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 227वी बैठक का कार्यवृत |

Subject: Minutes of the 227th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 227वीं बैठक दिनांक 17.01.2025 को आयोजित की गयी थी। उक्त बैठक का कार्यवृत्त उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है। यदि कार्यवृत पर कोई टिप्पणी हो तो कार्यवृत जारी करने के एक सप्ताह के अन्दर इस कार्यालय को भेजें |

The 227th meeting of the Operation Co-ordination Sub-Committee (OCC) of NRPC was held on 17.01.2025. The Minutes of this meeting has been uploaded on the NRPC website http://164.100.60.165. Any comments on the minutes may kindly be submitted within a week of issuance of the minutes.

संलग्नक:यथोपरि।

Signed by Dharmendra Kumar Meena
Date: 07-02-2025 17:12:50

(डी. के. मीना)
निदेशक (प्रचालन)

सेवा में,

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

Contents

List of addressee (via mail)

OCC Members for FY 2024-25			
S. No.	**OCC Member**	**Category**	**E-mail**
1	NLDC	National Load Despatch Centre	nomination awaited (susha@grid-india.in)
2	NRLDC	Northern Regional Load Despatch Centre	somara.lakra@grid-india.in
3	CTUIL	Central Transmission Utility	kashish@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	hrastogi@ntpc.co.in
6	BBMB		powerc@bbmb.nic.in
7	THDC		ravindrasrana@thdc.co.in
8	SJVN		sjvn.cso@sjvn.nic.in
9	NHPC		surendramishra@nhpc.nic.in
10	NPCIL		df@npcil.co.in
11	Delhi SLDC	State Load Despatch Centre	gmsldc@delhisldc.org
12	Haryana SLDC		cesocomml@hvpn.org.in
13	Rajasthan SLDC		ce.ld@rvpn.co.in
14	Uttar Pradesh SLDC		cepso@upsldc.org
15	Uttarakhand SLDC		se_sldc@ptcul.org
16	Punjab SLDC		ce-sldc@pstcl.org
17	Himachal Pradesh SLDC		cehpsldc@gmail.com
18	DTL	State Transmission Utility	bl.gujar@dtl.gov.in
19	HVPNL		cetspkl@hvpn.org.in
20	RRVPNL		ce.ppm@rvpn.co.in
21	UPPTCL		smart.saxena@gmail.com
22	PTCUL		ce_oandmk@ptcul.org
23	PSTCL		ce-tl@pstcl.org
24	HPPTCL		gmprojects.tcl@hpmail.in
25	IPGCL	State Generating Company	ncsharma@ipgcl-ppcl.nic.in
26	HPGCL		seom2.rgtpp@hpgcl.org.in
27	RRVUNL		ce.ppmcit@rrvun.com
28	UPRVUNL		cgm.to@uprvunl.org

29	UJVNL		gm_engg_ujvn@yahoo.co.in
30	HPPCL		gm_generation@hppcl.in
31	PSPCL	State Generating Company & State owned Distribution Company	ce-ppr@pspcl.in
32	UHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)	nomination awaited (md@uhbvn.org.in)
33	Jodhpur Vidyut Vitran Nigam Ltd.		addlcehqjdvvnl@gmail.com
34	Paschimanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (md@pvvnl.org)
35	UPCL		cgmupcl@yahoo.com
36	HPSEB		cesysophpsebl@gmail.com
37	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	sanjay.bhargava@tatapower.com
38	Aravali Power Company Pvt. Ltd		amit.hooda01@gmail.com
39	Apraave Energy Ltd.,		rajneesh.setia@apraava.com
40	Talwandi Sabo Power Ltd.		ravinder.thakur@vedanta.co.in
41	Nabha Power Limited		Durvesh.Yadav@larsentoubro.com
42	MEIL Anpara Energy Limited		arun.tholia@meilanparapower.com
43	Rosa Power Supply Company Ltd		Suvendu.Dey@relianceada.com
44	Lalitpur Power Generation Company Ltd		avinashkumar.ltp@lpgcl.com
45	MEJA Urja Nigam Ltd.		rsjuneja@ntpc.co.in
46	Adani Power Rajasthan Limited		manoj.taunk@adani.com
47	JSW Energy Ltd. (KWHEP)		roshan.zipta@jsw.in
48	TATA	IPP having less than	nomination awaited

	POWER RENEWABLE	1000 MW installed capacity (alphabetical rotational basis)	(dhmahabale@tatapower.com)
49	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	sojpdd@gmail.com
50	UT of Ladakh		cepdladakh@gmail.com
51	UT of Chandigarh		elop2-chd@nic.in
52	Noida Power Company limited	Private Distribution Company in region (alphabetical rotational basis)	nomination awaited (ssrivastava@noidapower.com)
53	Fatehgarh Bhadla Transmission Limited	Private transmission licensee (nominated by central govt.)	nomination awaited (nitesh.ranjan@adani.com)
54	NTPC Vidyut Vyapar Nigam Ltd.	Electricity Trader (nominated by central govt.)	nomination awaited (ceonvvn@ntpc.co.in)

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 227 वीं बैठक का कार्यवृत्त

The 227th OCC meeting of NRPC was held on 17.01.2025 through video conferencing. Member Secretary, NRPC welcomed all the participants who's connected through VC.

खण्ड-क:उ.क्षे.वि.स. PART-A:NRPC

A.1. Confirmation of Minutes

Minutes of the 226th OCC meeting was issued on 08.01.2025. OCC confirmed the minutes of the meeting. No comments received till now.

A.2. Status of action taken on decisions of 226th 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 decision of last meeting. Accordingly, issues may be resolved at the earliest.

A.2.2. Concerned utilities submitted the status on action taken *and the same has been complied as* ***Annexure- 0****.*

Decision of OCC Forum:

Forum asked SLDC to identify and communicate feeder-wise, Stage-wise load relief and submit to RPC/RLDC at the earliest.

A.3. Review of Grid operations of December 2024

Anticipated vis-à-vis Actual Power Supply Position (Provisional) for December 2024

Reasons submitted by States for significant deviation of actual demand from anticipated figures during the month of December 2024 are as under:

- **Himachal Pradesh**

The Anticipation in Energy Requirement in respect of Himachal Pradesh for the month of December, 2024 came on the lower side due to normal dry weather.

- **Haryana**

  The consumption of RDS, Urban and Industrial demand was increased about 7% in the month of Dec-24 whereas while anticipating demand for Dec-24 was calculated with CAGR of 4% in view of the historic demand growth.

- **Uttarakhand**

  The reason for significant variation in Energy Requirement (decrease) for month of Dec'24 against anticipated figures) was due to delayed winter season and change in weather conditions.

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

The maintenance programme of generating units and transmission lines for the month of February 2025 was deliberated in the meeting on 16.01.2025.

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

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

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	110	330	No Revision submitted
	Requirement	144	271	
	Surplus / Shortfall	-34	59	
	% Surplus / Shortfall	-23.6%	21.7%	
DELHI	Availability	3197	5637	10-Jan-25
	Requirement	2200	5500	
	Surplus / Shortfall	997	137	
	% Surplus / Shortfall	45.3%	2.5%	
HARYANA	Availability	5260	9338	13-Jan-25

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Requirement	4285	6190	
	Surplus / Shortfall	975	148	
	% Surplus / Shortfall	22.8%	1.6%	
HIMACHAL PRADESH	Availability	1124	2252	06-Jan-25
	Requirement	1127	2218	
	Surplus / Shortfall	-3	34	
	% Surplus / Shortfall	-0.2%	1.5%	
J&K and LADAKH	Availability	1130	3250	No Revision submitted
	Requirement	1939	3403	
	Surplus / Shortfall	-809	-153	
	% Surplus / Shortfall	-41.7%	-4.5%	
PUNJAB	Availability	6200	10840	16-Jan-25
	Requirement	4787	10380	
	Surplus / Shortfall	1413	460	
	% Surplus / Shortfall	29.5%	4.4%	
RAJASTHAN	Availability	7930	18150	16-Jan-25
	Requirement	8960	18200	
	Surplus / Shortfall	-1030	-50	
	% Surplus / Shortfall	-11.5%	-0.3%	
UTTAR PRADESH	Availability	9520	20800	13-Jan-25
	Requirement	9380	20800	
	Surplus / Shortfall	140	0	
	% Surplus / Shortfall	1.5%	0.0%	
UTTARAKHAND	Availability	1190	2400	04-Jan-25
	Requirement	1218	2490	
	Surplus / Shortfall	-28	-90	
	% Surplus / Shortfall	-2.3%	-3.6%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	35661	68100	
NORTHERN REGION	Requirement	34040	67600	
	Surplus / Shortfall	1621	500	
	% Surplus / Shortfall	4.8%	0.7%	

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.I.***

A.6.2. In 227th OCC, SLDCs were requested again to coordinate with respective Transmission Utilities of states/UTs and submit details about the updated status of Down Stream network by State Utilities from ISTS Station (enclosed as ***Annexure-A-I.I***) before every OCC meeting.

A.7. NR Islanding scheme

A.7.1. In the meeting (227th OCC), UPPTCL representative apprised that Unchahar-Lucknow Islanding scheme has been successfully implemented and same is visible at SCADA of UPSLDC also (except 01 Substation: 132 kV S/s Hussainganj. The data of above 01 substation is not available at UPSLDC due to lack of OPGW. The work of laying OPGW cable is under progress and same shall be completed by end of April.

A.7.2. With regard to Agra islanding scheme, UPPTCL representative apprised forum that their management is of view that procurement of UFRs for the Lalitpur-Agra islanding scheme should be explored through PSDF funding. A proposal for the same has been prepared and submitted to the PSDF Secretariat.

A.7.3. RRVPNL representative stated that they have submitted their proposal of Jodhpur-Barmer-Rajwest islanding scheme to PSDF Secretariat on 16.01.2025 for PSDF funding.

A.7.4. RRVPNL representative mentioned that DPR for implementation of Suratgarh islanding scheme would be submitted in next OCC.

A.7.1. With regard to Patiala-Nabha Power Rajpura islanding scheme representative from Punjab SLDC informed that they have submitted their proposal to PSDF Secretariat and are awaiting confirmation regarding the status of PSDF funding from PSDF Sectt.

A.7.2. HPSLDC representative apprised that proposed UFR scheme for Kullu- Manali islanding scheme has been recommended by the Appraisal Committee of the State PSDF for approval of Hon'ble HPERC. The islanding scheme would now be taken up in the Monitoring committee for State PSDF funding approval. Meeting of Monitoring committee is planned in February 2025.

A.7.3. Further, with regard to Shimla-Solan Islanding scheme, a separate meeting was conducted by NRPC Sectt. with HPSLDC, HPSEBL and M/s GE on 18.09.2024) wherein HPSEBL informed that payment to M/s GE would be made within two months and subsequently work regarding the implementation in revised setting of Bhaba HEP would be completed by M/s GE within one month. In the 227th OCC meeting, HPSLDC also informed that they had sent a letter to all concerned generators requesting them to lower the UFR settings of their generators to below 47.5 Hz. In this regard, HPSLD Chas intimated vide letter dated 06.01.2025 (a copy of which is attached as **Annexure-A.II**) that expect generators under HPSEBL and Sandhya HEP (which is under force outage) all the rest generators have lower the UFR settings of their generators to below 47.5 Hz.

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

A.8.1. NRPC representative apprised forum about the coal stock position of generating stations in northern region during current month (till 10th January 2025).

A.8.2. Average coal stock position of generating stations in northern region, having critical stock, during first ten days of January 2025 is NIL.

A.9. Updating outage Details by Generating Station/utilities (Agenda by CEA)

A.9.1 NRPC representative apprised forum that to enhance the monitoring of approved Planned Maintenance schedules, CEA has asked that information regarding actual maintenance availed against approved planned maintenance is to be updated on priority by respective RPCs regularly on monthly basis.

A.9.2 In the 221st OCC meeting of NRPC, forum asked generating stations of NR to update the status of Planned Maintenance schedules versus actual maintenance availed for the previous month before every OCC meeting and it was decided that to enhance the monitoring of approved Planned Maintenance schedules the said agenda item shall be taken as rolling/follow-up agenda in OCC meetings.

A.9.3 In this regard, list of Planned Maintenance schedules versus actual maintenance availed for the year 2024-25 for the month of December-2024 attached as

Annexure-A.IV of agenda was shared with the relevant generating stations of NR and based on the inputs received from them the updated information is attached as **Annexure-A.III**.

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

A.10.1. EE(O) NRPC apprised forum that in line with the report of Task Force on Automatic Under Frequency Load Shedding (AUFLS) and df/dt scheme and Region wise quantum of load shedding in different stages of AUFLS communicated by NPC Secretariat, NRPC Sectt. has computed Stage-wise AUFLS relief quantum for each State/UT of NR. The details of which are mentioned in the table below: -

State/UT	Stage-1 49.4 Hz (5%)	Stage-2 49.2 Hz (6%)	Stage-3 49.0 Hz (7%)	Stage-4 48.8 Hz (7%)	Total
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief	
Chandigarh	15.850	19.020	22.190	22.190	**79.248**
Delhi	299.338	359.205	419.073	419.073	**1496.690**
Haryana	526.332	631.599	736.865	736.865	**2631.661**
Himachal Pradesh	97.246	116.695	136.145	136.145	**486.231**
UT J&K & Ladakh	145.406	174.487	203.569	203.569	**727.031**
Punjab	601.638	721.966	842.293	842.293	**3008.190**
Rajasthan	811.056	973.268	1135.479	1135.479	**4055.282**
Uttar Pradesh	1191.769	1430.122	1668.476	1668.476	**5958.843**
Uttarakhand	113.069	135.682	158.296	158.296	**565.343**
Total	**3801.704**	**4562.045**	**5322.386**	**5322.386**	**19008.52**

A.10.2. In 15th NPC meeting held on 14.11.2024 following was approved by the committee: -

- The AUFLS scheme must ensure Pumped storage hydro plants operating in pumping mode or ESS operating in charging mode shall be automatically disconnected before the first stage of UFR.

- Bulk consumers connected to ISTS and STU networks must implement the UFR scheme. Compliance should be ensured during the grant of connectivity by CTU and STU.
- The implementation of the **AUFLS and df/dt schemes must be completed by March 2025**. RPCs are required to regularly monitor the implementation of the UFR scheme as a whole including the bulk consumers connected at the ISTS level. RPCs may communicate above decisions to the respective States for implementation.

A.10.3. States/UT shall identify the load relief for each stage considering the Quantum of relief and their demand contribution considering the intra-day, seasonality etc. 10% additional relief would be finalized considering the demand growth of the year, planned and forced outages, UFR and breaker issues etc. SLDC would communicate feeder-wise, Stage-wise details etc. to RPC/RLDC.

A.10.4. MS, NRPC mentioned that NRPC would be writing a letter to head of STU's and SLDC's of NR States/UTs to ensure timely implementation of the prescribed AUFLS relief quantum by 31st March 2025.

GUIDELINES FOR IDENTIFICATION OF AUFLS FEEDERS

The following to be considered for identification of feeders:

i. AUFLS relays under Stage-1 & Stage-2 should be implemented preferably on downstream network at 11/22/33 kV level.

ii. AUFLS relays under Stage-3 & Satge-4 should be implemented on upstream network at EHV (66/110/132 kV) level so that load relief obtained is fast and reliable as it is a desperate measure for areas that have disintegrated.

iii. As far as possible the feeders/transformers are feeding radial loads shall be identified.

iv. Telemetry availability would be considered as important factor so that the feeders/transformer loading can be extended to SLDC/RLDC for mapping

v. Feeders catering to critical loads are to be avoided. VIP areas, Airport, Metro, Railways, Defence, Govt Hospitals, Government Offices, continuous process industries etc. needs to be prioritized

vi. No mixed feeders with RE/Distributed generations should be identified. If identified the feeder should be never in injecting mode. Steps to segregate the feeder (load/RE/Distributed generation) would be taken.

vii. If Grid feeder is identified the other side breakers should be in normally open condition. If they are to be closed frequently then UFR with same set points to be provided at other ends.

viii. The feeders identified for AUFLS would be as far as possible not common for df/dt, scheduled power cuts, load shedding, SPS, ADMS etc. In case of difficulty to identify dedicated feeders the same is to be approved in OCC/PCSC. Adequate care is to be taken if round robin scheme is adopted for ADMS, SPS etc.

ix. The Islanding loads/feeders which are to be retained would not be enabled for AUFLS. However, loads in the Island can be identified for AUFLS but same has to be factored while designing the Island.

A.10.5. OCC forum in line with the report of task force on AUFLS and df/dt scheme asked States/UTs of NR to communicate feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before next OCC meeting.

Decision of OCC Forum:

Forum asked States/UTs of NR to communicate feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before next OCC meeting.

NRPC to write a letter to head of STU's and SLDC's of NR States/UTs to ensure timely implementation of the prescribed AUFLS relief quantum by 31st March 2025.

A.11. Mandatory Submission of Daily and Monthly Generation Data on National Power Portal (Agenda by CEA)

A.11.1 OPM division CEA vide letter dated 30.12.2024 (copy enclosed as Annexure-A.IV of agenda) has asked all the generating utilities to submit their monthly generation data on the NPP by the 7th of the following month without fail.

A.11.2 This timeline will provide the Central Electricity Authority (CEA) sufficient time to validate and finalize the data for publication by the prescribed deadline set by Ministry of Statistics & Programme Implementation (MOSPI). In case the required data is not submitted within the stipulated timeframe, CEA will have no other option but to freeze the tentative monthly generation data as the final (actual) data.

A.11.3 Once the data is firmed up and published on the NPP, no revisions or changes will be possible under any circumstances.

A.11.4 MS, NRPC asked Generating utilities of NR to submit their monthly generation data on the NPP by the 7th of the following month without fail.

Decision of OCC Forum:

Forum asked Generating utilities of NR to submit their monthly generation data on the NPP by the 7th of the following month without fail.

A.12. AGC implementation at Parbati-3 Power Station and Parbati-2 HE Project: relaxation in Trial Run operation and COD of Units at Parbati-2 HE Project (Agenda by NHPC)

A.12.1 Representative of NHPC informed that Parbati-2 HEP of capacity 800MW (4X200MW) is scheduled to be declared under Commercial operation by March 2025 and trial run operation of unit shall be taken up accordingly as per provisions of IEGC, 2023.

A.12.2 The power of Parbati-2 HEP shall be evacuated through exiting transmission line i.e. 400KV Parbati-2-Sainj-Banala and 400KV Parbati-2-Banala transmission line.

A.12.3 As per Regulation 24 of IEGC, 2023 Regulations, prior to declaration of Commercial operation All hydro generating stations having a capacity of more than 25 MW are required to submit documents confirming the enablement of automatic operation of the plant from the appropriate load despatch centre by integrating the controls and tele-metering features of their system into the automatic generation control in accordance with the CEA Technical Standards for Construction and the CEA Technical Standards for Connectivity.

A.12.4 Being OPGW implementing agency in Parbati-Banala-Koldam corridor, M/s Indigrid has confirmed that OPGW shall be functional in 400KV Parbati-2-Sainj-Banala and 400KV Parbati-2-Banala transmission line by January/February 2026.

A.12.5 NHPC representative stated that due to the absence of OPGW, NHPC would be unable to provide certification documents for AGC enablement during the Trial Run/COD of Parbati-2 units, as this issue is beyond its control. Therefore, a relaxation is requested for the submission of these certification documents during this period.

A.12.6 NRLDC representative acknowledged that NHPC is not at fault in this matter but clarified that the OCC forum cannot grant such a relaxation. It was also informed that a similar relaxation was recently granted to THDC Khurja by the Hon'ble CERC.

MS NRPC emphasized the importance of integrating hydro power to enhance grid flexibility while ensuring compliance with all necessary regulations. It was suggested that NHPC formally communicate its request to CERC and NLDC and inform MoP/CEA about the issue. If the matter remains unresolved through communication, NHPC may need to file a petition with CERC.

Decision of OCC Forum:

Forum suggested NHPC to a send formal communication with request from their side to CERC and NLDC and inform the matter to MoP/CEA. In case matter does not get resolved through communication, NHPC may need to file petition in CERC regarding the matter.

A.13. Installation of CSD in 400KV Kalaamb Wangtoo and 400KV Kalaamb Sorang to control switching surges (Agenda by CTU)

A.13.1. CTU representative apprised forum that a Joint study meeting was held on 11.12.24 among CTUIL, CEA, Grid-India, POWERGRID & HPPTCL to deliberate on feasibility of reactor shifting at the Karcham end to either Wangtoo or Sorang S/s on 400KV Kalaamb - Wangtoo and 400KV Kalaamb-Sorang line.

A.13.2. In the meeting HPPTCL stated that space is not available for installation of line reactor at Wangtoo (HPPTCL) S/s end for 400 kV Wangtoo (HPPTCL) -Kala Amb (PG) line, same was also confirmed by HPPTCL by mail dated 12.12.2024.

A.13.3. In the meeting HPPTCL also confirmed that CSD already installed at Wangtoo end for 400 Wangtoo-Kala Amb line & 400kV Wangtoo-Sorang line. Powergrid also confirmed that CSD (taken on loan basis) already installed at Kala Amb end for 400 Wangtoo-Kala Amb line. Power Grid also raised requirement of CSD at both end for 400kV Kala Amb-Sorang line. HPPTCL also requested for Installation of CSD at Kala Amb end for avoiding GIS failure due to switching over voltages.

A.13.4. In the meeting, Grid-India agreed for requirement of CSD devices however they have opined number of CSD requirement may be discussed in upcoming OCC meetings. Grid India & CTU also requested, POWERGRID to explore the possibility of breaker installation to make line reactor installed at Karcham end of 400kV Karcham-Wangtoo line as a bus reactor.

A.13.5. Subsequently, POWERGRID vide mail 06.01.25 informed that as presented in the meeting, purpose of CSD is to control switching surges during charging of the line. At 400kV Kalaamb, S/s one and half breaker scheme arrangement is in service and at Sorang S/s (M/s Greenco) and Wangtoo (HPPTCL) S/s, Double Bus arrangement is in service and depending upon Grid conditions, line can be charged from any end and also from any of the main as well as Tie CBs at Kalaamb. In view of above, it is for system stability to install CSD in above Line CBs at Kalaamb, wangtoo and Sorang to avoid switching surges during line charging for smooth GRID operation. As CSD is already installed at Wangtoo HPPTCL, at present, total CSD requirement is 05 number i.e. 04 Number at Kalaamb (Both main and Tie CBs at Kalaamb) and 01 Number at Sorang. POWERGRID further requested that as Kalaamb is implemented as a TBCB project, installation of CSD may please be approved under ADD CAP.

A.13.6. OCC forum technically agreed for installation of 05 numbers CSD i.e. 04 Number at Kalaamb (Both main and Tie CBs at Kalaamb) and 01 Number at Sorang. Further, Powergrid was asked to submit an agenda in upcoming NRPC meeting for capitalisation under ADD CAP.

A.13.7. Powergrid intimated that expected timeline for installation of CSD would be around eight months.

Decision of OCC Forum:

Forum approved the installation of 05 numbers CSD i.e. 04 Number at Kalaamb (Both main and Tie CBs at Kalaamb) and 01 Number at Sorang. Powergrid was asked to submit an agenda in upcoming NRPC meeting for capitalisation under ADD CAP.

A.14. SPS arrangement for load shedding at 400/220 kV Mandola & Maharani Bagh Substation in view of N-1 criteria violation (Agenda by POWERGRID NR-1)

A.14.1. Powergrid NR-1 informed that the additional ICTs at Mandola & Maharani Bagh has been agreed in CMETS meeting however considering the increased load projections in 2025-26 summers, implementation of SPS at Mandola & Maharani Bagh SS may be deliberated.

A.14.2. NRLDC representative mentioned that, according to the data available in the NRLDC SPS document, there are existing SPS systems at both 400kV Mandola and 400kV Maharanibagh.

A.14.3. The logic behind these SPS, which were approved in 2010 and are included in the NRLDC SPS document, was also presented during the meeting.

- 400kV Mandola ICTs:

Transformer Details: - 4 x 315 MVA = 1260 MVA (4*500MVA)

1. **Case-1:** Loading on the ICT is more than 85 % and no. of ICTs operating in parallel is 4 and 1 out of these 4 ICT trips.

   Action: Shed load in one of the identified groups

2. **Case-2:** Loading on the ICT is more than 75 % and no. of ICTs operating in parallel is 3 and 1 out of these 3 ICT trips

   Action: Shed load in one of the identified groups

3. **Case-3:** Loading on the ICT is more than 55 % and no. of ICTs operating in parallel is 2 and 1 out of these 2 ICT trips.

   Action: Shed load in one of the identified groups

Feeder details for tripping during SPS operation
a) 220kV Mandola-Gopalpur
b) 220kV Mandola-Narela ckt-1&2

- 400kV Maharanibagh ICTs:

Transformer Details: - 2 x 315 MVA = 630 MVA (2*315 2*500MVA)

1. **Case-1:** Loading on the ICT is more than 55 % and no. of ICTs operating in parallel is 2 and 1 out of these 2 ICT trips.

Action: Shed load in one of the identified groups

Feeder details for tripping during SPS operation
a) 220kV Maharanibagh - Masjid Moth ckt-1
b) 220kV Maharanibagh - Sarita Vihar
c) 220kV Maharanibagh - AIIMS Trauma centre ckt-1
d) 220kV Maharanibagh - Electric lane

A.14.4. NRLDC representative further mentioned that there is running agenda in OCC meeting regarding mock testing exercise schedule for existing SPS in Northern region wherein these SPS are also mentioned.

A.14.5. POWERGRID representative stated that there is immediate requirement of SPS at these substations. When SPS was implemented in 2010, the ICT capacity was lower. However, as ICT capacity got enhanced over time, the SPS logic became ineffective after ICT capacity augmentation.

A.14.6. OCC forum expressed concern that how the SPS were made inactive without approval of OCC forum/NRPC/NRLDC.

A.14.7. NRLDC representative stated that DTL and Delhi SLDC may confirm whether the feeders wired under old SPS would remain same or feeders need to be changed for SPS.

A.14.8. MS NRPC stated that DTL, POWERGRID and NRLDC may discuss separately and SPS logic may be finalised and implemented by POWERGRID at the earliest.

Decision of OCC Forum:

Forum directed to DTL, POWERGRID and NRLDC for separate discussion and SPS logic may be finalised and implemented by POWERGRID as soon as possible.

A.15. Deemed availability of transmission elements for outages proposed to be availed for retro fitment of old relays with numerical relays (Agenda by POWERGRID NR-1)

A.15.1. Powergrid NR-1 mentioned that, as per the CEA regulations on the “Technical Standards for Construction of Electrical Plants and Electric Lines Regulations, 2022” dated 27.12.2022, page 166, clause 48. (1).(b), the following requirement is specified:

"All major protection relays shall be of numerical type, and the communication protocol shall comply with IS-61850."

A.15.2. Several POWERGRID substations, commissioned over 20 years ago, currently have static Bus Bar and LBB protection relays installed, such as at Ballabgarh, Bahadurgarh, Hissar, Mandola, Bhiwadi, Meerut, Bassi, etc.

A.15.3. Powergrid mentioned that these static Bus Bar and LBB relays have limited settings and features, which have become obsolete and need to be upgraded to the latest numerical IEDs. In line with the CEA guidelines, these static Bus Bar and LBB relays are being replaced with the latest numerical relays having IEC61850 communication protocol.

A.15.4. To ensure the proper functionality and performance of these retrofitted Bus Bar and LBB relays, Powergrid stated that shutdown of associated elements (lines, transformers, reactors) along with the bus bar shutdown is required.

Henceforth, Powergrid requested that the outages taken for the retrofitting work of Bus Bar and LBB protection relays at these substations be considered under deemed availability, as these outages are being utilized for system improvements in compliance with CEA regulations.

A.15.5. MS NRPC stated that, due to regulatory requirements in compliance with the CEA regulations on the “Technical Standards for Construction of Electrical Plants and Electric Lines Regulations, 2022,” Powergrid may be granted a shutdown for the retrofitting of old relays with numerical relays. Regarding availability, this will be assessed by the NRPC Secretariat according to the CERC Tariff Regulation 2024.

Decision of OCC Forum:

Forum was of view that Powergrid may be granted a shutdown for the retrofitting of old relays with numerical relays. Regarding availability, this will be assessed by the NRPC Secretariat according to the CERC Tariff Regulation 2024.

A.16. Requirement of complete 400 kV Bus-1 &2 shutdown at Mandola & Ballabgarh SS for replacement of damaged sections 400 kV jack buses (Agenda by POWERGRID NR-1)

A.16.1. Powergrid NR-1 mentioned that issue regarding complete shutdown of 400 kV Bus-1&2 at Mandola has been discussed in 224th & 225th OCC. Powergrid has intimated that the matter was also deliberated in 8th Delhi OCC meeting and

shutdown of 400 kV Mandola SS has been agreed by DTL however the consent for shutdown was denied in end. Further, Powergrid has informed that consent for shutdown of complete 400 kV Bus sections at Ballabgarh has not been provided by BBMB/HVPNL.

A.16.2. DTL mentioned that shutdown was denied in d-5 basis because of sudden surge in peak winter load of Delhi, and in upcoming Delhi OCC the same matter is again taken up for approval of the Delhi DISCOMs and DTL is hopeful that shutdown would be agreed in that meeting for February 2025.

A.16.3. NRPC representative highlighted that in 226th OCC meeting the forum decided that Powergrid NR-1, HVPNL, and BBMB should jointly visit the Ballabgarh Substation to assess the possibility of shutting down the 400 kV bus at Ballabgarh Substation for the replacement of the damaged sections of the 400 kV jack buses.

A.16.4. In the 227th OCC meeting, it was brought to the forum's attention that the site visit has yet to be conducted. The Member Secretary, NRPC, expressed concern over the delay and instructed Powergrid NR-1, HVPNL, and BBMB to **complete the site visit within one week**.

A.16.5. Additionally, Powergrid NR-1, HVPNL, and BBMB were requested to submit their observations from the visit and thereafter a physical meeting would be held at NRPC Sectt. to explore the possibility of shutdown of the 400 kV bus at Ballabgarh Substation for the replacement of the damaged sections of the 400 kV jack buses.

Decision of OCC Forum:

Forum asked Powergrid NR-1, HVPNL, and BBMB to conduct a joint site visit of Ballabgarh S/s within one week and submit their observations to NRPC/NRLDC. Following this, a physical meeting will be arranged at the NRPC Secretariat to discuss the possibility of shutting down the 400 kV bus at Ballabgarh Substation for the replacement of the damaged sections of the 400 kV jack buses.

A.17. Outages Due to Intense Fog Conditions from 28th to 30th Dec 2024 (Agenda by Powergrid NR-3)

A.17.1. Powergrid NR-3 representative informed that from 28th to 30th December, there were intense foggy weather conditions, leading to outages of various elements of POWERGRID and other utilities. He requested these outages be considered as deemed available under “Force Majeure” as per CERC regulations.

A.17.2. He further mentioned that there was an advisory issued by the Ministry of Home Affairs Disaster Management Division (Ref. No. 40-4/2017-DM dated 29.12.2024) regarding dense fog conditions in Uttar Pradesh from 29th to 30th December.

A.17.3. MS, NRPC enquired NRLDC whether any other utility has reported trappings during the cited period, to which NRLDC replied that UPPTCL has also reported tripping.

A.17.4. NRLDC representative stated that as per existing CERC tariff regulations there is no provision to provide availability in case of tripping due to fog. Further, fog in Northern grid is well known phenomenon, and has been observed since numerous years. In case availability is provided for trappings during fog, actions that are being taken by utilities to improve availability of lines may not be proactive and we may again start seeing numerous tripping of lines during fog which has reduced over the years due to appreciable actions by transmission utilities.

A.17.5. EE (P) NRPC stated that the definition of Force Majeure in the IEGC includes exceptionally adverse weather conditions that exceed statistical measures for the past hundred years.

A.17.6. MS, NRPC stated that the issue would be reviewed after considering comments of NRLDC and decided in accordance with CERC regulations.

Decision of OCC Forum:

Forum was of view that the issue would be reviewed after considering comments of NRLDC and *availability will be assessed by the NRPC Secretariat according to the CERC Tariff Regulation 2024.*

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

B.1 NR Grid Highlights for December 2024 and demand forecasting related

NRLDC representative presented the major grid highlights of Dec 2024 in the meeting:

Demand met details of NR

S.No.	Constituents	Max Demand met (in MW)	Date & Time of Max Demand met	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)
1	Chandigarh	283	31.12.24 at 09:00	5.0	31.12.24	4.1
2	Delhi	5213	31.12.24 at 10:50	85.2	31.12.24	76.0

3	Haryana	9351	20.12.24 at 09:45	169.2	18.12.24	152.1
4	H.P.	2254	25.12.24 at 09:00	41.3	20.12.24	38.3
5	J&K	3181	24.12.24 at 20:00	68.4	26.12.24	63.1
6	Punjab	9355	14.12.24 at 09:45	166.8	20.12.24	155.2
7	Rajasthan	18643	19.12.24 at 09:45	339.2	17.12.24	321.8
8	U.P	20666	19.12.24 at 19:14	362.2	20.12.24	333.9
9	Uttarakhand	2504	27.12.24 at 09:00	46.5	27.12.24	43.7
10	Northern Region	68769	20.12.24 at 10:21	1273.0	20.12.24	1188.3

*As per SCADA

- In Dec'24, the Maximum energy consumption of Northern Region was **1273 MUs** on 20th Dec'24 and it was 7.7 % higher than Dec'23 (1182 MU 20th Dec'23)

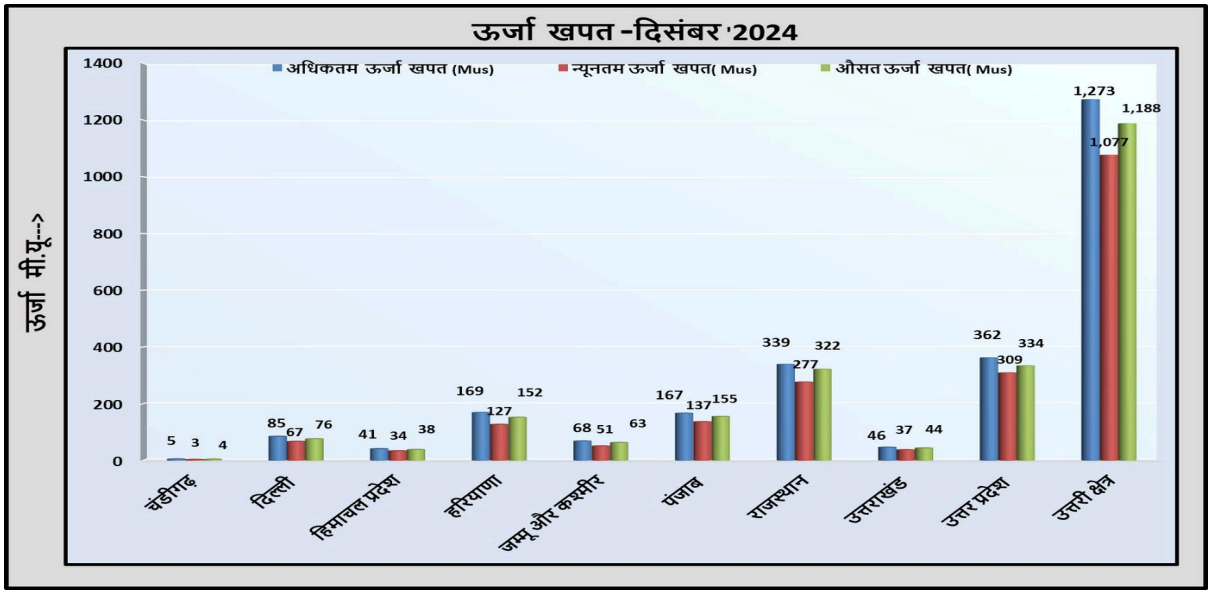
- In Dec'24, the Average energy consumption per day of Northern Region was **1188 MUs** and it was 6.7 % higher than Dec'23 (1065 MUs/day)

- In Dec'24, the Maximum Demand met of Northern Region was **68769 MW** on 20th Dec'24 @10:21 hours (*as per SCADA data)* as compared to 61380 MW on 19th Dec'23 @10:00hours.

- **Comparison of Average Energy Consumption (MUs/Day) of NR States for the Dec'23 vs Dec'24**

क्षेत्र/राज्य	दिसंबर- 2023	दिसंबर- 2024	% अंतर
चंडीगढ़	3.8	4.1	9.3%
दिल्ली	71.3	76.0	6.6%
हिमाचल प्रदेश	36.3	38.3	5.4%
हरियाणा	143.4	152.1	6.1%
जम्मू और कश्मीर	58.4	63.1	8.1%
पंजाब	142.0	155.2	9.3%
राजस्थान	301.3	321.8	6.8%
उत्तराखंड	41.2	43.7	6.0%
उत्तर प्रदेश	316.1	333.9	5.6%
उत्तरी क्षेत्र	**1113.7**	**1188.3**	**6.7%**

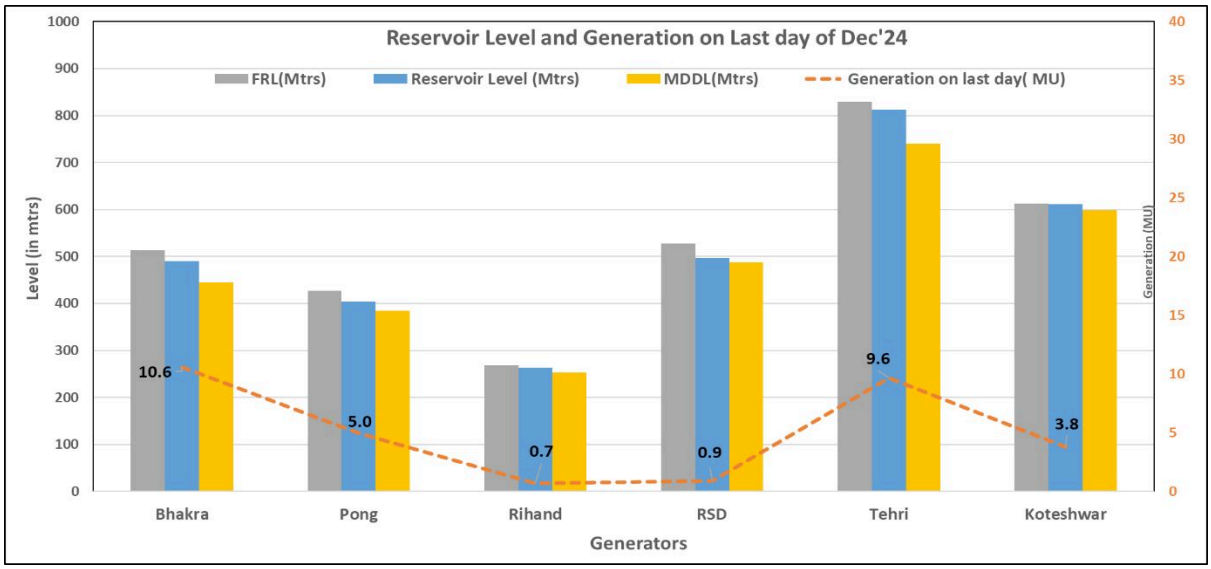
Energy Consumptions



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Dec '24	49.998	50.416 (15.12.24 at 06:03:20 hrs)	49.493 (22.12.24 at 09:07:00 hrs)	5.58	76.45	17.97
Dec '23	49.99	50.41 (17.12.23 at 06:04:30 hrs)	49.53 (06.12.23 at 09:17:10 hrs)	7.83	75.21	16.96

Reservoir Level and Generation on Last Day of Month



Reservoir Level on last day of Dec month				(Low: -ve)		(High: +ve)
Year	**Bhakra**	**Pong**	**Rihand**	**RSD**	**Tehri**	**Koteshwar**
2024	491	404	263	497	813	611
2023	497	415	259	501	807	610
Diff (in m)	-7	-12	4	-4	6	2

Detailed presentation on grid highlights of Dec'2024 as shared by NRLDC in OCC meeting is attached as **Annexure-B.I.**

B.2 Demand forecasting and resource adequacy related

Hon'ble CERC In the matter of Planning for safe, secure, and reliable integrated operation of the power system during critical periods arising on account of seasonal variations wherein the electricity demand increases rapidly by undertaking specific measures to mitigate the risks on the power system, under clause (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 and the Regulation 31 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 has issued suo-motto order 9/SM/2024 dated 07.10.2024.

Commission has issued the following directions to NLDC, RLDCs, and SLDCs in connection with the implementation of Regulations 31 and 33 of the Grid Code to address the anticipated surge in demand of electricity during October 2024 on account of seasonal variations:

a) All the State Load Despatch Centres and RLDCs shall furnish the details of operational planning undertaken by them in terms of Regulation 31(4) (a) of the

Grid Code especially for October 2024. RLDC shall validate the adequacy of resources in terms of Regulation 31(4)(b) of the Grid Code.

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

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

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

e) The generating companies operating their plant with capacity less than its installed capacity due to technical issues, i.e., capacity under partial outage or forced outage, are advised to fix the issues to ensure the maximum generation capacity on-bar.

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

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

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

NLDC, RLDCs, and SLDCs were directed to submit their responses to the measures contained in para 9 of this order by 16.10.2024.

As per the information available with NRLDC, only J&K, Punjab, Rajasthan, HP & Uttarakhand have submitted their formal reply to CERC as per latest information available with NRLDC.

Whereas other states have neither submitted their response to CERC nor NRLDC with regard to order 9/SM/2024 dated 07.10.2024.

In 225 OCC meeting, NRLDC representative mentioned that:

- *As per the information available with NRLDC, only HP & Uttarakhand have submitted their formal reply to CERC.*
- *Punjab and J&K have shared some information with NRLDC, but formal communication to CERC from their side is yet to be done.*
- *Whereas other states have neither submitted their response to CERC nor NRLDC with regard to order 9/SM/2024 dated 07.10.2024.*

Delhi SLDC representative had mentioned that reply is with their legal team and would be submitted shortly to Hon'ble Commission. Punjab SLDC mentioned that nodewise data has been requested from PSPCL, after receipt of the same, official reply would be submitted to CERC. No other update could be received from SLDCs in the meeting.

In 226 OCC meeting,

- *UP and Haryana SLDC representative stated that they have only submitted data to NRLDC and no reply has been submitted to CERC.*
- *Delhi SLDC representative stated that they have filed reply in first fortnight of Dec 2024.*

NRLDC representative requested UP, Haryana and Chandigarh may provide update.

SLDC Haryana representative informed that they have submitted their reply to CERC dated 30.12.2024.

No response could be received from UP SLDC and Chandigarh.

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

Type of Demand Estimation	**Timeline**
Daily	10:00 hours of previous day
Weekly	First working day of previous week
Monthly	Fifth day of previous month

Yearly	30th September of previous year

Status of Day Ahead Forecasting, week ahead, month-ahead and year-ahead submission status for December-2024 as per Clause 31(4) (a) & (b) of IEGC-2023 is shown below:

Region	State	Day ahead	Weeky	Monthly	Yearly	Generation Adequacy	ST-NRAP Data Submission
		Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)
NR	Punjab	Y	Y	Y	N	N	N
	Haryana	Y	N	N	N	N	N
	Rajasthan	Y	N	N	N	N	N
	Delhi	Y	N	Y	Y	N	N
	UP	Y	Y	Y	Y	N	N
	Uttarakhand	Y	Y	Y	N	N	N
	HP	Y	Y	Y	Y	N	N
	J&K	Y	N	N	N	N	N
	Chandigarh	Y	Y	N	N	N	N

In accordance with above, all SLDCs were requested to timely furnish the demand estimation data along with generation adequacy data as per the formats available at *https://drive.google.com/drive/folders/1KWY4G9gTBLV5wTJkhGEIeRptKP-QbhjL?usp=drive_link* to NRLDC through mail (nrldcmis@grid-india.in) and FTP as per above timeline.

The relevant clauses from IEGC 2023 related to demand forecasting exercise and resource adequacy exercise as discussed in 225 OCC meeting are enclosed in Annexure-B.I of agenda:

All SLDCs need to take actions at their end for timely submission of demand forecasting and resource adequacy data on day-ahead, week-ahead, month ahead and year ahead basis. It was also requested to share actions being taken at SLDC end to ensure compliance of listed clauses of IEGC 2023 as Annex-B.I.

In 226th OCC meeting, it was requested that SLDCs share actions being taken at their end to ensure compliance of above listed clauses of IEGC 2023. Further, report of self-audit carried out as per compliance of IEGC 2023 may also be submitted to NRLDC/ NRPC. All SLDCs agreed to take actions as discussed in the meeting.

Self-audit report has been received from NHPC.

Resource Adequacy guidelines issued by the CEA outline the roles and responsibilities of all stakeholders and provide a framework for RA planning in India. This matter was also discussed during the 52nd NRPC TCC meeting under Agenda Item A.12 to sensitize stakeholders on the importance of RA activities as per the approved CEA guidelines and IEGC provisions to enhance grid reliability. The format for data submission for ST-NRAP is provided in Annexure-II of the NLDC operating procedure (Link: *https://posoco.in/wp-content/uploads/2024/08/NLDC-Operating-Procedure_2024.pdf*).

Latest communication from NRLDC dated 09.01.2025 stressing on the need for actions from SLDCs in resource adequacy framework to all SLDCs is attached as Annexure B.II of agenda.

In meeting, NRLDC representative expressed concern on the non-submission of data by NR states. It was highlighted that most SLDCs in other region are providing required data within the timelines as per IEGC and requested that NR SLDCs also submit data as per regulatory requirement. Further, it was mentioned that a workshop was organized recently by FOLD subgroup.

SLDCs were asked to share actions being taken at their end to ensure compliance of above listed clauses of IEGC 2023. Further, report of self-audit carried out as per compliance of IEGC 2023 may also be submitted to NRLDC/ NRPC.

NHPC representative stated that report submitted by NHPC may also be shared with other Hydro stations for their inputs.

THDC has also submitted self-audit report of Koteshwar to NRLDC/ NRPC on 21.01.2025.

OCC asked all states to take actions at their end to ensure compliance of all regulations and guidelines w.r.t. resource adequacy framework.

B.3 a.) Status of insulator washing and replacement of porcelain insulators with polymer insulators

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

To furnish details of Progress on cleaning and replacement of porcelain insulator with polymer insulator. NRLDC has already requested vide emails dated 26.09.2024, 30.09.2024 & 07.11.2024, all transmission utilities to furnish the utility-wise latest status of the replacement of porcelain insulators with polymer insulators so that crucial lines for which such works are pending may be identified & prioritized.

However, tripping of lines were reported in last few weeks during fog timings. List of line that reported tripping on 3 or more instances last year during Dec-Jan months during fog-prone time of 20:00-10:00hrs along with their insulator status is shown below:

S. No.	Line Name	Owner	Tripping instances in Dec24-Jan'25 till 09.01.2025 between 20:00-10:00hrs	Insulator replacement status available with NRLDC
1	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	RRVPNL	10	NA
2	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-1	RRVPNL	6	Porcelain
3	132 KV Dehar(BB)-Kangoo(HP) (HPPTCL) Ckt-1	HPPTCL	5	NA
4	400 KV Anpara_B(UPUN)-Mau(UP) (UP) Ckt-1	UPPTCL	5	Partial (13%)
5	400 KV Bareilly-Unnao (UP) Ckt-1	UPPTCL	4	Partial (15%)
6	400 KV Akal-Jodhpur (RS) Ckt-1	RRVPNL	4	Polymer
7	132 KV Khatima(UK)-Pilibhit(UP) (PTCUL) Ckt-1	PTCUL	4	NA
8	400 KV Anpara_B(UPUN)-Sarnath(UP) (UP) Ckt-2	UPPTCL	4	Partial
9	400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-1	POWERGRID ,UPPTCL	4	NA
10	220 KV Agra(PG)-Bharatpur(RS) (PG) Ckt-1	POWERGRID ,RRVPNL	4	NA
11	400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-2	POWERGRID ,UPPTCL	4	NA
12	220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2	PTCUL	3	NA
13	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2	RRVPNL	3	NA
14	132 KV Jogindar Nagar(PS)-Bassi(HP) (HPPTCL) Ckt-2	HPPTCL	3	NA
15	400 KV Mohanlalganj (PGYTL)-Unnao(UP) (PGYTL) Ckt-1	UPPTCL	3	Partial (13%)

In 225th OCC meeting, Punjab SLDC representative stated that due to smog, number of transmission lines had tripped in last one week. However, lines for which washing and cleaning was not done and had tripped recently, would be taken on priority.

NRLDC had also conducted a meeting with PSTCL representatives on 21.11.2024 to discuss preparedness measures taken by Punjab to minimise tripping of lines due to fog.

In 226th OCC meeting, RVPN representative stated that they are undertaking washing/cleaning and installation of bird guards in lines emanating from 220kV RAPS.

NRLDC representative also stated that RAPS islanding was designed for average/peak load condition whereas in case of tripping of lines from RAPS in morning hours, load in island is lower and there is no significant reactive power absorption by RAPS units, therefore, survival of island in case it is formed at morning hours is comparatively lower.

Punjab SLDC representative stated that insulator for 400kV Muktsar-Makhu ckt 2 has been changed from porcelain insulators to polymer insulators.

RVPN representative stated that shutdowns are being taken for installation of bird guards in lines emanating from 220kV RAPS. Discs have been changed in 220kV Debari-RAPS line and further disc changing is being taken up by STU.

POWERGRID representative stated that 400 KV Sahupuri(UP)-Biharshariff(PG) lines are being maintained by ER-1 division whereas LILO portion is being maintained by UPPTCL. ER-1 has been intimated to attend fault locations by NR-3 division.

NRLDC representative stated that UPPTCL lines had also tripped during fog conditions and requested for expeditious actions for washing/cleaning.

***UPPTCL representative stated that they have also submitted data w.r.t.* status of insulator washing and replacement of porcelain insulators with polymer insulators.**

Further, it was mentioned that tripping of line from Anpara would be discussed in detail in upcoming Protection subcommittee meeting of NRPC.

b) Fog related frequent trippings of EHV lines during fog conditions in the Northern Region in December 2024-January 2025.

- Frequent trippings of inter-regional, intra -regional transmission lines including high power carrying capacity HVDC transmission line (500 KV HVDC Balia- Bhiwadi) observed.
- Link lines of NR-ER and WR-NR have also tripped during the night and early morning hours. Outage of the inter-regional lines limits the transfer capability across regions. Further tripping of transmission lines emanating from Generating Stations have also been observed.

- Faults reported mostly-DC line earth fault and Phase- to -earth fault in AC lines during foggy weather conditions. De-capping of insulators and insulators found broken on patrolling have been reported. The same indicates the need of insulator cleaning/washing in short term and replacement of porcelain insulators with polymer insulators in long term where frequent trippings have been observed recently.
- Updating the status of insulators in the control area of respective utilities and sharing the future plan for avoiding tripping due to fog related issues.
- Letter from CGM (SO), NRLDC dated 07.01.2025 regarding the insulator cleaning and replacement works in view of high peak winter demand (~ 70 GW) and trippings observed recently enclosed as Annexure B.III of agenda.

All transmission utilities were once again requested to furnish the utility-wise latest status of the replacement of porcelain insulators with polymer insulators so that crucial lines for which such works are pending may be identified & prioritized.

B.4 Periodic testing of generators and FACTS/HVDC Devices

In 213th OCC meeting held in Nov 2024, the requirements w.r.t. periodic testing of generators and FACTS/HVDC Devices were discussed when presentation was made by Solvina team in OCC forum.

Subsequently, in 219 OCC meeting and 73 NRPC meeting held in May 2024, the agenda was again discussed. During these meetings, it was discussed 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.

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.

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.”

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

In accordance with above, Generators and HVDC/FACT owners were required to furnish the Testing schedule for 2024-25 by 31st October 2023. As the time has already passed, Generators and HVDC/FACT owners were supposed to furnish the Testing schedule for 2025-26 by 31st October 2024.

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-System-Elements-submitted-to-CERC.pdf. This may be used for testing.

Along with testing, the mathematical models (preferably PSSE models) based on the results of testing need to be provided, so that All India case can be built with the respective generic models.

As per the decision of 73 NRPC meeting, NRPC forum asked all Generators and HVDC/FACT owners to furnish the Testing schedule for 2024-25 and 2045-26 to NRPC/NRLDC at the earliest.

However, the same is still pending.

Matter was then once again discussed in 54th Protection Sub-Committee Meeting held on 25th November, 2024. During the meeting, utilities had requested that list of third party testing agencies may be provided by NRLDC/NRPC. It was discussed that as of now there is no such criteria for selection of third party for carrying out testing. However, the third party should be a certified agency.

In 226 OCC meeting, NRLDC representative stated that as the testing plan is yet to be received from utilities, a google sheet has been prepared and it is requested that testing plan for 2024-25 and 2025-26 may be updated in the sheet provided at the earliest as per the requirement of IEGC 2023 and decision of 73 NRPC meeting.

Google sheet link is:

https://docs.google.com/spreadsheets/d/18KTutJ66bK9LdOOhuHfzlmBeYH7_TgMs/edit?gid=849497112#gid=849497112

MS NRPC stated that testing has to be carried out as per IEGC 2023, and agenda also discussed in NRPC meeting earlier. As it has been mentioned in IEGC and also decision of NRPC forum, all generating units and HVDC/FACT devices owner were asked to provide testing schedule in the google sheet attached.

OCC and NRPC forum had asked all generating units and HVDC/FACT devices owner to provide testing schedule in the google sheet attached. SLDCs were asked to take up the matter with respective state generating units. Still response from most of the utilities is pending.

In 227 OCC meeting,

NRLDC representative stated that the testing plan is yet to be received from most of utilities.

NHPC representative stated that they are at tendering stage for testing as per IEGC clauses for all their hydro stations and testing schedule is also expected to be finalised shortly.

NRLDC representative mentioned that inputs were received from Mahi HEP, POWERGRID for TCR and Kurukshetra HVDC.

MS NRPC stated that the above agenda would be included in follow up agenda of NRPC for regular monitoring in OCC Meetings.

B.5 Reactive power injection from LV side to HV side by state transmission network

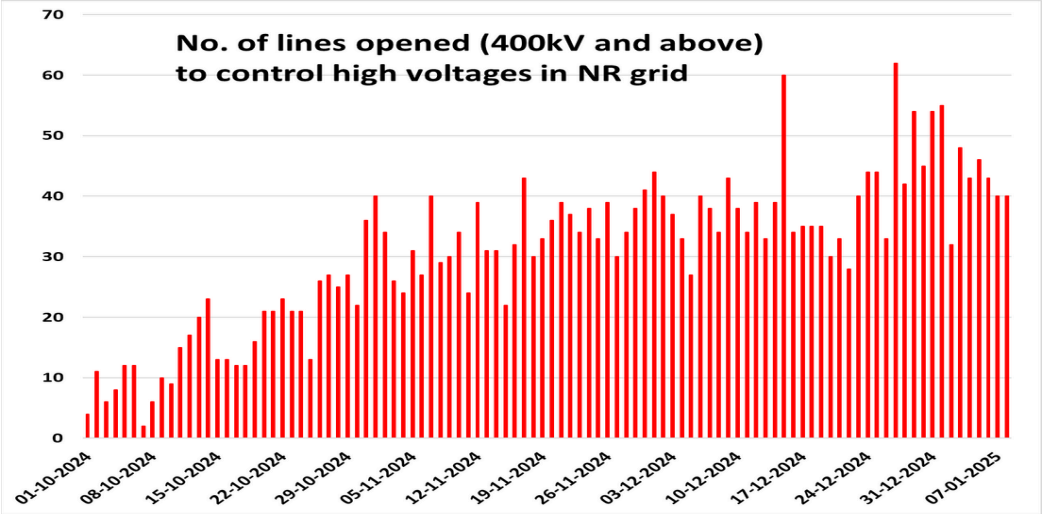
As it is well known that Northern region faces issues related to severe high voltages in the grid in winter months due to less demand as the transmission system remains

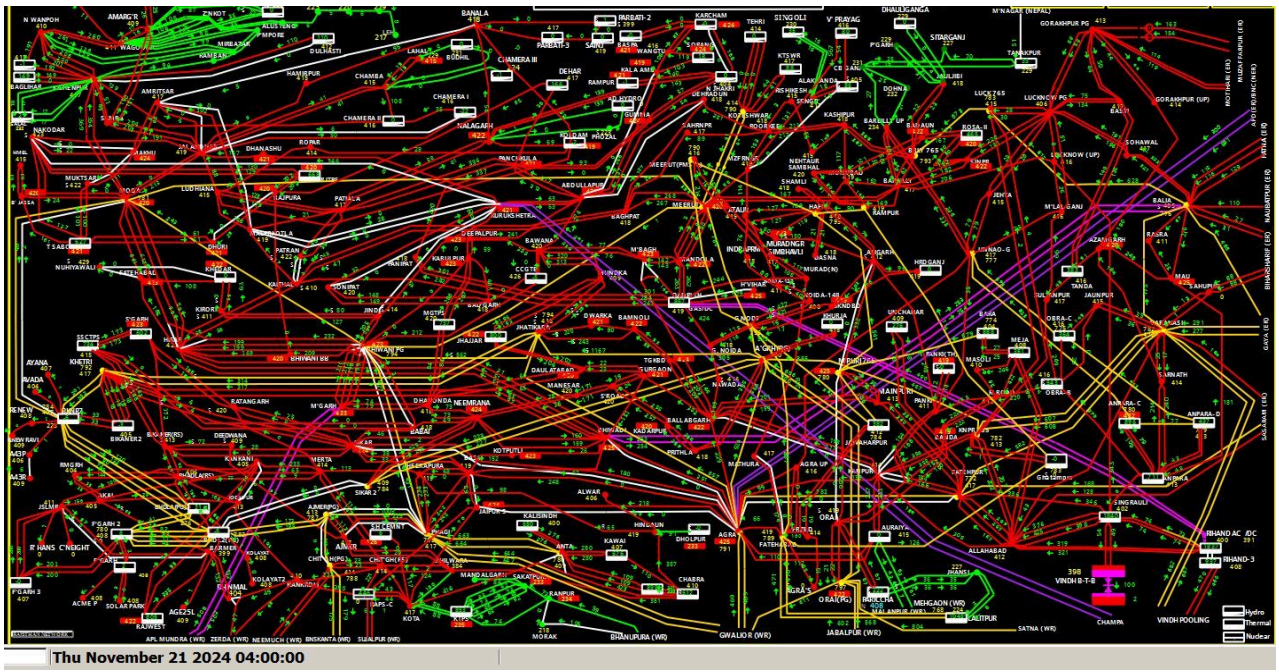
lightly loaded. A number of measures are already being taken to control high voltages in the grid such as:

- Ensuring to switch off capacitors & switch on reactors.
- Ensuring healthiness of all commissioned reactors in the system
- Monitoring of reactive power through SCADA displays.
- Reactive power support (absorption) by generating stations as per the capability curve.
- Synchronous condenser operation especially of hydro units during night hours for dynamic voltage support.
- ICT Tap Optimization at 400kV & above is carried out by NRLDC.
- Utilisation of line reactors as bus reactor in case of opening of EHVAC transmission lines.
- Opening of EHV lines based on expected voltage reduction and also considering security & reliability of system

Switching of bus reactors, line reactors are done as frequently as twice in a day at same location. For instance, during peak hours, voltages being on lower side, reactors are switched off while during off peak hours, reactors are brought into relieve high voltages. Capacitors switching is done primarily at lower voltage levels. The dynamic reactive power resources like generators, SVC, STATCOM keep on changing the VAr value as per system requirement or system operator's instructions. Tap optimization is being done mainly on seasonal basis. Manual opening of high voltage line is also carried out as a last resort to alleviate alarming high voltages in the system.

Even after taking all measures it is being seen that large number of EHVAC transmission lines have to be opened to control high voltages in the grid. Number of transmission lines (400kV & above) opened to control high voltage in last 90 days as well as snapshot of high voltages in grid is shown below:





Such opening of transmission lines always increases risk of system insecurity as transmission system gets weak due to opening of transmission lines and also susceptibility of tripping of lines especially during foggy weather. As such there seems to be requirement for planning of additional reactive compensation in the grid to control high voltages at both interstate as well as intrastate level.

This point was also highlighted from NRLDC side in 226 OCC meeting, wherein following was discussed:

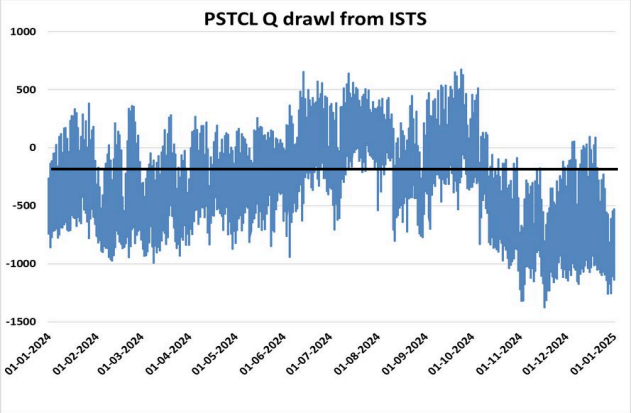
CTUIL representative stated that in NR, around 60-80% reactive compensation has been provided at ISTS level. Reactive compensation planning and implementation at intrastate level needs to be expedited to cater low/high voltage scenarios.

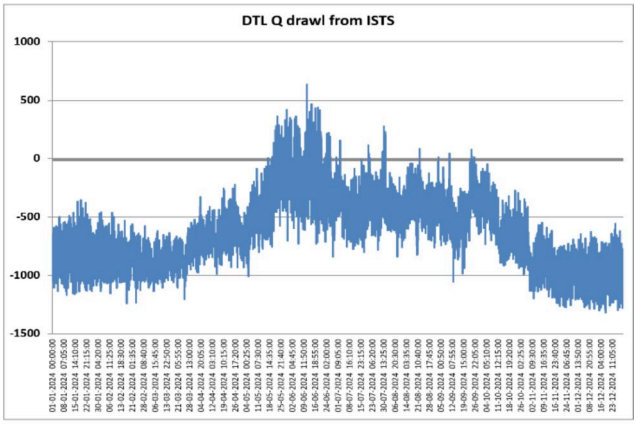
OCC asked all SLDCS to analyse reactive power change with ISTS grid and accordingly plan reactive power devices at intrastate level. This would also help to minimize opening/closing of EHVAC lines in winter months.

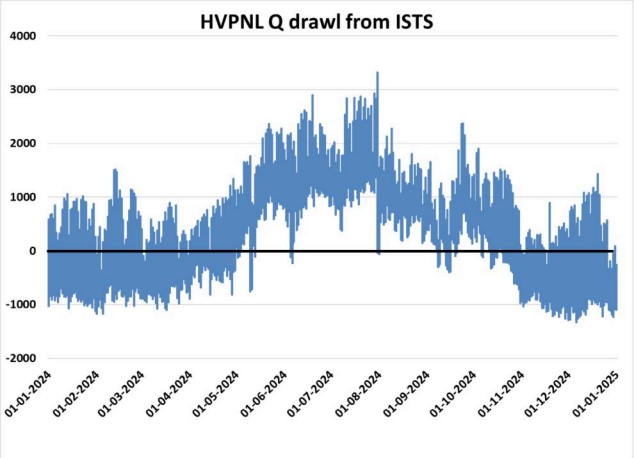
NRLDC representative stated that:

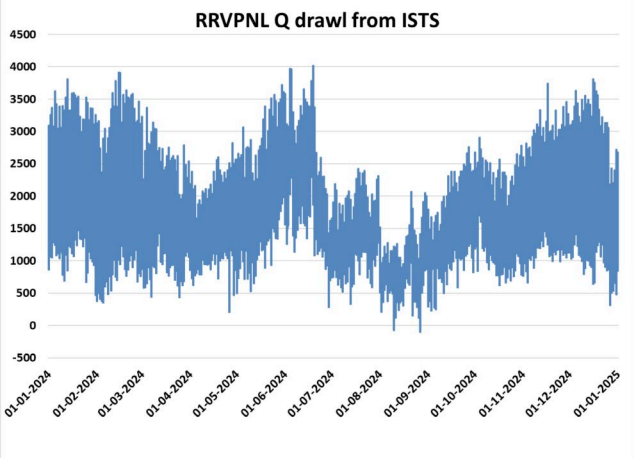
NRLDC has analysed reactive power flow of all states of NR for last year i.e. 2024. The points which are used to calculate MW drawl of state from ISTS have been used to calculate the MVAr drawl by state from ISTS.

Following is the result of such analysis:






HVPNL Q drawl from ISTS
4000
3000
2000
1000
0
-1000
-2000
01-01-2024
01-02-2024
01-03-2024
01-04-2024
01-05-2024
01-06-2024
01-07-2024
01-08-2024
01-09-2024
01-10-2024
01-11-2024
01-12-2024
01-01-2025


RRVPNL Q drawl from ISTS
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500
01-01-2024
01-02-2024
01-03-2024
01-04-2024
01-05-2024
01-06-2024
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01-08-2024
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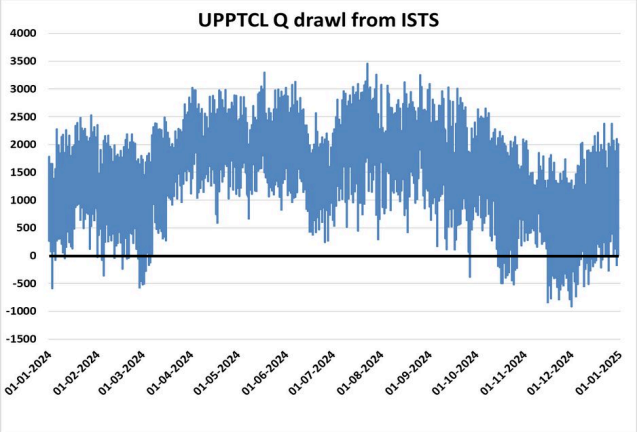
01-11-2024
01-12-2024
01-01-2025


UPPTCL Q drawl from ISTS
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
01-01-2024
01-02-2024
01-03-2024
01-04-2024
01-05-2024
01-06-2024
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01-08-2024
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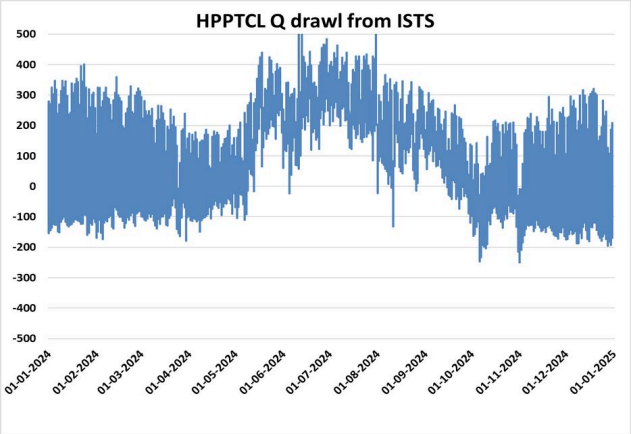
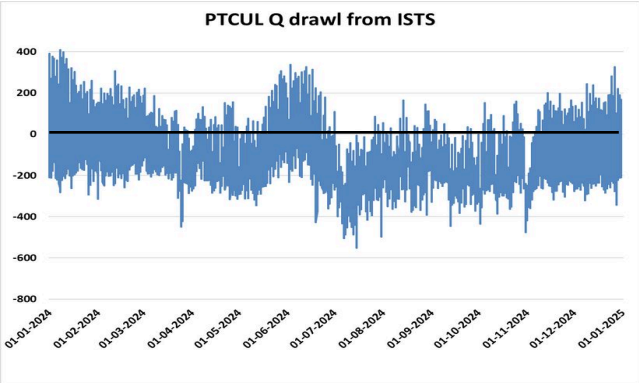
01-11-2024
01-12-2024
01-01-2025





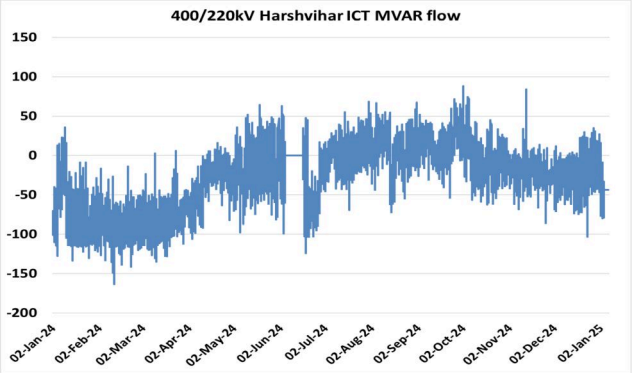
State	MVAr Variations	Proposed solutions in intrastate
Punjab	-1300 to 600	Bus reactors required
Delhi	-1200 to 500	Bus reactors & STATCOM required
Haryana	-1000 to 3000	STATCOM & capacitors required (URGENT)
Rajasthan	0 to 4000	Capacitor requirement (URGENT)
UP	-500 to 3000	Capacitor requirement
Uttarakhand	-500 to 400	STATCOM required
HP	-200 to 400	Capacitor requirement (URGENT)

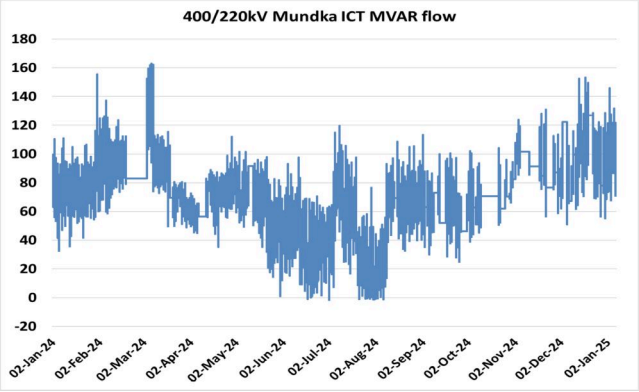
NRLDC expressed severe concern on reactive power drawl by HVPNL, RRVPNL, HPPTCL and suggested to take up for capacitor installation on war footing basis.

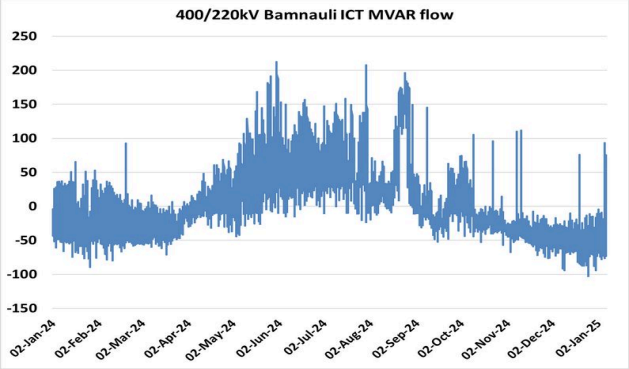
OCC forum appreciated the inputs shared by NRLDC and asked all SLDCs/STUs to analyse nodewise reactive power injection/absorption from ISTS and accordingly, take necessary measures. It was also highlighted that report was provided by CPRI based on work awarded by NRPC forum to assess capacitor requirement. Studies were done in the report based on 2019-

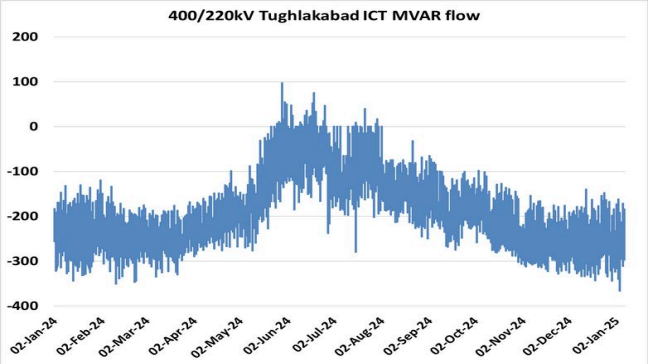
2020 data and still it is being seen that capacitor commissioning has not progressed as was required.

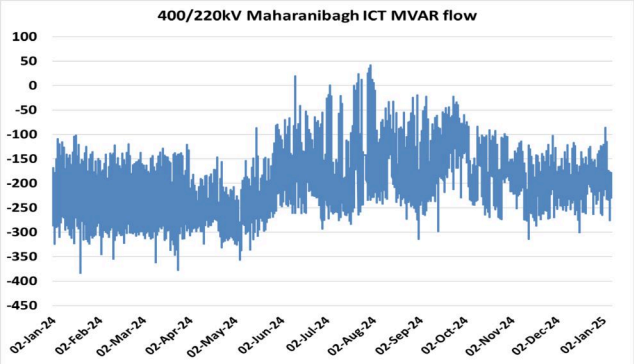
Further, station-wise MVAr flow has been assessed for 400/220kV substations in Delhi state control area. Delhi state control area having high network of cables, generates high reactive power and suggests that there is huge MVAr flow from Low voltage side to High voltage side. Station-wise MVAR flow pattern for year 2024 for DTL as well as POWERGRID substations in Delhi is shown below:

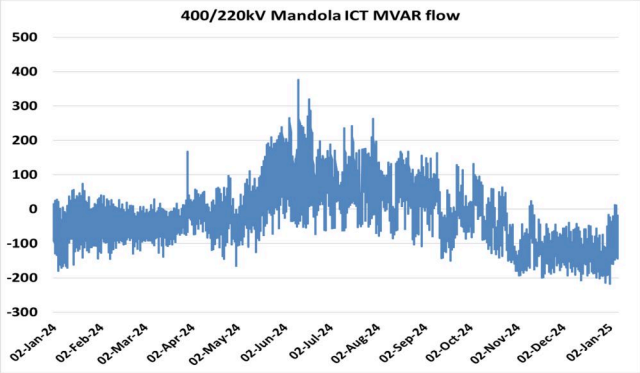


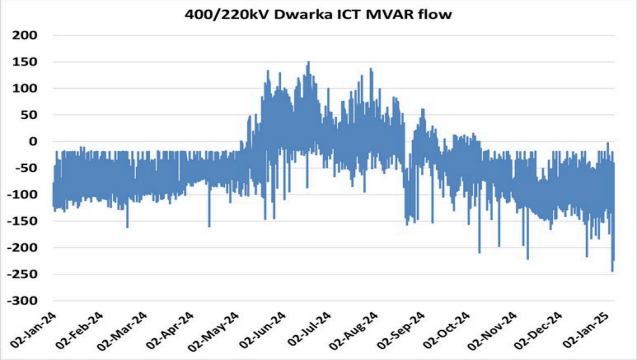










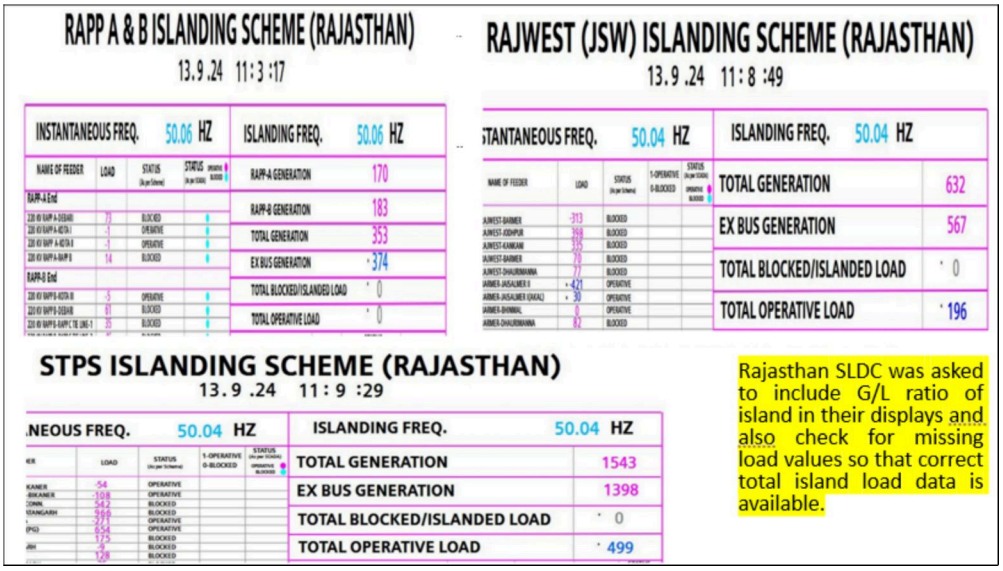


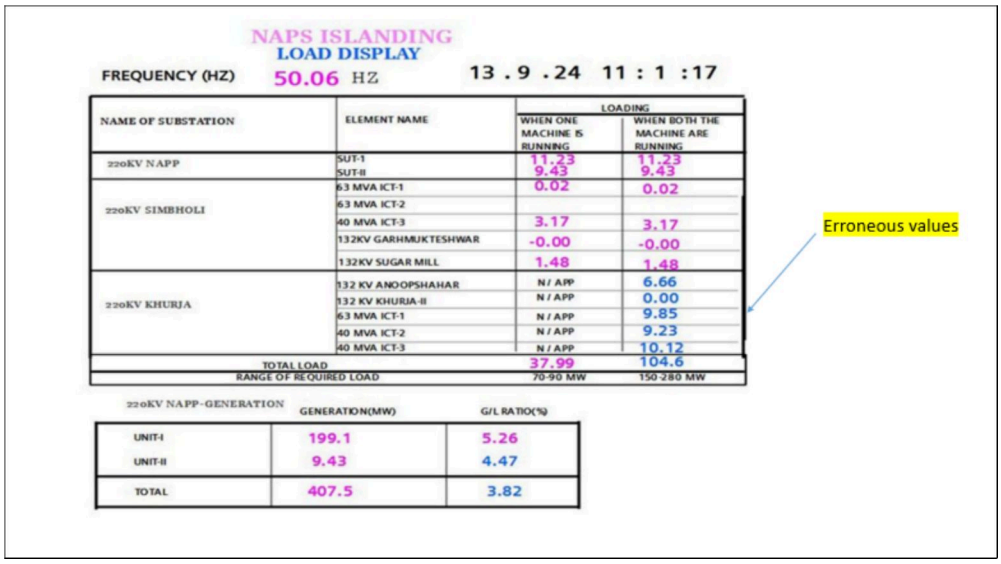
In meeting, NRLDC representative stated that there clearly seems to be need for planning for more reactive power support (reactive power absorption devices) at 400/220kV Tughlakabad, Dwarka and Maharanibagh. DTL was asked to take up for required reactive power absorption on priority.

B.6 Mock testing of islanding scheme and simulation studies

Following four islanding schemes are operational in the Northern Region: NAPP Islanding Scheme (Uttar Pradesh), RAPP Islanding Scheme (Rajasthan), Bawana Islanding Scheme (Delhi), and Pathankot-RSD Islanding Scheme (Punjab). As per the SOP for mock islanding schemes approved in the recently concluded OCC 223, SLDCs are requested to prepare and share their plans for conducting mock testing of islanding schemes in their control areas.

None of the four utilities have yet created a SCADA network map for their island areas. However, Uttar Pradesh and Rajasthan have developed SCADA displays with partial island summaries, although telemetry issues still need resolution.





During 224 OCC meeting, NRLDC representative mentioned that only the NAPS Islanding Scheme of UP has incorporated the G/L ratio in its SCADA display according to the shared format. UP representative added that due to a recent fire

incident at Khurja S/S, the telemetry from the 220kV Khurja S/S is currently unavailable, and they promised to share an update on the restoration of telemetry from Khurja as soon as possible.

NRLDC representative also requested that all concerned utilities provide updated islanding base cases for different load-generation balance scenarios (summer: Peak/Off-peak and winter: Peak/Off-peak) along with dynamic data of the generators in the island for conducting dynamic simulation studies. He reiterated that the Islanding SCADA display should be made available at NRLDC as per the format shared in previous OCC meetings.

During 225 OCC meeting, UP, Rajasthan, Punjab and Delhi SLDC were requested to provide update.

UP SLDC representative informed that NAPS has been asked to carry out mock testing of ufr which are part of islanding scheme. After receiving testing report from NAPS, same shall be shared with OCC forum.

No other update could be received from other SLDCs.

OCC asked all SLDCs to proactively take actions as discussed in the meeting.

Further, NRLDC had also conducted an online meeting on 03.12.2024 with all relevant stakeholders from UP, Rajasthan, Delhi and Punjab regarding any issues being faced in carrying out mock testing exercise of islanding scheme.

Following updates were received in the meeting:

1. Uttar Pradesh (NAPS Islanding Scheme)
    - Field testing of relays has been completed; a detailed report will be shared by 15th December 2024.
    - PSSE basecase files will be submitted within one month.
    - NRLDC demonstrated modelling the island in PSSE using the Bawana Island example (Delhi SLDC).
2. Rajasthan (RAPS Islanding Scheme)
    - Regular UFR testing is ongoing and will extend to Islanding UFR relays.
    - A detailed report as per the SOP will be submitted by the first week of January 2025.
    - PSSE basecase files will be provided within one month.
3. Delhi (Bawana Islanding Scheme)
    - DTL will conduct field mock testing as per the SOP within one month and submit a detailed report accordingly.
    - PSSE basecase files will be shared within one month.
4. Punjab (RSD Islanding Scheme)
    - Field mock testing as per SOP will be conducted within one month, and a detailed report will follow.
    - PSSE basecase files will be submitted within one month.
5. Uttar Pradesh (Unchahar Islanding scheme)

UP, Rajasthan, Delhi and Punjab SLDCs were requested to provide update.

UPPTCL representative stated that they have shared basecase with NRLDC. NRLDC requested to reshare the basecase as the file was not received. It was also mentioned that there is need to review NAPS islanding scheme in view of recent network changes.

NRLDC representative requested that UPPTCL and NAPS may first convene bilateral meeting and share the discussion points with NRLDC/NRPC, then separate meeting would be convened between all concerned parties.

Rajasthan SLDC representative stated that detailed report was received, but it was not as per SOP and accordingly, detailed report has again been sought by SLDC from concerned site. Further, basecase for islanding scheme would also be shared shortly.

Delhi SLDC representative stated that part testing has been completed and expected to be completed by first week of Feb'25. Basecase file would also be shared shortly.

Punjab SLDC representative stated that testing report as well as basecase would be shared with NRLDC by 31 Jan 2025.

OCC asked all SLDCs to expedite testing exercise and also sharing of basecase with NRLDC. Further, NRLDC may convene separate meeting on the subject before next OCC meeting.

B.7 Reactive power performance of generators

During winter season, demand of Northern region is low and high voltages are a common phenomenon predominantly in Punjab, Haryana and Delhi area. Even after several actions being taken by control centers, it is seen that there is persistent high voltage in Northern region. The reactive power absorption by generators becomes an important resource that helps in managing high voltages in the grid. However, even after continuous follow up in OCC meetings, it is seen that MVAR data telemetry is poor/ inaccurate from most of the generating stations. For some of the generators it is seen that there is inadequate reactive power absorption based on their capability curve, especially during night hours. The performance of generators in absorption of reactive power for last 20 days (10 Dec 2024 – 09 Jan 2025) is shown below:

S.No.	Station	Unit No.	Capacity	Geographical location	MVAR capacity as per capability	MVAR performance (-) Absorption	Voltage absorption above (in KV)

					curve (on LV side)	(+) Generation (HV side data)	
1	Dadri NTPC	1	490	Delhi-NCR	-147 to 294	-160 to 80	410
		2	490		-147 to 294	-150 to 60	408
2	Singrauli NTPC	1	200	UP	-60 to 120	-15 to 5	397
		2	200		-60 to 120	0 to 30	404
		3	200		-60 to 120	0 to 20	402
		4	200		-60 to 120	-15 to 5	400
		5	200		-60 to 120	-20 to 10	400
		6	500		-150 to 300	0 to 60	405
		7	500		-150 to 300	0 to 50	404
3	Rihand NTPC	1	500	UP	-150 to 300	-50 to 50	398
		2	500		-150 to 300	-60 to 30	397
		3	500		-150 to 300	-100 to 0	394
		4	500		-150 to 300	-110 to 0	394
4	Kalisindh RS	1	600	Rajasthan	-180 to 360	-100 to 150	-
		2	600		-180 to 360	-130 to 50	-
5	Anpara C UP	1	600	UP	-180 to 360	-150 to 50	770
		2	600		-180 to 360	-	770
6	Talwandi Saboo PB	1	660	Punjab	-198 to 396	-210 to 0	410
		2	660		-198 to 396	-210 to 0	408
		3	660		-198 to 396	-	-
7	Kawai RS	1	660	Rajasthan	-198 to 396	-80 to 50	404
		2	660		-198 to 396	-90 to 50	404
8	IGSTPP Jhajjar	1	500	Haryana	-150 to 300	-110 to 60	412
		2	500		-150 to 300	-110 to 120	415

		3	500		-150 to 300	-	-
9	Rajpura (NPL)	1	700	Punjab	-210 to 420	-210 to 70	405
		2	700		-210 to 420	-210 to 80	405
10	MGTPS	1	660	Haryana	-198 to 396	-130 to 40	404
		2	660		-198 to 396	-130 to 70	405
11	Bawana	1	216	Delhi-NCR	-65 to 130	-	-
		2	216		-65 to 130	-70 to 10	410
		3	216		-65 to 130	-	-
		4	216		-65 to 130	-	-
		5	253		-65 to 130	-70 to 10	412
		6	253		-65 to 130	-	-
12	Bara PPGCL	1	660	UP	-198 to 396	-40 to 80	772,778
		2	660		-198 to 396	-50 to 60	772,778
		3	660		-198 to 396	-70 to 50	772,778
13	Lalitpur TPS	1	660	UP	-198 to 396	-100 to 50	760
		2	660		-198 to 396	-80 to 50	765
		3	660		-198 to 396	-100 to 50	758
14	Anpara D UP	1	500	UP	-150 to 300	-	-
		2	500		-150 to 300	-150 to 0	760
15	Chhabra TPS	1	250	Rajasthan	-75 to 150	-50 to 50	410
		2	250		-75 to 150	-40 to 50	412
		3	250		-75 to 150	-40 to 40	410
		4	250		-75 to 150	-	-
		5	660		-198 to 396	-50 to 150	412
		6	660		-198 to 396	-70 to 150	412

All generating stations are requested to resolve any issues related to telemetry and make sure that MVAr absorption is as per grid requirement and capability curve of machine.

Since with IEGC 2023 implementation, reactive energy performance also has financial impact, it is desirable that all generating stations continue to support grid voltages by having reactive power performance as per their capability curve and grid requirement.

Some of the generating units such IGSTPP Jhajjar, MGTPS Jhajjar, Bara need to explore possibility of further MVAR absorption. Further, intrastate generators in Rajasthan control area may be asked to support through adequate reactive power generation during day-time when Rajasthan grid experiences low voltage.

During 226 OCC meeting, NRLDC representative presented following are few observations based on data of 20 Nov 2024 – 09 Dec 2024 analysed at NRLDC end:

- Some of the machines at NTPC Singrauli are generating MVAr whereas some are absorbing MVAr
- IGSTPP Jhajjar and MGTPS performance needs improvement, unnecessary MVAR generation could be avoided. AVR setpoint to be reduced.
- AVR setpoint may also be reduced for Dadri Stage-II, Talwandi Saboo stations. It was mentioned that Railways has also highlighted high voltage in their supply from 220kV Dadri gas and NRLDC would be communicating with Dadri Gas for tap change.
- More reactive power support can be obtained from Chhabra 250MW generating units.
- No internal generation in Delhi state control area is leading to high voltages in the Delhi network as no dynamic reactive compensation is available from thermal machines for MVAR generation from cables.

NTPC representative stated that they will check performance of Singrauli units, AVR is planned to be replaced for one unit.

OCC expressed concern on performance of IGSTPP Jhajjar, and asked to reduce AVR setpoint, change tap position, so that voltage profile in the grid is improved.

NRLDC representative presented IEGC clause 39.(3),

Quote

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

Unquote

Following are few observations based on data of 10 Dec 2024 – 09 Jan 2025 analysed at NRLDC end:

- ***Some of the machines at NTPC Singrauli are generating MVAr whereas some are absorbing MVAr. NTPC representative stated that AVR is to be replaced for Unit-6 of Singrauli.***
- ***IGSTPP Jhajjar performance needs improvement, unnecessary MVAR generation could be avoided. As requested previously AVR setpoint to be reduced.***
- ***AVR setpoint may also be reduced for Dadri Stage-II, Talwandi Saboo and Bawana stations.***
- ***NTPC representative stated that Dadri is already absorbing up to 150MVAR.***
- ***NRLDC representative stated that no doubt Dadri is absorbing MVAr, but AVR setpoint or GT tap may be changed such that the units are absorbing MVAr just beyond 400kV.***
- ***IGSTPP Jhajjar representative stated that Unit-1 overhauling is planned in first week of Feb. and during this time GT tap position of Unit-1 will also be changed. It was also mentioned that during summer tap position may again need to be changed when MVAr generation is desired as AVR setpoint change is not able to change the required MVAr output.***
- ***NRLDC representative stated that AVR set point change should be available with thermal stations so that reactive power change is possible as per grid requirement and relying on offload tap change is not at all suitable alternative. However, as last resort if required, seasonal tap change of GT may have to be carried out.***
- ***It was also mentioned that communication with OEM regarding any issue in AVR setpoint may be shared separately with NRLDC. In case AVR setpoint change is not possible, GT tap position has to be changed so that required MVAr exchange is obtained and generating station needs to take up the issue of AVR setpoint inflexibility with their OEM.***

Further, a procedure has been prepared in accordance with regulation 39(6) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 (hereinafter referred to as the “IEGC, 2023”). Relevant extracts are quote below.

Quote

…..(6) NLDC, RLDCs and SLDCs shall assess the dynamic reactive power reserve available at various substations or generating stations under any credible contingency on a regular basis based on technical details and data provided by the users, as per the procedure specified by NLDC

Unquote

The final procedure prepared by NLDC after deliberation with stakeholders is available @ https://posoco.in/wp-content/uploads/2023/10/NLDC_Procedure-on-Assesment-of-Dynamic-Reactive-Reserve.pdf

Displays are to be created in control rooms to monitor the available dynamic reactive reserve. The format for monitoring such reserve as part of procedure is shown below:

Format-IA- for Generating stations / Condenser / IBR

Sl No	Generating Station	Installed Capacity	On Bar Active Capability	On Bar Current Generation	On bar reactive Capability at that bus in MVAr		Actual Reactive Injection (+)/ Absorption (-) in MVAr	Dynamic reactive power reserves in MVAr	
		MW	MW	MW	Qmax (+)	Qmin (-)		Qmax (+)	Qmin (-)
		A	B	C	D	E	F	G=D-F	H=E-F
1									
2									

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

SLDCs were requested to develop such displays at their end to effectively monitor the dynamic reactive power reserve in the system in compliance to IEGC 2023.

B.8 Sharing of ATC/TTC assessment and basecase with NRLDC

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 requirement.

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".

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 by SLDC in consultation with RLDC			26th Day of 'M-12' 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 Assessment of TTC/ATC of the intra- state system and sharing of updated network simulation models	SLDC	RLDC	8th Day of 'M- 1' month
	3(b)	Declaration of TTC/ATC of the intra- state system in consultation with RLDC	SLDC	RLDC	22nd Day of 'M-1' month

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 recently to involve further participation from SLDCs. Subsequently, workshop was organized on 9-11 December 2024 at NRLDC for all SLDCs under initiative by FOLD.

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 number of times basecases are not received from SLDC side.

B.8.1 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."

Accordingly, SLDCs are requested to send the PSSE cases for four scenarios for Oct'25 i.e. Afternoon Peak, Solar Peak, Evening Peak & Off-Peak hours as communicated from NRLDC side. It is requested that the basecases as well as ATC/TTC assessments may be shared with NRLDC as per CERC approved procedure. Further, the above exercise needs to be carried out regularly monthly.

It was discussed in last several OCC meetings & all states were requested to share basecase as well as ATC/TTC assessments for M-12 scenarios on monthly basis with NRLDC as per CERC approved procedure. Accordingly, it is requested to submit the basecase as well as ATC/TTC assessments.

B.8.2 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 study on the impact of new elements to be commissioned in the next six (6) months in (a) inter-regional system, (b) cross-border link and (c) intra-regional system on the inter-regional system.

In line with above, utilities are requested 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 monthly exercise on regular basis.

The agenda was discussed in last several OCC meetings & all utilities were requested to share list of elements/LGB data/interconnection study results etc as per the approved procedure on monthly basis.

B.8.3 TTC/ATC of state control areas for Feb 2025 (M-1)

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.

Based on simulation studies and discussions between SLDCs and NRLDC, ATC/TTC limits for NR states for the month of Feb'2025 are attached as Annexure-B.IV of agenda.

OCC has advised all states to timely declare TTC/ATC for prospective months and revise the figures as per requirement.

The agenda was also discussed in last several OCC meetings wherein all states agreed to send the data as well as PSSE basecases on time for all three (M-1, M-6, M-11) scenarios.

Still, it is being observed that response from some SLDCs is not as per desired levels. Latest status for Jan 2025 is shown below:

August 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1(September-24)		M-11(August-25)		M-6 (Feb-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	No	Shared only for 1 cardinal	No	No	No	No
Himachal	No	No	No	No	No	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	Yes	Yes	Yes	Yes
Rajasthan	No	No	No	No	No	No
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

September 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1(October-24)		M-12 (September-25)		M-6 (Mar-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	No	No	No	No
Haryana	No	No	No	No	No	Shared only for 1 cardinal
Himachal	Shared only for 1 cardinal	Shared only for 1 cardinal	Shared only for 1 cardinal	Shared only for 1 cardinal	No	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

October 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1(November-24)		M-12 (October-25)		M-6 (Apr-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	No	No	No	No
Haryana	Yes	Yes	No	No	No	No
Himachal	Yes	No	Yes	No	No	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	Shared only TTC value and		No	No	No	No

November 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1(December-24)		M-12 (November-25)		M-6 (May-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	No	No	No	No	No
Himachal	Yes	No	Yes	No	No	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

Submitted with one month delay

December 2024 Mails

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

January 2025 Mails

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

In 227 OCC meeting,

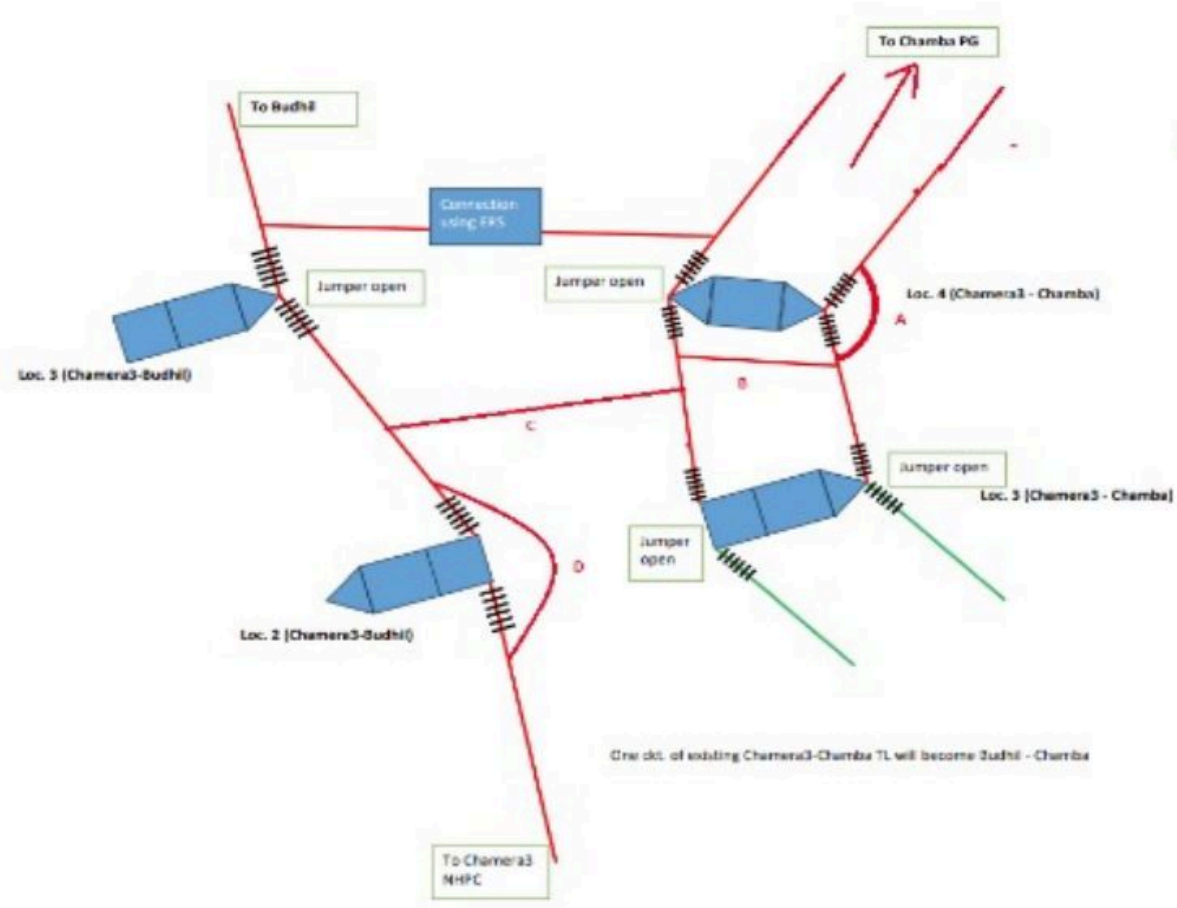
- ***NRLDC representative stated that the agenda was also discussed in last several OCC meeting wherein all states agreed to send the data as well as PSSE basecases on time for all three (M-1, M-6, M-11)***

scenarios. CGM NRLDC asked states to get help from NRLDC in case of any difficulty and emphasized on the need for regularity in sharing the data.

- ***NRLDC representative presented the status of basecase and data sharing by NR states for the last six months.***
- ***It was mentioned that UP, Punjab, Rajasthan and J&K are regularly sharing basecase as well ATC/TTC assessment with NRLDC. Haryana, Delhi, Uttarakhand and HP are sharing data, but on some occasions it is getting missed. It was requested that all SLDCs may timely share the same.***
- ***NRLDC representative requested Punjab SLDC to revise their ATC/TTC assessment in view of recent commissioning of 400/220kV ICTs at Patran and Nakodar.***
- ***Uttarakhand is sharing basecase for ATC, but not for 4 timepoints as being requested by NRLDC as per the new approved procedure.***
- ***All SLDCs agreed to share basecase as well as ATC/TTC assessment as per CERC approved procedure.***

B.9 Long outage of 220kV Chamera 3-Chamba D/C line

220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 and ckt-2 were out due to tower collapse on 09-07-2023. Tower collapse was reported at Loc no. 1 from Chamera-3 end and subsequently an interim arrangement was worked out in separate meeting between NRPC, PGCIL(NR2), Chamera3(NHPC), Budhil(Grenko), HPPTCL and NRLDC.



New circuits after installation of the alternative mechanism are in service as:
a) 220 kV Budhil-Chamba transmission line
b) 220 kV Chamera III-Chamba line

As the interim arrangement was done to facilitate safe evacuation of hydropower during the peak hydro season, it is requested that the works on collapsed tower may be expedited and the line may be restored to its normal configuration.

In 215 OCC meeting, NHPC representative stated that tower has been damaged and washed away, accordingly proposal is being worked out to directly string the conductor to gantry. Proposal is being taken up between NHPC and POWERGRID and it is expected that the line would be charged before monsoon season. Work from NHPC side is expected to be completed by Apr 2024.

During the 218 OCC meeting,

- POWERGRID representative stated that gantry tower design at NHPC end is not available. NHPC requested POWERGRID to develop the approximate tower design with help of some vendor.
- Cost estimate and work plan is under approval for both POWERGRID and NHPC. After approval of the work, the implementation would take 3-4 months

and accordingly it is expected that line would be restored to normal configuration by Nov'2024.

During 223 OCC meeting,

- POWERGRID representative informed that tower design and other related issue have been resolved and MOU has been proposed between POWERGRID and NHPC and sent to NHPC for formalities at their end. Based on signing of MOU by NHPC, restoration timeline can be provided.
- No update could be received from NHPC side.

Major concern is that NHPC (Chamera-III) generation is being evacuated through single line and generation evacuation reliability is reduced. NRLDC communication dated 07.01.2025 sent to NHPC & POWERGRID for expeditious restoration of line is attached as Annexure B.V of agenda.

During 227 OCC meeting,

- ***NHPC representative stated that MOU signing has been done and line is expected to be restored by 31 Mar 2024. NHPC will also change CT, CVT at their end by 31 Mar 2024.***
- ***POWERGRID representative stated that the work is expected to be completed by 31 Mar 2024.***
- ***NRLDC representative asked POWERGRID/NHPC to coordinate and complete the line restoration work as per their commitments made in the meeting.***

B.10 Multiple element tripping events in Northern region in the month of December 2024:

A total of 15 grid events occurred in the month of **December'24** of which **05** are of GD-1 category, **03** are of GI-2 Category and **07** 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.VI of agenda.

Maximum delayed clearance of fault observed in event of multiple elements tripping at 220/132kV CB Ganj(UP) and 220KV Tanakpur HEP on 29th December, 2024 (As per PMU at Bareilly(PG), Y-B phase to phase fault with delayed fault clearing time of 920ms is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **05** events out of **15** grid events occurred in the month. In 04 (no.) of grid event, there was no fault in the grid.

NRLDC representative presented the reporting status of DR/EL & tripping reports w.r.t. grid events occurred in December 2024. It was highlighted that detailed report of majority of the tripping events have not received. Utilities were requested to start

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

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

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

B.11 Frequent event of multiple elements tripping and loss of wind generation at 400/220kV Akal(RS) S/s:

Frequent events of multiple elements tripping at 400/220kV Akal S/s have been observed in recent past. On 09.01.2025, all the 400kV & 220kV elements at Akal S/s tripped during B-N fault on 220kV Bus and again on 12.01.2025, all the 400kV & 220kV elements at Akal S/s tripped during R-N fault on 400kV Akal-Barmer Line-1. Significant quantum of RE generation pooled at Akal S/s also affected during the event i.e., ~435 MW on 09.01.2025 & ~210 MW in 12.01.2025.

NLRDC representative highlighted that blackout of complete station during a single phase to earth fault shows that protection systems are not in healthy condition at 400/220kV Akal S/s. Similar grid events of multiple elements tripping at Akal S/s and loss of wind generation occurred in past on 13.09.2024 & 08.06.2024. During analysis of grid event on 08.06.2024, it was reported by Rajasthan that bus bar protection is not in service. Rajasthan was requested to expedite the restoration of bus bar protection at Akal S/s.

NRLDC stated that the issue of bus bar protection at Akal S/s is being continuously highlighted in OCC & PSC forum. Issues are in discussion at PSC forum since 51st PSC meeting held on 12.07.2024, however, there is no further progress. Recent grid event on 12.01.2025 due to breaker stuck of 400kV Akal-Barmer Line-1 and improper protection coordination, highlighted further shortcomings in protection system. SCADA data was also not healthy at Akal S/s during both the incidents.

Further, it was also highlighted that DR/EL & tripping reports of grid event occurred on 09.01.2025 not received yet. Delay in submission of DR/EL and analysis of tripping events leads to further delay in corrective actions.

Rajasthan representative stated that due to faulty one bay unit, restoration of bus bar protection is getting delayed. Regarding issue of SCADA data, it was informed that SAS software is due for upgradation, it is in process and SCADA system will get healthy after SAS upgradation.

NRLDC representative requested RVPNL for expeditious restoration of bus bar protection at 220kV level at Akal S/s. Further, other issues related to protection system, their coordination and healthiness of equipment's also need inspected and rectified at the earliest. SLDC-RS / RVPNL were also requested to ensure timely submission of DR/EL & grid event analysis report in compliance with IEGC clause 37.2(c), 37.2(e) and 15.3 of CEA grid standard.

Rajasthan agreed to share the details analysis of aforementioned grid events during 56th PSC meeting on 20.01.2025. Further, expeditious remedial actions will be taken to restore the bus bar protection at Akal S/s.

B.12 Status of submission of DR/EL and tripping report of utilities for the month of December'24.

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

NRLDC representative stated that on the basis of status of December month it is evident that reporting status of some of the constituents i.e., SLDC-HP, SLDC-J&K, SLDC-PS, SLDC-RS, SLDC-HR and RE stations are not satisfactory and needs improvement.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the tripping shall be **uploaded on Web Based Tripping Monitoring System (TMS) "https://postda.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.

NRLDC representative requested SLDC-HP, SLDC-J&K, SLDC-PS, SLDC-RS, SLDC-HR and RE stations to improve the status of submission of DR/EL & tripping reports. Further, it was also suggested to organize training programs for site engineers regarding DR/EL extraction and their uploading on TMS.

OCC forum emphasized the importance of DR/EL & tripping report data for analysis of the tripping. In addition, these data are also the base for the availability verification. The unavailability of these details delays the availability verification process also. Hence, timely submission of DR/EL & tripping report is very much necessary. Members were requested to comply

with IEGC 37.2(c) and submit the details in time. Members agreed to take necessary follow-up actions to improve the reporting status.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the tripping shall be uploaded on Web Based Tripping Monitoring System "http://103.7.128.184/Account/Login.aspx" within 24 hours of the events as per IEGC clause 37.2.c and clause 15.3 of CEA grid standard.

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

As per Indian Electricity Grid Code (IEGC) clause 34.3

" *Detailed procedures for restoration post partial and total blackout of each user system within a region shall be prepared by the concerned user in coordination with the concerned SLDC, RLDC or NLDC, as the case may be. The concerned user shall review the procedure every year and update the same. The user shall carry out a mock trial run of the procedure for different sub-systems including black-start of generating units along with grid forming capability of inverter based generating station and VSC based HVDC black-start support at least once a year under intimation to the concerned SLDC and RLDC. Diesel generator sets and other standalone auxiliary supply source to be used for black start shall be tested on a weekly basis and the user shall send the test reports to the concerned SLDC, RLDC and NLDC on a quarterly basis*".

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

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

Therefore, regional entity generating stations and SLDCs were requested to share the annual schedule plan for conducting dead bus charging / mock black start exercise of generating stations / sub-systems during 2024-25 in the format attached as Annexure-B.VIII of agenda. Constituents were also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis. In this regard, communication has already been sent to constituents through NRLDC letter dated 24.04.2024.

NRLDC representative informed that details received from AD Hydro HEP, Tehri HEP, Karcham Wangtoo HEP, Koteshwar HEP, SJVN, NHPC, Budhil, Auraiya GPS, Singoli Bhatwari HEP, Koldam HEP, Dadri GPS, Delhi, Punjab and Uttarakhand.

Mock black start exercises conducted during 2024-25 till date area as follows:

a) *GTPS (IPGCL) on 10.04.2024 (black start, Island operation and synchronisation)*
b) *Ranjit Sagar Dam(RSD) HEP on 07.05.2024 (black start, Island operation and synchronisation)*
c) *Kishenganga HEP on 09.11.2024 (black start & dead bus charging)*
d) *Tehri HEP on 13.11.2024 (black start, dead bus charging and synchronisation)*
e) *Koteshwar HEP on 27.11.2024 (black start, dead bus charging and synchronisation)*
f) *N.Jhakri & Rampur HEP on 08.12.2024 (black start, Island operation and synchronisation)*
g) *Chamera-I HEP on 12.12.2024 (black start & dead bus charging)*
h) *Dhauliganga HEP on 13.12.2024 (black start & dead bus charging)*
i) *Bairasiul HEP on 14.12.2024 (black start & dead bus charging)*
j) *Tanakpur HEP on 19.12.2024 (black start & dead bus charging)*

NRLDC representative requested ISGS and SLDCs to take following actions were:

- *To share the report of testing of DG sets.*
- *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.*

UP representative informed that they will conduct the mock black start exercise of Obra & Rihand Hydro in February month.

NRLDC representative requested Rajasthan to coordinate with Ramgarh GPS for mock black start exercise. Ramgarh GPS is only gas/hydro generating station nearest to the RE pocket of Rajasthan. Therefore, healthiness of its black start facility is important. Rajasthan agreed to follow up with the Ramgarh GPS for mock black start exercise. Further, it was also requested to follow-up for the mock black start exercise

of hydro stations in Rajasthan control area i.e. RPS HEP, JS HEP & Mahi Sagar HEP and share the schedule plan.

OCC forum requested all the concerned generating stations and states to conduct and share the schedule of mock black start of generating stations of their control area.

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

As per IEGC clause 16.2

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

As per IEGC clause 16.3

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

There are 53 numbers of System Protection Scheme (SPS) approved in Northern Region out of which 05 numbers of SPS are under implementation stage. These SPS are implemented at major generation complexes, important evacuating transmission lines and ICTs which are N-1 non-complaint. Details of SPS in Northern Region is available on NRLDC website at link https://nrldc.in/download/nr-sps-2024/?wpdmdl=13255&lang=en .

SPS is designed to detect abnormal system conditions and take predetermined, corrective action to preserve system integrity and provide acceptable system performance. Therefore, correct operation of SPS as per designed logic is important to serve its purpose. To ensure this, mock testing of SPS needs to be conducted at a regular period. Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year.

In view of the above, concerned constituents / utility were requested to share the tentative schedule plan for conducting mock testing of SPS in their respective control area during 2024-25 in format attached as Annexure-B.IX of agenda. In this regard, communication has already been sent to constituents through NRLDC letter dated 01.05.2024. Update in this regard received only from UP and Uttarakhand.

Details only received from Uttarakhand, Rajasthan & UP.

NRLDC representative informed that UP & Rajasthan has conducted ~70-80% of SPS schemes in their control area. POWERGRID, Punjab and other members are also requested to plan and conduct the SPS testing in their control area.
POWERGRID representative stated that they are following up on this subject and will share the tentative schedule plan soon.

NRLDC representative asked UP to share the present status of SPS of 400kV Gr. Noida, Unnao & Sultanpur. In status report submitted by UP, it was mentioned that SPS at these stations are unhealthy. Necessary remedial actions may be taken to ensure the healthiness of SPS system.

UP representative informed that updated status yet to be received, they will follow up and share the updated status.

OCC forum requested members to conduct the mock testing of SPS in their respective control area, share the tentative schedule plan of mock testing of SPS and also share the report of the same.

B.15 Revision of document for Reactive Power Management of Northern Region:

NRLDC has been issuing 'Reactive Power document of Northern Region' on annual basis. NRLDC representative stated that Reactive Power Management document for Northern region has been revised and same has been shared with all the constituents.

Document is also available on NRLDC website in document section. Weblink of document section is https://newnr.nrldc.in/documents/Documents

The document is password protected and password was already informed to all the NR constituents through NRLDC letter dated 31st Dec 2024. Constituents may refer this document for Reactive Power Management for grid operation.

B.16 Revision of document for System Restoration Procedure Document of Northern Region:

NRLDC has been issuing '**System Restoration Procedure Document of Northern Region**' on annual basis. The document was last revised on 31st Jan 2023 & updated document link is as below:

https://nrldc.in/download/nr-sps-2024/?wpdmdl=13255&lang=en

The document is password protected and password was already informed to all the NR constituents through letter dated 08th Jan 2025 for review and to share updated details w.r.t. their respective control area.

*In view of new addition/modification of transmission & generation element in NR grid since Jan'24, the document is being reviewed for update. NRLDC requested all the c**onstituents to provide feedback, suggestion and updated information of their respective control area by 15th Jan 2025.***

Status of action taken on decision of 226th OCC meeting of NRPC

S.N.	Agenda	Decision of 226th OCC meeting of NRPC	Status of action taken
1	A.17. Review of existing combined islanding scheme of RAPP-A and RAPP-B (Agenda by RAPS)	Forum asked NPCIL to hold a separate meeting with RVPN to discuss the matter and subsequently present a detailed proposal to the OCC forum.	There has been no meeting between NPCIL and RVPN till now. CGM(SO) mentioned that there is committee to comprehensively review the protection system, load management, islanding scheme, SPS requirement, Auto Transfer Scheme at RAPS and other related aspects in the RAPS, KTPS complex. OCC forum asked the committee to take up the matter with NPCIL and RVPN the proposal of review of existing combined islanding scheme of RAPP-A and RAPP-B.
2	A.24. Implementation of AUFLS scheme in accordance with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) (Agenda by NRPC Sectt.)	Forum asked SLDC to identify and communicate feeder-wise, Stage-wise load relief to RPC/RLDC.	There is separate agenda A.10 on the said matter.

Follow up issues from previous OCC meetings

Annexure-A.I

<table>
<tr><td>1</td><td>Down Stream network by State utilities from ISTS Station</td><td>Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.</td><td>List of downstream networks is enclosed in Annexure-A.I.I.</td></tr>
<tr><td>2</td><td>Progress of installing new capacitors and repair of defective capacitors</td><td>Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Sep-2019
◎ DELHI — Nov-2024
◎ HARYANA — Oct-2024
◎ HP — Sep-2024
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Dec-2024
◎ RAJASTHAN — Dec-2024
◎ UP — Dec-2024
◎ UTTARAKHAND — Dec-2024
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Healthiness of defence mechanism: Self-certification</td><td>Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional”.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Not Available
◎ DELHI — Dec-2024
◎ HARYANA — Dec-2024
◎ HP — Oct-2024
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Sep-2024
◎ RAJASTHAN — Sep-2024
◎ UP — Dec-2024
◎ UTTARAKHAND — Dec-2024
◎ BBMB — Jun-2024
All States/UTs are requested to update status for healthiness of UFRs on monthly basis for islanding schemes and on quartely basis for the rest.</td></tr>
<tr><td>In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.</td><td>Status:
◎ CHANDIGARH — Not Available
◎ DELHI — Increased
◎ HARYANA — Increased
◎ HP — Increased
◎ J&K and LADAKH — Increased
◎ PUNJAB — Increased
◎ RAJASTHAN — Increased
◎ UP — Increased</td></tr>
</table>

			◎	UTTARAKHAND	Increased
			◎	BBMB	Increased
4	Status of Automatic Demand Management System in NR states/UT's	The status of ADMS implementation in NR, which is mandated in clause 5.4.2 (d) of IEGC by SLDC/SEB/DISCOMs is presented in the following table:	The status of ADMS implementation in NR is enclosed in **Annexure-A.I.II.**		
			◎	DELHI	Scheme Implemented but operated in manual mode.
			◎	HARYANA	Scheme not implemented
			◎	HP	Scheme not implemented
			◎	PUNJAB	Scheme not implemented
			◎	RAJASTHAN	Under implementation.
			◎	UP	Scheme implemented by NPCIL only
			◎	UTTARAKHAND	Scheme not implemented
5	Status of availability of ERS towers in NR	As per the decesion of 68th NRPC and 211th OCC meeting, ERS availability monitoring is being taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.	As per the information received from different utilities in Northern region, updated status of availability of ERS towers in Northern Region attached as **Annexure-A.I.III.**		
6	Submission of breakup of Energy Consumption by the states	All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under:	Status of the information submission (month) from states / utilities is as under:		
				State / UT	Upto
			◎	CHANDIGARH	Not Submitted
			◎	DELHI	Nov-24
			◎	HARYANA	Nov-24
			◎	HP	Nov-24
			◎	J&K and LADAKH	JPDCL- Mar'24 KPDCL- Not Submitted
			◎	PUNJAB	Oct-24
			◎	RAJASTHAN	Sep-24
			◎	UP	Sep-24
			◎	UTTARAKHAND	Aug-24
			Chandigarh is requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format		
7	Status of FGD installation vis-à-vis installation plan at identified TPS	List of FGDs to be installed in NR was finalized in the 36th TCC (special) meeting dt. 14.09.2017. All SLDCs were regularly requested since 144th OCC meeting to take up with the concerned generators where FGD was required to be installed. Further, progress of FGD installation work on monthly basis is monitored in OCC	Status of the information submission (month) from states / utilities is as under:		
			◎	HARYANA	Jun-2024
			◎	PUNJAB	Jun-2024
			◎	RAJASTHAN	Nov-2024
			◎	UP	Jan-2024
			◎	NTPC	Feb-2023
			FGD status details are enclosed as **Annexure-A.I.IV.**		

Category→	Consumption by Domestic Loads	Consumption by Commercial Loads	Consumption by Agricultural Loads	Consumption by Industrial Loads	Traction supply load	Miscellaneous / Others
<Month>						

		basis is monitored in OCC meetings.	All States/utilities are requested to update status of FGD installation progress on monthly basis.
8	Information about variable charges of all generating units in the Region	The variable charges detail for different generating units are available on the MERIT Order Portal.	All states/UTs are requested to submit daily data on MERIT Order Portal timely.

9	Reactive compensation at 220 kV/ 400 kV level at 7 substations			
	State / Utility	Substation	Reactor	Status
i	DTL	Peeragarhi	1x50 MVAr at 220 kV	1x50 MVAr Reactor at Peeragarhi has been commissioned on dated 18.09.2023
ii	DTL	Harsh Vihar	2x50 MVAr at 220 kV	2x50 MVAR Reactor at Harsh Vihar has been commissioned on dated 31th March 2023.
iii	DTL	Mundka	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
iv	DTL	Bamnauli	2x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
v	DTL	Indraprastha	2x25 MVAr at 220 kV	Bay work completed on 07.11.2023. Reactor part tender is dropped and at present same is under revision.
vi	DTL	Electric Lane	1x50 MVAr at 220 kV	Under Re-tendering due to Single Bid
vii	PTCUL	Kashipur	1x125 MVAR at 400 kV	Tender for Procurement of 125 MVAR Reactor has been floated on 04.11.2024 and tender opening date is 30.12.2024.

Annexure-A-I.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.	Mar'25	02 No. of bays shall be utilized for LILO-II of 220kV Jatwal-Bishnah Transmission Line, the work of which is delayed due to persisting RoW issues. expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 220th 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	Mar'25	Under construction.Updated in 222nd OCC by HVPNL
5	400/220 kV, 2x315 MVA Dehradun	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• Network to be planned for 4 bays	-	PTCUL to update the status.
6	Shahjahanpur, 2x315 MVA 400/220 kV	Commissioned: 6 Approved/Under Implementation:1	Utilized: 7	• 220 kV D/C Shahajahanpur (PG) - Gola line	Commissioned	Energization date: 26.10.2023 updated by UPPTCL in 215th OCC
				• LILO of Sitapur – Shahjahanpur 220 kV SC line at Shahjahanpur (PG)	Commissioned	Energization date: 25.02.2022 updated by UPPTCL in 196th OCC
7	Hamirpur 400/220 kV Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• 220 kV Hamirpur-Dehan D/c line	Commissioned	HPPTCL has commissioned the Planned 220kV Dehan-Hamirpur TL utilizing 2 No. 220kV Bays.Commisioned date: 09.06.2022. Updated in 198th OCC by HPPTCL
				• Network to be planned for 4 bays	-	HPPTCL to update the status.
8	Sikar 400/220kV, 1x 315 MVA S/s	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• LILO of 220 kV Sikar (220 kV GSS)-Dhod S/c line at Sikar (PG)	Commissioned	LILO of 220 kV S/C Sikar-Dhod line at 400 kV GSS PGCIL, Sikar has been charged on dt. 31.03.2022
				• Network to be planned for 2 bays.	-	Against the 3rd ICT at 400 kV GSS Sikar, only 2 bays were constructed and same has been utilized by RVPN by constructing LILO of 220 kV S/C Sikar – Dhod line as updated by RVPNL in 195th OCC
9	Bhiwani 400/220kV S/s	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	Commissioned	Updated in 202nd OCC by HVPNL
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	Dec'24	Issue related to ROW as intimated in 218th OCC by HVPNL. **Status:** Work was stalled since 29.07.2021 due to ROW issues and farmers agitation and further restarted on 9.10.2023 with the help of district administration. Now, work was again stalled since30.11.2023 due to severe ROW issues. Expected to be completed by 31.12.2024. Foundation 209/212. Erection 193/212. Stinging 37.8/50.3 km
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Oct'25	Line work awarded to M/s R S Infra Projects Pvt. Ltd. Noida, Uttar Pardesh on dated 09.03.2024. Work of route plan and route alignment has been started by the firm as intimated in 218th OCC by HVPNL.
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0	• LILO of both circuits of 220 kV Jind HVPNL to PTPS D/C line at 400 kV substation PGCIL Khatkar (Jind) with 0.5 sq inch ACSR conductor	Dec'24	Work in progress. Updated in 220th OCC by HVPNL.
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

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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 - Sec-56 Gurugram.	Not awarded yet	Initial proposal of LILO of 220kV Pali-Sector 56 Line and Pali-Sector 52 line was descoped due to forest issue. Proposal to evacuate power from 220kV D/C Pali-Sector 56 line to Sector 56 and 52 with bunching of lines is under consideration. Updated in 218th OCC by HVPNL
				• S/C line Kadarpur - Sec-52 Gurugram	Not awarded yet	Initial proposal of LILO of 220kV Pali-Sector 56 Line and Pali-Sector 52 line was descoped due to forest issue. Proposl to evacuate power from 220kV D/C Pali-Sector 56 line to Sector 56 and 52 with bunching of lines is under consideration. Updated in 218th OCC by HVPNL
				• S/C line Kadarpur - Pali	Not awarded yet	Initial proposal of LILO of 220kV Pali-Sector 56 Line and Pali-Sector 52 line was descoped due to forest issue. Proposl to evacuate power from 220kV D/C Pali-Sector 56 line to Sector 56 and 52 with bunching of lines is under consideration. Updated in 218th OCC by HVPNL
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	Dec'24	Updated in 216th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	The matter is subjudice in Hon'ble Punjab & Haryana High court, Chandigarh Updated in 205th OCC by HVPNL. **Status:-** Earlier 02 nos 220 kV line bays were to be utilized for the 220 kV GIS S/Stn. Sec-77, Gurugram but due to denotification of land of the 220 kV GIS S/Stn. Sec-77 the said substation is now going to be dismantled and a new substation is proposed at Sec-75A, Gurugram. Now, these 02 no. 220 kV line bays may be utilized at 220 kV GIS S/Stn Sec-75A, Gurugram.
15	400/220kV Prithla Sub-station	Commissioned: 8 Aprroved: 2 Total: 10	Utilized: 4 Unutilized: 4 Under Implementation:2	• 220kV D/C line from Prithla to Harfali with LILO of one circuit at 220kV Meerpur Kurali	Mar'25	Contract awarded on 08.08.23 to M/s Skipper with completion in March 25.Updated in 218th OCC by HVPNL
				• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	Commissioned	Energization date: 31.12.2021. Updated in 198th OCC by HVPNL
				• 220kV D/C for Sector78, Faridabad	31.01.2025	Issue related to ROW and Pending crossing approval from Northern Railways and DFCCIL. as intimated in 223rd OCC by HVPNL.
				• Prithla - Sector 89 Faridabad 220kV D/c line	Jul'25	Work awarded to M/s Man Structurals Pvt Ltd. JV M/s Aquarian Enterprises on 09.01.2024. Contractual date: 06.05.2025 and Tentative date of completion :06.05.2025 Route has been approved and further work is in progress.Updated in 218th OCC by HVPNL
16	400/220kV Sonepat Sub-station	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 2 Unutilized: 4 Under Implementation:2	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat	31.12.2024	Updated in 224th OCC by HVPNL. **Status:** The stringing work between TL No. 19 & 20, TL No. 22 & 23 and TL No. 22 & 24 is pending for want of necessary consent from the forest department. The case has already been uploaded on Parivesh portal and is currently pending at the O/o AIGF, Forest Dept. Panchkula.
				• 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	08.03.2025	Updated in 212th OCC by HVPNL. **Status:** Work order has been issued to M/s R.S Infra on dated 09.08.2023 by O/o CE/PD&C, Panchkula for construction of line. Both bays are under construction and erection of electrical equipment is under progress. Tetative date of completion of both bays at PGCIL end is end of July 2024.
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	• Network to be planned for 2 bays	-	LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar being planned. Route plan and estimate of work sanctioned, DNIT has been sent to float tender as updated by PSTCL in 227th OCC

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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	Mar'25	Updated in 222nd OCC by HVPNL
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	31.08.2024	Issue in connectivity agreement with CTU. CTU asked PSTCL to approach CEA and thereafter CEA may plan a meeting with PSTCL and CTU to resolve the issue. Updated in 225th 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)	31.08.2024	Issue in connectivity agreement with CTU. CTU asked PSTCL to approach CEA and thereafter CEA may plan a meeting with PSTCL and CTU to resolve the issue. Updated in 225th 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	Mar'25	Updated in 220th OCC by HVPNL. **Status:** NIT has been floated vide NIT No. EPC-D-96 dated 15.10.23 to be opened on 22.12.23. • Now, the tender has been dropped and likely to be refloated by 31.07.2024.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	Mar'25	Updated in 220th OCC by HVPNL. **Status:** • Revised BOQ forwarded from Design wing to contract wing. • Tender has floated vide NIT No. EPC-D-100 dated 04.01.2024 with tender opening date of 26.02.2024. • Tender has been opened on 26.03.24 and 03 nos. bids has been received. The work is likely to be awarded by the 31.07.2024.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	08.03.2025	Updated in 220th OCC by HVPNL. **Status:** Contract awarded on 09.08.23 to M/s R S Infra Noida. Work has been started.
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.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	-	Status:- 2nos bays are being utilised for 220 kV D/C Panchgaon (PGCIL)-Panchgaon Ckt-I & 220 kV D/C Panchagon (PGCIL)-Panchgaon Ckt-II, charged on dated 05.09.2022 & 20.10.2022 respectively. The 2nos bays may be utilised by HVPNL in future.
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	• Network to be planned for 2 bays	May'25	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. The civil work not started , the civil tender is in process as updated by PSTCL in 220th OCC meeting

Status of ADMS implementation in NR:

Sl. No.	State / UT	Status	Remarks
1	DELHI	Scheme Implemented but operated in manual mode.	In 225th OCC meeting NRPC representative apprised forum that revised Standard Operating Procedure (SOP) of Automatic Demand ManagementScheme (ADMS) by the DISCOMs in NCT of Delhi has been approved in 51st TCC and 76th NRPC meeting. In 52nd TCC and 77th NRPC DTL intimated that tentative timeline for implemenation is 28th February 2025.DTL intimated that TPPDL has informed that they have engaged SCADA OEM for the implementation of ADMS. However, OEM has confirmed that incorporation of ADMS logic into the current SCADA system is not feasible and it would require an upgrade or refresh of the system, necessitating additional expenditure for which DERC has been approached. The complete implementation cycle is expected to be within 2 years. However, in the meantime considering the criticality, their in-house team is working to develop a trigger notification/alarm system for manual operation of breaker triggering from the control room and thereafter exploring the possibility of automatically triggering the breaker using the trigger notification. TPPDL has stated taht they expect to complete it by August 2025, if materialized. BRPL and BYPL have informed that their existing SCADA system is obsolete and it is in the up-gradation phase by OEM. After the up-gradation of SCADA system, the ADMS is expected to be implemented in BRPL & BYPL by Oct 25.
2	HARYANA	Scheme not implemented	Haryana SLDC intimated that as per Joint Roadmap of implementation of ADMS in Haryana supplied to NRPC vide memo dated 17.10.2023 (Annexure-II), the implementation plan was proposed to be carried out in two parts, as mentioned below: PART-I: Control with Transmission Utility PART-II: Control with Distribution Utility It is pertinent to mention that as part of upcoming SCADA-EMS system i.e. upgradation of SCADA-EMS system, a feature in the name of LSS (Load Shedding Software)/ ADMS is part of the Technical Specification of project to be delivered. Therefore, the functionalities of ADMS application will be covered under 'Part-I: Control with Transmission Utility' will already be covered using the RTUs available at select substations along with the ADMS software being delivered by M/s GE under SCADA upgradation project. Hence, there is no need to acquire a separate ADMS application & associated hardware for data centre for implementation of PART-I. Further for Part -II a committee has been constituted for further finalization of the ADMS module with control with Discoms is under discussions for preparation of DPR.
3	HP	Scheme not implemented	HP SLDC imentioned that HPSEB had intimated that initially 142 Nos. of feeders were identified for operation under ADMS functionality but most of these feeders were from same sub-station. Therefore, now they have increased the no. of sub-station and identified the non-critical feeders. Load relief to be given through these feeders is under finalization. The revised feeder list to be shared by HPSEBL with the SLDC within one month.

4	PUNJAB	Scheme not implemented	i. A committee comprising of following officers of PSPCL & PSTCL has been constituted to finalize the logic regarding implementation of Automatic Demand Management System in Punjab Control Area. A meeting in this regard was held on dated 26-02-2024 at PSLDC Complex, Patiala. The committee deliberated various loading scenarios and proposed the following logic for the management of demand: 1. If the frequency sustains below 49.90 Hz for duration of 3 minutes, the Automatic Demand Management System will initiate a 50% reduction in the Over Drawl. 2. In case the frequency falls further below 49.85 Hz, the Over Drawl will be reduced to zero. 3. The software at the SLDC end for ADMS shall be available with ULDC phase –III SCADA system which is under implementation. ii. In 222nd OCC, MS NRPC asked Punjab to co-ordiante with Powergrid for integration of their propsoed logic with the ULDC phase-III SCADA system for timely implementation.
5	RAJASTHAN	Under implementation	In 227th OCC meeting, RVPN informed that 208 nos. of circuit breakers have been mapped to ADMS, all 208 circuit breakers tested upto yard individually. Total 650CBs are to be mapped in phased manner.
6	UP	Scheme implemented by NPCIL only	i. A meeting regarding ADMS was held on 15.01.2023 with the UPPCL under the chairmanship of MD UPPTCL ii. A committee formed for identification of load at 33 kV level under the chairmanship of Director (Distribution), UPPCL. iii. Another committee under the chairmanship of Director UPSLDC shall identify the technical and operational requirement for ADMS implementation iv. The software at the SLDC end for ADMS shall be available with ULDC phase –III SCADA system which is under implementation and likely to be commissioned by March 2025. v. In order to operate identified 33 kV feeders under ADMS scheme, integration of 132 kV substations with SCADA system is under implementation in the Reliable Communication Scheme and expected date of completion of the scheme is October 2024. vi. MS, NRPC apprised forum that a letter has been written to Director, SLDC for co-odinatng with Director (Distribution), UPPCL for expediting the finalization of feeder list at 33kV for ADMS implementation.
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.

Annexure-A.I.III.

Status of availability of ERS towers in NR

Sl. No.	Transmission Utility	Voltage Level (220kV/400kV/765kV/ 500 kV HVDC etc.)	Length of the transmission lines owned by the Utility (Ckt. Kms.)	Number of ERS Sets (towers) available (Nos.)	ERS Set (towers) required as per the Govt. norms.	Location	Remarks
1	PTCUL	400kV	418.394	NIL	1		Tender has been scraped due to single tender.
		220kV	1045.135	NIL	1		
2	Powergrid NR-1	220 KV	1842.88	NIL	1		
		400 KV	11074.26	12 Towers	3	All 400kV ERS at Ballabhgarh	make-Lindsey
		765 KV	4721.85	15 Towers	1	All 765kV ERS at Meerut	Make-SBB
		500 KV HVDC	653.88	NIL	1		
		800 KV HVDC	416.58	NIL	1		
3	Powergrid NR-2	66 KV	37.56	Nil	1		ERS tower available for 400KV rating can be used in place of lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can be erected will reduce due to increase in Tower Hight.
		132 KV	262.7	Nil	1		
		220 KV	2152	Nil	1		
		400 KV	8097.3	02 Set (32 Towers)	2	Kishenpur & Jalandhar	
		765 KV	337.5	Nil	1		
4	Powergrid NR-3	800KV HVDC	2205	NIL	1		400KV ERS will be also be used in other voltage level lines
		500KV HVDC	2566	NIL	1		
		765KV	4396	NIL	1		
		400KV	12254	26 Towers	3	Kanpur	
		220KV	1541	NIL	1		
		132KV	207	NIL	1		
5	PARBATI KOLDAM TRANSMISSION COMPANY LIMITED	400kV	457	NIL	1		Procurement under process.
6	PATRAN TRANSMISSION COMPANY LTD	400kV	0.4	NIL	1	It is kept in Bhopal and on need basis is moved across region	Not available, will tie up based on the requirements in future. However the parent company IndiGrid owns one set of ERS for all five regions.
7	NRSS-XXIX TRANSMISSION LTD	400kV	853	NIL	1		
8	GURGAON PALWAL TRANSMISSION LTD	400kV	272	NIL	1		
9	RAPP Transmission Company Limited.	400kV	402	NIL	1		
10	NRSS XXXVI Transmission Limited	400kV	301.924	NIL	1		Element I - Operational comprising of 3 kms. Element II - Work Under Progress comprising of 221.924 kms. Element II - Work Under Progress comprising of 77 kms.
11	HPPTCL	220 kV	659	NIL	1		
		400 kV	75.7	NIL	1		
12	RVPN	132 kV	18969.958	1	4	01 No. ERS available at 220 kV GSS Heerapura, Jaipur	ERS proposed : 01 Set at 400 kV GSS, Jodhpur. 01 set at 400 kV GSS Bikaner
		220 kV	16227.979		3		
		400 kV	6899.386		2		
		765 kV	425.498		1		
13	DTL	220kV	915.498	NIL	1	400kV Bamnauli Sub station	ERS tower available for 400KV rating can also be used for lower voltage lines as well
		400kV	249.19	02 Sets (32 towers)	1		
14	JKPTCL						JKPTCL, Jammu: being procured JKPTCL, Kashmir:10 tower procured (out of which 3 on loan to JKPTCL, Jammu)

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
15	HVPN						HVPN has apprised that purchase order for procurement of 2 sets of Emergency Restoration System (ERS) in HVPNL has been issued to M/s Jost's Engineering Company Ltd., Mumbai
16	PSTCL	400 kV	1666.43	2	2		
		220 kV	7921.991				
17	UPPTCL 1- Meerut	132KV	27508.321	24 Nos(15 Running+9 Angle)		400 kV S/s Gr. Noida	ERS will be also be used in other voltage level lines.
		220KV	14973.453				
		400KV	6922.828				
	UPPTCL 2-Prayagraj	765KV	839.37	24 Towers		220 kv S/s phulpur	ERS will also be used in other voltage lines.
		400KV	1804.257				
		220KV	2578.932				
		132KV	4714.768				
18	POWERLINK						
19	POWERGRID HIMACHAL TRANSMISSION LTD						
20	Powergrid Ajmer Phagi Transmission Limited						
21	Powergrid Fatehgarh Transmission Limited						
22	POWERGRID KALA AMB TRANSMISSION LTD						
23	Powergrid Unchahar Transmission Ltd						
24	Powergrid Khetri Transmission Limited						
25	POWERGRID VARANASI TRANSMISSION SYSTEM LTD						
26	ADANI TRANSMISSION INDIA LIMITED		2090	1 Set (12 towers)	1 set (12 towers)	Sami (Gujarat)	Make-Lindsey ERS set available for 400KV & 500KV rating can be used for lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can reduce due to increase in Tower Height & nos of conductors.
27	BIKANER KHETRI TRANSMISSION LIMITED		482				
28	FATEHGARH BHADLA TRANSMISSION LIMITED	500 kV HVDC 400 kV HVAC	291				
29	NRSS-XXXI(B) TRANSMISSION LTD	400 kV	577.74	Not Available	Not Available		In the advance stage of process of finalising arrangement for providing ERS on need basis with other transmission utility (M/s INDIGRID).
30	ARAVALI POWER COMPANY PVT LTD	765 kv HVAC					

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

FGD Status

Updated status of FGD related data submission

NTPC (27.02.2023)
MEJA Stage-I
RIHAND STPS
SINGRAULI STPS
TANDA Stage-I
TANDA Stage-II
UNCHAHAR TPS
UPRVUNL (10.01.2024)
ANPARA TPS
HARDUAGANJ TPS
OBRA TPS
PARICHHA TPS

PSPCL (18.06.2024)
GGSSTP, Ropar
GH TPS (LEH.MOH.)
RRVUNL (20.11.2024)
CHHABRA SCPP
CHHABRA TPP
KALISINDH TPS
KOTA TPS
SURATGARH SCTPS
SURATGARH TPS

Updated status of FGD related data submission

Lalitpur Power Gen. Co. Ltd. (10.01.2024)
Lalitpur TPS
Lanco Anpara Power Ltd. (01.01.2024)
ANPARA-C TPS

HGPCL (22.11.2024)
PANIPAT TPS
RAJIV GANDHI TPS
YAMUNA NAGAR TPS

Adani Power Ltd. (18.02.2022)
KAWAI TPS

Rosa Power Supply Company (01.01.2024)
Rosa TPP Phase-I
Prayagraj Power Generation Company Ltd. (05.01.2024)
Prayagraj TPP
APCPL (01.05.2024)
INDIRA GANDHI STPP

Pending submissions

GVK Power Ltd.
GOINDWAL SAHIB

NTPC
DADRI (NCTPP)
Talwandi Sabo Power Ltd.
TALWANDI SABO TPP
L&T Power Development Ltd.
Nabha TPP (Rajpura TPP)

Target Dates for FGD Commissioning (Utility-wise)

Adani Power Ltd.	KAWAI TPS U#1 (Target: 31-12-2024), KAWAI TPS U#2 (Target: 31-12-2024)
APCPL	INDIRA GANDHI STPP U#2 (Target: 30-09-2023), INDIRA GANDHI STPP U#3 (Target: 30-06-2023)
GVK Power Ltd.	GOINDWAL SAHIB U#1 (Target: 30-04-2020), GOINDWAL SAHIB U#2 (Target: 29-02-2020)
HGPCL	PANIPAT TPS U#6 (Target: 31-12-2025), PANIPAT TPS U#7 (Target: 31-12-2025), PANIPAT TPS U#8 (Target: 31-12-2025), RAJIV GANDHI TPS U#1 (Target: 31-08-2027), RAJIV GANDHI TPS U#2 (Target: 31-08-2027), YAMUNA NAGAR TPS U#1 (Target: 31-08-2027), YAMUNA NAGAR TPS U#2 (Target: 31-08-2027)

NTPC	DADRI (NCTPP) U#1 (Target: 31-12-2020), DADRI (NCTPP) U#2 (Target: 31-10-2020), DADRI (NCTPP) U#3 (Target: 31-08-2020), DADRI (NCTPP) U#4 (Target: 30-06-2020), DADRI (NCTPP) U#5 (Target: 30-06-2022), DADRI (NCTPP) U#6 (Target: 31-03-2023), RIHAND STPS U#1 (Target: 31-10-2025), RIHAND STPS U#2 (Target: 30-06-2026), RIHAND STPS U#3 (Target: 31-12-2024), RIHAND STPS U#4 (Target: 31-03-2025), RIHAND STPS U#5 (Target: 30-06-2025), RIHAND STPS U#6 (Target: 31-10-2025), SINGRAULI STPS U#1 (Target: 31-12-2024), SINGRAULI STPS U#2 (Target: 31-12-2024), SINGRAULI STPS U#3 (Target: 31-12-2024), SINGRAULI STPS U#4 (Target: 31-12-2024), SINGRAULI STPS U#5 (Target: 31-03-2025), SINGRAULI STPS U#6 (Target: 31-06-2024), SINGRAULI STPS U#7 (Target: 31-03-2024), UNCHAHAR TPS U#1 (Target: 31-12-2023), UNCHAHAR TPS U#2 (Target: 31-12-2023), UNCHAHAR TPS U#3 (Target: 30-09-2023), UNCHAHAR TPS U#4 (Target: 30-09-2023), UNCHAHAR TPS U#5 (Target: 30-09-2023), UNCHAHAR TPS U#6 (Target: 31-08-2022), MEJA Stage-I U#1 (Target: 31-10-2023), MEJA Stage-I U#2 (Target: 30-06-2023), TANDA Stage-I U#3 (Target:), TANDA Stage-I U#4 (Target:), TANDA Stage-II U#3 (Target: 31-03-2023), TANDA Stage-II U#4 (Target: 30-09-2023)

L&T Power Development Ltd (Nabha)	Nabha TPP (Rajpura TPP) U#1 (Target: 30-04-2021), Nabha TPP (Rajpura TPP) U#2 (Target: 28-02-2021)
Lalitpur Power Gen. Company Ltd.	LALITPUR TPS U#1 (Target: 31-12-2026), LALITPUR TPS U#2 (Target: 30-09-2026), LALITPUR TPS U#3 (Target: 30-06-2026)
Lanco Anpara Power Ltd.	ANPARA C TPS U#1 (Target: 31-12-2025), ANPARA C TPS U#2 (Target: 31-12-2025)
Prayagraj Power Generation Company Ltd.	PRAYAGRAJ TPP U#1 (Target: 31-12-2026), PRAYAGRAJ TPP U#2 (Target: 31-12-2026), PRAYAGRAJ TPP U#3 (Target: 31-12-2026)
PSPCL	GH TPS (LEH.MOH.) U#1 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#2 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#3 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#4 (Target: 31-12-2026), GGSSTP, Ropar U#3 (Target: 31-12-2026), GGSSTP, Ropar U#4 (Target: 31-12-2026), GGSSTP, Ropar U#5 (Target: 31-12-2026), GGSSTP, Ropar U#6 (Target: 30-12-2026)

Rosa Power Supply Company	ROSA TPP Ph-I U#1 (Target: 31-12-2026), ROSA TPP Ph-I U#2 (Target: 31-12-2026), ROSA TPP Ph-I U#3 (Target: 31-12-2026), ROSA TPP Ph-I U#4 (Target: 31-12-2026)
RRVUNL	KOTA TPS U#5 (Target: 30-11-2025), KOTA TPS U#6 (Target: 30-11-2025), KOTA TPS U#7 (Target: 30-11-2025), SURATGARH TPS U#1 (Target: 31-12-2026), SURATGARH TPS U#2 (Target: 31-12-2026), SURATGARH TPS U#3 (Target: 31-12-2026), SURATGARH TPS U#4 (Target: 31-12-2026), SURATGARH TPS U#5 (Target: 31-12-2026), SURATGARH TPS U#6 (Target: 31-12-2026), SURATGARH SCTPS U#7 (Target: 28-02-2025), SURATGARH SCTPS U#8 (Target: 28-02-2025), CHHABRA TPP U#1 (Target: 31-12-2026), CHHABRA TPP U#2 (Target: 31-12-2026), CHHABRA TPP U#3 (Target: 31-12-2026), CHHABRA TPP U#4 (Target: 31-12-2026), CHHABRA SCPP U#5 (Target: 28-02-2025), CHHABRA SCPP U#6 (Target: 28-02-2025), KALISINDH TPS U#1 (Target: 28-02-2025), KALISINDH TPS U#2 (Target: 28-02-2025)
Talwandi Sabo Power Ltd.	TALWANDI SABO TPP U#1 (Target: 28-02-2021), TALWANDI SABO TPP U#2 (Target: 31-12-2020), TALWANDI SABO TPP U#3 (Target: 31-10-2020)
UPRVUNL	ANPARA TPS U#1 (Target: 31-12-2025), ANPARA TPS U#2 (Target: 31-12-2025), ANPARA TPS U#3 (Target: 31-12-2025), ANPARA TPS U#4 (Target: 31-12-2025), ANPARA TPS U#5 (Target: 31-12-2025), ANPARA TPS U#6 (Target: 31-12-2025), ANPARA TPS U#7 (Target: 31-12-2025), HARDUAGANJ TPS U#8 (Target: 31-12-2026), HARDUAGANJ TPS U#9 (Target: 31-12-2026), OBRA TPS U#9 (Target: 31-12-2026), OBRA TPS U#10 (Target: 31-12-2026), OBRA TPS U#11 (Target: 31-12-2026), OBRA TPS U#12 (Target: 31-12-2026), OBRA TPS U#13 (Target: 31-12-2026), PARICHHA TPS U#3 (Target: 31-12-2026), PARICHHA TPS U#4 (Target: 31-12-2026), PARICHHA TPS U#5 (Target: 31-12-2026), PARICHHA TPS U#6 (Target: 31-12-2026)

Annexure-A.II

HIMACHAL PRADESH STATE LOAD DESPATCH CENTRE

(an Apex body)

GOVERNMENT OF HIMACHAL PRADESH

No. HPSLDC/SLDC-75 (Vol.-III)/2024-25- 8925-33 **Dated:** 06-01-2025

To

The Superintending Engineer (Operation),
Northern Regional Power Committee,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016.
Email: seo-nrpc@nic.in

Subject: **Implementation of Islanding Scheme in the HP Control Area.**

Reference: **1 MoM held through VC mode on 18.09.2024 to discuss the implementation of Shimla -Solan Islanding Scheme in HP.**
2 This office letter of even file No. 7004-13, dated: 29.10.2024

Sir,

In compliance to the point No. 7 of the above referred MoM, this office, vide letter mentioned at Sr. No. 2 of the reference, requested all concerned generators (excluding the generators under HPSEBL) involved in the islanding schemes to decrease the under frequency relay (UFR) settings of their generating units to 47.5 Hz and compliance of the same be intimated to this office at the earliest.

Subsequently, the concerned generators, except Sandhya HEP which is under forced outage, have carried out necessary action and intimation of the same has submitted to this office. The details of the under frequency relay (UFR) settings which have been received from the concerned generators (excluding the Generators under HPSEBL) are as under: -

Name of the Generators	Under Frequency Relay Setting (Hz)	Remarks
A. Shimla Solan Islanding Scheme		
Nanti HEP (Upper Nanti)	47.5	Plant's office email attached as **Annexure –A**
Kurmi HEP	47.5	Plant's office letter attached as **Annexure – B**
Kut HEP (Goodwill Energy)	47.5	Plant's office email attached as **Annexure –C**
A. Kullu Mandi Manali Islanding Scheme		
Sandhya HEP	-	Presently, the plant is under shutdown condition; however, they will take the necessary action once the plant operation resume. Plant's office email attached as **Annexure-D**
Malana – I HEP	47.5	Plant's office email attached as **Annexure –E**
Chaski HEP	47.5	Plant's office email attached as **Annexure –F**
Toss HEP	47.5	Plant's office email attached as **Annexure –G**
Jirah HEP	47.5	Plant's office email attached as **Annexure –H**

This is for your kind information and necessary action please.

Yours sincerely,

DA: As above

Superintending Engineer,
O/o Managing Director,
HPSLDC, GoHP, Totu, Shimla-11.

RK.

SLDC Complex, Totu, Shimla-171011
Phone: 0177-2838666, Telefax: 0177-2837649 GST No. 02AAAAH7757E1ZX
Email: sehpsldc@gmail.com, cehpsldc@gmail.com, mdhpsldc@gmail.com, Web: www.hpsldc.com

Copy of the above is forwarded to the following for kind information please: -

1. M/s Sandhya Hydro Power Project (Balargha-3x3 MW SHEP), Reg. Office- H. No. 24, Behind HPSEB Bhuntar Substation, Bhuntar, Kullu (HP)-175125.Email:kumar.abhinav@continuumenergy.in
2. M/s Nanti Hydro Power Pvt. Ltd. (Uper Nanti – 2x6.5 MW HEP), Gymba House, New Shimla – 9. Email: nanti.nhppl@gmail.com
3. M/s Malana Power Company Ltd. (2x43 MW HEP), MDR 30, Village Chauki, P.O. Jari Distt. Kullu – 175105. Email: malanageneration@injbhilwara.com
4. M/s Kurmi Energy Pvt. Ltd., V.P.O Phancha, Tehsil Rampur BSR, Distt. Shimla (HP) – 172101.Email: avtarsingh13021983@gmail.com
5. M/s Puri Oil Mills Ltd. Chaski 2 MW SHEP, V.P.O. Barshani, Distt. Kullu (HP) – 175105.Email: ajmer@purioilmills.com
6. M/s Toss Mini Hydel Power Project, Vill. Toss P.O. Barsheni Distt. Kullu (HP). Email: tossmhep@gmail.com
7. M/s Jirah Hydro Electric Project (4 MW SHEP), Village Tosh, P.O. Barshaini, Tehsil Bhunter, Distt. Kullu (H.P.) Email: binny195@gmail.com
8. M/s Kundan Green Energy Private Limited,Village Suru, PO Kut, Tehsil Rampur Bushahr,District Shimla (H.P).Email: kut@kundangreenenergy.com

Superintending Engineer,
O/o Managing Director,
HPSLDC, GoHP, Totu, Shimla-11.

'Annexure-A'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Nanti Hydro <uppernantihydro11102017@gmail.com> 13 November 2024 at 13:09
To: Se Sldc <sehpsldc@gmail.com>
Cc: sanjay thakur <sanjay.thakur@greenkogroup.com>, pratul.g@greenkogroup.com, "dev.r" <dev.r@greenkoassetmanagement.com>

Dear sir,

Upper Nanti plant is concerned, team has already told that relay setting is below 47.50Hz (point No.3 of MOM on dated 11-01-2023).

Thanks & Rewards
Nanti Team
[Quoted text hidden]

KURMI ENERGY (P) LTD.

CORRESPONDENCE ADDRESS : S.C.O. 140-141, SECTOR 34-A, CHANDIGARH
TELEPHONE No. : +91-172-505999 FAX No. : +91-172-2602863

KEPL/HPSLDC/2024-25/102 **DATE: 07.11.2024**

To,

The Superintending Engineer,
O/o Managing Director,
HPSLDC, GoHP, Totu, Shimla - 11

Subject: Regarding decrease the Under Frequency Relay (UFR) settings of generators of Kurmi energy Pvt. Ltd (8 MW).

Reference: Your office Letter No. HPSLDC/SLDC – 75 (VOL – III) / 2024 -25 – 7004 – 13, Dated: - 29.10.2024

Respected Sir,

This has reference to the subject cited above, In this regard, we would like to inform to your good office is that Under Frequency Relay setting of our generating units are 47.5 Hz and Over Frequency relay setting of our generating units are 52.5 Hz. Further, Generator protection Relay Over & Under frequency relay setting Photographs is attached herewith for your reference.

This is for your kind information and further necessary action please.

Thanking You

Your Truly

For Kurmi Energy (P) Ltd.
For KURMI ENERGY (P) LTD.

(Authorized Signatory)
AUTHORIZED SIGNATORY

CC to:

1. The General Manager (SO – 1), Northern Regional Load Dispatch Centre for kind information please.
2. The Superintending Engineer (Operation), Northern Regional Power Committee for kind information please.


Actual setting
Operation mode
=f</f> 2 timers
Voltage limit
=0.3 x Un
Start frequency
=47.50 Hz
Operate time 1
=001.00 s
Start df/dt
=01.0 Hz/s
Operate time 2
=003.00 s
↑,↓ Move cursor
←Prev. E set
I
F
L
R
R/L
C
E
Order No:REM543CG214AAAA
Serial No:368049
Uaux = 110-240 Vac
Uaux = 110-220 Vdc
In = 50/60 Hz
REM-GENERATOR
PROTECTION RELAY
EMERGENCY
TRIP


ABB
MACHINE TERMINAL REM543
Actual setting
=f</f> 2 timers
Voltage limit
=0.3 x Un
Start frequency
=52.50 Hz
Operate time 1
=001.00 s
Start df/dt
=01.0 Hz/s
Operate time 2
=003.00 s
↑,↓ Move cursor
←Prev. E set
I
L
R
F
C
E
REM-GENERATOR
PROTECTION RELAY
EMERGENCY
TRIP
NIS OFF

('Annexure - C')

Gmail

Se Sldc <sehpsldc@gmail.com>

Under frequency relay settings

1 message

Kut Energy <kutgoodwill@kundangroup.com> 14 November 2024 at 14:54
To: Power Controller HP-SLDC <pchpsldcshimla@gmail.com>, Se Sldc <sehpsldc@gmail.com>
Cc: Gaurav Agarwal <gaurav.agarwal@kundangroup.com>, Kundan Kut <kut@kundangreenenergy.com>

Respected Sir,

Please find herewith the attached copy of under/over frequency relay setting of Kut HEP generating units.

Thanks and Regards,
Ajay Kumar
Kundan Green Energy Pvt Ltd
Kut HEP

DOC-20241114-WA0016..pdf
351K

Kundan Green Energy Pvt Ltd

Kut HEP

A. For Under Frequnecy Relay (UFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(UFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 47.5Hz(Note: Ony for those Generators having UFR settings above 47.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	8000KW, 11000V, 8 Pole, 50HZ Horizontal Brushless Generator	47.50HZ	No	UFR realy setting is 47.5HZ in the P343 Realy installled at Generator Panel	

B. For Over Frequency Relay (OFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(OFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 52.5Hz(Note: Ony for those Generators having UFR settings above 52.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	8000KW, 11000V, 8 Pole, 50HZ Horizontal Brushless Generator	52.50Hz	No	OFR Realy setting is 52.5HZ in the P343 Realy installled at Generator Panel	

'Annexure-D'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Kumar Abhinav <kumar.abhinav@continuumenergy.in> 13 November 2024 at 16:16
To: Se Sldc <sehpsldc@gmail.com>
Cc: NRLDC Power Grid <nrldcso2@posoco.in>, NRPC <seo-nrpc@nic.in>, Mohan Thakur <mohan.thakur@continuumenergy.in>

Dear Ma'am/ Sir,

I would like to submit that the project is currently in a shutdown condition. The necessary actions will be taken once operations resume.

Regards,

Kumar Abhinav

+919910317105

From: Se Sldc <sehpsldc@gmail.com>
Sent: Tuesday, October 29, 2024 4:03 PM
To: Kumar Abhinav <kumar.abhinav@continuumenergy.in>; nanti.nhppl <nanti.nhppl@gmail.com>; Malana Generation <malanageneration@lnjbhilwara.com>; avtarsingh13021983@gmail.com; ajmer@purioilmills.com; tossmhep@gmail.com; Vinay Parmar <binny195@gmail.com>; Kundan Kut <kut@kundangreenenergy.com>
Cc: NRLDC Power Grid <nrldcso2@posoco.in>; NRPC <seo-nrpc@nic.in>
Subject: Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Dear Sir,

[Quoted text hidden]

'ANNEXURE-E'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Malana Generation <malanageneration@lnjbhilwara.com> 16 November 2024 at 11:34
To: Se Sldc <sehpsldc@gmail.com>
Cc: Mohmad Rafiq <ma.rafiq@lnjbhilwara.com>

Respected Sir,

Please find the enclosed Unit #1 and Unit#2 Relay Test report(Under-Frequency Relay (UFR)) .

Thanks & Regards,

(Shift In-charge)

Power House Control Room,
Malana Hydro Electric Plant (Stage - I)
Phone: 09816099653
Fax: 01902276078
Mail id:- malanageneration@lnjbhilwara.com

From: "Se Sldc" <sehpsldc@gmail.com>
To: "Kumar Abhinav" <kumar.abhinav@continuumenergy.in>, "nanti.nhppl" <nanti.nhppl@gmail.com>, "Malana Generation" <malanageneration@lnjbhilwara.com>, avtarsingh13021983@gmail.com, ajmer@purioilmills.com, tossmhep@gmail.com, "Vinay Parmar" <binny195@gmail.com>, "Kundan Kut" <kut@kundangreenenergy.com>,
Cc: "NRLDC Power Grid" <nrldcso2@posoco.in>, "NRPC" <seo-nrpc@nic.in>
Date: 29-10-2024 16:04
Subject: Request to decrease the Under-Frequency Relay (UFR) settings of generators.

EXTERNAL EMAIL : **Open any attachment or URL only if sender is reliable.**
[Quoted text hidden]

[attachment "REQUEST TO DECREASE THE 125.pdf" deleted by Malana Generation/Gen/Mpclsite/LNJB] [attachment "Annexure - I..pdf" deleted by Malana Generation/Gen/Mpclsite/LNJB]

2 attachments

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-1
ERECTION SITE	: MALANA H.E.P	PANEL No.	
FEEDER	: UNIT-1 GENERATOR	DEVICE No.	: F111 (MAIN-I)

TECHNICAL DATA

Manufacture	ANDRITZ	Rated Current In	5	A
Type	HIPASE	Rated Voltage In	110	Vac
Software Ref.1	V1.47.01	Rated Frequency	50	Hz
Serial No.	GGP004-03225B004	Auxiliary Voltage Vx	110 - 250	Vdc
IP Address	172.16.215.63			

VISUAL CHECK

	Checked
1.1 Relay undamaged and clean.	☑
1.2 Wiring check, cable and terminal fastened properly.	☑
1.3 Check relay case earthed	☑
1.4 Test block connect check	☑
1.5 Verify relay rated information correct to installation	☑
1.6 Checking HMI&LCD	☑

TEST EQUIPMENT USED

Manufacturer	:	OMICRON
Type / Model	:	CMC256
Serial No.	:	KE722D
Cal. Date	:	23.02.2024 to 22-02-2025

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafi
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-1
ERECTION SITE	: MALANA H.E.P	PANEL No.	:
FEEDER	: UNIT-1 GENERATOR	DEVICE No.	: F111 (MAIN-I)

1. **Measurement Check**

Parameter setting :

CT AND VT RATIOS

GEN PHASE SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GEN NEUTRAL SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GT HV PHASE CT

Polarity	=	Standard	
Primary	=	320	A
Secondary	=	5.000	A

UAT CT

Polarity	=	Standard	
Primary	=	50	A
Secondary	=	1.000	A

GENERATOR PT

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

NGT FOR 64S

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

SHAFT CT 51SC

Polarity	=	Standard	
Primary	=	100.0	
Secondary	=	1.00	

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafik
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER : MALANA POWER COMPANY LTD.		LOCATION : UNIT-1	
ERECTION SITE : MPCL H.E.P		PANEL No. :	
FEEDER : UNIT-1 GENERATOR		DEVICE No. : F112 (MAIN-2)	

10. Under Frequency Protection.

Parameter setting :

81U

Start Value stage-1	=	48.00	Hz
Start Value stage-2	=	47.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s
Reset Time delay	=	0.10	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	48.00	*48.010*	*47.990*
81U	ABC	47.50	*47.510*	*47.400*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	40.40	*40.390*	*40.410*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	Pick up	Drop off
81U	ABC	140.00	*140.010*	*139.900*

- Operating test

Function	Injected	Should be	Operating time (s)
	Frequency (Hz)	(s)	
81U	47.9	5.000	*5.0*
81U	47.4	1.000	*1.1*

Responsibility	Tested by	Approved by
Company Name	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Signature	Sathiyaseelan T	Mohd Abdul Rafiq
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-1
ERECTION SITE	: MPCL H.E.P	PANEL No.	:
FEEDER	: UNIT-1 GENERATOR	DEVICE No.	: F112 (MAIN-2)

11. Over Frequency Protection.

Parameter setting :

81O

Start Value stage-1	=	52.00	Hz
Start Value stage-2	=	52.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	52.00	*52.002*	*51.950*
81O	ABC	52.50	*52.510*	*52.490*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	40.40	*40.390*	*40.410*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	140.00	*140.100*	*139.900*

- Operating test

Function	Injected Frequency (Hz)	Should be (s)	Operating time (ms)
81O	52.1	5.0	*5042.0*
81O	52.6	1.0	*1042.0*

Responsibility	Tested by	Approved by
Company Name	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Signature	Sathiyaseelan T	Mohd Abdul Rafiq
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER : MALANA POWER COMPANY LTD.		LOCATION : UNIT-2	
ERECTION SITE : MPCL H.E.P		PANEL No. :	
FEEDER : UNIT-2 GENERATOR		DEVICE No. : F112 (MAIN-2)	

TECHNICAL DATA

Manufacture	ANDRITZ	Rated Current In	5	A
Type	HIPASE	Rated Voltage In	110	Vac
Software Ref.1	V1.47.01	Rated Frequency	50	Hz
Serial No.	GGP004-03225B004	Auxiliary Voltage Vx	110 - 250	Vdc
IP Address	172.16.215.64			

VISUAL CHECK

	Checked
1.1 Relay undamaged and clean.	☑
1.2 Wiring check, cable and terminal fastened properly.	☑
1.3 Check relay case earthed	☑
1.4 Test block connect check	☑
1.5 Verify relay rated information correct to installation	☑
1.6 Checking HMI&LCD	☑

TEST EQUIPMENT USED

Manufacturer	:	OMICRON
Type / Model	:	CMC256
Serial No.	:	KE722D
Cal. Date	:	23.02.2024 to 22.02.2025

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafiq
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-2
ERECTION SITE	: MPCL H.E.P	PANEL No.	:
FEEDER	: UNIT-2 GENERATOR	DEVICE No.	: F112 (MAIN 2)

1. Measurement Check

Parameter setting :

CT AND VT RATIOS

GEN PHASE SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GEN NEUTRAL SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GT HV PHASE CT

Polarity	=	Standard	
Primary	=	320	A
Secondary	=	5.000	A

UAT CT

Polarity	=	Standard	
Primary	=	50	A
Secondary	=	1.000	A

GENERATOR PT

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

NGT FOR 64S

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

SHAFT CT 51SC

Polarity	=	Standard	
Primary	=	100.0	
Secondary	=	1.00	

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H E P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafiq
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-2
ERECTION SITE	: MALANA H.E.P	PANEL No.	:
FEEDER	: UNIT-2 GENERATOR	DEVICE No.	: F111 (MAIN-I)

10. Under Frequency Protection.

Parameter setting :

81U

Start Value stage-1	=	48.00	Hz
Start Value stage-2	=	47.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s
Reset Time delay	=	0.10	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	48.00	*48.010*	*48.090*
81U	ABC	47.50	*47.510*	*47.500*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	40.40	*40.390*	*40.420*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	Pick up	Drop off
81U	ABC	140.00	*140.020*	*139.910*

- Operating test

Function	Injected	Should be	Operating time (s)
	Frequency (Hz)	(s)	
81U	47.9	5.000	*5.03*
81U	47.4	1.000	*1.02*

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdur Rafiq
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-2
ERECTION SITE	: MALANA H.E.P	PANEL No.	:
FEEDER	: UNIT-2 GENERATOR	DEVICE No.	: F111 (MAIN-I)

11. Over Frequency Protection.

Parameter setting :

81O

Start Value stage-1	=	52.00	Hz
Start Value stage-2	=	52.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	52.00	*52.003*	*51.960*
81O	ABC	52.50	*52.520*	*52.480*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	40.40	*40.390*	*40.410*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	140.00	*140.100*	*139.900*

- Operating test

Function	Injected Frequency (Hz)	Should be (s)	Operating time (ms)
81O	52.1	5.0	*5048.0*
81O	52.6	1.0	*1039.0*

Responsibility	Tested by	Approved by
Company Name	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
	Sathiyaseelan T	Mohd Abdul Rafiq
Signature		
Date		

(Annexure-J)

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Ajmer Singh <ajmerengineer123@gmail.com> 26 December 2024 at 11:55
To: Se Sldc <sehpsldc@gmail.com>

Dear Sir,

As per our telephonic discussion regarding Chakshi under frequency relay, I am referring to the meeting held on 11.1.2023, wherein we submitted a letter with reference number HPSLDC/SLDC(VOL111-75)7004-13. As requested, the necessary charges have been applied. (Generator management relay 489 Photograph attached for your reference.)
Thank you for your attention to this matter.

Sincerely,
Ajmer Singh
Manager
[Quoted text hidden]

SR 489 UFR.jpeg
114K


UNDERFREQUENCY
ALARM LEVEL: 47.50Hz
489 STATUS
RELAY IN SERVICE
SETPOINT ACCESS
COMPUTER RS232
COMPUTER RS485
AUXILIARY RS485
ALT. SETPOINTS
RESET POSSIBLE
MESSAGE
GENERATOR STATUS
BREAKER OPEN
BREAKER CLOSED
HOT STATOR
NEG. SEQUENCE
GROUND
LOSS OF FIELD
VT FAILURE
BREAKER FAILURE
OUTPUT STATUS
1 TRIP
2 AUXILIARY
3 AUXILIARY
4 AUXILIARY
5 ALARM
6 SERVICE
7
8
9
4
5
6
1
2
3
.
0
HELP
MESSAGE
ENTER
ESCAPE
VALUE
489 Generator Management Relay

'Annexure-G'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

toss mhep <tossmhep@gmail.com> 13 November 2024 at 12:19
To: Se Sldc <sehpsldc@gmail.com>
Cc: Kumar Abhinav <kumar.abhinav@continuumenergy.in>, "nanti.nhppl" <nanti.nhppl@gmail.com>, Malana Generation <malanageneration@lnjbhilwara.com>, Avtar Singh <avtarsingh13021983@gmail.com>, ajmer@purioilmills.com, Vinay Parmar <binny195@gmail.com>, Kundan Kut <kut@kundangreenenergy.com>, NRLDC Power Grid <nrldcso2@posoco.in>, NRPC <seo-nrpc@nic.in>

Respected/Sir

As per your mail the setting of Under Frequency Relay(UFR) is 47.50HZ & Over Frequency Relay(OFR) is 52.60HZ for your reference. Please find the attachment for the same.

Best Regards
Pankaj Thakur
Toss Mini Hydel Power Project
9418764081, 9882681658

Show quoted text

[Quoted text hidden]

Format of Realy setting (2).xlsx
10K

A. For Under Frequnecy Relay (UFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(UFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 47.5Hz(Note: Ony for those Generators having UFR settings above 47.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	5000KW, 6600V, 12 Pole, 50HZ Vertical Brushless Generator	47.50HZ	No	UFR realy setting is 47.5HZ in the REM543 Realy installled at Generator Panel	

B. For Over Frequency Relay (OFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(OFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 52.5Hz(Note: Ony for those Generators having UFR settings above 52.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	5000KW, 6600V, 12 Pole, 50HZ Vertical Brushless Generator	52.60Hz	No	OFR Realy setting is 52.6HZ in the REM543 Realy installled at Generator Panel	

'Annexure-H'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Vinay Parmar <binny195@gmail.com> 13 November 2024 at 15:05
To: Se Sldc <sehpsldc@gmail.com>
Cc: NRLDC Power Grid <nrldcso2@posoco.in>, NRPC <seo-nrpc@nic.in>, Parveen Thakur <pthakur874@gmail.com>

Respected/Sir

As per your mail the setting of Under Frequency Relay(UFR) is 47.50HZ & Over Frequency Relay(OFR) is 52.60HZ for your reference. Please find the attachment for the same

Thanks with rgds..

[Quoted text hidden]

--

Vinay Parmar
Manager (O&M)
Kapil Mohan & Asso. Hydro Power Pvt Ltd.
Jirah HEP
9805012776,8894704216

Format of Realy setting Jirah SHEP 4mw.xlsx
10K

A. For Under Frequnecy Relay (UFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(UFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 47.5Hz(Note: Ony for those Generators having UFR settings above 47.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	2500KW, 6600V, 8 Pole, 50HZ Vertical Brushless Generator	47.50HZ	No	UFR realy setting is 47.5HZ in the REM543 Realy installled at Generator Panel	

B. For Over Frequency Relay (OFR) Setting

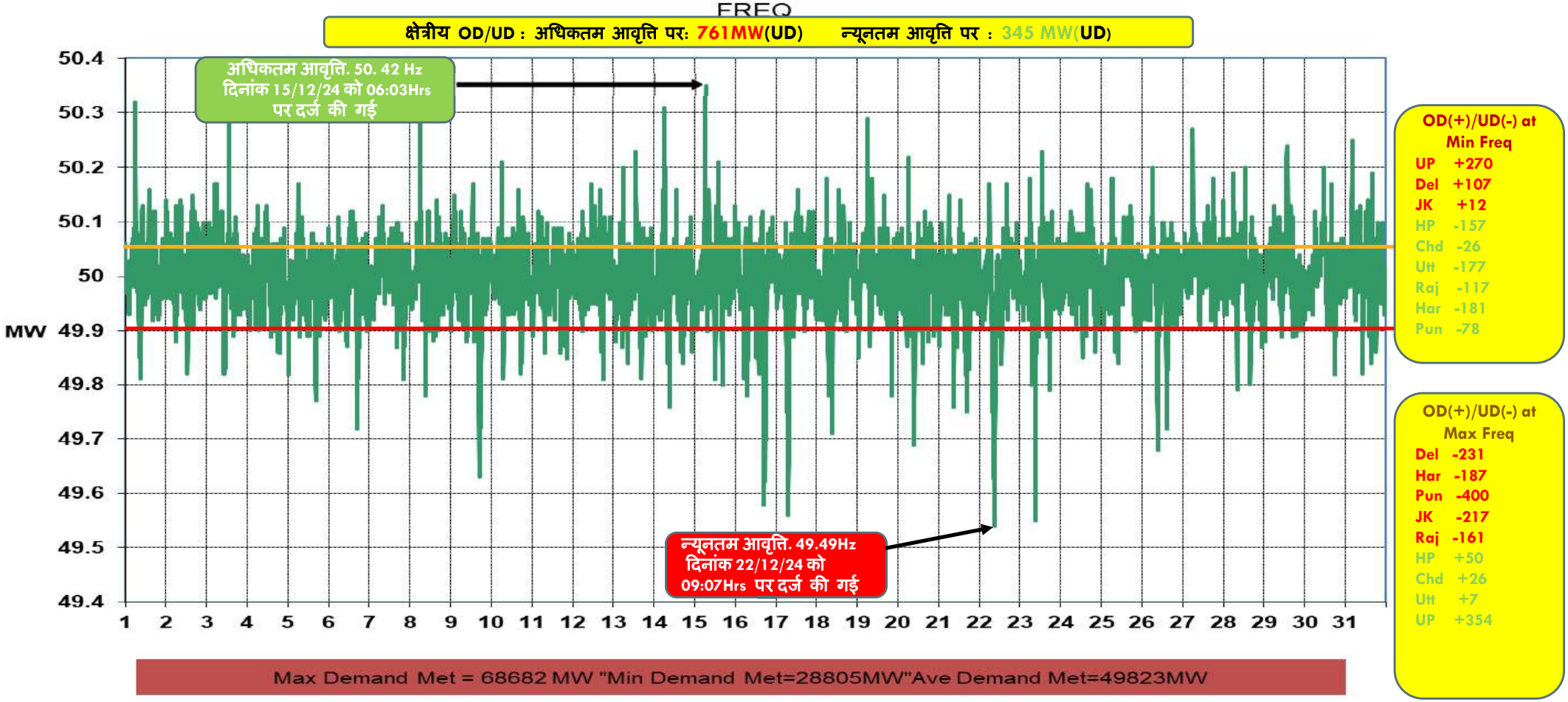
Sr.No	Name of the Generator	Existing Under Frequency Relay(OFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 52.5Hz(Note: Ony for those Generators having UFR settings above 52.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	2500KW, 6600V, 8 Pole, 50HZ Vertical Brushless Generator	52.60Hz	No	OFR Realy setting is 52.6HZ in the REM543 Realy installled at Generator Panel	

											Approved Planned Outage-1			Actual Planned Outage-1		
Capacity (MW) 30-11-2023	Name of Station	UNIT_NM	STN_TYPE_ID	SECTOR	REGION_NM	ST_NM	SH_NM	IPP	FUEL_NM	Capacity (MW) 31-03-2025	Start Date	End Date	Reason	Start Date	End Date	Reason for any deviation
500	INDIRA GANDHI STPP	1	T	CENTRAL SECTOR	Northern	Haryana	APCPL	FALSE	COAL	500	27-Nov-24	3-Dec-24	Boiler License Renewal	27-Nov-24	3-Dec-24	
135	JALIPA KAPURDI TPP	3	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	6-Dec-24	13-Dec-24	Boiler License Renewal	6-Nov-24	10-Nov-24	Boiler License Renewal was done on 08-Nov-24
135	JALIPA KAPURDI TPP	7	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	16-Dec-24	27-Dec-24	Boiler License Renewal			Boiler License Renewal due date is 28-Feb-25.
135	JALIPA KAPURDI TPP	5	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	29-Nov-24	10-Dec-24	Boiler Inspection	30-Sep-24	24-Nov-24	Refractory maintenance & Boiler Inspection was completed on 24-Nov-24
225	KASHIPUR CCPP	1	T	IPP SECTOR	Northern	Uttarakhand	SrEPL	FALSE	NATURAL GAS	225	23-Dec-24	26-Dec-24	Offline Waterwash			No Offline Waterwash and Boiler inspection conducted. Plant was under reserve shutdown

प्रचालन समन्वय उपसमिति की बैठक
दिसंबर- 2024

दिसंबर-2024 के दौरान आवृत्ति की स्थिति
(As per 5 Minute SCADA data)

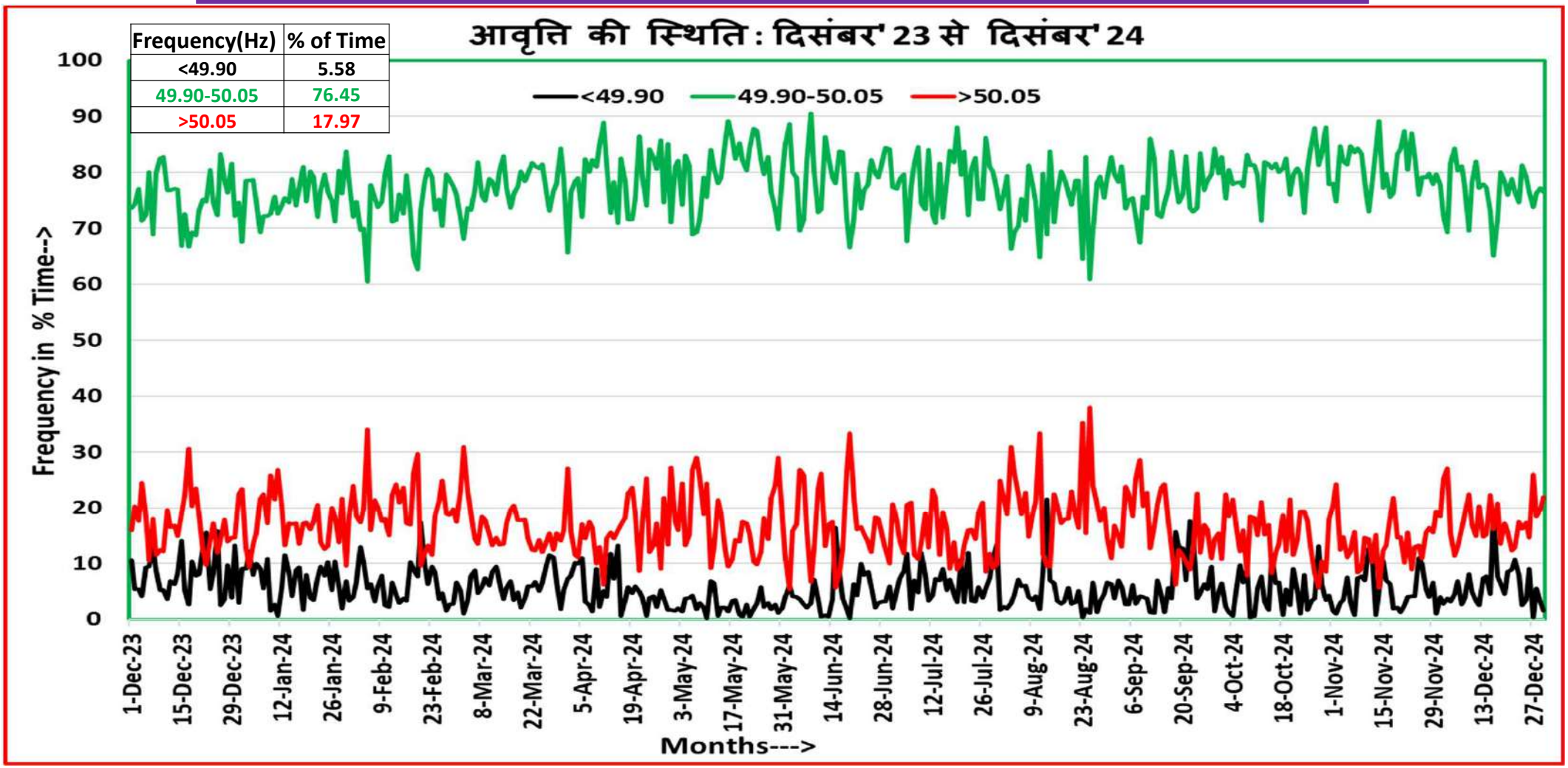
ग्रिड-इंडिया GRID-INDIA



आवृत्ति की स्थिति: दिसंबर -2023 से 2024

ग्रिड-इंडिया
GRID-INDIA

Frequency(Hz)	% of Time
<49.90	5.58
49.90-50.05	76.45
>50.05	17.97



पिछले एक साल मे आवृत्ति की स्थिति

आवृत्ति बैंड	दिसंबर 2023	जनवरी 2024	फ़रवरी 2024	मार्च 2024	अप्रैल 2024	मई 2024	जून 2024	जुलाई 2024	अगस्त 2024	सितम्बर 2024	अक्टूबर 2024	नवम्बर 2024	दिसंबर 2024
< 49.7 Hz(%)	0.17	0.12	0.095	0.065	0.030	0.000	0.02	0.054	0.176	0.18	0.14	0.10	0.29
<49.8 Hz(%)	1.40	0.92	0.797	0.479	0.432	0.059	0.31	0.621	0.631	0.89	0.60	0.66	0.97
<49.9 Hz(%)	7.83	6.80	6.239	6.022	5.254	2.490	4.50	6.406	4.660	6.09	4.86	5.15	5.58
49.90-50.05 Hz(%)	***75.21***	***75.83***	***74.06***	***77.51***	***78.56***	***80.045***	***79.177***	***78.424***	***75.012***	***77.130***	***80.27***	***80.80***	***76.45***
50.05-50.10 Hz(%)	10.47	11.91	14.118	12.262	11.178	13.839	13.34	12.122	13.334	10.36	12.18	10.90	14.59
>50.10 Hz(%)	6.49	5.47	5.581	4.204	5.010	3.627	2.99	3.047	6.992	6.42	2.49	3.15	3.38
>50.20 Hz(%)	0.53	0.41	0.565	0.657	0.539	0.285	0.12	0.280	1.725	1.03	0.20	0.21	0.37
औसत आवृत्ति	49.99	49.99	50.00	50.00	50.00	50.00	50.002	49.997	50.008	50.000	49.998	49.995	49.998

दिसंबर-2024 के दौरान अधिकतम मांग (Demand Met), अधिकतम ऊर्जा खपत (Energy consumption) और अब तक का कीर्तिमान (राज्यों द्वारा जमा आंकड़ों के अनुसार)

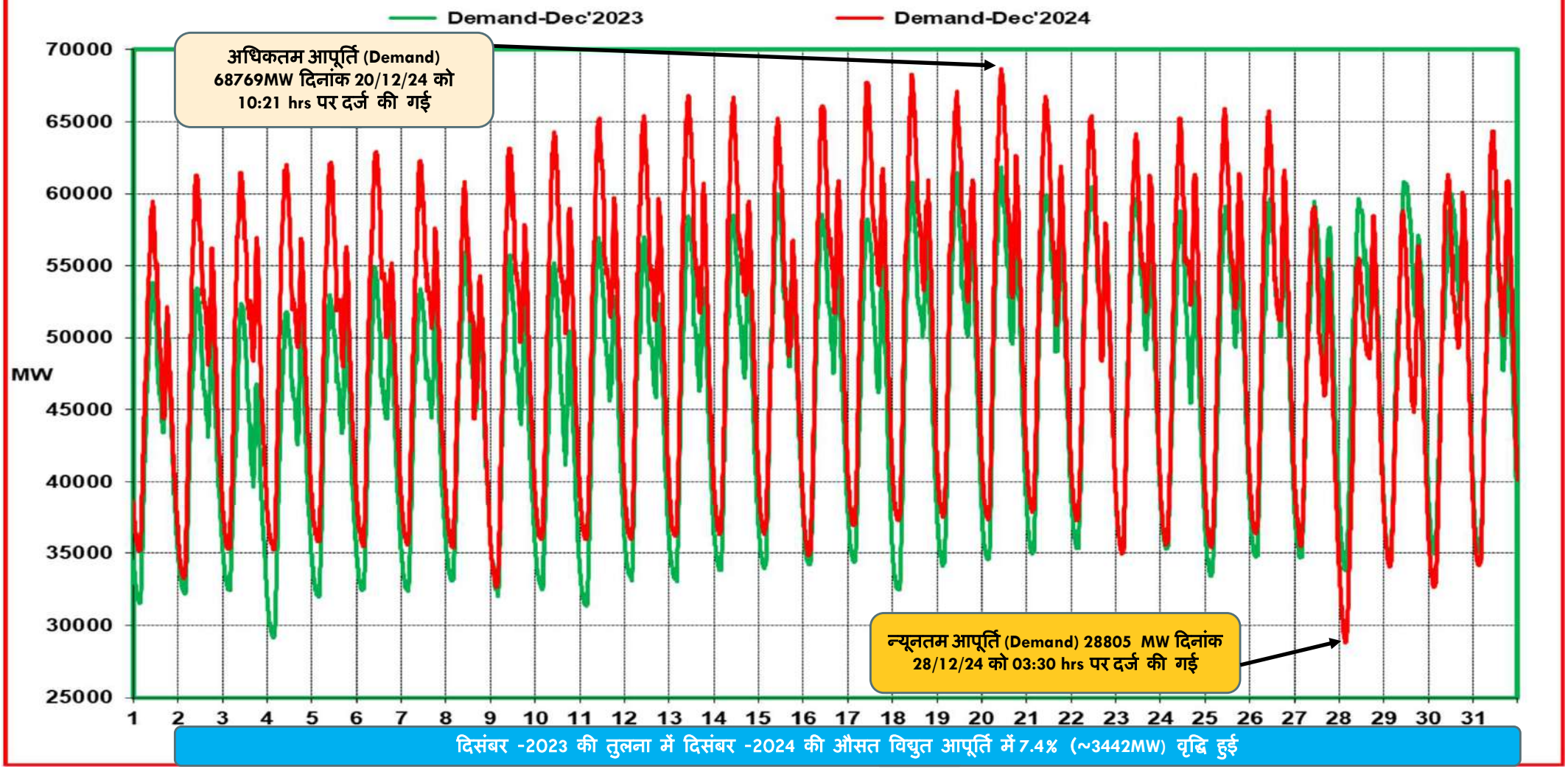
ग्रिड-इंडिया GRID-INDIA

राज्य	अधिकतम मांग (MW) (in Dec'24)	दिनांक / समय	रिकॉर्ड अधिकतम मांग (in MW) (upto Nov'24)	दिनांक / समय	अधिकतम ऊर्जा खपत (MU) (in Dec'24)	दिनांक	रिकॉर्ड अधिकतम ऊर्जा खपत (MU) (Upto Nov'24)	दिनांक
पंजाब	9355	14.12.24 at 09:45	16089	29.06.24 at 12:45	166.8	20.12.24	366.8	21.07.2024
हरियाणा	9351	20.12.24 at 09:45	14662	31.07.24 at 14:30	169.2	18.12.24	293.4	30.07.2024
राजस्थान	18643	19.12.24 at 09:45	17949	20.01.24 at 11:00	339.2	17.12.24	379.1	30.05.2024
दिल्ली	5213	31.12.24 at 10:50	8656	19.06.24 at 15:06	85.2	31.12.24	177.7	18.06.2024
उत्तर प्रदेश	20666	19.12.24 at 19:14	30618	13.06.24 at 22:00	362.2	20.12.24	658.7	17.06.2024
उत्तराखंड	2504	27.12.24 at 09:00	2863	14.06.24 at 22:00	46.5	27.12.24	62.1	14.06.2024
हिमाचल प्रदेश	2254	25.12.24 at 09:00	2235	20.01.24 at 07:00	41.3	20.12.24	40.5	30.07.2024
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	3181	24.12.24 at 20:00	3107	12.01.24 at 20:00	68.4	26.12.24	66.8	26.01.2024
चंडीगढ़	283	31.12.24 at 09:00	482	18.06.24 at 15:28	5.0	31.12.24	9.1	18.06.2024
उत्तरी क्षेत्र #	68769	20.12.24 at 10:21	91234	19.06.24 at 14:37	1273.0	20.12.24	1990.4	18.06.2024

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

क्षेत्रीय विद्युत आपूर्ति (Demand) दिसंबर 2023 बनाम दिसंबर 2024 (As per 5 Minute SCADA data)

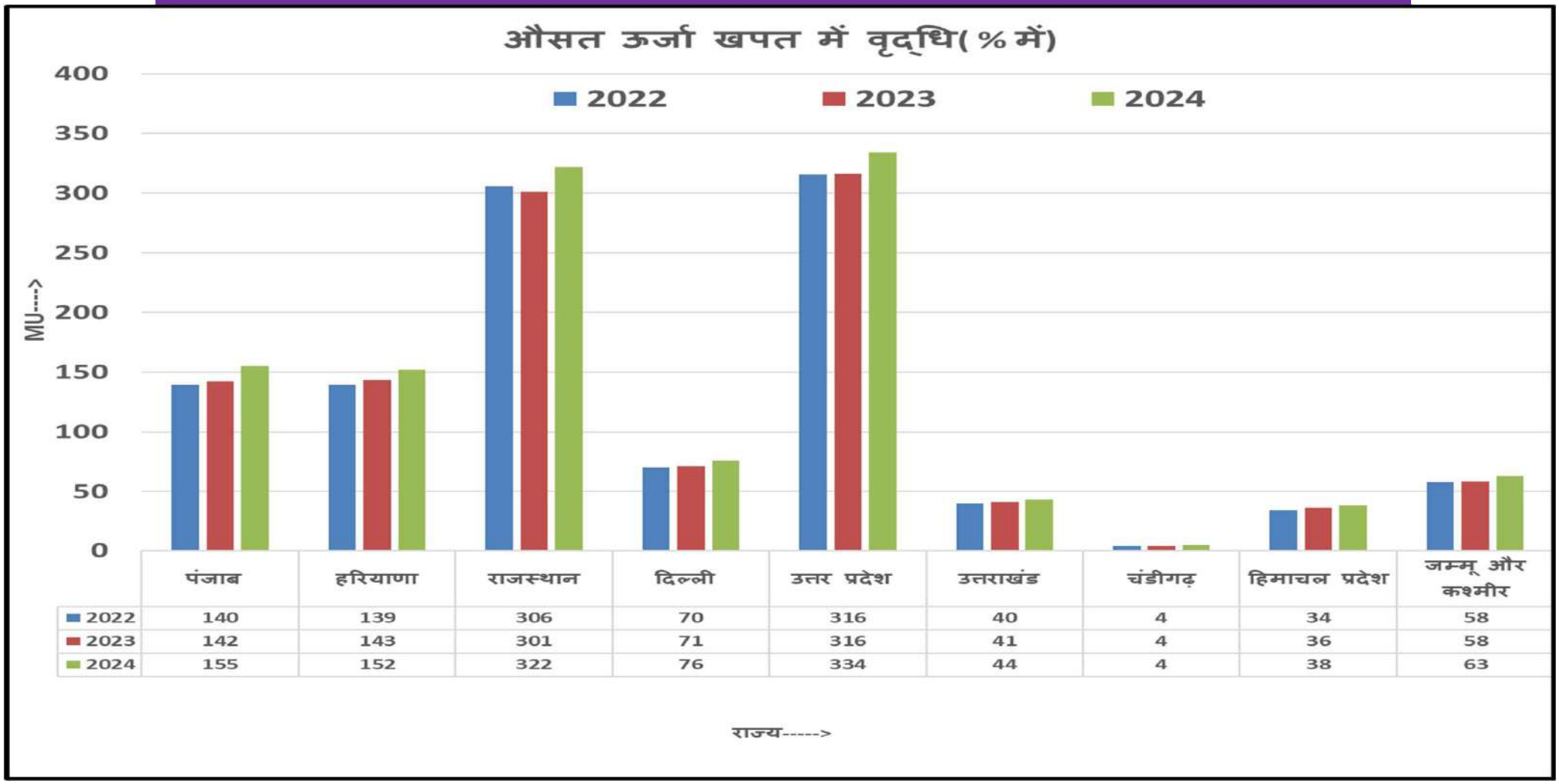
ग्रिड-इंडिया GRID-INDIA



उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) दिसंवर -2024/ दिसंवर -2023 / दिसंवर -2022

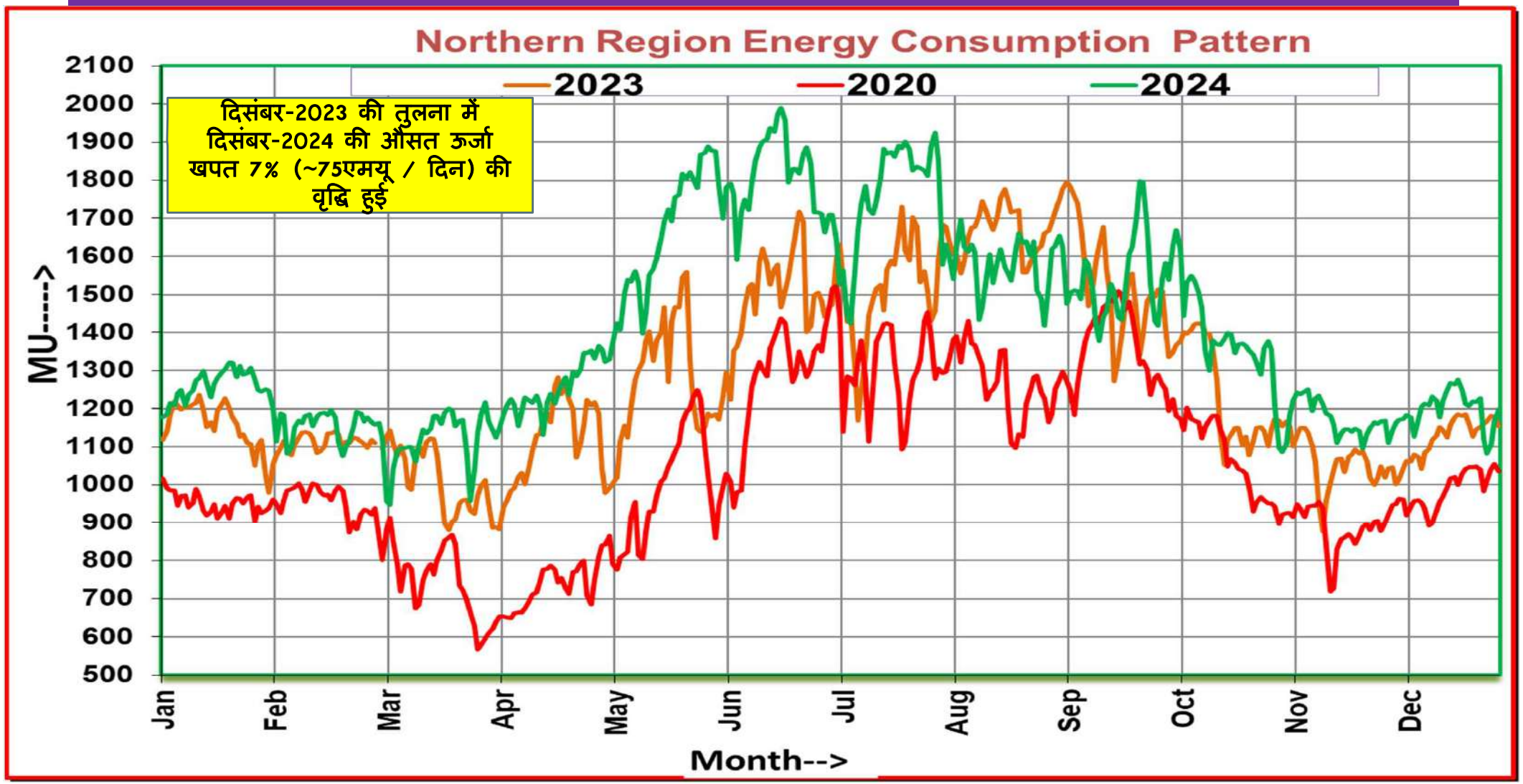
राज्य	दिसंबर -2022	दिसंबर -2023	दिसंबर -2024	% वृद्धि (दिसंबर -2023 vs दिसंबर -2022)	% वृद्धि (दिसंबर -2024 vs दिसंबर -2023)
पंजाब	140	142	155	1.8%	9.3%
हरियाणा	139	143	152	2.9%	6.1%
राजस्थान	306	301	322	-1.5%	6.8%
दिल्ली	70	71	76	1.6%	6.6%
उत्तर प्रदेश	316	316	334	0.2%	5.6%
उत्तराखंड	40	41	44	3.2%	6.0%
चंडीगढ़	4	4	4	0.9%	9.3%
हिमाचल प्रदेश	34	36	38	5.7%	5.4%
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	58	58	63	1.2%	8.1%
उत्तरी क्षेत्र	1106	1117	1192	1.0%	6.7%

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) दिसंवर-2024/ दिसंवर-2023 / दिसंवर-2022

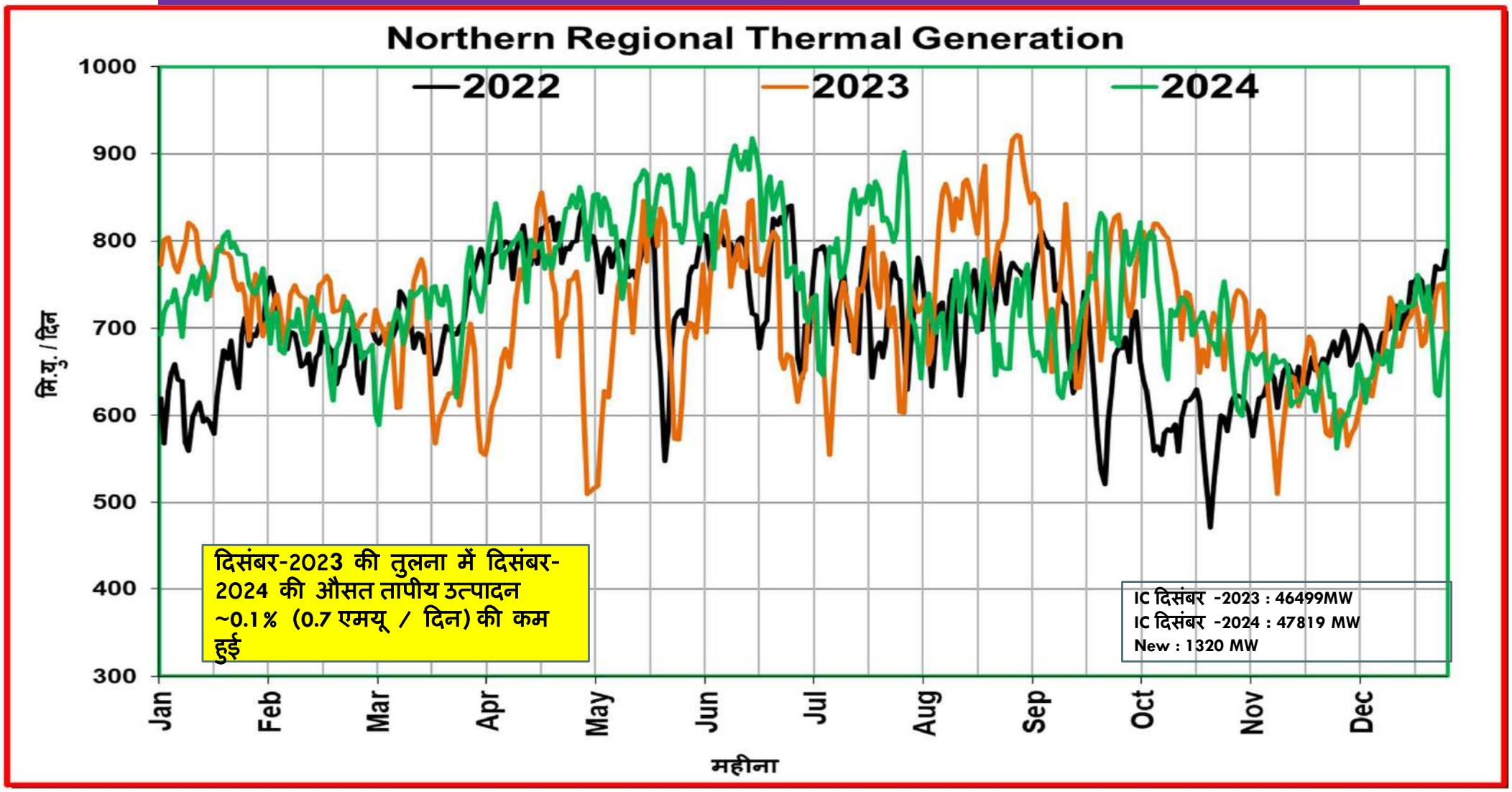


	पंजाब	हरियाणा	राजस्थान	दिल्ली	उत्तर प्रदेश	उत्तराखंड	चंडीगढ़	हिमाचल प्रदेश	जम्मू और कश्मीर
2022	140	139	306	70	316	40	4	34	58
2023	142	143	301	71	316	41	4	36	58
2024	155	152	322	76	334	44	4	38	63

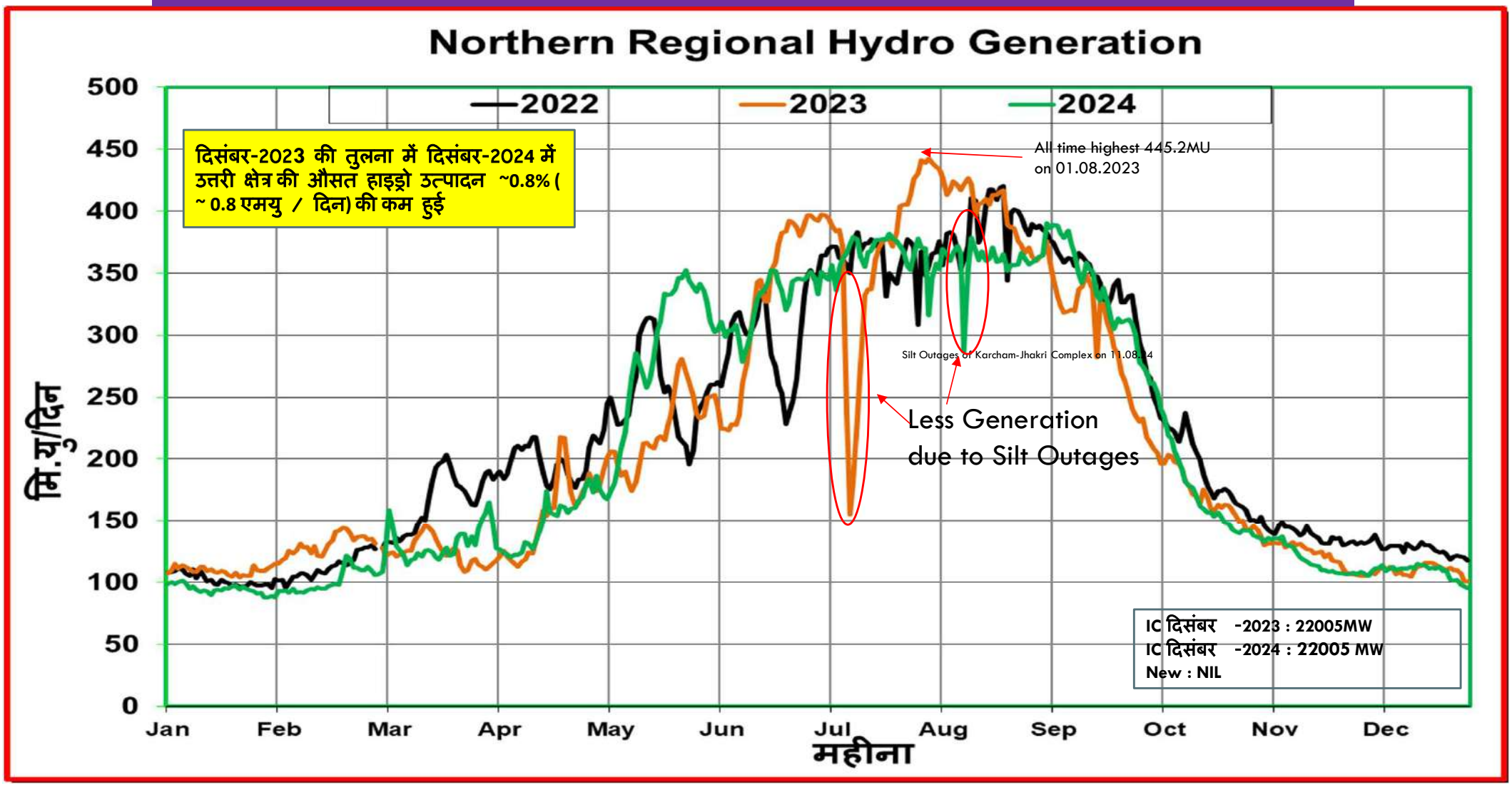
उत्तरी क्षेत्र की ऊर्जा खपत(MUs)



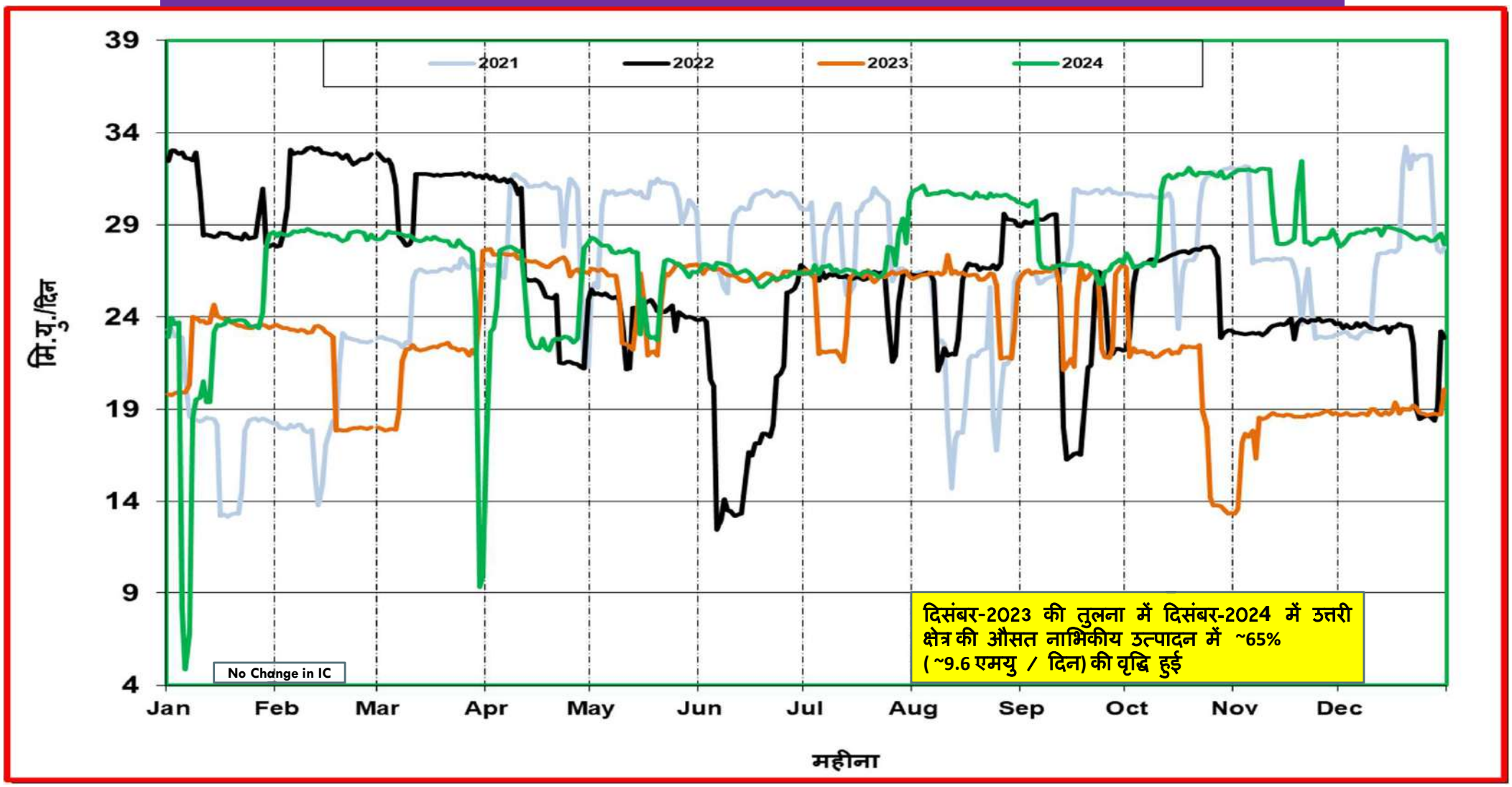
उत्तरी क्षेत्र की तापीय (Thermal) उत्पादन की स्थिति(MUs/Day)



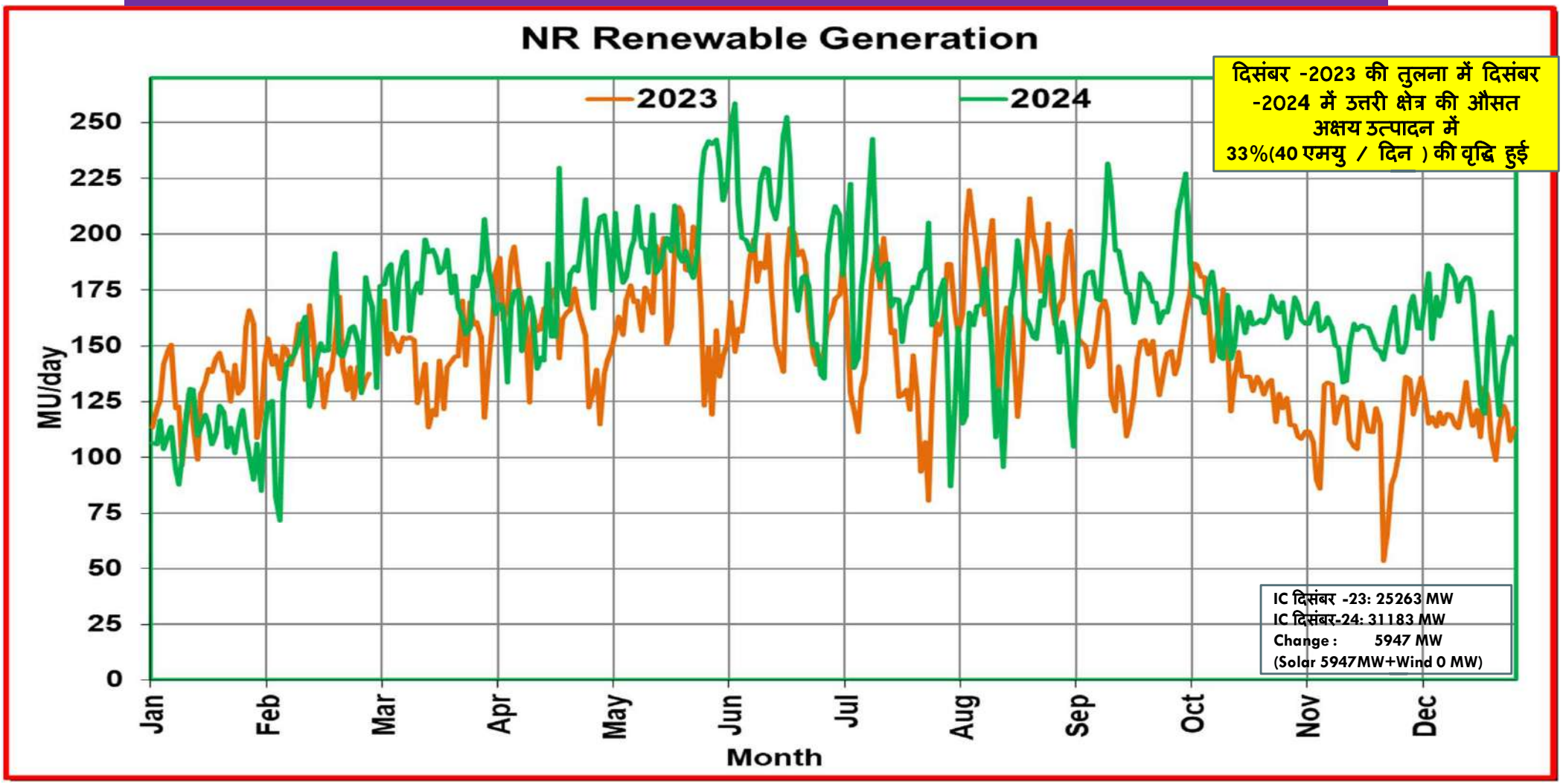
उत्तरी क्षेत्र की जलीय (हाइड्रो) उत्पादन की स्थिति(MUs/Day)



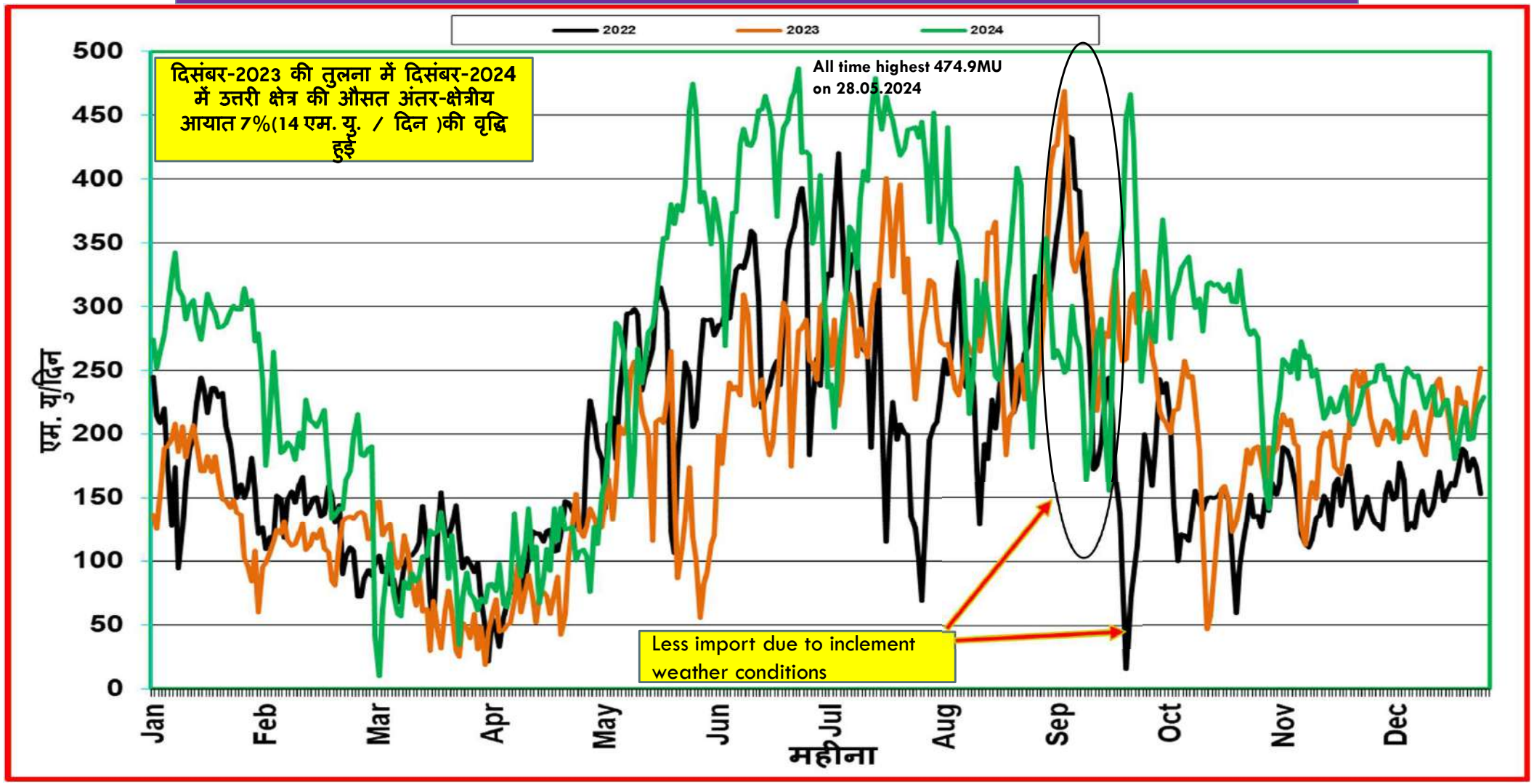
उत्तरी क्षेत्र की नाभिकीय उत्पादन की स्थिति (MUs/Day)



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



अंतर-क्षेत्रीय आयात(MUs/Day) की स्थिति



वास्तविक सारांश -
दिसंवर-2023 वनाम दिसंवर-2024

	दिसंबर-2023 (मि.यु. /दिन)	दिसंबर-2024 (मि.यु. /दिन)	दिसंबर माह में वृद्धि (मि.यु./दिन)
तापीय (Thermal) उत्पादन	672	671	-1
जलीय (Hydro) उत्पादन	109	108	-1
नाभिकीय (Nuclear) उत्पादन	19	28	10
अंतर-क्षेत्रीय (Inter-Regional) कुल आयात	212	225	14
अक्षय (Renewable) उत्पादन	120	160	40

RE Penetration

	Maximum Daily MU Penetration			
	Dec '2024		Record upto Nov '2024	
	Max % Penetration	Date	Max % Penetration	Date
Punjab	3.84	15-12-2024	12.28	01-04-2020
Rajasthan	16.00	20-12-2024	36.47	22-10-2021
UP	4.25	11-12-2024	5.50	05-03-2024
NR	16.22	08-12-2024	20.69	02-04-2023

DEMAND FORECAST STATUS OF SLDC

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

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

- The following is the status regarding forecast data submission.

Region	State	Day ahead	Weeky	Monthly	Yearly	Generation Adequacy	ST-NRAP Data Submission
		Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)	Data submission (Y/N)
NR	Punjab	Y	Y	Y	N	N	N
	Haryana	Y*	N	N	N	N	N
	Rajasthan	Y	N	N	N	N	N
	Delhi	Y	N	Y	Y	N	N
	UP	Y	Y	Y	Y	N	N
	Uttarakhand	Y	Y	Y	N	N	N
	HP	Y	Y	Y	Y	N	N
	J&K	Y	N	N	N	N	N
	Chandigarh	Y	Y	N	N	N	N

***Submitted for FY-24-25. Data is awaited for FY 25-26.**

- In accordance with above, all SLDCs are requested to furnish the demand estimation data as per the formats to NRLDC through mail (nrldcmis@grid-india.in) and SFTP as per above timeline.

Outage Summary For December 2024									
CONSTITUENTS	PLANNED (A)	FORCED OUTAGES (B=C+D)	EMERGENCY SHUTDOWNS (C)	TRIPPING (D)	% PLANNED SHUTDOWNS (A/(A+C))	% EMERGENCY SHUTDOWNS(C/(A+C)	% ESD SHUTDOWNS(C/B)	% TRIPPING (D/B)	TOTAL OUTAGES (A+B)
POWERGRID	481	319	186	133	72.1%	27.9%	58.3%	41.7%	800
UPPTCL	270	174	70	104	79.4%	20.6%	40.2%	59.8%	444
RRVPNL	58	145	67	78	46.4%	53.6%	46.2%	53.8%	203
PSTCL	94	26	12	14	88.7%	11.3%	46.2%	53.8%	120
HVPNL	69	45	23	22	75.0%	25.0%	51.1%	48.9%	114
BBMB	47	23	16	7	74.6%	25.4%	69.6%	30.4%	70
DTL	8	31	22	9	26.7%	73.3%	71.0%	29.0%	39
PTCUL	18	17	1	16	94.7%	5.3%	5.9%	94.1%	35
HPPTCL	9	20	7	13	56.3%	43.8%	35.0%	65.0%	29
NTPC	13	12	3	9	81.3%	18.8%	25.0%	75.0%	25
NRSS36	1	23	23	0	4.2%	95.8%	100.0%	0.0%	24
GTL	20	2	0	2	100.0%	0.0%	0.0%	100.0%	22
ADHPL,ADHPL	16	0	0	0	100.0%	0.0%	NA	NA	16
PDD JK	0	12	2	10	0.0%	100.0%	16.7%	83.3%	12
ATIL	5	4	1	3	83.3%	16.7%	25.0%	75.0%	9
NHPC	3	5	3	2	50.0%	50.0%	60.0%	40.0%	8
NRSS XXIX	0	7	4	3	0.0%	100.0%	57.1%	42.9%	7
Azure	0	6	2	4	0.0%	100.0%	33.3%	66.7%	6
PKTSL	4	2	2	0	66.7%	33.3%	100.0%	0.0%	6
ESUCRL	3	2	2	0	60.0%	40.0%	100.0%	0.0%	5
PKTCL	2	2	1	1	66.7%	33.3%	50.0%	50.0%	4
Tata Power	4	0	0	0	100.0%	0.0%	NA	NA	4
THDC	1	3	1	2	50.0%	50.0%	33.3%	66.7%	4
AHEJ2L	2	1	1	0	66.7%	33.3%	100.0%	0.0%	3
PATRAN	2	0	0	0	100.0%	0.0%	NA	NA	2
SJVNL	1	1	1	0	50.0%	50.0%	100.0%	0.0%	2
Total	1131	882	450	432	71.5%	28.5%	51.0%	49.0%	2013

OUTAGE SUMMARY OF LAST THREE MONTHS

MONTH	PLANNED	FORCED OUTAGES	EMERGENCY SHUTDOWNS	TRIPPING	% PLANNED as of TOTAL S/D	% EMERGENCY SHUTDOWNS	TOTAL OUTAGES (A+B)
	(A)	(B=C+D)	(C)	(D)	(A/(A+C))	(C/(A+C))	
Sep-24	758	911	415	496	64.6%	35.4%	1669
Oct-24	985	815	434	381	69.4%	30.6%	1800
Nov-24	1117	818	425	393	72.4%	27.6%	1935
Dec-24	**1131**	**882**	**450**	**432**	**71.5%**	**28.5%**	**2013**

New Elements First Time Charged During Dec 2024

S. No.	Type of transmission element	Total No
1	New Ac Transmission Line	02
2	LILO AC Transmission line	02
3	Transformer	03
4	Solar Plant	06
5	Harmonic Filter	01
6	Bus reactor	01
Total New Elements charged		15

New AC Transmission line

S.No	Name of element	Owner	Voltage Level (in kV)	Circuit No	Line Length	Conductor Type	Actual date of charging
1	765kV Bhadla_2 (PG)-Sikar_2(PSTL)-2	POWERGRID SIKAR TRANSMISSION LIMITED	765kV	2	309.272 KM	Hexa Zebra	16-Dec-2024
2	765kV Bhadla_2 (PG)-Sikar_2(PSTL)-1	POWERGRID SIKAR TRANSMISSION LIMITED	765kV	1	309.272 KM	Hexa Zebra	17-Dec-2024

LILO AC Transmission line

S.No	Name of element	Voltage Level (in kV)	Line Length of New Line after LILO (In Km)	Conductor Type	Agency/Owner	Actual date of charging
1	400kV Kankani(RS)- GSS Pachpadra(RS)-1(After LILO of 400 kV Rajwast - Kankani line at 400 kV GSS Pachpadra)	400kV	112.011 KM	Twin Moose	RRVPNL	07-Dec-2024
2	400kV Rajwest(RW)- GSS Pachpadra(RS)-1(After LILO of 400 kV Rajwast - Kankani line at 400 kV GSS Pachpadra)	400kV	168.011 KM	Twin Moose	RRVPNL	07-Dec-2024

Transformer

S.No	Name of element	Owner	Voltage Level (HV/LV/Tertiary)	MVA Capacity	Transformer Details	OLD MVA Capacity	Actual date of charging
1	400/220/33kV, 500 MVA, 3-Phase, T&R, ICT - 1 at GSS Pachpadra(RS)	RRVPNL	400/220/33kV	500	New	NA	10-Dec-2024
2	400/220/33kV, 500 MVA, 3-Phase, GE, ICT - 3 at Patran(PATR)	PATRAN	400/220/33kV	500	New	NA	26-Dec-2024
3	400/220/33kV, 500 MVA MVA, 3-Phase, T & R, ICT - 6 at Bikaner_2 (PBTSL)	PBTSL	400/220/33kV	500	New	NA	28-Dec-2024

Solar plant

S.No	Plant Name	Pooling Sub-station	Total Capacity charged(MW)	Total Installed Capacity of Plant(MW)	Type of RE	Total No. of Solar ICR/Block Charged	Agency/ Owner	Actual date of charging
1	AMP Energy Green Four Private Limited	Bhadla_2	46.15	100	Solar	6	AMP_EG4PL	02-Dec-2024
2	AYANA RENEWABLE POWER THREE PRIVATE LIMITED (ARP3PL)	Bikaner	19.38	300	Solar	2	Ayana_RP3PL	05-Dec-2024
3	AYANA RENEWABLE POWER THREE PRIVATE LIMITED (ARP3PL)	Bikaner	28	272	Solar	2 x 45 MVAR SVG	Ayana_RP3PL	26-Dec-24
4	Serentica Renewables India 5 Pvt Ltd (SRI5PL)	Bikaner_2	66	220	Solar	6	SERENTICA_RI5PL_Bik 2	17-Dec-2024
5	ACME Dhaulpur Powertech Private Limited	Fatehgarh Pooling	28	300	Solar	2x46MVAr SVG	ACME_Dhaulpur_PPL	24-Dec-24
6	ACME Raisar Solar Energy Private Limited	Fatehgarh Pooling	28	300	Solar	2x46MVAr SVG	ACME_Raisar_SEPL	24-Dec-24

Harmonic Filter

S.No	Name of element	Owner	Voltage Level (in kV)	Capacitor Bank No	Sub Capacitor Bank MVAR Rating	Capacitor MVAR Rating	Actual date of charging
1	33kV, Harmonic Filter, 8MVAR at JGCPL_SL_BIK2_PG	Juniper_GCPL	33kV	1	8MVAR Filter bank with quality factor of 100 and with 2MVAr tuned for 260Hz + 2MVAr tuned for 655Hz + 1MVAr tuned for 360Hz +1MVAr tuned for 2150Hz + 1MVAr tuned for 620Hz + 1MVAr tuned for 1080Hz. Filter shall ensure compliance related to clause B.1 (power quality norms).	8MVAR	04-Dec-2024

Bus reactor

S.No	Name of element	Owner	Voltage Level	MVAR Capacity	Actual date of charging
1	400kV, 125 MVAR Bus Reactor 1 at Jodhpur(RS)	RRVPNL	400kV	125 MVAR	09-Dec-2024


धन्यवाद