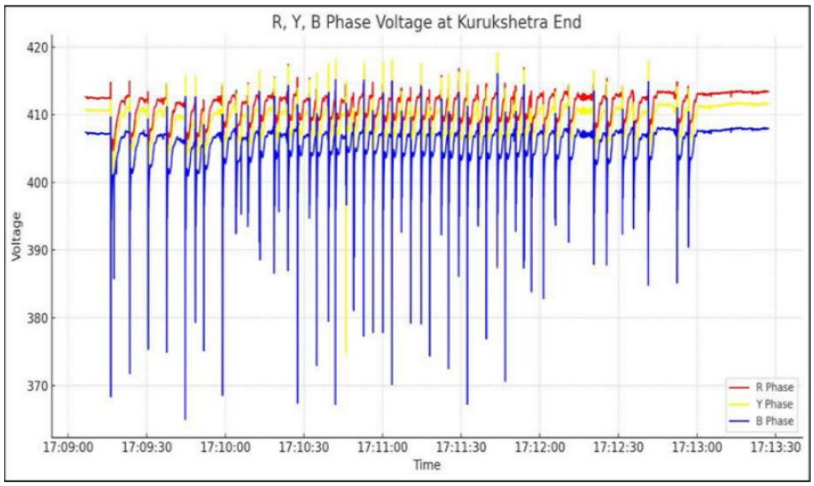
B.6.4. Based on discussion in 240 OCC meeting, following tentative logics for SPS were proposed:

- Voltage in all 3-phases at Kurukshetra fall below 380kV and more than 50kV for 250ms: Shed load in Groups C and D
- Voltage in all 3-phases at Kurukshetra fall below 360kV and more than 50kV for 250ms: Shed load in all Groups

(Time delay increased considering LBB protection timing)

B.6.5. Voltage >50kV is being proposed so that SPS does not operate in case of any CVT data error.

B.6.6. Moreover, it was observed that bus voltages at Kurukshetra were reaching below 380kV during frequent commutation failures observed on 21.05.2025.



B.6.7. Accordingly, it is important that SPS logic resets immediately, so that in case of multiple voltage dip and

B.6.8. During 241 OCC meeting, OCC forum asked all utilities to provide actions taken at their end in compliance to recommendations of MoP Committee constituted under Member (GO&D), CEA to analyse 17th June 2024. OCC forum approved the proposed SPS logic and asked POWERGRID to implement it at the earliest.

B.6.9. **During 242 OCC meeting,**

- *POWERGRID representative stated that DTPC cards of old make are not available, and it is being arranged as the signal needs to be transferred from Kurukshetra to Dadri for the implementation of SPS.*

- *NRLDC representative stated that POWERGRID may arrange the DTPC cards and check for its availability across other regions such as SR, WR, ER, NER also considering the importance of SPS implementation.*

Decision of OCC Forum:

OCC forum asked POWERGRID to expeditiously commission SPS for Champa-Kurukshetra HVDC.

B.7 Maximising availability of ERS in summer 2026

B.7.1. Several important transmission lines in the Northern Region remain under prolonged outage due to tower collapse in Apr-Jun months during windstorm events reported during the summer season. The extended non-availability of these transmission lines impacts grid reliability, load transfer capability, and in some cases RE evacuation.

B.7.2. As per the CERC order dated 3.7.20214 in Petition No. 174/MP/2013

Restoration Type	Condition	Timeline
ERS	< 3 towers damaged per line	12 days

	>=3 towers damaged per line	20 days
Permanent Tower	Plain terrain (with foundation damage)	60 days
	River bed location	Up to 8 months

B.7.3. Further, as per information available with NRLDC, following transmission lines are in service through ERS since long time. Accordingly, it is requested that concerned transmission utilities may plan for revival of transmission lines on normal towers so that ERS set is available for other contingencies that may happen in near future.

SL No	Name of the Transmission Line	Revival Date/Time through ERS	Expected Restoration to Permanent tower as submitted in 241 OCC meeting
1	765 KV BAREILLY_2.LUCKNOW_2 (PG) CKT.1 (ERS tower at location 566)	21:13/20.09.25	
2	765 KV KOTESHWAR.MEERUT (PG) CKT.1 (ERS tower at location 142)	19:38/03.09.25	
3	400 KV RAMPUR HEP(SJ).NALLAGARH(PG) (PG) CKT.1 & 2 (ERS tower at location number 343)	19:48/15.09.25	30th April 2026
4	400 KV CHAMERA_2(NH).KISHENPUR(PG) (PG) CKT.1 (ERS tower at location number 238)	22:10/18.09.25	31st May 2026
5	220 KV SALAL(NH).JAMMU(PDD) (PG) CKT.2 (ERS tower at location 48)	22:23/11.09.25	30th April 2026
6	400 KV JALANDHAR(PG).SAMBA(PG) (NRSS XXIX) CKT.1 (04 Nos ERS at tower location 235 to 238)	18:40/30.09.25	
7	400 KV JALANDHAR(PG).SAMBA(PG)	17:20/16.10.25	31st May 2026

	(NRSS XXIX) CKT.2 (02 Nos ERS at tower location 236)		
8	400 KV KOLDAM(NT)-PARBATI POOLING BANALA(PG) (PKTCL) CKT-1 (01 Nos ERS at tower location 42)	23:37/22.11.25	
9	220 KV KISHENPUR(PG)-RAMBAN(PDD) (PDD) CKT-1 (03 Nos of ERS Towers (01 Nos ERS towers between KP-61 and KP-63, 02 Nos ERS towers between KP-75 and KP-82))	10:03/19.12.25	31st May 2026

B.7.4. To ensure timely revival of critical transmission infrastructure, immediate restoration plans should be finalized and shared by the respective transmission licensees. The use of ERS should be prioritized wherever feasible to enable interim restoration and minimize prolonged outages. Additionally, transmission licensees must focus on strengthening tower foundation designs, particularly in regions vulnerable to shifting sand dunes or weak soil conditions. Enhanced patrolling and preventive maintenance practices must also be adopted to proactively identify and address structural vulnerabilities.

B.7.5. During 242 OCC meeting,

- **MS NRPC expressed concern on the same and asked all concerned transmission utilities to free ERS tower, which has been in service for a long time.**
- **All transmission utilities were asked to update the likely revival date for these in the NRLDC outage portal and expedite revival of these transmission elements before summer 2026.**

B.7.6. Concerned transmission utilities were requested to share a plan for the revival of transmission lines on normal towers so that ERS set is available for other contingencies that may happen in the next few months due to dust storms/ wind storms.

Decision of OCC Forum:

OCC forum requested concerned utilities to share a plan for the revival of transmission lines on normal towers.

B.8 Mock testing of the islanding scheme and simulation studies

B.8.1. 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).

- NAPP Islanding scheme (UP)
- RAPP Islanding scheme (Raj)
- Bawana Islanding scheme (Delhi)
- Unchahar Islanding scheme(UP)

B.8.2. There have been recent directions from NPC and MoP also for islanding testing.

As per Clause 29.10 and 29.11 of the IEGC:

"(10) RPCs shall prepare the islanding schemes in accordance with the CEA Grid Standards for identified generating stations, cities and locations and ensure their implementation. The islanding schemes shall be reviewed and augmented depending on the assessment of critical loads at least once a year or earlier, if required.

(11) Mock drill of the islanding schemes shall be ***carried out annually*** *by the respective RLDCs in coordination with the concerned SLDCs and other users involved in the islanding scheme. In case mock drill with field testing is not possible to be carried out for a particular scheme,* ***simulation testing*** *shall be carried out by the respective RLDC."*

B.8.3. The required mock testing data is still awaited for the following islanding scheme:

- RAPP Islanding Scheme (basecase last received on 21.03.2025)

B.8.4. Mock testing data has been received for:

- NAPP Islanding Scheme (UFR testing report received, updated base case awaited) (basecase last received on 30.01.2025)
- Lucknow–Unchahar Islanding Scheme (UFR testing report received, updated base case awaited, basecase last received on 16.03.2025)

B.8.5. Further, the status of other schemes is as follows:

- Delhi Islanding Scheme – under review/modification
- RSD Pathankot Islanding Scheme – not presently in service.

B.8.6. The SOP for mock testing of islanding schemes in the Northern Region was approved during the 223rd OCC meeting held in September 2024.

B.8.7. In compliance with the above provisions of the IEGC, it was requested to submit the requisite data and report, as stipulated in the approved SOP, to facilitate the successful conduct of mock testing of islanding schemes for FY 2025–26 at the earliest.

B.8.8. Communications have already been sent from NRLDC side vide email dated 16.02.2026 & 03.03.2026.

B.8.9. In case of non-availability of gas generation at Bawana, another islanding scheme with the generation of Dadri NTPC / IGSTPP NTPC (Jhajjar) is being explored for maximizing the chances of survival of critical loads in Delhi. A separate islanding scheme with Bawana generation is also under review.

B.8.10. ***Rajasthan SLDC representative submitted that the revised basecase for the islanding scheme of RAPS-A was shared in November last year. Same may be considered for compliance purposes also.***

Decision of OCC Forum:

OCC forum asked concerned SLDCs to provide an update on field testing and simulation-based testing of each islanding scheme as based on the latest status, compliance of this point would be submitted from NRLDC side to CERC in compliance to self-audit clause of IEGC.

B.9 Frequent tripping of 800kV HVDC Champa-Kurukshetra inter-regional link:

B.9.1. It has been observed that frequency of tripping of 800kV HVDC Champa-Kurukshetra inter-regional link has increased in recent past. There are 11 no. of tripping instances has been observed in this link since March 2026. List of all the tripping of HVDC Champa-Kurukshetra is attached as Annexure-B.IV of agenda. The tripping of this high-capacity link may cause overloading of other parallel transmission lines and further tripping may cause cascade tripping.

B.9.2. It is also well known that, paddy season is going to start in Haryana & Punjab and on account of summer, the Northern Region load would remain high till September and therefore, high import requirement exists for the Northern Region. Thus, the HVDC Champa-Kurukshetra inter-regional link is a very important link for fulfilling the Northern Region demand requirement.

B.9.3. It has been observed that major fault is either due to DC line fault, filter protection, software issues, protection mal-operation etc. The reason of most of the tripping seems similar indicating the repetitive nature of fault/tripping.

B.9.4. NRLDC representative presented the detailed tripping analysis of the Champa–Kurukshetra link. It was observed that a total of 13 tripping incidents occurred between 01.03.2026 and 12.04.2026, the majority of which were attributed to communication issues, DC line faults, and the non-availability of minimum filters.

B.9.5. MS NRPC emphasized the importance of this link, particularly during the summer period. She further mentioned that the poles remained out of service for approximately 2–3 hours and inquired about the corrective actions implemented by POWERGRID.

B.9.6. POWERGRID representative informed that NRLDC has been following up on the tripping incidents, and the corrective actions taken at the site are being consolidated. The same shall be shared by 15-04-2026. Meanwhile, all the corrective action will be taken care after the internal higher-level meeting, which is going to be held very soon.

B.9.7. MS NRPC requested to expedite the SPS implementation process in Champa-Kurukshetra link.

B.9.8. POWERGRID representative informed that an issue has been identified in the receipt of the DTPC signal, necessitating the replacement of certain communication cards. If the

required cards are readily available, the implementation will be expedited; however, in case procurement is necessary, the process may take time.

Decision of OCC Forum:

Forum has requested to minimize the tripping of this critical link. It is further referred to the 'Short-Term Measures' (timeline: 0–6 months) recommended by the Technical Committee under CEA for addressing the trippings of the HVDC Champa–Kurukshetra link, published on 23.02.2026. Forum further requested that the implementation status of the measures recommended by the Technical Committee may be furnished. In case the measures have already been completed, the same may be intimated; otherwise, the target timeline for their completion may be provided.

B.10 Multiple element tripping events in Northern region in the month of March 2026

B.10.1. A total of 24 grid events occurred in the month of March 2026 of which 12 are of GD-1 category, 10 are of GI-2 Category and 02 are of GI-1 Category. The tripping report of all the events have been issued from NRLDC. A list of all these events is attached at Annexure-B.V of agenda.

B.10.2. Maximum delayed clearance of fault observed in multiple element tripping event at 400/220kV Ajmer(RS) at 14:50 hrs on 02nd March 2026 (As per PMU at Ajmer(PG), R-N phase to earth fault with unsuccessful A/R was observed with fault clearing time of 80 ms and 1560 ms (delayed) respectively).

B.10.3. Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) was observed in a total 05 events out of 24 grid events that occurred in the month. In 08 (no.) of grid events, there was no fault in the grid.

B.10.4. **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.**

B.10.5. It is observed that DR/EL & tripping reports of most of the grid events are not being submitted as per the timeline specified in IEGC 2023. Non-availability of tripping details further hampers the grid event analysis at RLDC level.

B.10.6. **Members may take necessary preventive measures to avoid such grid incidents/disturbances in future and share the report of actions taken by respective utilities. Moreover, utilities may impress upon all concerned to provide the Preliminary Report, DR/EL & Detailed Report of the events to RLDC in line with the IEGC clause 37.2 (c) & (e).**

B.10.7. NRLDC representative presented the details of the events, and all concerned were requested to undertake a detailed analysis and submit the requisite reports in the NRLDC portal. The same shall be discussed in the forthcoming PSC meeting.

B.10.8. NRLDC representative also highlighted that the number of grid events is gradually increasing, and therefore, appropriate corrective measures may be undertaken to minimize these trippings.

Decision of OCC Forum:

OCC forum requested members to take necessary preventive measures to avoid such grid incidents/disturbances in future and actions taken by respective utilities may be shared in OCC & PSC forum. Furthermore, the utilities are requested to advise all concerned to furnish the Preliminary Report, DR/EL, and detailed event reports to RLDC in accordance with the regulations.

B.11 Status of submission of DR/EL and tripping report of utilities for the month of March 2026:

B.11.1. The status of receipt of DR/EL and tripping report of utilities for the month of March 2026 is attached at Annexure-B.VI 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. However, it is evident from the submitted data that the reporting status of RE stations, SLDC-HR, SLDC-PS, SLDC-J&K, SLDC-Delhi, Dadri-NT, INDIGRID, BBMB and RAPS is not satisfactory and needs improvement.

B.11.2. Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the trippings shall be uploaded on Web Based Tripping Monitoring System “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. Apart from prints of DR outputs, the corresponding COMTRADE files (.cfg/.dat) may please also be submitted in tripping portal.

B.11.3. NRLDC representative submitted that, based on the status for the month of March, the reporting performance of certain constituents—namely RE stations and SLDC- Haryana, Punjab, J&K, Delhi, and HP appears to require further improvement. All concerned are kindly requested to take necessary steps to enhance the reporting status.

B.11.4. 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 criticality of DR/EL and tripping report data for effective analysis of tripping incidents, as well as for availability verification. Non-submission or delayed submission of such data adversely impacts the verification process. Accordingly, the timely submission of DR/EL and tripping reports is imperative.

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.12 Frequency response performance for the reportable events of month of March 2026:

B.12.1. During the month of **March 2026, 1 reportable** event was notified by NLDC for which FRC/ FRP need to be calculated. Description of the event is as given in the Table below:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	Nadir Frequency (in Hz)	End Frequency (in Hz)	*Δf(Hz)*	NR FRP during the event
1	03-Mar-26	11:42 hrs	As reported, at 11:42 hrs on 03.03.2026, generation loss event of 1197 MW occurred in RE generation complex, NR. Hence generation loss of 1197 MW is considered for FRC/FRP Calculation.	50.027	49.910	49.958	-0.069	0.53

B.12.2. As per IEGC 2023 Clause 30.8, "The primary response of the generating units shall be verified by the Load Despatch Centres (LDCs) during grid events. The concerned generating station shall furnish the requisite data to the LDCs within two days of notification of reportable event by the NLDC."

B.12.3. As per IEGC 2023 Clause 30.10.(n), "Each control area shall assess its frequency response characteristics and share the assessment with the concerned RLDC along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and 10 (ten) seconds for the state control area."

B.12.4. As per sub-clause (a(v)) of clause (9) of IEGC 2023 Annexure-2, "All the SLDCs shall work out FRC for all the intra-state entities (for events indicated by the Regional Load Despatch Centres) based on the HDR available at their respective SLDCs and submit the same to respective RLDC within six (6) working days after the event. (Format as per Table-B)."

B.12.5. As per sub-clause (a(vi)) of clause (9) of IEGC 2023 Annexure-2, "All regional entity generating stations shall also assess the FRC for their respective stations and submit the same to respective RLDC within six (6) working days. (Format as per Table-B). The high-resolution data (1 second or better resolution) of active power generation and frequency shall also be shared with RLDC."

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

B.12.6. Frequency Response Performance (FRP) of generating stations for each reportable event are calculated based on the submitted high-resolution data from generating stations. However, the generating stations for which data is not received **till 01st April 2026,** FRC/FRP as per NRLDC HDR data is used for computation of Average Monthly Frequency Response Performance, Beta 'β' for Generating Stations.

B.12.7. From the FRP data, it is observed that FRP of many of the control areas are not satisfactory. Therefore, it is requested to review the FRC/FRP, governor actions of your respective control area, and necessary actions may be taken for improvement in the FRC/FRP.

B.12.8. Status of details received from constituents and FRP values as considered for the events of March 2026 are attached as Annexure-B.VII of the agenda.

B.12.9. ISGS were requested to confirm whether FGMO as per IEGC 2023 has been implemented at their respective stations or not. Updated list on the basis of details received is as follows:

Sl. No.	Entity	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
1	**Dadri -1 (TH)**	Yes	6%	
2	**Dadri -2 (TH)**	Yes	6%	
3	**Jhajjar (TH)**	Yes	5%	
4	**Rihand-1 (TH)**	Yes	5%	
5	**Rihand-2 (TH)**	Yes	5%	
6	**Rihand-3 (TH)**	Yes	5%	

7	**Shree Cement (TH)**			
8	**Singrauli (TH)**	Yes	5%	
9	**Tanda-2 (TH)**	Yes	6%	
10	**Unchahar-I (TH)**	Yes	5%	
11	**Unchahar-II (TH)**	Yes	5%	
12	**Unchahar-III (TH)**	Yes	5%	
13	**Unchahar-IV (TH)**	Yes	5%	
14	**Anta (G)**			
15	**Auraiya (G)**			
16	**Dadri (G)**			
17	**AD Hydro (H)**	Yes	4%	
18	**Bairasiul (H)**	Yes	4%	
19	**Bhakra (H)**			
20	**Budhil (H)**			
21	**Chamera-1 (H)**	Yes	5%	
22	**Chamera-2 (H)**	Yes	5%	
23	**Chamera-3 (H)**	Yes	4%	
24	**Dehar (H)**			
25	**Dhauliganga (H)**	Yes	5%	
26	**Dulhasti (H)**	Yes	5%	
27	**Karcham (H)**	Yes	5%	
28	**Kishenganga**	Yes	4%	
29	**Koldam (H)**	Yes	9%	
30	**Koteshwar (H)**			
31	**Malana-2 (H)**			
32	**Nathpa Jhakri (H)**	Yes	9%	
33	**Parbati-2 (H)**	Yes	4%	
34	**Parbati-3 (H)**	Yes	4%	
35	**Pong (H)**			
36	**Rampur (H)**			
37	**Sainj (H)**			
38	**Salal (H)**	Yes	5%	
39	**Sewa-II (H)**	Yes	4%	
40	**Singoli Bhatwari (H)**			
41	**Sorang (H)**	No	4%	ROR, no storage
42	**Tanakpur (H)**	Yes	4%	
43	**Tehri (H)**	Yes	4%	
44	**Uri-1 (H)**	Yes	6%	
45	**Uri-2 (H)**	Yes	5%	

B.12.10. Constituents are requested to share the details of the droop w.r.t. their generating stations.

B.12.11. Members are requested to analyse the frequency response of their respective control area and share the FRC/FRP analysis of generating stations along with unit-wise 01 sec data as per timeline for ensuring IEGC compliance.

B.12.12. NRLDC representative presented the status of FRC computation & data submission and frequency response performance(FRP). Detailed data are awaited from Rajasthan, Delhi, Uttarakhand, J&K and UP. NTPC-Singrauli has been providing partial data on recent occasions; accordingly, NTPC was requested to furnish complete data henceforth.

B.12.13. NRLDC has requested to review the frequency response of the entities that have poor response in their respective control area and improve accordingly.

B.12.14. NRLDC representative also requested all generators to review their Frequency Response Performance (FRP), particularly in cases where performance has been indicated as poor.

B.12.15. ISGS were requested to confirm whether FGMO as per IEGC 2023 has been implemented at their respective stations or not. All were requested to share the data as per the format shared by NRLDC. The details of the present status is as per the above table.

B.12.16. NRLDC representative requested that the droop settings of Koldam and Nathpa Jhakri generating stations be maintained within the range of 4–5%, in place of the existing 9%, to get the improved FGMO response.

Decision of OCC Forum:

OCC forum requested all members to take necessary actions as discussed.

B.13 Mock trial run and testing of black start facilities at generating stations in Northern Region

B.13.1. 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 the grid-forming capability of an 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".

B.13.2. 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.

B.13.3. 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.

B.13.4. 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 2026-27. The present status of mock black start of generating units is attached as Annexure-B.VIII of agenda. Constituents are also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis.

Mock black start exercised conducted during FY 2025-26 are as follows:

Sr. No.	Name of Generating station	Date of Mock Black Start Exercise conducted
1.	Bhakra (L)	22-12-2025
2.	Bhakra (R)	19-12-2025
3.	Pong	14-03-2026
4.	Bairasuil	30-01-2026
5.	Chamera HPS-I	30-01-2026
6.	Chamera HPS-II	06-02-2026
7.	Dhauliganga	05-02-2026
8.	Kishanganga	31-01-2026
9.	Parbati-2	26-05-2025
10.	Parbati-3	17-05-2025
11.	Sewa-II	16-05-2025. 30-01-2026
12.	Tanakpur HPS	28-01-2026
13.	URI-I	24-01-2026
14.	URI-II	26-01-2026
15.	Nathpa-Jhakri	11-03-2026

16.	Rampur	11-03-2026
17.	Tehri	11-11-2025
18.	Koteshwar	25-03-2026
19.	Ranjit Sagar (Thein Dam)	01-12-2025
20.	Ramgarh GPS	11-05-2025
21.	Rihand (H) or Pipri	02-06-2025
22.	Obra(H)	02-06-2025

B.13.5. **Therefore, ISGS and SLDCs are requested to take following actions:**

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

B.13.6. **NRLDC representative presented the status of mock black start exercises in NR and requested ISGS and SLDCs to take the following actions:**

- It was observed that mock black start exercises for Anta, Auraiya, Dadri, Faridabad, Koldam, and Salal have not been carried out during FY 2026–27. The concerned utilities were requested to complete the mock black start at the earliest.
- Other generating stations (including IPPs and intra-state generators) that have not yet conducted the mock black start exercise were requested to undertake the same on priority.
- Following the mock black start exercise, the concerned entities are requested to submit a detailed report, along with the test report of the DG sets.

Decision of OCC Forum:

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.

Status of action taken on decision of 241st OCC meeting of NRPC

S.N.	Agenda	Decision of 241st OCC meeting of NRPC	Status of action taken
1.	A.13. Approval of Temporary Operational Arrangement for 220 kV ADhydro-Phozal-Nalagarh Circuits (Agenda by ADHPL)	OCC forum agreed for the temporary arrangement proposed by ADHPL subject to the consent of HPPTCL.	HPPTCL representative stated that currently they are having issues in wave trap in Phozal- Nalagarh line which will impact the carrier wave communication. ADHPL representative stated that other protection system will be operational. NRLDC representative stated in the absence of carrier wave communication at Phozal end some changes in the protection settings would be required which would be be communicated by NRLDC through mail. OCC forum asked ADHPL to proceed with the arrangement and make changes in the protection settings to be communicated by NRLDC. Further, forum asked HPPTCL to replace wave trap at Phozal end at the earliest.

Follow up issues from previous OCC meetings

Annexure-A.II

1	Down Stream network by State utilities from ISTS Station	Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.	List of downstream networks is enclosed in **Annexure-A.II.I**.
2	Progress of installing new capacitors and repair of defective capacitors	Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.	Data upto following months, received from various states / UTs: ◎ CHANDIGARH: Sep-2019 ◎ DELHI: Feb-2026 ◎ HARYANA: Jan-2026 ◎ HP: Mar-2026 ◎ J&K and LADAKH: Not Available ◎ PUNJAB: Mar-2026 ◎ RAJASTHAN: Dec-2025 ◎ UP: Mar-2026 ◎ UTTARAKHAND: Mar-2026 All States/UTs are requested to update status on monthly basis.
3	Healthiness of defence mechanism: Self-certification	Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that "All the UFRs are checked and found functional".	Data upto following months, received from various states / UTs: ◎ CHANDIGARH: Not Available ◎ DELHI: Mar-2026 ◎ HARYANA: Mar-2026 ◎ HP: Jan-2026 ◎ J&K and LADAKH: Not Available ◎ PUNJAB: Dec-2025 ◎ RAJASTHAN: Dec-2025 ◎ UP: Mar-2026 ◎ UTTARAKHAND: Mar-2026 ◎ BBMB: Dec-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.
		In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.	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

tripping report

<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>Feb-26</td></tr><tr><td>◎</td><td>HP</td><td>Jan-26</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>Jan-26</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Aug-25</td></tr><tr><td>◎</td><td>UP</td><td>Jan-26</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Oct-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'25	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Alusteng D/c Line. RoW issues persisting; At present new-wampoh-mirbazar 5km and harwan-alstung 16km have been completed, expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 214th OCC by JKPTCL.
				• 220 kV New Wanpoh - Mattan D/c Line	End of 2024	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Mattan D/c Line. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	End of 2024	02 No. of bays are proposed to be utilized for connecting 220/132 kV GSS Loolipora. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	Commissioned	Updated by HVPNL in 235th OCC.
5	400/220 kV, 2x315 MVA Dehradun	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• Network to be planned for 4 bays	-	PTCUL to update the status.
6	Shahjahanpur, 2x315 MVA 400/220 kV	Commissioned: 6 Approved/Under Implementation:1	Utilized: 7	• 220 kV D/C 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.	Commissioned	Ckt-1 charged at 22:48 hrs dated 30.03.26 Ckt-2 charged at 18:45 hrs dated 29.03.26
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Dec'26	The work is in progress after resolution of RoW. The status of work is as under:- Foundation=76/129 Nos. Erection=56/129 Stringing = 0/29 Km
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 30.06.2026.
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	Updated in 232nd OCC by HVPNL **Status:-** A-formats for FTC of line submitted on FTC portal of NRLDC on dated 09.04.25.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• LILO of both circuits of 220kV D/c Sohna-Rangla Rajpur at Roj Ka Meo line at 400kV Sohna Road	Oct'26	Line work completed, Substation is under construction
				• 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	Sep'26	Contract awarded on 8.08.23 to M/s Skipper with completion in December 25. 220 KV D/C Prithla - Harfali line: Foundation: 80 / 83 Erection: 46/83 Stringing of conductor: 0 / 13.724 Km. LILO at 220 KV S/Stn Meerpur Kurali: Foundation: 137 / 143 Erection: 74/143 Stringing of conductor: 0 / 30.896 Km
				• 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	Jul'26	Work awarded on 03-Aug-2021 to M/s Skipper Limited Contractual completion date: 01.03.2023 Foundation: 168/169 Nos. Erection: 168/169 Nos. Stringing: 20.083/31.358 KM. Stringing work is in progress
				• Prithla - Sector 89 Faridabad 220kV D/c line	Jul'26	Foundation- 20/23 Erection-18/23 Stringing-1.500/3.89 KM
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	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	May'26	Foundation:- 163/163 Erection :-161/161, Stringing-25.7/36.2

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	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.Foundation - 47/91 Nos. Erection – 26 / 91 Nos. Stringing – 0 / 19.8 Km
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	28.02.2027	Updated in 234th OCC by HVPNL. **Status:** RoW issues due to demand of higher land rate compenation.
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 Mar'26. Further, SCADA upgradation work of TPDDL would be completed by Dec'26.
2	HARYANA	Scheme not implemented	Haryana SLDC intimated that ADMS software has already been taken under project work of upgradation of SCADA-EMS in Haryana. As per already decided methodology, the current status of ADMS Project is as under: - i. Part-1 i.e. Control with HVPNL Any hindrances/delay in execution of PART-I which is covered under upgradation of SCADA-EMS system (ULDC Phase-III of Northern Region) being delivered by M/s GE Vernova, completion timelines etc. ii. PART-II: Control with Distribution Utility Communication with DISCOMs, identification of feeders, status of retrofitting of 33kV & 11kV substations of DISCOMs to handle the automation, hiring of consultant on the pattern of Rajasthan etc. In this regard, the matter has already been taken up with Discoms to provide the lists of 11kV & 33kV feeders to prepare the DPR of the same.
3	HP	Scheme not implemented	In 242nd OCC meeting, HPSDLC representative informed that they have identifed the feeders and submitted the same vide mail dated 19.03.2026.
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.Punjab has submitted list of feeders vide mail dated 16.01.2026
5	RAJASTHAN	Under implementation	RVPN has pilot tested the logic of ADMS which is to be implemented for Rajasthan. In 232th OCC meeting, RVPN informed that 351 nos. of circuit breakers have been mapped to ADMS, all 351 circuit breakers tested upto yard individually. Total 650CBs are to be mapped in phased manner. In 241st OCC Meeting, RVPN representative informed that 400 no. of feeders have been identified and the logic needs to be reviewed before ADMS implementation.
6	UP	Scheme implemented by NPCIL only	In 236th OCC meeting, UP SLDC representative stated that 300 No. of 132 KV Substations have been integrated with SCADA. SCADA upgradation under ULDC phase III is likely to be completed in the next 3 to 4 months. List of 33kV feeders to be mapped under ADMS is required from the Discoms. In the meeting held in Aug'25, UPSLDC had requested Discoms to provide the feeders list. Reminders were also sent to Discoms. However, 33 kV feeder list is still pending from the Discoms. MS, NRPC asked UPSLDC to have meeting with Discoms in its control areas and finalize of feeder list before next OCC meeting. In the 241st OCC Meeting, UPSLDC representative informed that 466 feeders have been identified and that the same would be updated to the NRPC after receiving consent from the DISCOMs and parallel testing of feeders at SLDC level is being carried out.
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	Delhi (DTL)	220kV	915.498	NIL	1	400kV Bamnauli Sub station	2 ERS tower available.
		400kV	249.19	02 Sets (32 towers)	1		
2	Himachal Pradesh (HPPTCL)	220 kV	659	NIL	1		
		400 kV	75.7	NIL	1		
3	Haryana (HVPNL)						ERS towers (6 nos tension and 6 nos suspension type 400kv level) in Haryana have been procured and already dispatched to 220kv Substation karnal and DD store Hisar.
4	Punjab (PSTCL)	400 kV	1666.43	2	3		
		220 kV	7921.991				
5	Rajasthan (RVPN)	132 kV	20706.876	1	4	01 No. ERS available at 220 kV GSS Heerapura, Jaipur	1 ERS set is available and work order has been placed for 3 more Sets.
		220 kV	16429.022		3		
		400 kV	8416.434		2		
		765 kV	425.498		1		
6	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				
7	Uttarakand (PTCUL)	400kV	418.394	NIL	1		Tender has been scraped due to single bidder.
		220kV	1045.135	NIL	1		
8	JKPTCL	132 kV	1040.63	8		Z Mohr, Kanispora Pathla T141 D/C, Kalanpora Delina Railway station T 3 & T4, Bagh-i Wahpoh	1 No. LILO USHP-I Kangan Line, 2 No. In Sheeri LJHP Line, 2 No. Delina Baramulla Railway Line, 1 No. Bagh-i Wanpoh (KPTL) and 2 No. Lying at the stores
		220 kV	419.34				
9	Powergrid NR-1	220 KV	1540.21	NIL	1		
		400 KV	13348.828	10 Towers	3	Ballabhgarh 4 (Make Lindsey) Meerut 4(Make SBB) Roorkee 2(Make SBB)	

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
		765 KV	8977.947	15 Towers	1	Bhadla-I SS(11 Set, SBB make) & Bikaner-I SS (4 set, Lindsey make)	11 Sets were diverted from Meerut to Bhadla-I ; 04 Sets were diverted from Ballabgarh to Bikaner-I
		500 KV HVDC	653.88	NIL	1		
		800 KV HVDC	416.54	NIL	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
10	Powergrid NR-2	66 KV	37.04	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	262.33	Nil	1		
		220 KV	2157.67	Nil	1		
		400 KV	7326.39	03 Set (48 Towers)	2	Kishenpur, Leh & Jalandhar	
		765 KV	1319.95	Nil	1		
11	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		
12	PARBATI KOLDAM TRANSMISSION COMPANY LIMITED	400kV	457	NIL	1		Procurement under process.
13	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.
14	NRSS-XXIX TRANSMISSION LTD	400kV	853	NIL	1		
15	GURGAON PALWAL TRANSMISSION LTD	400kV	272	NIL	1		
16	RAPP Transmission Company Limited.	400kV	402	NIL	1		
17	NRSS XXXVI Transmission Limited	400kV	301.924/225.004	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.
18	POWERLINKS TRANSMISSIONLIMITED (PTL)	400 kV	1485				
19	POWERGRID HIMACHAL TRANSMISSION LTD	400 kV	454				
20	Powergrid Ajmer Phagi Transmission Limited	765 KV	269				
21	Powergrid Fatehgarh Transmission Limited	765 KV	372				
22	POWERGRID KALA AMB TRANSMISSION LTD	400 kV	2.38				
23	Powergrid Unchahar Transmission Ltd	400 kV	106.744				
24	Powergrid Khetri Transmission Limited	765 KV	292				
		400 kV	156.16				
25	POWERGRID VARANASI TRANSMISSION SYSTEM LTD	765 KV	379				
26	POWERGRID ALIGARH SIKAR TRANSMISSION LIMITED	765 KV	514				
27	ADANI TRANSMISSION INDIA LIMITED	400 kV	110	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.
28	Bikaner Khetri Transmission Limited (Adani)	765 KV	482				
29	Fatehgarh Bhadla Trasmission Limited (Adani)	765 kV HVAC 400 kV HVAC	282 10				
30	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.
31	AD Hydro Power Limited (Renew)	400 kV	360				
32	ARAVALI POWER COMPANY PVT LTD	400 kV	132				
33	POWEGRID BHADLA TRANSMISSION LIMITED	765 KV	405				
34	POWERGRID BIKANER TRANSMISSION SYSTEM LIMITED	400 kV	1353				
35	POWERGRID RAMGARH TRANSMISSION LIMITED	400 kV	188				
36	POWERGRID SIKAR TRANSMISSION LIMITED	765 KV	619				
		400 kV	267				

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

*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-A.III

सत्यमेव जयते

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

विषय: Minutes of the meeting to discuss the Details of load catered by proposed/implemented Islanding Schemes in UP Control Area-reg.

Kindly find attached minutes of the meeting to discuss the Details of load catered by proposed/implemented Islanding Schemes in UP Control Area held on 7th April 2026.

Encl: As above

DHARMENDER KUMAR MEENA
Digitally signed by DHARMENDER KUMAR MEENA
Date: 2026.04.22 16:58:22 +05'30'

(डी. के. मीना)
अधीक्षण अभियंता (प्रचालन)

सेवा में,

List of Participants (as attached)

Minutes of the meeting to discuss the Details of load catered by proposed/implemented Islanding Schemes in UP Control Area

MS, NRPC welcomed all the participants. List of Participants is attached at **Annexure-I**.

1. SE(O), NRPC informed the participants that UP SLDC has proposed a total 11 Nos. islanding schemes, out of which 2 have already been implemented, 1 no. (Agra IS) has been submitted to PSDF Sectt. for funding, and the remaining 8 no. are yet to be taken up. He requested to UPSLDC's representative to justify the requirement for such a large number of islanding schemes in the state.

2. UPSLDC representative stated that the modus operandi for all islanding schemes implemented or proposed within the UP control area is to meet either of the following objectives:

    i. Safeguarding generators to enable supply to critical loads during blackout conditions; or
    ii. Protecting critical loads.

3. UPSLDC further elaborated on the load catered of the various islanding schemes proposed under the UP control area, as detailed in **Annexure-II** (copy attached).

4. MS, (NPC & NRPC) informed that as per CEA SOP on Islanding Scheme only those deference establishments may be included in the Islanding Scheme for which Ministry of Defence (MoD) agrees. Therefore, she asked UPSLDC to obtain consent from the Ministry of Defence (MoD) as per the CEA SOP on islanding schemes, pertaining to load of Varanasi cantonment area to be considered for Varanasi Islanding scheme.

5. She further stated that, since the load pattern for activities such as ropeway operations and the Kumbh Mela is inherently aperiodic, this variability must be accounted for during dynamic studies. This will ensure that the islanding schemes can effectively maintain load–generation balance and successfully cater to such fluctuating demands; otherwise, the objective of the islanding scheme would be defeated.

6. UPSLDC representative stated that such load patterns will be duly considered while carrying out dynamic studies. Based on the outcomes, the UFR will be configured in coordination with the islanding scheme, so that in case of higher load, certain loads can be shed through UFR operation, and in case of higher generation, identified feeders can be connected to the system.

7. NRLDC representative stated that, based on the steady-state studies of the islanding schemes, no such variations were observed. Accordingly, they have requested UPSLDC to carry out dynamic studies so that such variations can be properly assessed.

8. MS, NRPC requested UPSLDC to review and prioritize the most critical islanding schemes among the remaining eight, and also to consult with the Ministry of Defence (MoD), with respect to the loads of the cantonment area.

9. UP SLDC representative stated that, out of the remaining eight schemes, those at Varanasi, Ayodhya, and Prayagraj are the most critical, as they are intended to cater to loads associated with major religious centres.

10. MS, NRPC requested UP SLDC to submit the DPRs for the three identified schemes and to take-up in Phase-I for implementation. Based on the operational experience of these schemes, the remaining schemes may be considered subsequently, depending on their criticality.

Meeting ended with vote of thanks to the Chair.

*****

Annexure-I

Name	Designation	Organization
Rishika Sharan	Member Secretary	NRPC
Dharmendra Kumar Meena	Superintending Engineer	NRPC
Satyendra Kumar Dotan	Director	NPC, CEA
Satyendra Kumar	Superintending Engineer	UPPTCL
Ram Baran	Chief Engineer (PSO)	UPSLDC
S K Pradhan	Deputy Director	NPC, CEA
Omkishor	Executive Engineer	NRPC
Vipul Kumar	Executive Engineer	NRPC
Aindri Shree	Asst. Executive Engineer	NRPC
Gaurav Singh	Chief Manager	NRLDC
Mohsin Khan	Executive Engineer	UPSLDC

Annexure-II

Superintending Engineer (R&A)

U.P. State Load Despatch Centre Ltd.
UPSLDC Complex, Vibhuti Khand – II
Gomti Nagar, Lucknow- 226010
E-mail: sera@upsldc.org

No: 400 /SE(R&A)/EE-III/ Islanding Dated: - 18/03/ 2026

Superintending Engineer (Operations),
NRPC, 18 – A SJSS Marg,
Katwaria Sarai, New Delhi,
110016. (seo-nrpc@nic.in)

Via E-mail

Subject: - Details of load catered by proposed/implemented Islanding Schemes in UP Control Area

Kindly refer to the discussion held in 241th OCC meeting regarding proposed Islanding Schemes in UP Control Area. In the meeting Member Secretary NRPC instructed UPSLDC to submit details of load catered by proposed Islanding Schemes as a justification for proposing aforementioned Islanding Schemes. Kindly find Islanding wise load details as Annexure.

Encl: As above.

(Smt. Vipin)
Superintending Engineer (R&A)

O/C

No: 400 /SE(R&A)/EE-III/ Islanding Dated: - 18/03/ 2026

Copy forwarded to following (via e-mail) for kind information and necessary action:-

1. Chief Engineer (PSO), UPSLDC, Vibhuti Khand, Gomti Nagar, Lucknow.
2. Chief Engineer (A), UPPTCL, 11th Floor Shakti Bhawan Extn., Lucknow.
3. General Manager, NRLDC 18-A, SJSS Marg, Katwaria Sarai, New Delhi–110016

(Smt. Vipin)
Superintending Engineer (R&A)

O/C

Sr No	Name of Islanding Scheme	Generating Staion	Purpose of Islanding Scheme/Load Catered	Remarks
1	**NAPP Islanding Scheme**	NAPP	To protect generation of NAPP	Implemented
2	**Lucknow-Unchahar Islanding Scheme**	NTPC Unchahar	To Cater load of Lucknow region (Capital City) which includes load of Cantonement Area, Raj Bhawan, CM Awas, High Court, Lucknow Metro, SGPGI	Implemented
3	**Varanasi Islanding Scheme**	Anpara B	To Cater load of Varanasi which includes load of Kashi Vishwanath temple, Deendyal Upadhya(DDU) Hospital, Shri Kaal Bhairav Temple, Rope way, Cantonment Area, Dist.HQ, BHU Campus Area, Under Construction Cricket Stadium Varanasi, Railway and Varanasi Airport	Dynamic Study Underway
4	**Prayagraj Islanding Scheme**	Meja TPS	To Cater load of Prayagraj which includes load of High court, Bamrauli Air Force, Bamrauli Air port , ITBP, Kumbh Mela Area, Karelabagh water works, Khusrobagh water works, Railway, RADAR.	Proposed(Steady State Study done)
5	**Ayodhya-Gorakhpur Islanding Scheme**	Tanda Stage II	To Cater load of Ayodhya and Gorakhpur which includes load of Shri Ram Janm Bhumi temple, Cantonement Area, Airforce, Airport, Gorakhnath Mandir, Railway, AIIMS	Proposed(Steady State Study done)
6	**Noida-Ghaziabad Islanding Scheme**	THDC Khurja	To Cater load of Noida and Ghaziabad which includes load of Data Centers, Jewar Airport, Hindon Airport, Metro, Railway	Proposed(Steady State Study done)
7	**Kanpur Islanding Scheme**	Panki TPS	To Cater load of Kanpur which includes load of Ordinance Factory, Kanpur Metro, Airforce, Chakeri Airport, Cantonement Area	Proposed(Steady State Study done)
8	**Aligarh Islanding Scheme**	Harduaganj D	To Caterload of Aligarh which includes load of Defence corridor, Railway, Aligarh Muslim University, Medical College	Proposed(Steady State Study done)
9	**Bareilly Islanding Scheme**	Rosa II	To Caterload of Bareilly which includes load of Airforce, Cantonement area, Airport, MES, District Headquarter, Railway, District Court	Proposed(Steady State Study done)
10	**Meerut Islanding Scheme**	Alaknanda Hydro	To Caterload of Meerut which includes load of Cantonement area, District headquarter, RRTS	Proposed(Steady State Study done)
11	**Agra Islanding Scheme**	Lalitpur TPS	To protect load of Agra	Approved

Annexure_A.IV

(33)

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

केन्द्रीय कार्यालय : ''सौदामिनी'' प्लॉट सं. 2, सैक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 0124-2571700-719, फैक्स : 0124-2571760, 2571761 तार 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001, Haryana
Tel. : 0124-2571700-719, Fax : 0124-2571760, 0124-2571761 Gram : 'NATGRID'

सदर्भ संख्या / Ref. No

C/CTU-Plg/LTA/N/THDC

18th Dec, 2015

Shri R S Malhotra
Additional General Manager (Tehri Complex)
Bhagirathi Bhawan,
Administrative Block, Tehri Garhwal
Uttarakhand- 249124

Subject: Grant of Long Term Access (LTA) to THDC India Ltd

Dear Sir,

We write with reference to your application for Long Term Access Ref: THDCIL/THEP/PSP-EM&HM/AGM/F-1397 dated 12.06.2015 for transfer of 1000 MW from Tehri PSP of THDC to beneficiaries in Northern Region and Minutes of 7th Meeting of NR Constituents regarding Connectivity/ open access application held on 14.07.2015. In this regard, intimation for grant of Long Term Access (LTA) is enclosed.

It is to mention that grant of LTA is subject to the signing of requisite LTA Agreement and fulfillment of other conditions as required under the Regulations & approved Procedure and also those mentioned in the enclosed intimation. In regard to the above grant of LTA, applicant shall abide by all provisions of the CERC (Grant of Connectivity, Long Term Access and Medium Term Open Access in inter-State transmission system and related matters) Regulations, 2009.

You are requested to sign LTA Agreement; Transmission Service Agreement for sharing of transmission charges, as and when applicable under relevant CERC Regulations introduced or modified from time to time in this regard. Sample agreement is available at our website www.powergridindia.com >> CTU Open Access.

You may contact at the following address for signing the referred agreements.

Executive Director (Commercial)
Power Grid Corporation of India Limited
Saudamini, Plot No. – 2, Sector – 29,
Near IFFCO Chowk, Gurgaon – 122 001
Tel : 0124-2571988

Thanking you,

Yours faithfully,

(Seema Gupta)
Chief Operating Officer (CTU-Plg & CE)

पंजीकृत कार्यालय : बी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110 016 दूरभाष : 011-26560121 फैक्स : 011-26560039 तार 'नेटग्रिड'
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110 016 Tel. : 011-26560121 Fax : 011-26560039 Gram : 'NATGRID'

(22)

FORMAT-LTA-5

POWER GRID CORPORATION OF INDIA LTD.
Intimation for Grant of Long - term Access (LTA)

1	**Intimation No.** **Date :**	C/CTU-Plg/LTA/N/ THDC 18th Dec, 2015
2	**Ref. Application No.** **Date :**	THDCIL/THEP/PSP-EM&HM/AGM/F-1397 12th June, 2015
3	**Name of the Applicant**	THDC India Ltd
4	**Address for Correspondence**	Bhagirathi Bhawan, Administrative Block, Tehri Garhwal Uttarakhand
5	**Nature of the Applicant**	
	Normal Generator (other than captive) :	Normal Generator
	Captive Generator	
	Bulk Consumer	
	Electricity Trader	
	Distribution Licensee	
	Others	
6	**Details for Long Term Access (LTA)**	
6a	Quantum (MW) for which LTA is granted	1000 MW
7	**Injection of Power (more than one only in case of single Drawl)**	
	Entity-1	Tehri PSP
	State/Region	Uttarakhand/ NR
	Quantum-1	1000 MW
	Connectivity with the Grid	Through Bus Bar extension at Tehri Bus
8	**Drawl of Power (more than one only in case of single Injection)**	
	Entity-1	BRPL
	State/Region	Delhi/ Northern Region
	Quantum-1	262MW
	Connectivity with the Grid	Interconnection of Delhi STU with CTU
	Entity-2	BYPL
	State/Region	Delhi/ Northern Region
	Quantum-2	163MW
	Connectivity with the Grid	Interconnection of Delhi STU with CTU
	Entity-3	TPDDL
	State/Region	Delhi/ Northern Region
	Quantum-3	175 MW

Note: Long Term Access to the ISTS is granted subject to the following:

1. That the LTA applicant shall enter into Long Term Access Agreement (LTAA) within 30 days of the LTA intimation in default of which the LTA shall be liable for revocation.

2. That the LTA applicant shall enter into Transmission Service Agreement (TSA), if applicable, in line with the Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010.

3. That the LTA applicant shall abide by all the duties and liabilities under the Electricity Act, 2003; all applicable CERC Regulations as amended from time to time, including but not limited to CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009, and; Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010; as also with the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007.

4. That the applicant shall keep the CTU and RLDC/NLDC indemnified at all times and shall undertake to indemnify, defend and keep the CTU, RLDC/NLDC from any and all damages, losses, claims and actions including those relating to injury to or death of any person or damage to property, demands, suits, recoveries, costs and expenses, court costs, attorney fees, and; all other obligations by or to third parties, arising out of or resulting from the long-term access transaction.

Name: Seema Gupta
Designation: COO (CTU-Plg & CE)

Place: Gurgaon
Date: 18.12.2015

To:

Shri R S Malhotra
Additional General Manager (Tehri Complex)
Bhagirathi Bhawan,
Administrative Block, Tehri Garhwal
Uttarakhand- 249124

Copy to :

Member (Power Systems) Central Electricity Authority Sewa Bhawan, RK Puram New Delhi – 110 066.	**Chief Engineer (SP&PA)** Central Electricity Authority Sewa Bhawan, R K Puram New Delhi – 110 066.
CEO Power System Operation Corporation Ltd. B-9, Qutab Institutional Area, Katwaria Sarai ,New Delhi -110016	**Member Secretary,** Northern Region Power Committee Shaheed Jeet Singh, Sansanwal Marg, Katwaria Sarai, New Delhi- 110016
GM Northern Regional Load Despatch Centre 18-A, Shaheed Jeet Singh Sansanwal Marg,Katwaria Sarai,New Delhi-110016	

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

केन्द्रीय कार्यालय : ''सौदामिनी'' प्लॉट सं. 2, सैक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 0124-2571700-719, फैक्स : 0124-2571760, 2571761 तार 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001. Haryana
Tel. : 0124-2571700-719, Fax : 0124-2571760, 0124-2571761 Gram : 'NATGRID'

सदर्भ सख्या / Ref. No

C/CTU-Plg/CON/N/THDC

18th Dec, 2015

Shri R S Malhotra
Additional General Manager (Tehri Complex)
Bhagirathi Bhawan,
Administrative Block, Tehri Garhwal
Uttarakhand- 249124

Subject: Grant of Connectivity to THDC India Ltd

Dear Sir,

We write with reference to your application Ref: THDCIL/THEP/PSP-EM&HM/AGM/F-1397 dated 12.06.2015 received on 18.06.2015 for Connectivity of 1000 MW for Tehri PSP of THDC at Bhagirathi Puram, Uttarakhand and Minutes of 7th Meeting of constituents for LTA & Connectivity applications in NR held on 14.07.2015. In this regard, intimation for grant of Connectivity is enclosed.

It is to mention that grant of Connectivity is subject to the signing of requisite Connection Agreement; fulfillment of other conditions as mentioned in the enclosed intimation as also required under the Regulations and the approved Procedure.

In regard to the above grant of Connectivity, applicant shall abide by all provisions of the CERC (Grant of Connectivity, Long Term Access and Medium Term Open Access in inter-State transmission system and related matters) Regulations, 2009.

Thanking you,

Yours faithfully,

(Seema Gupta)
Chief Operating Officer (CTU-Plg & CE)

Intimation for Grant of Connectivity

1	**Intimation No.** **Date :**	C/CTU-Plg/CON/N/ THDC 18.12.2015
2	**Ref. Application No.** **Date :**	THDCIL/THEP/PSP-EM&HM/AGM/F-1397 12.06.2015
3	**Name of the Applicant**	THDC India Ltd
4	**Address for Correspondence**	Bhagirathi Bhawan, Administrative Block, Tehri Garhwal Uttarakhand
5	**Nature of the Applicant** Generator (other than captive) Captive Generator Bulk Consumer Solar Park Developer	 Normal Generator
6	**Details for Connectivity**	
6a	Capacity(MW) for which connectivity is granted	1000 MW
6b	Point at which Connectivity is granted	Tehri Generation Switchyard
6c	Date from which connectivity is granted	03.11.2017
6d	Transmission System Required for Connectivity	Through Bus Bar extension at Tehri Bus
6e	Implementing Agency for transmission system required for connectivity	THDC
6f	Agencies between which agreement is to be signed for implementation of transmission system required for connectivity	THDC/Beneficiaries & POWERGRID
7	**Transmission Charges Applicable for the dedicated line**	As per CERC Regulations
8	**Amount (in Rupees) for which Bank Guarantee is to be provided by the applicant**	NA
9	**Location of the Generating Station / Bulk Consumer**	

Nearest Village / Town	Bhagirathi Puram
District	Tehri
State	Uttarakhand
Latitude	30.3738609
Longitude	78.4324809

10 Installed Capacity of the Generating Station

Unit-I	250 MW
Unit-II	250 MW
Unit -III	250 MW
Unit-IV	250 MW

11 Commissioning Schedule of the Generating Station

Unit-I	Nov'17
Unit-II	Jan'18
Unit-III	Mar'18
Unit-IV	May'18

Note:

1. This grant of connectivity has been made in terms of the details as per the application submitted by the applicant on Affidavit to the nodal agency. Thus, for all such cases where dedicated/connectivity transmission system upto point of connection is to be undertaken by the applicant itself, it is incumbent on the applicant to complete the dedicated/connectivity transmission system by the date from which connectivity is sought/granted. In case any extension in time is envisaged by applicant, he shall approach CTU at least 2 months prior to date from which connectivity is granted. CTU may review the grant of connectivity for extension or cancellation.

2. The Applicant shall furnish additional details to CTU for signing of "Connection Agreement" as per FORMAT-CON-4. These details are to be furnished to CTU at least 2 (two) years prior to physical interconnection, unless otherwise indicated by CTU. The applicant is, however advised to furnish such details as early as possible.

3. The CTU will process the above information and will intimate the connection details pursuant to which the applicant shall sign "Connection Agreement" as per FORMAT-CON-6 with CTU prior to the physical inter-connection. In case, the connectivity is granted to the ISTS of an inter-state transmission licensee other than the CTU, a tripartite agreement is to be signed between the applicant, the Central Transmission Utility and such inter-state transmission licensee, in line with the provisions of the regulations.

4. Applicant shall have to inform likely date of synchronization, likely quantum and period of injection of infirm power before being put into commercial operation to

the SLDC/RLDC concerned at least one month in advance and obtain their concurrence for the same.

5. Applicant shall provide Special Protection Scheme (SPS) if required, integrated into their system. Details of SPS and its setting shall be worked out by the applicant in consultation with NRLDC/ NRPC separately.

6. The applicant shall abide by all provisions of the Electricity Act, 2003, the CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009, Central Electricity Authority (Technical Standards for connectivity to the Grid) and Indian Electricity Grid Code as amended from time to time.

Place: Gurgaon
Date: 18.12.2015

Name: Seema Gupta
Designation: COO (CTU-Planning & CE)

To:

Shri R S Malhotra
Additional General Manager (Tehri Complex)
Bhagirathi Bhawan,
Administrative Block, Tehri Garhwal
Uttarakhand- 249124

Copy to:

Member (Power Systems) Central Electricity Authority Sewa Bhawan, RK Puram New Delhi – 110 066.	**Chief Engineer (SP&PA)** Central Electricity Authority Sewa Bhawan, R K Puram New Delhi – 110 066.
CEO Power System Operation Corporation Ltd. B-9, Qutab Institutional Area, Katwaria Sarai ,New Delhi -110016	**Member Secretary,** Northern Region Power Committee Shaheed Jeet Singh, Sansanwal Marg, Katwaria Sarai, New Delhi- 110016
GM Northern Regional Load Despatch Centre 18-A, Shaheed Jeet Singh Sansanwal Marg,Katwaria Sarai,New Delhi-110016	

सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

Ref. No. CTU/NR/TILTP/GNA **Date:** 31-10-2022

Shri L P Joshi
Executive Director (PSP- Project Incharge)
THDC India Ltd.
Corporate Office, Pragatipuram,
Bypass Road, Rishikesh-249201

Sub: Transition of Connectivity & LTA of M/s THDC India Ltd. for its Tehri PSP located in Tehri distt., Uttarakhand in line with CERC (Connectivity and GNA to the ISTS) Regulations, 2022- reg

Dear Sir,

As per CERC (Connectivity and General Network Access to the Inter-State Transmission System) Regulations, 2022, CTU as the nodal agency published the details of transition for all the entities granted connectivity/LTA/MTOA (intimations issued till August 2022) as well as CGS generation for migration into GNA Regulations on 23-09-2022 for stakeholder comments by 10-10-2022.

CERC vide its notification dated 09-10-2022 has notified that GNA Regulations shall come into operation with effect from 15-10-2022 except for provisions of Regulations 23 to 24, 26 to 36, 37.9, 38, 40 and 43, whose date of commencement shall be notified separately.

Accordingly, it is informed that connectivity of 1000 MW and LTA of 1000 MW has been considered for the generation project of M/s THDC India Ltd. (Tehri PSP) situated in Tehri distt., Uttarakhand. In this regard, following may be noted for transition under GNA Regulation:

- As per Regulation 18.1(f), 1000 MW of LTA effective with firm beneficiaries shall be considered as deemed GNA.

Thanking you,

Yours faithfully,

31/10/22

(Kashish Bhambhani)
General Manager

सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

Ref.: C/CTU/N/05/THDC/2200000800/Amend-2 **Date**: 12/09/2025

Shri S. K. Sahoo
AGM (PSP-EM/HM-Incharge)
THDC India Limited
Urja Sanchay Bhawam, Bhagirathipuram
Tehri Garhwal
Uttarakhand - 249142

Amendment-2

Subject: Connection details (FORMAT-CONN-TD-4) for connection of 1000MW Pumped Storage Power Plant of M/s THDC India Limited in Tehri, Uttarakhand for Connectivity to the ISTS

Reference:

1. Connection details letter vide ref.: C/CTU/N/05/THDC/2200000800 dated 13.01.2025 for connection of 250MW out of 1000MW Pumped Storage Power Plant of M/s THDC India Limited in Tehri, Uttarakhand for Connectivity to the ISTS
2. Connection details (Corrigendum) letter vide ref.: C/CTU/N/05/THDC/2200000800/Corr. dated 12.02.2025 for connection of 250MW out of 1000MW Pumped Storage Power Plant of M/s THDC India Limited in Tehri, Uttarakhand for Connectivity to the ISTS
3. Connection details (Amendment) letter vide ref.: C/CTU/N/05/THDC/2200000800/Amend-1 dated 11.06.2025 for connection of 500MW out of 1000MW Pumped Storage Power Plant of M/s THDC India Limited in Tehri, Uttarakhand for Connectivity to the ISTS
4. CEA Minutes of the Meeting taken by Member (GO&D), CEA, on 02.09.2025 (Tuesday) at 11:30 AM to discuss request of THDC for grant of connectivity for Units 7 &8 of Tehri PSP dated 04.09.2025
5. THDC letter no. टीएचडीसीइलि/पी.एस.पी.-ई.एम.एंड एच.एम/टिहरी/एफ-138/435 dated 05.09.2025.

Dear Sir,

In line with THDC letter (Ref. 5) and CEA MoM (Ref. 4), the following Amendment is hereby issued in the Connection details (Ref. 1):

S. No.	Item of Ref. 1	As per Ref. 1, 2 & 3	Amended as
1.	Sl. No. 5 Page No. 2 of 11 [Maximum Import Capacity through the Link (during startup)]	500 MW (Unit 1 & 2) (plus allowed overload capacity)	1000 MW (plus allowed overload capacity)
2.	Sl. No. 6 Page No. 2 of 11 [Maximum Export Capacity through the Link]	500 MW (Unit 1 & 2) (plus allowed overload capacity)	1000 MW (plus allowed overload capacity)

With the above, the connection details for THDC India Limited w.r.t. their Pumped Storage Plant stands at

1000MW (plus allowed overload capacity). Further, as mentioned in the CEA MoM (Ref. 4), THDC shall adhere to the following:

(a) Submission of Preliminary PSCAD model by 30th September, 2025 (Stage-I)

(b) Initial set of simulations to be shared preferably before 31st October, 2025 (Stage-II)

(c) Complete set of simulations along with Final PSCAD Model latest by 31st January, 2026 (Stage-III)

This letter shall be an integral part of the Amendment to Connection details letter (Ref. 1). M/s THDC India Limited shall comply with all statutory requirements in this regard. All other technical details and terms and conditions of Connection details (FORMAT-CONN-TD-4) (Ref. 1) shall remain the same.

Thanking you.

Yours faithfully,

12/9/2025

(K. K. Sarkar)
Senior General Manager

Copy to:

1. **Shri K.K. Jain**, Senior GM(CTUIL)
2. **Shri Partha Sarathi Das**, Senior GM(CTUIL)
3. **ED (NR-I), POWERGRID**

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

टीएचडीसी इंडिया लिमिटेड
THDC INDIA LIMITED
(भारत सरकार एवं उ.प्र. सरकार का संयुक्त उपक्रम)
CIN : U45203UR1988GO1009822
टिहरी, टिहरी गढ़वाल (उत्तराखण्ड) पिन- 249 124
Tehri, Tehri Garhwal (Uttarakhand) PIN- 249 124

15 YEARS OF CELEBRATING THE MAHATMA

पत्रांक : टीएचडीसीइलि/पी.एस.पी.–ई.एम.एंड एच.एम/टिहरी/एफ–138/901 दिनांक : 03.03.2026

To,

Chief General Manager
Central Transmission Utility of India
Floors No. 5th-10th, IRCON International Tower,
Tower 1, Plot No. 16, Institutional Area,
Sector 32, Gurugram, Haryana 122003

Kind Attention: Shri R.V.M.M. Rao

Sub: Request for Enhancement of GNA for THDC India Limited – Tehri PSP (4 × 250 MW) to Avoid Regional Transmission Deviation Charges.

Ref: 1. CTUIL letter No. CTU/NR/TILTP/GNA dated 31.10.2022
2. CTUIL Letter No. C/CTU/N/05/THDC/2200000800/Amend-2 dated 12.09.2025

Dear Sir,

This has reference to the subject cited above and letter referred at Sl. No. 01, wherein GNA was granted to Tehri PSP for 1000 MW.

As you are aware that Tehri PSP is India's first variable speed Pumped Storage Plant. Units #5, 6 & 7 of Tehri PSP are presently under commercial operation and Unit #8 is under advanced stage of commissioning. As per the design capability of PSP machines and Tehri Reservoir Head conditions, Tehri PSP machines cannot be operated below 250 MW in Pumping mode for an approximate duration of 5 months (tentatively from August to December) in a year. During this period, it is not technically possible to run the machine below 250 MW. Consequently, when all four units will operate in pumping mode as per their design capability, the aggregate drawal from the grid will exceed the currently sanctioned GNA of 1000 MW. Due to this operational constraint during the aforesaid five-month period, Tehri PSP will become liable for Regional Transmission Deviation Charges on account of GNA constraints. However, such drawal shall remain within the permissible connectivity limit, i.e. 1000 MW plus 10% overload.

Apart from the above, Tehri PSP Units may be operated above 250 MW in pumping mode as per design capability of machines for further duration of 4 to 5 months in a year. It is evident that Tehri PSP units may be operated above 250 MW in pumping mode for a duration of approximate 9 to 10 months in a year subject to prevailing Tehri reservoir head conditions. Such operation would utilize the maximum pumping capacity of the machines, thereby enhancing generation, improving operational flexibility and providing stronger grid support.

It is pertinent to mention that the last unit of Tehri PSP is expected to be commissioned by the first week of April 2026. Upon commissioning of all four units, the station will be fully equipped to operate at its full capacity. However, the existing grant of GNA up to 1000 MW may limit

एस. के. साहू

optimal utilization of the machines at their maximum capacity (in pump mode) during the aforesaid period.

In view of the above, it is therefore requested that CTUIL may kindly consider enhancement of the GNA quantum to 1100 MW (275 MW × 4) for Tehri PSP throughout the year. This is necessary to avoid Regional Transmission Deviation Charges, strengthen grid security, and ensure optimal utilization of the Tehri PSP units for the majority of the year.

Thanking You.

For THDC India Ltd.

एस. के. साहू
03/03/26

(S.K. Sahoo)/ (एस0 के0 साहू)
महाप्रबंधक (पी.एस.पी–ई.एम. एंड एच.एम)

प्रतिलिपिः COO, CTUIL, Gurugram, Haryana

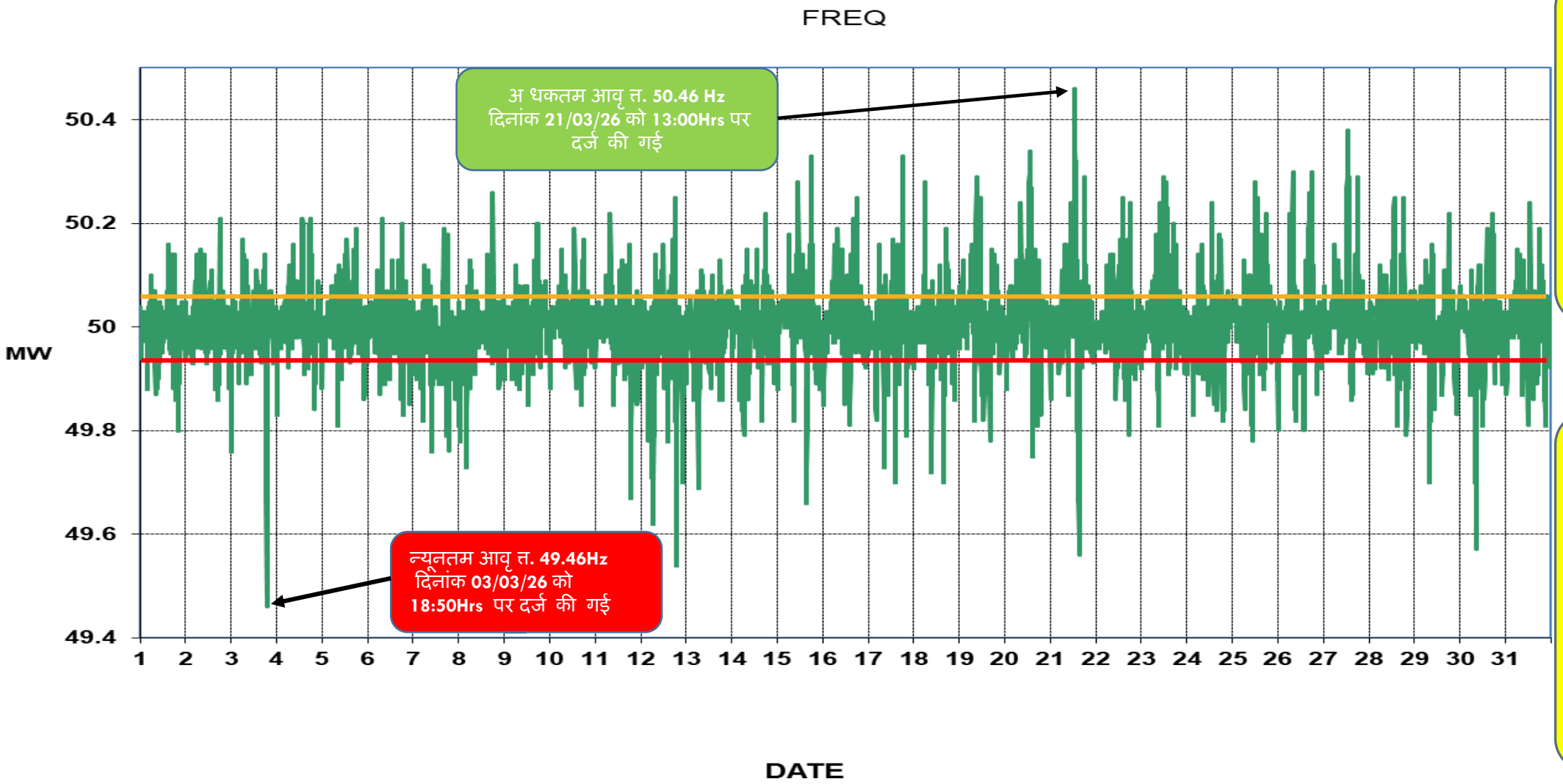
Annexure-B.I

प्रचालन समन्वय उपसमिति की बैठक
मार्च - 2026

NRLDC (Northern Regional Load Dispatch Centre),
New Delhi

मार्च-2026 के दौरान आवृत्ति की स्थिति
(As per 5 Minute SCADA data)

क्षेत्रीय **OD/UD :** अधिकतम आवृत्ति पर: **-2311 MW(UD)** न्यूनतम आवृत्ति पर : **-850 MW(UD)**



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

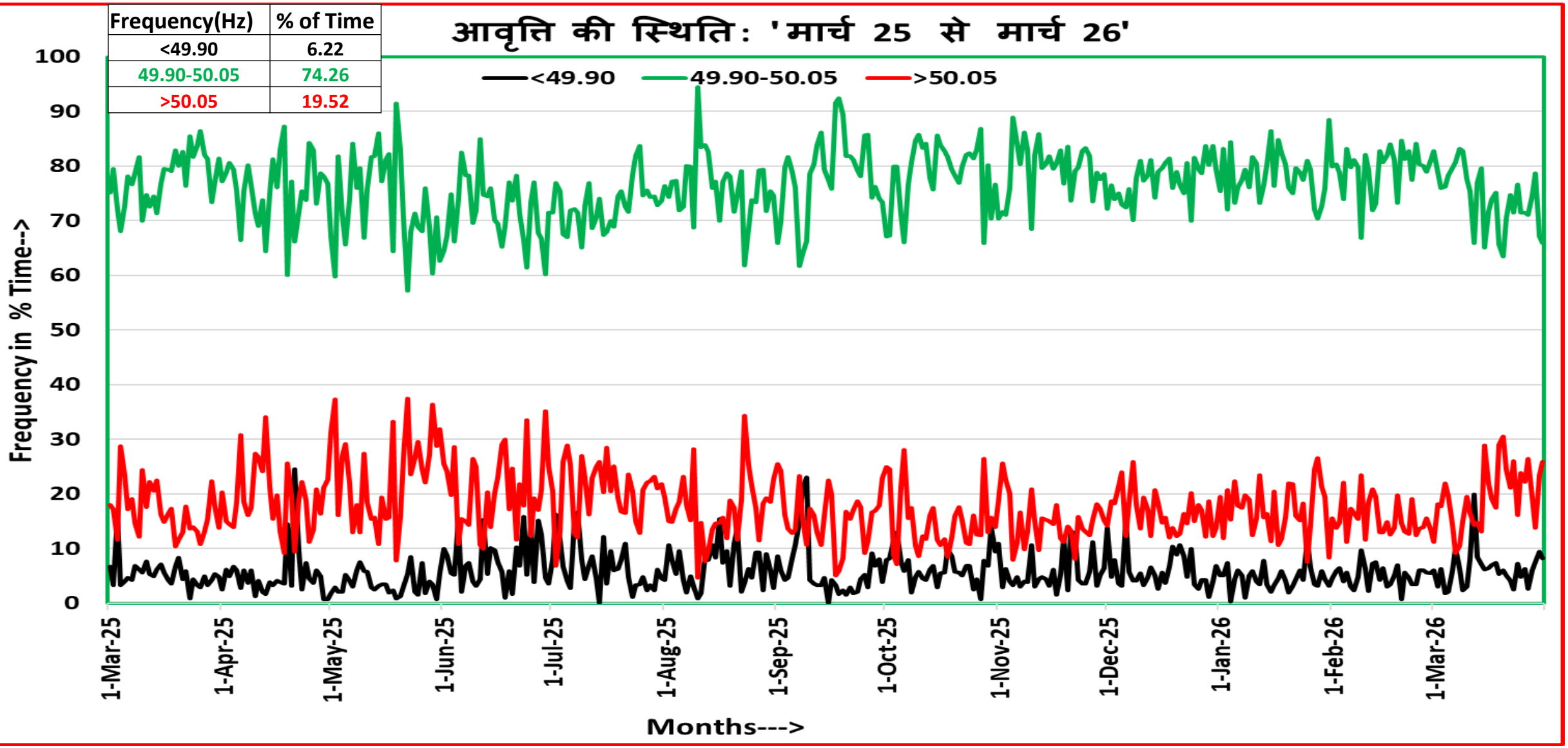
HP	+9
Har	-233
Chd	-16
Raj	-502
Utt	-45
Pun	-482
JK	-359
Del	-327
UP	-358

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

Chd	+20
Raj	+262
Del	+567
Utt	-113
Har	-114
Pun	-360
UP	-1013
JK	-84
HP	-16

आवृत्ति की स्थिति: मार्च-2025 से 2026

Frequency(Hz)	% of Time
<49.90	6.22
49.90-50.05	74.26
>50.05	19.52



पिछले एक साल मे आवृत्ति की स्थिति

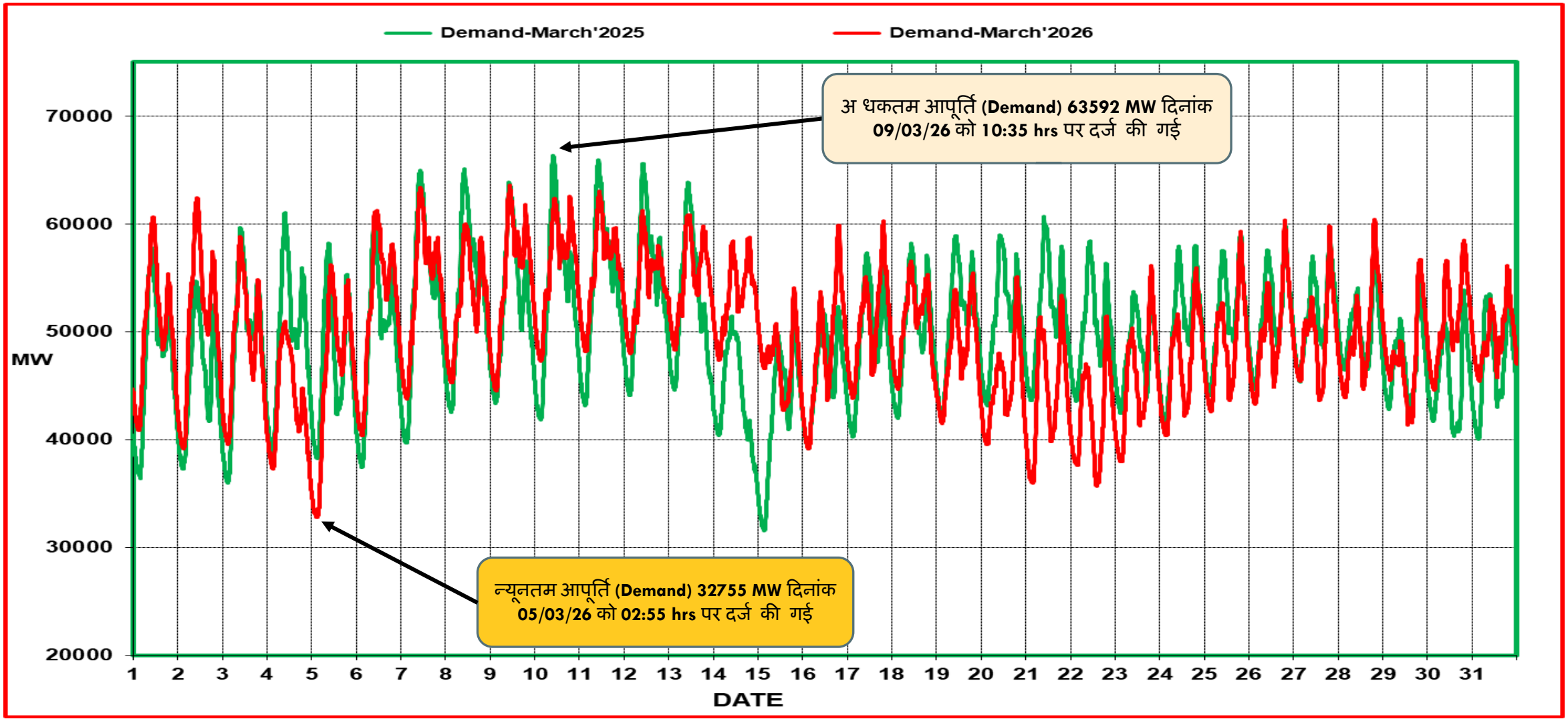
आवृ त्त बैंड	मार्च 2025	अप्रैल 2025	मई 2025	जून 2025	जुलाई 2025	अगस्त 2025	सतम्बर 2025	अक्टूबर 2025	नवम्बर 2025	दिसंबर 2025	जनवरी 2026	फरवरी 2026	मार्च 2026
< 49.7 Hz(%)	0.05	0.27	0.07	0.15	0.32	0.20	0.42	0.16	0.19	0.26	0.09	0.04	0.30
<49.8 Hz(%)	0.61	0.96	0.29	0.86	1.39	0.80	0.93	0.75	0.75	0.97	0.55	0.30	1.06
<49.9 Hz(%)	5.32	5.16	3.60	7.56	6.65	6.63	6.02	6.60	5.66	6.00	4.58	4.99	6.22
49.90-50.05 Hz(%)	*77.89*	*75.64*	*73.30*	*71.85*	*72.89*	*76.22*	*78.33*	*78.59*	*79.39*	*77.50*	*78.26*	*79.44*	*74.26*
50.05-50.10 Hz(%)	13.12	14.80	15.35	14.11	16.38	13.19	12.76	11.36	11.46	12.78	13.15	10.33	13.79
>50.10 Hz(%)	3.67	4.39	7.76	6.48	4.08	3.96	2.89	3.46	3.49	3.73	4.01	5.24	5.73
>50.20 Hz(%)	0.63	1.09	2.87	1.73	0.64	0.83	0.28	0.62	0.60	0.48	0.54	0.60	1.37
औसत आवृ त्त	50.001	50.004	50.015	50.002	50.003	49.999	49.996	49.993	49.994	49.995	50.001	49.996	50.004

मार्च -2026 के दौरान अधिकतम मांग (Demand Met), अधिकतम ऊर्जा खपत (Energy consumption) और अब तक का कीर्तिमान (राज्यों द्वारा जमा आंकड़ों के अनुसार)

राज्य	अ धकतम मांग (MW) (in Mar'26)	दिनांक / समय	रिकॉर्ड अ धकतम मांग (in MW) (upto Feb'26)	दिनांक / समय	अ धकतम ऊर्जा खपत (MU) (in Mar'26)	दिनांक	रिकॉर्ड अ धकतम ऊर्जा खपत (MU) (Upto Feb'26)	दिनांक
पंजाब	11127	06-03-2026 12:00	16754	28.06.25 at 15:00	185.3	11-03-2026	366.8	21.07.2024
हरियाणा	8822	02-03-2026 09:45	14662	31.07.24 at 14:30	181.3	10-03-2026	293.4	30.07.2024
राजस्थान	17264	02-03-2026 09:30	19617	09-01-2026 09:45	327.7	07-03-2026	388.01	11.06.2025
दिल्ली	4580	13-03-2026 12:00	8656	19.06.24 at 15:06	93.4	13-03-2026	177.7	18.06.2024
उत्तर प्रदेश	22314	29-03-2026 20:24	31486	11.06.25 at 00:45	432.7	10-03-2026	658.7	17.06.2024
उत्तराखंड	2315	28-03-2026 19:00	2821	11.06.25 at 22:00	44.9	10-03-2026	62.1	14.06.2024
हिमाचल प्रदेश	2060	18-03-2026 08:00	2310	09-01-2026 09:15	38.3	18-03-2026	42.9	04-02-2026
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	3188	03-03-2026 19:00	3325	07-01-2026 11:00	59.5	20-03-2026	70.3	04.02.2025
चंडीगढ़	228	10-03-2026 19:00	482	18.06.24 at 15:28	4.3	10-03-2026	9.28	12.06.2025
उत्तरी क्षेत्र #	63286	07-03-2026 10:00	91234	19.06.24 at 14:37	1338.5	10-03-2026	2022.9	12.06.2025

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

क्षेत्रीय विद्युत आपूर्ति (Demand) मार्च 2025 बनाम मार्च 2026 (As per 5 Minute SCADA data)

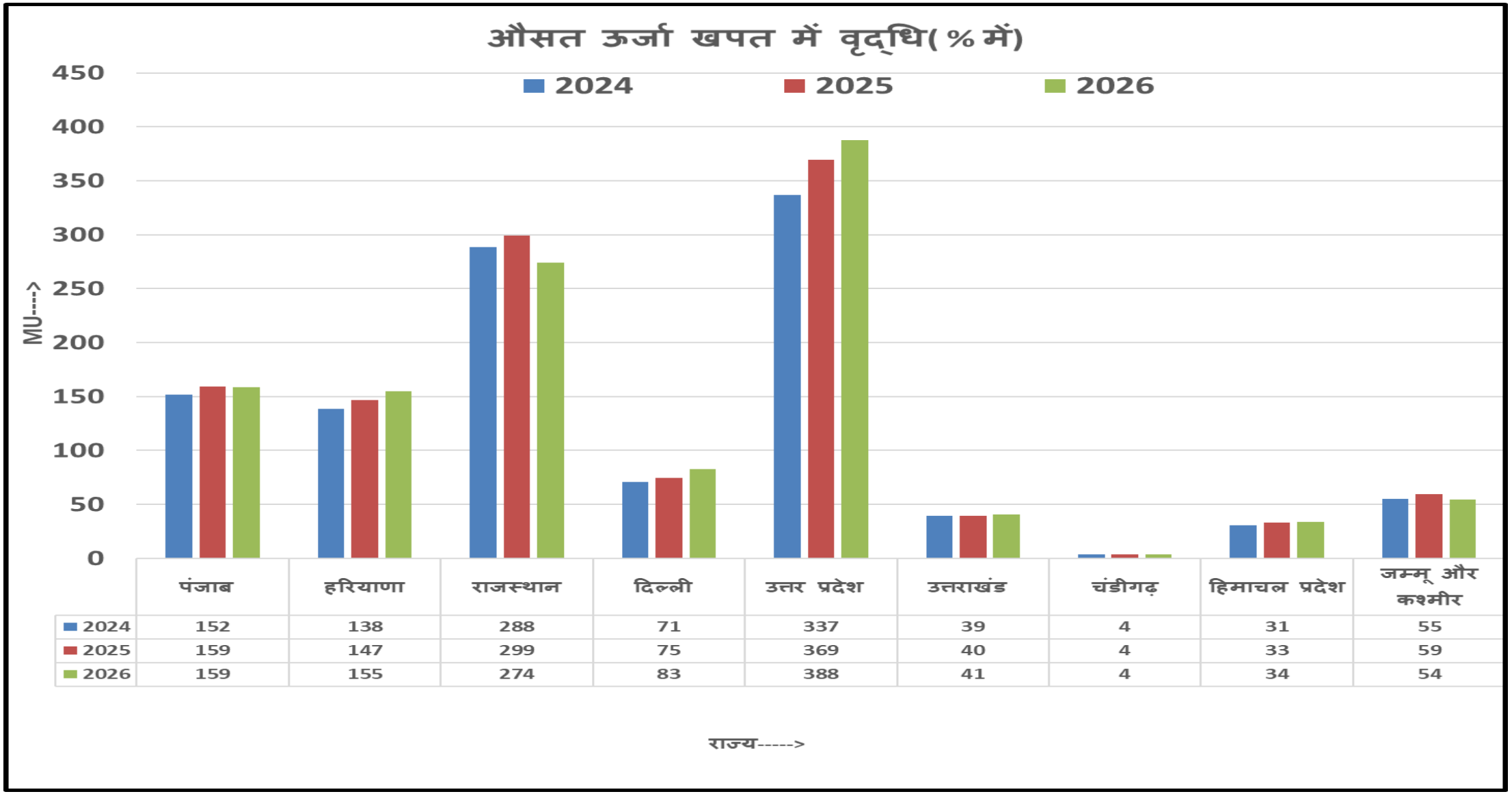


फरवरी -2025 की तुलना में फरवरी -2026 की औसत वद्युत आपूर्ति में 962 MW वृद् ध हुई

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) मार्च -2026/ मार्च -2025 / मार्च -2024

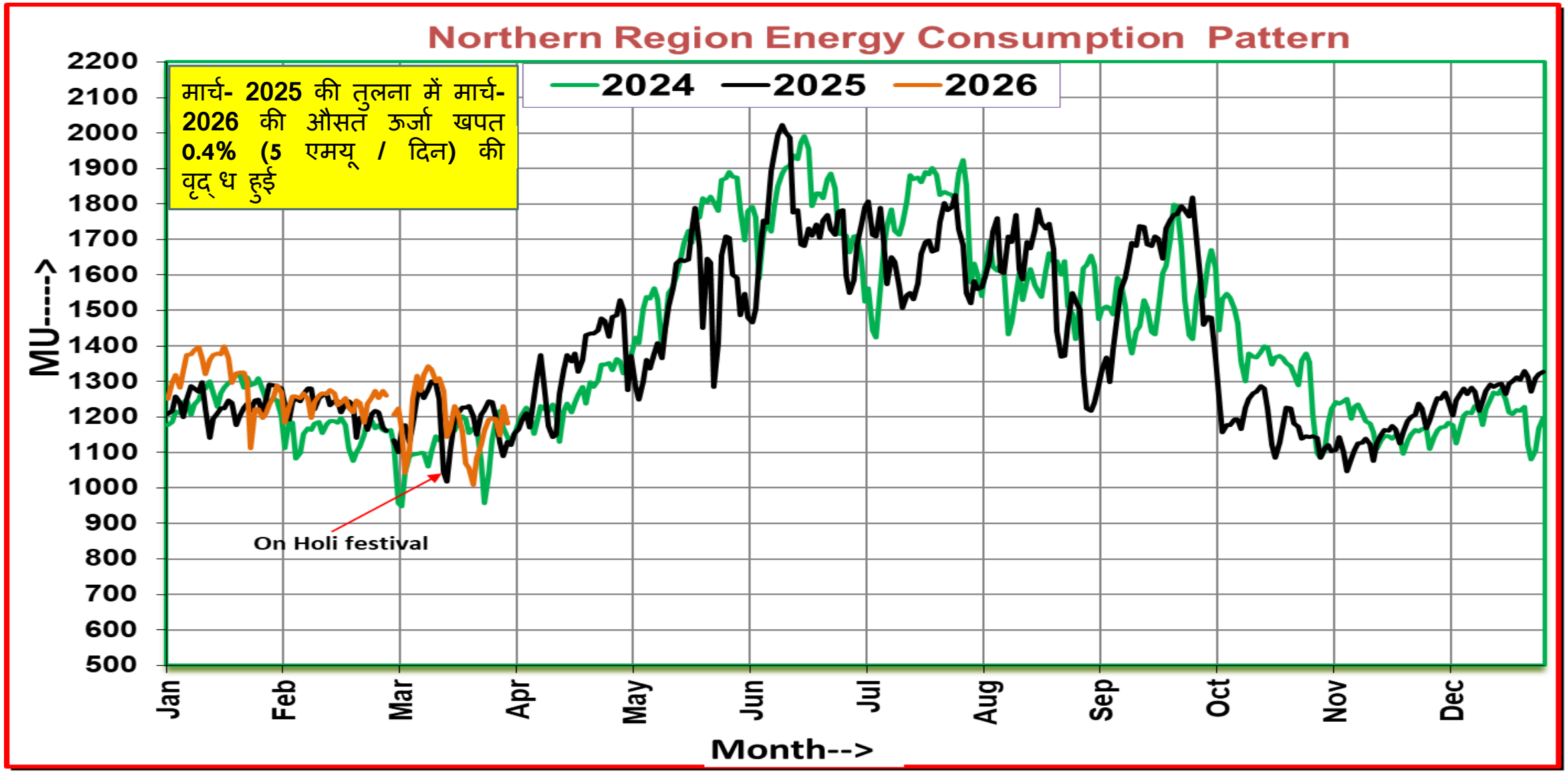
राज्य	मार्च-2024	मार्च-2025	मार्च-2026	% वृद् ध (मार्च-2025 vs मार्च-2024)	% वृद् ध (मार्च-2026 vs मार्च-2025)
पंजाब	152	159	159	5.0%	-0.3%
हरियाणा	138	147	155	6.0%	5.6%
राजस्थान	288	299	274	3.8%	-8.5%
दिल्ली	71	75	83	5.3%	10.4%
उत्तर प्रदेश	337	369	388	9.6%	5.0%
उत्तराखंड	39	40	41	0.9%	2.4%
चंडीगढ़	4	4	4	0.6%	5.0%
हिमाचल प्रदेश	31	33	34	8.2%	1.6%
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	55	59	54	8.0%	-8.8%
उत्तरी क्षेत्र	1118	1189	1194	6.3%	0.4%

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) मार्च-2026/ मार्च-2025 / मार्च-2025

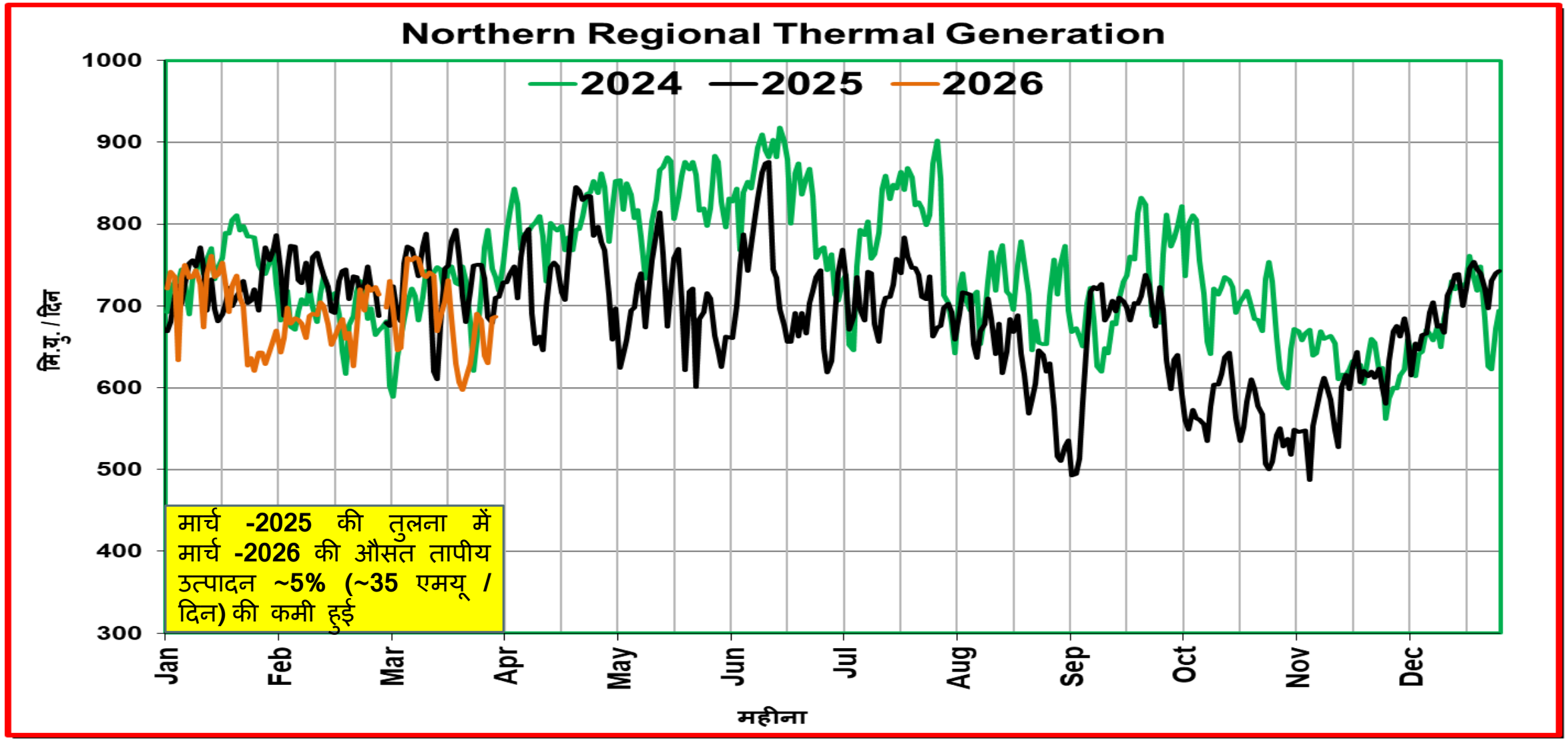


	पंजाब	हरियाणा	राजस्थान	दिल्ली	उत्तर प्रदेश	उत्तराखंड	चंडीगढ़	हिमाचल प्रदेश	जम्मू और कश्मीर
2024	152	138	288	71	337	39	4	31	55
2025	159	147	299	75	369	40	4	33	59
2026	159	155	274	83	388	41	4	34	54

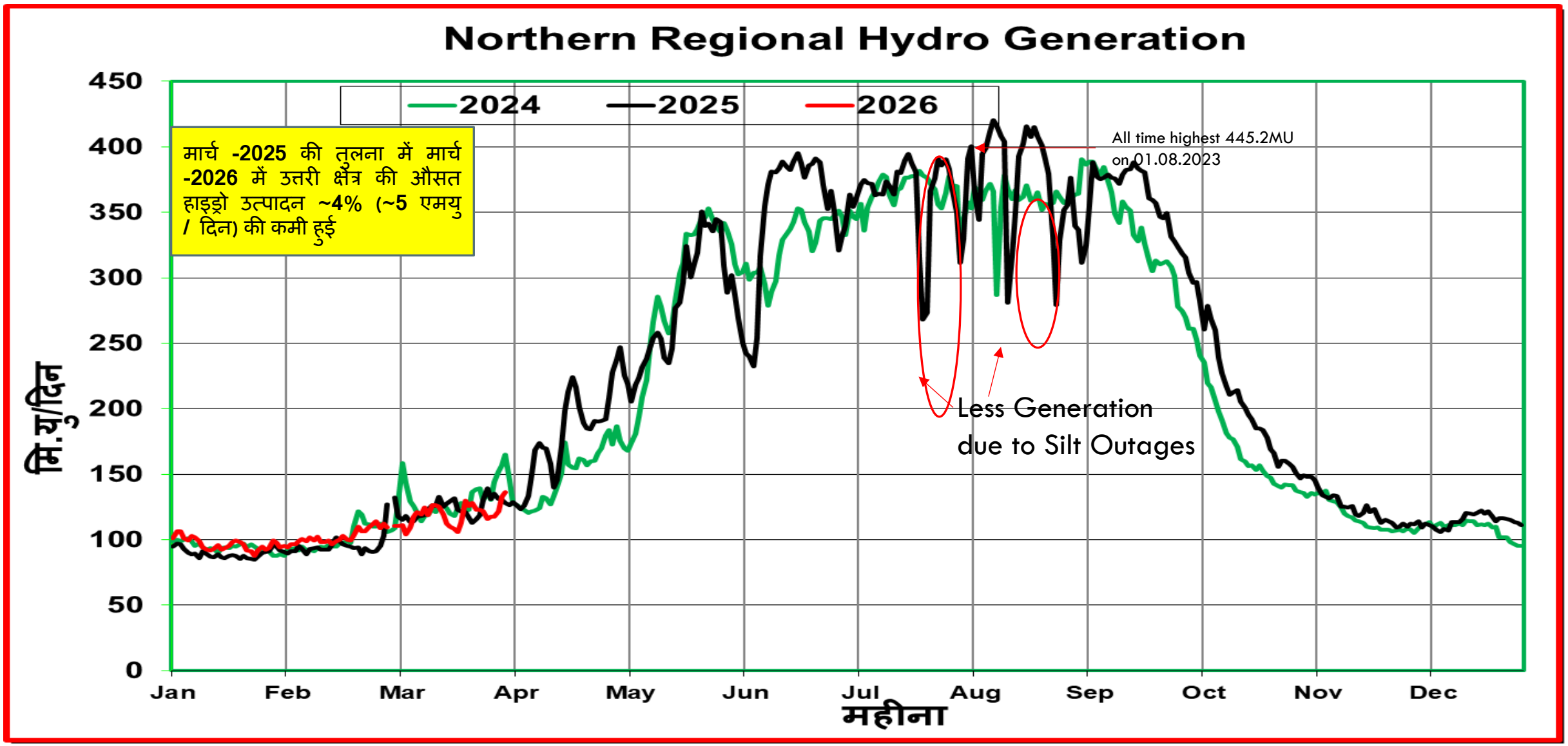
उत्तरी क्षेत्र की ऊर्जा खपत(MUs)



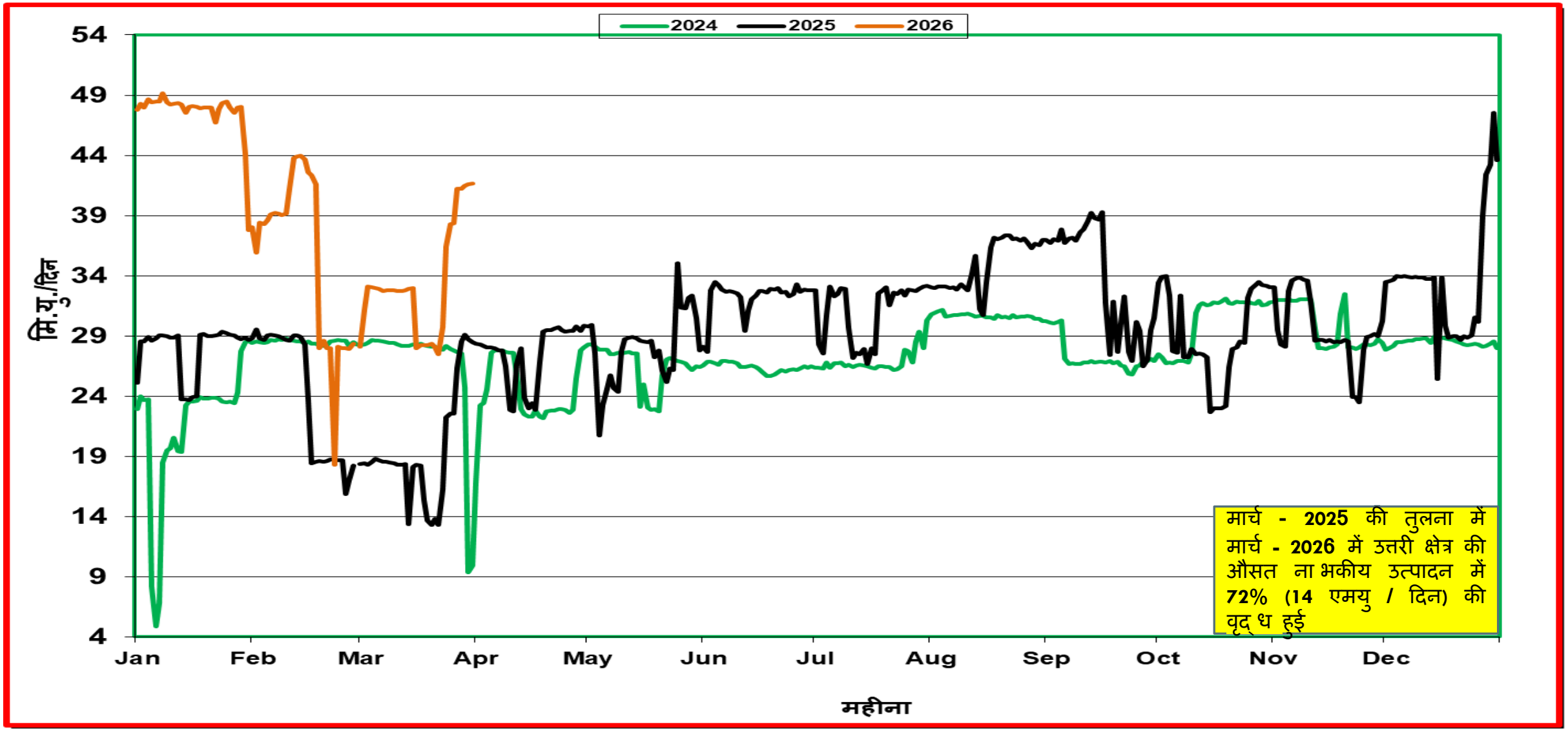
उत्तरी क्षेत्र की तापीय (Thermal) उत्पादन की स्थिति(MUs/Day)



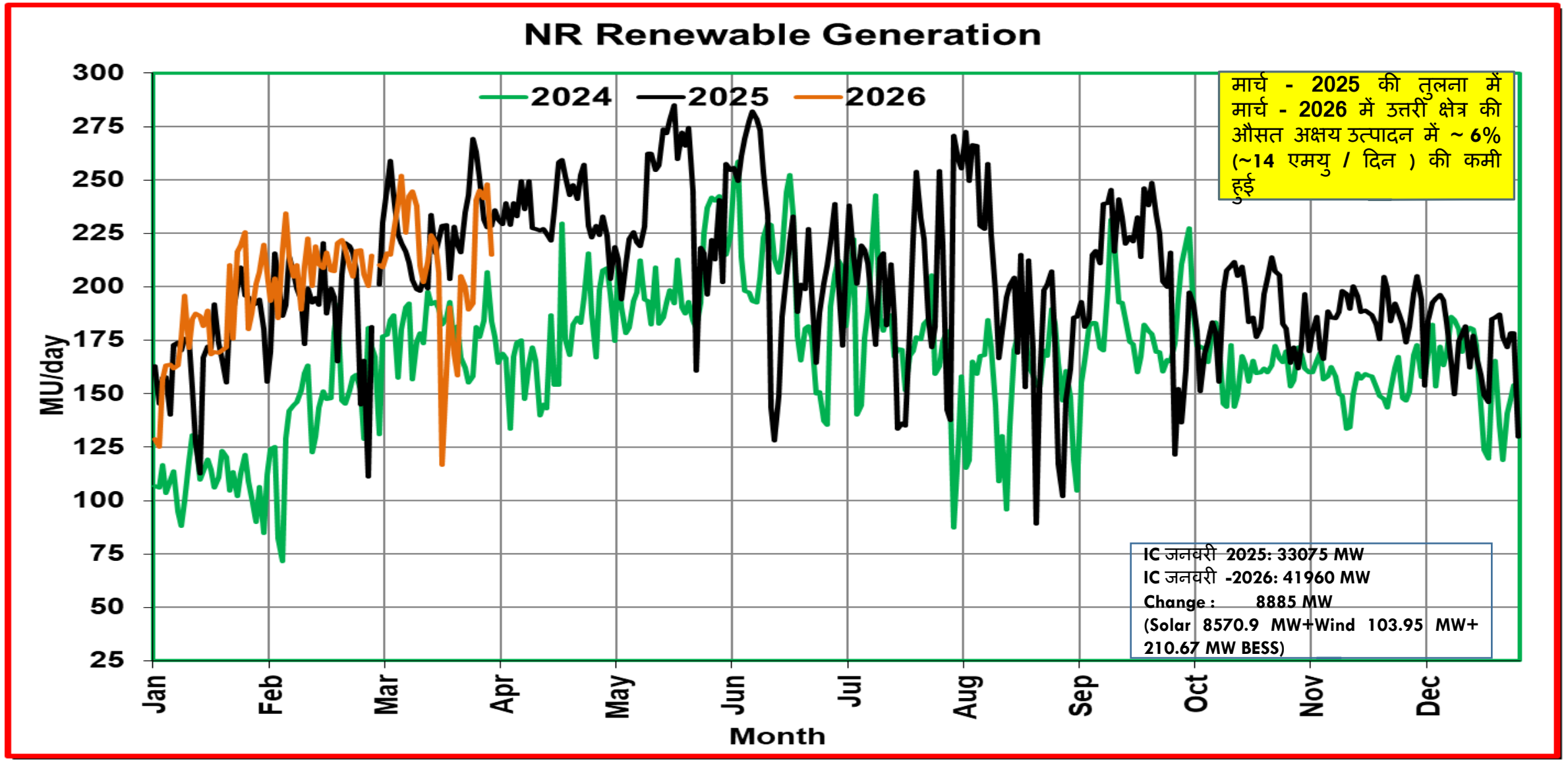
उत्तरी क्षेत्र की जलीय (हाइड्रो) उत्पादन की स्थिति(MUs/Day)



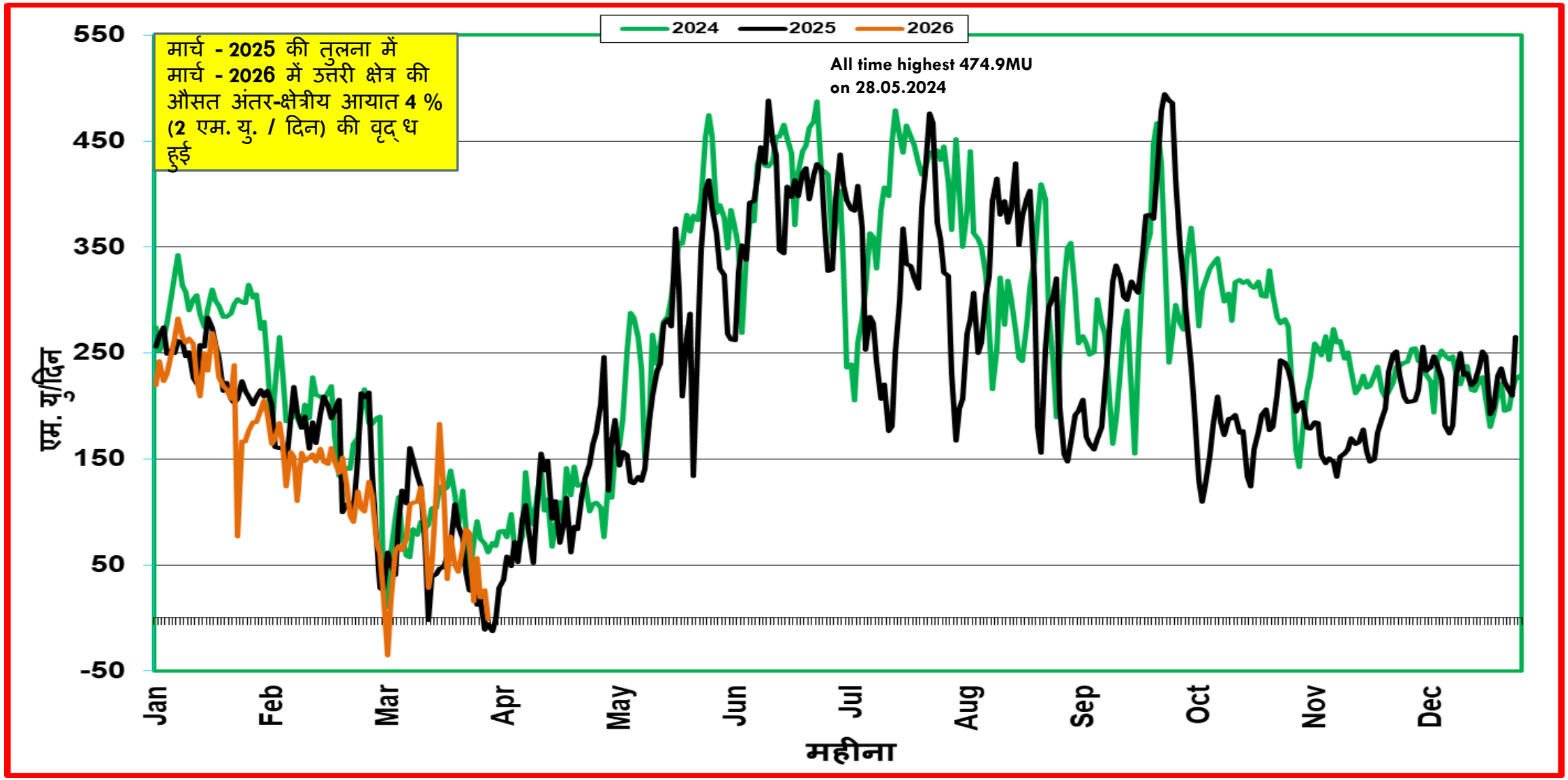
उत्तरी क्षेत्र की नाभिकीय उत्पादन की स्थिति (MUs/Day)



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



अंतर-क्षेत्रीय आयात(MUs/Day) की स्थिति



वास्तविक सारांश -
मार्च-2025 बनाम मार्च -2026

	मार्च-2025 (म.यु. /दिन)	मार्च-2026 (म.यु. /दिन)	मार्च माह में वृद् ध (म.यु./दिन)
तापीय (Thermal) उत्पादन	724	688	-35
जलीय (Hydro) उत्पादन	124	119	-5
ना भकीय (Nuclear) उत्पादन	19	33	14
अंतर-क्षेत्रीय (Inter-Regional) कुल आयात	62	64	2
अक्षय (Renewable) उत्पादन	226	212	-14

नवीकरणीय ऊर्जा की क्षमता
(VRE PENETRATION)

	अधिकतम दैनिक (MU) क्षमता			
	मार्च '2026		मार्च '2026 तक का रिकॉर्ड	
	अधिकतम % क्षमता	दिनांक	अधिकतम % क्षमता	दिनांक
पंजाब	**6.50**	**29 March 2026**	**12.28**	**01-04-2020**
राजस्थान	**37.47**	**30 March 2026**	**37.47**	**30-03-2026**
उत्तर प्रदेश	**6.06**	**27 March 2026**	**6.06**	**27-03-2026**
उत्तर क्षेत्रीय	**21.04**	**29 March 2026**	**23.00**	**15-03-2025**

OUTAGE SUMMARY FOR Mar-2026									
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	405	213	137	76	75%	25%	64%	36%	618
UPPTCL	205	101	44	57	82%	18%	44%	56%	306
RRVPNL	112	88	22	66	84%	16%	25%	75%	200
HVPNL	49	32	13	19	79%	21%	41%	59%	81
BBMB	38	23	9	14	81%	19%	39%	61%	61
PSTCL	106	35	8	27	93%	7%	23%	77%	141
DTL	4	9	6	3	40%	60%	67%	33%	13
PTCUL	9	18	6	12	60%	40%	33%	67%	27
HPPTCL	7	12	2	10	78%	22%	17%	83%	19
NTPC	5	9	3	6	63%	38%	33%	67%	14
PDD JK	5	8	3	5	63%	38%	38%	63%	13
NRSS36	2	14	14	0	13%	88%	100%	0%	16
Adani	4	4	3	1	57%	43%	75%	25%	8

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)
Dec-25	1217	770	396	374	75.45%	24.55%	1987
Jan-26	942	1015	446	569	67.87%	32.13%	1957
Feb-26	1216	657	347	310	77.80%	22.20%	1873
Mar-26	1227	759	375	384	76.59%	23.41%	1986

New Elements First Time Charged During Mar 2026

S. No.	Type of transmission element	Total No.
1	AC/Lilo Lines (12+8)	20
2	Antitheft Charging	04
3	Transformer	30
4	Solar/Wind Plant (16+0)	16
5	Bus Reactors	04
6	Harmonic Filter	19
8	Line Reactor	05
9	Generating Unit	01
	Total New Elements Charged	99

AC Lines

S.No	Name of element	Owner	Voltage Level (in kV)	Circuit No	Line Length	Conductor Type	Actual date of charging
1	220kV IB_Vogt_SSPL__SL_Ftg3-Fatehgarh_III(PG)-1	IBVSSPL	220kV	1	10.796	AL59 Moose	13-Mar-2026
2	220kV JG_stellarPL_Hyb_S/W/B_FTHG4-Fatehgarh_IV(F4TL)-1	JG_stellar_PL	220kV	1	11.5	HTLS	14-Mar-2026
3	220kV Fatehgarh_III(PG)-ASEB1L_SL_FTG3-1	ASEB1L	220kV	1	42	AL59 Zebra	14-Mar-2026
4	400kV AGE25BL_SL_RG2-RAMGARH_II(PR2TL)-1	AGE25BL	400kV	1	46.65	AL59 Twin Moose	24-Mar-2026
5	220kV P16RPPL_SL_BDL2-Bhadla_2 (PG)-1	P16RPPL	220kV	1	14.062	AL59 Moose	26-Mar-2026
6	220kV P16RPPL_SL_BDL2-Bhadla_2 (PG)-2	P16RPPL	220kV	2	14.063	AL59 Moose	26-Mar-2026
7	220kV Fatehgarh_III(PG)-ASEB1L_SL_FTG3-2	ASEB1L	220kV	2	42	AL59 Zebra	26-Mar-2026
8	400kV Renew_SS5PL_SL_Ftg3-Renew_SS3PL_SL_Ftg3-1	Renew_SS5PL	400kV	1	4.091	AL59 Quad Moose	27-Mar-2026
9	220kV Bhiwani(PG)-Isherwal(HR)-2	HVPNL	220kV	2	50.049	Moose	29-Mar-2026
10	220kV Bhiwani(PG)-Isherwal(HR)-1	HVPNL	220kV	1	50.049	Moose	30-Mar-2026
11	765kV Fatehgarh_III(PG)-BEAWAR-1	F3BTL	765kV	1	317.34	AL59 Hexa Zebra	31-Mar-2026
12	765kV BEAWAR-Fatehgarh_III(PG)-2	F3BTL	765kV	2	317.34	AL59 Hexa Zebra	31-Mar-2026

Lilo Lines Charging

S.No	Name of element	Name of Line to be LILOed	Line Length of New Line after LILO (In Km)	LILO Portion Line Length (In Km)	Conductor Type	Agency/ Owner	Actual date of charging
1	765kV DAUSA(PBDTL)-Phagi(RS)-2(After LILO of 765 KV Phagi Gwalior 2 at DAUSA)	765 KV Phagi Gwalior 2 (311KM)	94.24	33.94	AL59 Hexa Zebra	PB_DAUSA_TL, POWERGRID	10-Mar-2026
2	765kV DAUSA(PBDTL)-Gwalior(PG)-2(After LILO of 765kV Phagi-Gwalior-2 at DAUSA)	765 KV Phagi Gwalior 2 (311KM)	281.47	33.94	AL59 Hexa Zebra	PB_DAUSA_TL, POWERGRID	10-Mar-2026
3	400kV Garautha(UP)-Orai(UP)-1(After LILO of 400KV ORAI(PG)-ORAI(UP) CKT-I at 400 kV GARAUTHA)	400KV ORAI(PG)-ORAI(UP) CKT-I (42KM)	92.05	52.245	Quad Moose	UPPTCL,PGCIL	17-Mar-2026
4	400kV Garautha(UP)-Orai(PG)-1(After LILO of 400KV ORAI (PG)-ORAI(UP) CKT-I at 400 kV GARAUTHA)	400KV ORAI(PG)-ORAI(UP) CKT-I (42KM)	54.316	52.245	Quad Moose	UPPTCL,PGCIL	17-Mar-2026
5	400kV Bikaner_2 (PBTSL)-Bikaner_3(PBNTL)-4(After LILO of 400 KV Bikaner Bikaner_II ckt2 at Bikaner_III)	400 KV Bikaner Bikaner_II ckt2 (43KM)	39.55	18.65	AL59 Quad Moose	PBNTL, POWRGRID	26-Mar-2026
6	400kV Bikaner(PG)-Bikaner_3(PBNTL)-1(After LILO of 400 KV Bikaner Bikaner_II at Bikaner_III)	400 KV Bikaner Bikaner_II ckt1 (43KM)	39.93	18.76	AL59 Quad Moose	PBNTL, POWRGRID	26-Mar-2026
7	400kV Bikaner_2 (PBTSL)-Bikaner_3(PBNTL)-3(After LILO of 400 KV Bikaner Bikaner_II ckt1 at Bikaner_III)	400 KV Bikaner Bikaner_II ckt1 (43KM)	39.55	18.65	AL59 Quad Moose	PBNTL, POWRGRID	26-Mar-2026
8	400kV Bikaner(PG)-Bikaner_3(PBNTL)-2(After LILO of 400 KV Bikaner Bikaner_II at Bikaner_III)	400 KV Bikaner Bikaner_II ckt2 (43KM)	39.93	18.76	AL59 Quad Moose	PBNTL, POWRGRID	26-Mar-2026

Antitheft Charging

S.No	Name of element	Voltage Level (in kV)	Line to be charged upto	Line Length (In Km)	Conductor Type	Agency/Owner	Actual date & time of charging
1	Antitheft charging of 765kV DAUSA(PBDTL)-BEAWAR CKT-1 from DAUSA(PBDTL) Upto 155	765kV	155	237.021	AL59 Hexa Zebra	PB_DAUSA_TL	31-Mar-2026
2	Antitheft charging of 765kV DAUSA(PBDTL)-BEAWAR CKT-2 from DAUSA(PBDTL) Upto 155	765kV	155	237.021	AL59 Hexa Zebra	PB_DAUSA_TL	31-Mar-2026
3	Antitheft charging of 400kV Badaune(UP)-Farrukhabad_400kV(UP) CKT-2 from Badaune(UP) Upto Dead end tower of 400 KV Farrukhabad	400kV	96.498 (Dead end tower of 400 KV Farrukhabad)	96.498	Moose	UPPTCL	31-Mar-2026
4	Antitheft charging of 400kV Badaune(UP)-Farrukhabad_400kV(UP) CKT-1 from Badaune(UP) Upto Dead end tower of 400 KV Farrukhabad	400kV	96.498 (Dead end tower of 400 KV Farrukhabad)	96.498	Moose	UPPTCL	31-Mar-2026

Line Reactor

S.No	Name of element	Owner	Voltage Level (in kV)	MVAR Capacity	Line Reactor Details	OLD MVAR Capacity	Actual date of charging
1	330 MVAR Switchable Convertable LINE_REACTOR of 765 KV Neemrana-II-Bareilly_2(PG) Line Ckt-I at Bareilly_2(PG)	PNBTL	765kV	330	New	NA	17-Mar-2026
2	330 Switchable Convertable LINE_REACTOR of 765kV Fatehgarh_III(PG)-BEAWAR-1 at BEAWAR	F3BTL	765kV	330	New	NA	31-Mar-2026
3	330 Switchable Convertable LINE_REACTOR of 765kV Fatehgarh_III(PG)-BEAWAR-1 at Fatehgarh_III(PG)	F3BTL	765kV	330	New	NA	31-Mar-2026
4	330 Switchable Convertable LINE_REACTOR of 765kV BEAWAR-Fatehgarh_III(PG)-2 at Fatehgarh_III(PG)	F3BTL	765kV	330	New	NA	31-Mar-2026
5	330 Switchable Convertable LINE_REACTOR of 765kV BEAWAR-Fatehgarh_III(PG)-2 at BEAWAR	F3BTL	765kV	330	New	NA	31-Mar-2026

Transformer

S.No	Name of element	Owner	Voltage Level (HV/LV/Tertiary)	MVA Capacity	HV Stattion	Transformer Details	OLD MVA Capacity	Actual date of charging
1	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 1 at Bhadla_3(PB3TL)	PB3TL	400/220/33kV	500	Bhadla_3(PB3TL)	New	NA	01-Mar-2026
2	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 2 at Bhadla_3(PB3TL)	PB3TL	400/220/33kV	500	Bhadla_3(PB3TL)	New	NA	01-Mar-2026
3	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 3 at Bhadla_3(PB3TL)	PB3TL	400/220/33kV	500	Bhadla_3(PB3TL)	New	NA	02-Mar-2026
4	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 1 at Bareilly(UP)	UPPTCL	400/220/33kV	500	Bareilly(UP)	Augmentation	315	02-Mar-2026
5	220/33kV, 150 MVA, 3-Phase, M/S Indo Tech Transformers Ltd, - 1 at IB_Vogt_SSPL__SL_Ftg3	IBVSSPL	220/33 kV	150	IB_Vogt_SSPL__SL_Ftg3	New	NA	13-Mar-2026
6	220/33kV, 150 MVA, 3-Phase, Indo Tech Transformers Ltd, Power Transformer - 2 at IB_Vogt_SSPL__SL_Ftg3	IBVSSPL	220/33 kV	150	IB_Vogt_SSPL__SL_Ftg3	New	NA	13-Mar-2026
7	220/33kV, 200 MVA, 3-Phase, Meiden, Power Transformer - 2 at Fatehgarh_IV(F4TL)	JG_stellar_PL	220/33 kV	200	Fatehgarh_IV(F4TL)	New	NA	14-Mar-2026
8	220/33kV, 300 MVA, 3-Phase, TBEA, ICT - 1 at ASEB1L_SL_FTG3	ASEB1L	220/33 kV	300	ASEB1L_SL_FTG3	New	NA	14-Mar-2026
9	220/33kV, 200 MVA, 3-Phase, Meiden, Power Transformer - 1 at Fatehgarh_IV(F4TL)	JG_stellar_PL	220/33 kV	200	Fatehgarh_IV(F4TL)	New	NA	15-Mar-2026
10	220/33kV, 300 MVA, 3-Phase, TBEA, ICT - 2 at ASEB1L_SL_FTG3	ASEB1L	220/33 kV	300	ASEB1L_SL_FTG3	New	NA	15-Mar-2026

S.No	Name of element	Owner	Voltage Level (HV/LV/Tertiary)	MVA Capacity	HV Stattion	Transformer Details	OLD MVA Capacity	Actual date of charging
11	400/220/33kV, 500 MVA, 3-Phase, KANOHAR, ICT - 2 at Behman Jassa Singh (PS)	PSTCL	400/220/33kV	500	Behman Jassa Singh (PS)	New	NA	17-Mar-2026
12	400/220/33kV, 500 MVA, 3-Phase, KANOHAR, ICT - 3 at Behman Jassa Singh (PS)	PSTCL	400/220/33kV	500	Behman Jassa Singh (PS)	New	NA	17-Mar-2026
13	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 1 at Garautha(UP)	UPPTCL	400/220/33kV	500	Garautha(UP)	New	NA	18-Mar-2026
14	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 1 at Garautha(UP)	UPPTCL	400/220/33kV	500	Garautha(UP)	New	NA	18-Mar-2026
15	400/220/33kV, 500 MVA, 3-Phase, TOSHIBA, ICT - 3 at Kotputli(PG)	POWERGRID	400/220/33kV	500	Kotputli(PG)	New	NA	21-Mar-2026
16	400/33kV, 330 MVA, 3-Phase, TBEA, ICT - 3 at AGE25BL_SL_RG2	AGE25BL	400/33kV	330	AGE25BL_SL_RG2	New	NA	24-Mar-2026
17	400/33kV, 330 MVA, 3-Phase, TBEA, ICT - 4 at AGE25BL_SL_RG2	AGE25BL	400/33kV	330	AGE25BL_SL_RG2	New	NA	24-Mar-2026
18	765/400/33kV, 1000 MVA, 3x1-Phase, GE, ICT - 2 at Obra_C_TPS(UP)	UPRVUNL	765/400/33kV	1000	Obra_C_TPS(UP)	New	NA	25-Mar-2026
19	220/33kV, 160 MVA MVA, 3-Phase, TBEA Energy (India) Pvt Ltd, Power Transformer - 1 at P16RPPL_SL_BDL2	P16RPPL	220/33 kV	160	P16RPPL_SL_BDL2	New	NA	26-Mar-2026
20	220/33kV, 160 MVA MVA, 3-Phase, TBEA Energy (India) Pvt Ltd, Power Transformer - 2 at P16RPPL_SL_BDL2	P16RPPL	220/33 kV	160	P16RPPL_SL_BDL2	New	NA	26-Mar-2026

S.No	Name of element	Owner	Voltage Level (HV/LV/Tertiary)	MVA Capacity	HV Stattion	Transformer Details	OLD MVA Capacity	Actual date of charging
21	220/33kV, 160 MVA MVA, 3-Phase, TBEA Energy (India) Pvt Ltd, Power Transformer - 3 at P16RPPL_SL_BDL2	P16RPPL	220/33 kV	160	P16RPPL_SL_BDL2	New	NA	26-Mar-2026
22	400/220/33kV, 500 MVA, 3-Phase, Toshiba, ICT - 9 at Fatehgarh_III(PG)	PRTL	400/220/33kV	500	Fatehgarh_III(PG)	New	NA	26-Mar-2026
23	400/33kV, 200 MVA, 3-Phase, Meiden T&D (INDIA) LTD., - 1 at Renew_SS5PL_SL_Ftg3	Renew_SS5PL	400/33kV	200	Renew_SS5PL_SL_Ftg3	New	NA	27-Mar-2026
24	765/400/33kV, 1500 MVA, 3x1-Phase, Hitachi, ICT - 4 at Bhiwani(PG)	POWERGRID	765/400/33kV	1500	Bhiwani(PG)	New	NA	28-Mar-2026
25	400/132/33kV, 200 MVA, 3-Phase, BHEL, ICT - 1 at Mau(UP)	UPPTCL	400/132/33kV	200	Mau(UP)	Replacement	200	28-Mar-2026
26	400/33kV, 200 MVA, 3-Phase, Meiden T&D (INDIA) LTD., - 2 at Renew_SS5PL_SL_Ftg3	Renew_SS5PL	400/33kV	200	Renew_SS5PL_SL_Ftg3	New	NA	30-Mar-2026
27	765/400/33kV, 1500 MVA, 3x1-Phase, Seimens, ICT - 4 at Fatehgarh_III(PG)	PRTL	765/400/33kV	1500	Fatehgarh_III(PG)	New	NA	30-Mar-2026
28	400/220/33kV, 500 MVA, 3-Phase, Toshiba, ICT - 10 at Fatehgarh_III(PG)	PRTL	400/220/33kV	500	Fatehgarh_III(PG)	New	NA	31-Mar-2026
29	765/400/33kV, 1500 MVA, 3x1-Phase, BHEL, ICT - 1 at Bikaner_3(PBNTL)	PBNTL	765/400/33kV	1500	Bikaner_3(PBNTL)	New	NA	31-Mar-2026
30	765/400/33kV, 1500 MVA, 3x1-Phase, Siemens, ICT - 5 at Fatehgarh_III(PG)	PRTL	765/400/33kV	1500	Fatehgarh_III(PG)	New	NA	31-Mar-2026

Solar/Wind plants

S.No	Plant Name	Pooling Sub-station	Added Capacity (MW)	Total Capacity Charged(MW)	Total Installed Capacity of Plant(MW)	Type of RE	Total No. of Solar ICR/WTG Charged	Agency/ Owner	Actual date of charging
1	BBMB	Bhiwani	8.8	8.8	10	Solar	2	BBMB	02-Mar-2026
2	Khaba Renewable Energy Private Limited (KREPL)	Fatehgarh_III	151.21	151.21	250	Solar	13	Khaba_REPL	03-Mar-2026
3	IB VOGT SOLAR SEVEN PRIVATE LIMITED(IBVSSPL)	Fatehgarh_III	150	150	300	Solar	18	IBVSSPL	15-Mar-2026
4	ADANI SOLAR ENERGY BARMER ONE LIMITED(ASEB1L)	Fatehgarh_III	251	251	600	Solar	21	ASEB1L	18-Mar-2026
5	Juniper Green Stellar Private Limited(JGSPL)	Fatehgarh_IV	185	185	715 MW Renewable Hybrid (285 MW Solar + 250 MW Wind + 180 MW	Solar	21	JG_stellar_PL	20-Mar-2026
6	IB VOGT SOLAR SEVEN PRIVATE LIMITED(IBVSSPL)	Fatehgarh_III	125	275	300	Solar	15	IBVSSPL	24-Mar-2026
7	Adani Green Energy Twenty Five B Limited (AGE25BL)	Ramgarh 2	137.5	137.5	500	Solar	11	AGE25BL	24-Mar-2026
8	PROJECT ELEVEN RENEWABLE POWER PRIVATE LIMITED(P11RPPL)	Bhadla2	100	100	150	Solar	8	P16RPPL	30-Mar-2026

S.No	Plant Name	Pooling Sub-station	Added Capacity (MW)	Total Capacity Charged(MW)	Total Installed Capacity of Plant(MW)	Type of RE	Total No. of Solar ICR/WTG Charged	Agency/ Owner	Actual date of charging
9	Energizent Power Private Limited	Fatehgarh_III	60.6	129.6	250	Solar	7	Energizent_PPL	27-Mar-2026
10	Renew Solar Shakti Five Private Limited (RSS5PL)	Fatehgarh_III	200	200	400	Solar	24	Renew_SS5PL	28-Mar-2026
11	PROJECT SIXTEEN RENEWABLE POWER PRIVATE LIMITED(P16RPPL)	Bhadla2	200	200	300	Solar	16	P16RPPL	29-Mar-2026
12	ACME SURYODAYA PRIVATE LIMITED(ACME_SPL)	Fatehgarh_I	95	171	285	BESS	40 - BESS Containers	ACME_SURYODAYA_PL	19-Mar-26
13	ACME SUN POWER PRIVATE LIMITED(ASPPL)	Bhadla-2	66.6665	133.3365	300	BESS	64 - BESS Containers	ACME_Sun_PPL	25-Mar-26
14	ACME Surya Power Private Limited (ASRPPL)	Bikaner-2	71.429	71.429	250	BESS	64 - BESS Containers	ACME_Surya_PPL	16-Mar-26
15	ACME Surya Power Private Limited (ASRPPL)	Bikaner-2	35.714	107.143	250	BESS	32 - BESS Containers	ACME_Surya_PPL	23-Mar-26
16	Juniper Green Stellar Private Limited(JGSPL)	Fatehgarh_IV	90	90	715 MW Renewable Hybrid (285 MW Solar + 250 MW Wind + 180 MW	BESS	40 - BESS Containers	JG_stellar_PL	20-Mar-2026

Bus Reactors

S.No	Name of element	Owner	Voltage LeveL	MVAR Capacity	Bus Reactor Details	OLD MVAR Capacity	Actual date of charging
1	400kV, 125 Bus Reactor 2 at Bhadla_3(PB3TL)	PB3TL	400kV	125	New	NA	01-Mar-2026
2	400kV, 125 Bus Reactor 1 at Bhadla_3(PB3TL)	PB3TL	400kV	125	New	NA	01-Mar-2026
3	400kV, 125 Bus Reactor 1 at Garautha(UP)	UPPTCL	400kV	125	New	NA	17-Mar-2026
4	400kV, 125 Bus Reactor 3 at Fatehgarh_III(PG)	PRTL	400kV	125	New	NA	27-Mar-2026

Harmonic Filters

S.No	Name of element	Owner	Voltage Level (in kV)	Type of Capacitor	Capacitor Bank No	Sub Capacitor Bank MVAR Rating	Capacitor MVAR Rating	Actual date of charging
1	33kV, 3 MVAR Capacitor bank no-1 at Khaba_REPL_SL_Ftg3	Khaba_REPL	33kV	Harmonic Filter	1	3 MVAR (tuned to frequency 355 and quality factor of 1 connected)	3	10-Mar-2026
2	33kV, 24.99 MVARCapacitor bank no-3 at ASEB1L_SL_FTG3	ASEB1L	33kV	Harmonic Filter	3	12.99MVAR for 5th & 12 MVAR for 4th order	24.99	15-Mar-2026
3	33kV, 24.99 MVAR Capacitor bank no-1 at ASEB1L_SL_FTG3	ASEB1L	33kV	Harmonic Filter	1	12.99 MVAR for 5th &12 MVAR 2nd order	24.99	15-Mar-2026
4	33kV, 24.99 MVAR Capacitor bank no-2 at ASEB1L_SL_FTG3	ASEB1L	33kV	Harmonic Filter	2	12.99 MVAR for 5th & 12MVAR for 3rd order	24.99	15-Mar-2026
5	33kV , 30.99 MVAR Capacitor bank no-4 at ASEB1L_SL_FTG3	ASEB1L	33kV	Harmonic Filter	4	12.99 MVAR for 5th & 18MVAR for 31st order	30.99	15-Mar-2026
6	33kV, 9 MVAR Capacitor bank no-1 at IB_Vogt_SSPL__SL_Ftg3	IBVSSPL	33kV	Harmonic Filter	1	4.5MVAR(3ph) Hi Pass filter with Q factor of 5 and cut off frequency of 545Hz, 3MVAR(3ph) Hi Pass filter with Q factor of 5 and cut off frequency of 1245Hz, 1.5MVAR(3ph) Hi Pass filter with Q factor of 5 and cutt off frequency of 2145Hz	9	16-Mar-2026
7	33kV, 9 MVAR Capacitor bank no-2 at IB_Vogt_SSPL__SL_Ftg3	IBVSSPL	33kV	Harmonic Filter	2	4.5MVAR(3ph) Hi Pass filter with Q factor of 5 and cut off frequency of 545Hz, 3MVAR(3ph) Hi Pass filter with Q factor of 5 and cut off frequency of 1245Hz, 1.5MVAR(3ph) Hi Pass filter with Q factor of 5 and cutt off frequency of 2145Hz	9	16-Mar-2026

S.No	Name of element	Owner	Voltage Level (in kV)	Type of Capacitor	Capacitor Bank No	Sub Capacitor Bank MVAR Rating	Capacitor MVAR Rating	Actual date of charging
8	33kV, 15.6 MVAR Capacitor bank no-Filter Bank 03 at the Bay No.304 (15.6 MVAr) at JG_stellarPL_Hyb_S/W/B_FTHG4	JG_stellar_PL	33kV	Harmonic Filter	3	9 (235Hz)+3 (350Hz)+3.6 (650Hz)	15.6	23-Mar-2026
9	33kV,15.6 MVAR Capacitor bank no-Filter Bank 04 at the Bay No.306 (15.6 MVAr) at JG_stellarPL_Hyb_S/W/B_FTHG4	JG_stellar_PL	33kV	Harmonic Filter	4	9 (235Hz)+3 (350Hz)+3.6 (650Hz)	15.6	23-Mar-2026
10	33kV, 18.6 MVAR Capacitor bank no-Filter Bank 02 at the Bay No.303 (18.6 MVAr) at JG_stellarPL_Hyb_S/W/B_FTHG4	JG_stellar_PL	33kV	Harmonic Filter	2	3 (1850Hz)+9 (235Hz)+3 (350Hz)+3.6 (650Hz)	18.6	23-Mar-2026
11	33kV, 18.6 MVAR Capacitor bank no-Filter Bank 01 at the Bay No.308 (18.6 MVAr) at JG_stellarPL_Hyb_S/W/B_FTHG4	JG_stellar_PL	33kV	Harmonic Filter	1	3 (1850Hz)+9 (235Hz)+3 (350Hz)+3.6 (650Hz)	18.6	23-Mar-2026
12	33kV, 3 MVAR Capacitor bank no-5 at AGE25BL_SL_RG2	AGE25BL	33kV	Harmonic Filter	5	3 MVAR for 11th order	3	25-Mar-2026
13	33kV, 3 MVAR Capacitor bank no-7 at AGE25BL_SL_RG2	AGE25BL	33kV	Harmonic Filter	7	3 MVAR for 11th order	3	25-Mar-2026
14	33kV, 3 MVAR Capacitor bank no-8 at AGE25BL_SL_RG2	AGE25BL	33kV	Harmonic Filter	8	3 MVAR for 11th order	3	25-Mar-2026
15	33kV, 3 MVAR Capacitor bank no-6 at AGE25BL_SL_RG2	AGE25BL	33kV	Harmonic Filter	6	3 MVAR for 11th order	3	25-Mar-2026

S.No	Name of element	Owner	Voltage Level (in kV)	Type of Capacitor	Capacitor Bank No	Sub Capacitor Bank MVAR Rating	Capacitor MVAR Rating	Actual date of charging
16	33kV, 12.99 MVAR Capacitor bank no-1 at Renew_SS5PL_SL_Ftg3	Renew_SS5PL	33kV	Harmonic Filter	1	0.99MVAR(3ph) Single Tunned filter with Q factor of 60 and cut off frequency of 195Hz, 12MVAR(3ph) Hi Pass filter with Q factor of 2 and cut off frequency of 249.5Hz.	12.99	27-Mar-2026
17	33kV, 12.99 MVAR Capacitor bank no-2 at Renew_SS5PL_SL_Ftg3	Renew_SS5PL	33kV	Harmonic Filter	2	0.99MVAR(3ph)Single Tunned filter with Q factor of 60 and cut off frequency of 195Hz, 12MVAR(3ph) Hi Pass filter with Q factor of 2 and cut off frequency of 249.5Hz.	12.99	27-Mar-2026
18	33kV, 12.99 MVAR Capacitor bank no-3 at Renew_SS5PL_SL_Ftg3	Renew_SS5PL	33kV	Harmonic Filter	3	0.99MVAR(3ph) Single Tunned filter with Q factor of 60 and cut off frequency of 95Hz, 12MVAR(3ph) Hi Pass filter with Q factor of 2 and cut off frequency of 249.5Hz.	12.99	30-Mar-2026
19	33kV, 11.49 MVAR Capacitor bank no-4 at Renew_SS5PL_SL_Ftg3	Renew_SS5PL	33kV	Harmonic Filter	4	0.99MVAR(3ph)Single Tunned filter with Q factor of 60 and cut off frequency of 195Hz, 10.5MVAR(3ph) Hi Pass filter with Q factor of 2 and cut off frequency of 249.5Hz.	11.49	30-Mar-2026

Generating Unit

S.No	Name of element	Owner	Voltage LeveL	Installed Capacity (MW)	MVA Capacity	Actual date & time of charging
1	250 MW, 306 MVA 15.75 KV Make M/s GE Unit No 8 at 4x250 MW Tehri PSP(Stage 1)	THDC	15.75 KVkV	250 MW	306 MVA	10-Mar-2026