सत्यमेव जयते

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

विषय: प्रचालन समन्वय उप-समिति की 229वीं बैठक की कार्यसूची।

Subject: Agenda of the 229th OCC meeting.

प्रचालन समन्वय उप-समिति की **229वीं** बैठक का आयोजन वीडियो कॉन्फ्रेंसिंग के माध्यम से दिनांक **12.03.2025** को **10:30** बजे से किया जायेगा। उक्त बैठक की कार्यसूची उत्तर क्षेत्रीय विद्युत् समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है।

बैठक में सम्मिलित होने के लिए लिंक व पासवर्ड सभी सदस्यों को ई-मेल द्वारा प्रदान किया जाएगा।

कृपया बैठक में उपस्थित होने की सुविधा प्रदान करें।

The **229th** meeting of the Operation Co-ordination sub-committee will be conducted through Video Conferencing on **12.03.2025** from **10:30 Hrs**. The agenda of this meeting has been uploaded on the NRPC web-site http://164.100.60.165.

The link and password for joining the meeting will be e-mailed to respective e-mail IDs in due course.

Kindly make it convenient to attend the meeting.

Signed by Dharmendra Kumar Meena
Date: 07-03-2025 20:21:07

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

सेवा में : प्रचालन समन्वय उप समिति के सभी सदस्य।
To : All Members of OCC

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	sandeepk@powergrid.in
4	PGCIL	Central Government owned Transmission Company	rtamc.nr1@powergrid.in rtamcjammu@powergrid.in cpcc.nr3@powergrid.in
5	NTPC	Central Generating Company	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	nomination awaited

		Company (alphabetical rotational basis/nominated by state govt.)	(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 POWER RENEWABLE	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	nomination awaited (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)

Contents

खण्ड-क: उ.क्षे.वि.स. Part-A: NRPC

A.1. Confirmation of Minutes

228th OCC meeting was held on 14.02.2025. Minutes of the meeting were issued vide letter dt. 03.03.2025. No comments received till now.

Decision required from Forum:

Forum may approve the minutes of 228th OCC meeting.

A.2. Status of action taken on decisions of 228th OCC meeting of NRPC

A.2.1. Status of action taken on decisions of 228th NRPC meeting is attached as **Annexure- A.0**.

A.3. Review of Grid operations

A.3.1. **Power Supply Position (Provisional) for February 2025**

Anticipated Power Supply Position v/s Actual Power Supply Position (Provisional) of Northern Region during the month of February-2025 is as under:

State / UT	Req. / Avl.	Energy (MU)			Peak (MW)		
		Anticipated	Actual	% Variation	Anticipated	Actual	% Variation
CHANDIGARH	(Avl)	110	108	-2.0%	300	312	4.0%
	(Req)	126	108	-14.4%	260	312	20.0%
DELHI	(Avl)	1950	2041	4.6%	5000	4657	-6.9%
	(Req)	3047	2041	-33.0%	5000	4657	-6.9%
HARYANA	(Avl)	4790	4394	-8.3%	11610	9602	-17.3%
	(Req)	4039	4394	8.8%	8900	9602	7.9%
HIMACHAL PRADESH	(Avl)	1062	1044	-1.6%	2063	2193	6.3%
	(Req)	1063	1046	-1.6%	2115	2193	3.7%
J&K and LADAKH	(Avl)	1110	1728	55.7%	4130	3057	-26.0%
	(Req)	1810	1730	-4.4%	3090	3057	-1.1%
PUNJAB	(Avl)	5000	4335	-13.3%	10930	10165	-7.0%
	(Req)	4305	4335	0.7%	8500	10165	19.6%
RAJASTHAN	(Avl)	8030	9650	20.2%	18590	19165	3.1%
	(Req)	8845	9650	9.1%	17000	19165	12.7%
UTTAR PRADESH	(Avl)	9570	9844	2.9%	19000	20456	7.7%
	(Req)	9425	9845	4.5%	19000	20456	7.7%
UTTARAKHAND	(Avl)	1177	1186	0.8%	2340	2477	5.9%
	(Req	1204	1186	-1.4%	2390	2477	3.6%

	)						
NORTHERN REGION	(Avl)	32799	34329	4.7%	77800	68600	-11.8%
	(Req)	33864	34334	1.4%	62000	68600	10.6%

As per above, negative / significant variation (≥5%) in Actual Power Supply Position(Provisional) vis-à-vis Anticipated figures is observed for the month of February-2025 in terms of Energy Requirement for Chandigarh, Delhi, Haryana, HP, UTs of J&K and Ladakh, Rajasthan, and Uttarakhand and in terms of Peak Demand similar variation is noted for Chandigarh, Delhi, Haryana, UTs of J&K and Ladakh, Punjab, Rajasthan, UP, . These states/UTs are requested to submit reason for such variations so that the same can be deliberated in the meeting.

All SLDCs are requested to furnish provisional and revised power supply position in prescribed formats on NRPC website portal by 2nd and 15th day of the month respectively for the compliance of Central Electricity Authority (Furnishing of Statistics, Returns and Information) Regulations, 2007.

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

A.4.1. Maintenance Programme for Generating Units

The meeting on proposed maintenance programme for Generating Units for the month of April-2025 is scheduled on 11-March-2025 via Video Conferencing from 02.00PM.

A.4.2. Outage Programme for Transmission Elements

The meeting on proposed outage programme of Transmission elements for the month of April-2025 is scheduled on 11-March-2025 via Video conferencing from 02.00PM.

A.5. Planning of Grid Operation

A.5.1. Anticipated Power Supply Position in Northern Region for April 2025

The Anticipated Power Supply Position in Northern Region for April 2025 is as under:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	160	360	No Revision submitted
	Requirement	133	288	
	Surplus / Shortfall	27	72	
	% Surplus / Shortfall	19.9%	25.2%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	3613	6000	
DELHI	Requirement	2700	6000	No Revision submitted
	Surplus / Shortfall	913	0	
	% Surplus / Shortfall	33.8%	0.0%	
HARYANA	Availability	6300	9700	No Revision submitted
	Requirement	5494	10390	
	Surplus / Shortfall	806	-690	
	% Surplus / Shortfall	14.7%	-6.6%	
HIMACHAL PRADESH	Availability	1030	1902	No Revision submitted
	Requirement	1054	1875	
	Surplus / Shortfall	-24	27	
	% Surplus / Shortfall	-2.3%	1.4%	
J&K and LADAKH	Availability	1430	3290	No Revision submitted
	Requirement	1766	3169	
	Surplus / Shortfall	-336	121	
	% Surplus / Shortfall	-19.0%	3.8%	
PUNJAB	Availability	6910	11230	No Revision submitted
	Requirement	5150	10863	
	Surplus / Shortfall	1760	367	
	% Surplus / Shortfall	34.2%	3.4%	
RAJASTHAN	Availability	9230	17180	No Revision submitted
	Requirement	8700	15800	
	Surplus / Shortfall	530	1380	
	% Surplus / Shortfall	6.1%	8.7%	
UTTAR PRADESH	Availability	11700	25800	No Revision submitted
	Requirement	11400	25800	
	Surplus / Shortfall	300	0	
	% Surplus / Shortfall	2.6%	0.0%	
UTTARAKHAND	Availability	1284	2320	06-Mar-25
	Requirement	1305	2360	
	Surplus / Shortfall	-21	-40	
	% Surplus / Shortfall	-1.6%	-1.7%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	41656	71600	
NORTHERN REGION	Requirement	37702	70500	
	Surplus / Shortfall	3954	1100	
	% Surplus / Shortfall	10.5%	1.6%	

SLDCs are requested to update the anticipated power supply position of their respective state / UT for the month of April-2025 and submit the measures proposed to be taken to bridge the gap between demand & availability, as well to dispose-off the surplus, if any, in the prescribed format.

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

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

All utilities are requested to update the status.

A.7. NR Islanding scheme

Latest status of Islanding Scheme of NR is attached as **Annexure-A.II.**

Members may kindly deliberate.

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

A.8.1In 186th OCC meeting, it was agreed that coal stock position of generating stations in northern region may be reviewed in the OCC meetings on the monthly basis.

A.8.2 Accordingly, coal stock position of generating stations in northern region during current month (till 04th April 2025) is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
ANPARA C TPS	1200	0.12	17	26.9
ANPARA TPS	2630	0.80	17	25.3
BARKHERA TPS	90	0.22	26	24.6
DADRI (NCTPP)	1820	0.65	26	23.6
GH TPS (LEH.MOH.)	920	0.67	26	32.9
GOINDWAL SAHIB TPP	540	0.38	26	33.6
HARDUAGANJ TPS	1265	0.13	26	30.2
INDIRA GANDHI STPP	1500	0.48	26	45.6
KAWAI TPS	1320	0.59	26	15.7

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
KHAMBARKHERA TPS	90	0.00	26	22.5
KOTA TPS	1240	0.53	26	19.6
KUNDARKI TPS	90	0.00	26	19.1
LALITPUR TPS	1980	0.52	26	23.7
MAHATMA GANDHI TPS	1320	0.38	26	31.2
MAQSOODPUR TPS	90	0.22	26	25.3
MEJA STPP	1320	0.32	26	28.0
OBRA TPS	1094	0.73	26	11.2
PANIPAT TPS	710	0.36	26	38.1
PARICHHA TPS	1140	0.54	26	22.2
PRAYAGRAJ TPP	1980	0.79	26	16.9
RAJIV GANDHI TPS	1200	0.26	26	30.0
RAJPURA TPP	1400	0.52	26	23.1
RIHAND STPS	3000	0.81	17	22.7
ROPAR TPS	840	0.78	26	44.4
ROSA TPP Ph-I	1200	0.63	26	28.4
SINGRAULI STPS	2000	0.96	17	24.4
SURATGARH TPS	1500	0.47	26	13.6
TALWANDI SABO TPP	1980	0.44	26	4.6
TANDA TPS	1760	0.83	26	16.7
UNCHAHAR TPS	1550	0.60	24	19.0
UTRAULA TPS	90	0.27	24	24.6
YAMUNA NAGAR TPS	600	0.43	24	35.2
CHHABRA-I PH-1 TPP	500	0.84	24	12.4
KALISINDH TPS	1200	0.76	24	13.2
SURATGARH STPS	1320	0.69	24	12.1
CHHABRA-I PH-2 TPP	500	0.54	24	14.2
CHHABRA-II TPP	1320	0.78	24	11.0
JAWAHARPUR STPP	660	0.04	24	14.3

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

A.9.1. To enhance the monitoring of approved Planned Maintenance schedules, Member (GO&D), CEA has directed that 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 February 2025 is attached as **Annexure-A.III.**

A.9.4. In this, regard, Generating Station/utilities of NR are requested to submit each month details of the maintenance activities that transpired against the originally planned schedule. Further, any deviations from the planned schedule shall be explained by the concerned generating entities.

Generating utilities of NR to update status.

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. 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.

A.10.2. The details of AUFLS 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.10.3. In 226th OCC and 227th OCC meeting, aforementioned relief was communicated to respective SLDC's of NR and forum asked States/UTs of NR to communicate feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before next OCC meeting.

A.10.4. In 15th NPC meeting held on 14.11.2024 following was approved by the committee

i. 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.

ii. 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.

iii. 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.10.5. In 228th OCC meeting respective SLDCs of NR States/UTs were asked to confirm via mail the relief quantum at different stages of AUFLS as on present date.

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

State/UT	**Stage-1 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	NIL	NIL	NIL	NIL	**NIL**
Delhi	350	335	330	435	**1450**
Haryana	308	309	312	314	**1243**
Himachal Pradesh	153	197	80	35	**465**
UT J&K & Ladakh	155.6	204.3	204.2	214.2	**778.3**
Punjab	249	298.49	1035.97	270	**1853.46**
Rajasthan	461	340	348	344	**1493**
Uttar Pradesh	2580.33	2187.72	2013	1757	**8538.05**
Uttarakhand	486	67	87	241	**881**
Total	**4742.93**	**3938.51**	**4410.17**	**3610.2**	**16701.81**

Respective SLDC's of NR to update the status in line with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) and df/dt scheme.

A.11. Planned Maintenance schedule of thermal generating stations for FY 2025-26 (Agenda by NRPC Sectt.)

A.11.1. CEA vide mail dated 27.02.205 has asked RPC's to communicate to all the thermal generators in their respective regions to adhere to the approved planned outages for FY 2025-26. No deviation should be entertained to generators. (copy of approved planned maintenance schedule of thermal generating stations for FY 2025-26 is attached as **Annexure-A.IV**)

Generators to kindly note.

A.12. Periodic testing of generators and FACTS/HVDC Devices (Agenda by NRPC Sectt.)

A.12.1. Regulation 40 (1) of CERC (IEGC) Regulations, 2023 stipulate that there shall be periodic tests, as required under clause (3) of this Regulation, carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies as well as ensuring desired performance during an event in the system.

A.12.2. The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if advised by SLDC or RLDC or NLDC or RPC, as the case may be.

A.12.3. Further, Regulation 40(1)(b) stipulate that "All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance."

Extract of IEGC 2023 clause 40,

"40. PERIODIC TESTING

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

(2) General provisions

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

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

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

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

(3) Testing requirements

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

TABLE 9 : TESTS REQUIRED FOR POWER SYSTEM ELEMENTS

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

A.12.4. In accordance with above, Generators and HVDC/FACT owners were supposed to furnish the Testing schedule for 2025-26 by 31st October 2024.

A.12.5. In 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.

A.12.6. 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

A.12.7. In 227th OCC meeting, MS NRPC stated that the above agenda would be included in follow up agenda of NRPC for regular monitoring in OCC Meetings.

A.12.8. In view of the above Generators and HVDC/FACT owners are requested to furnish Testing schedule for 2025-26 in the format attached as **Annexure-A.V**

Utilities to update status.

A.13. SPS for 2X315 MVA, 400/220kV ICTs at 400kV GSS Merta (Agenda by RRVPNL)

A.13.1. RRVPNL vide letter dated 02.03.2025 has submitted that SPS for the 2X315 MVA, 400/220 kV ICTs at 400kV GSS Merta approved in the 194th OCC was based on taking the trip command from the 86 relay installed on 220kV side of both the 2X315 MVA, 400/220kV ICTs at 400kV GSS Merta.

A.13.2. The existing SPS give relief in the event of tripping of the lines and it does not take care of the ICT overloading. Hence, a generalized SPS is required which can take care of the tripping of the ICTs and overloading of the ICTs.

A.13.3. In this regard, revised SPS for the 2X315 MVA, 400/220 kV ICTs at 400kV GSS Merta has been formulated by RRVPNL (details of the SPS along with revised logic is attached as **Annexure-A.VI**).

Members may kindly deliberate.

A.14. To expedite the execution of the proposed temporary arrangement and provide the latest status of work progress of 400kV SCSTPS-Babai line (Agenda by RVUNL)

A.14.1. RVUNL has intimated that 400KV STPS Switchyard gets overloaded due to heavy import of power from 400KV SSTPS-SCSTPS interconnectors 1&2 which in turn imports power from 400kV SCSTPS-Bikaner-1&2 feeders. These Bikaner feeders feed the solar power during Solar hours and thus overloads the 400 KV Buses of STPS switchyard.

A.14.2. RVUNL has informed that 400 KV SCSTPS-Babai lines were proposed to carry out the power evacuation of SCSTPS/solar power. But these lines are under construction since last 6-7 years. Due to non-evacuation of power from Babai lines and low export or import power from Bikaner lines during solar hours the buses of 400KV switchyard of SSTPS becomes heavily loaded. The Al. pipe buses are maintained and strengthened time to time but jumpers and isolator contacts are always prone to develop hotspot on overloading.

A.14.3. Further, RVUNL has mentioned that during the special meeting held on 19.10.2024 among NRPC, NRLDC and representatives of various power utilities of Rajasthan, it was assured by RVPN that 400KV SCSTPS-Babai lines work is likely to be completed by March 2025. RVPN is requested to update the status and expedite the work to avoid operational and overloading issues.

A.14.4. Moreover, RVUNL has stated that in the meeting held on 19.10.2025, a temporary solution of interconnecting 400 kV SCSTPS-Babai line to 400 KV SSTPS-Ratangarh line was also proposed by SLDC. It would bypass the power from 400KV SSTPS switchyard. RVPN has confirmed that this work can continue in parallel to the commissioning of 400KV Babai Lines.

A.14.5. Further, RVUNL has submitted that to expedite the execution of the proposed temporary arrangement and provide the latest status of work progress of 400kV SCSTPS-Babai line a letter (copy attached as **Annexure-A.VII**) was also written on dated 07/02/2025 by Chief Engineer (O&M), STPS, RVUN, Suratgarh to The Zonal Chief Engineer (T&C), RVPN, Jodhpur but no update has been provided till now.

Members may kindly deliberate.

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

B.1. NR Grid Highlights for February 2025

Detailed presentation on grid highlights of Febraury'2025 will be shared by NRLDC in OCC 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	265	05.02.25 at 07:00	5.1	05.02.25	3.9
2	Delhi	4657	07.02.25 at 10:10	78.7	07.02.25	72.9
3	Haryana	9602	07.02.25 at 09:45	172.0	12.02.25	157.0
4	H.P.	2193	18.02.25 at 07:45	39.5	25.02.25	37.5
5	J&K	3057	05.02.25 at 10:00	70.3	04.02.25	61.7
6	Punjab	10165	07.02.25 at 11:15	180.0	07.02.25	154.4
7	Rajasthan	19165	12.02.25 at 11:00	355.0	08.02.25	344.6
8	UP	20456	08.02.25 at 18:53	363.7	26.02.25	346.9
9	Uttarakhand	2477	07.02.25 at 08:00	45.3	04.02.25	42.7
***10**	**Northern Region**	**69055**	**07.02.25 at 10:10**	**1275.8**	**08.02.25**	**1221.6**

*As per SCADA

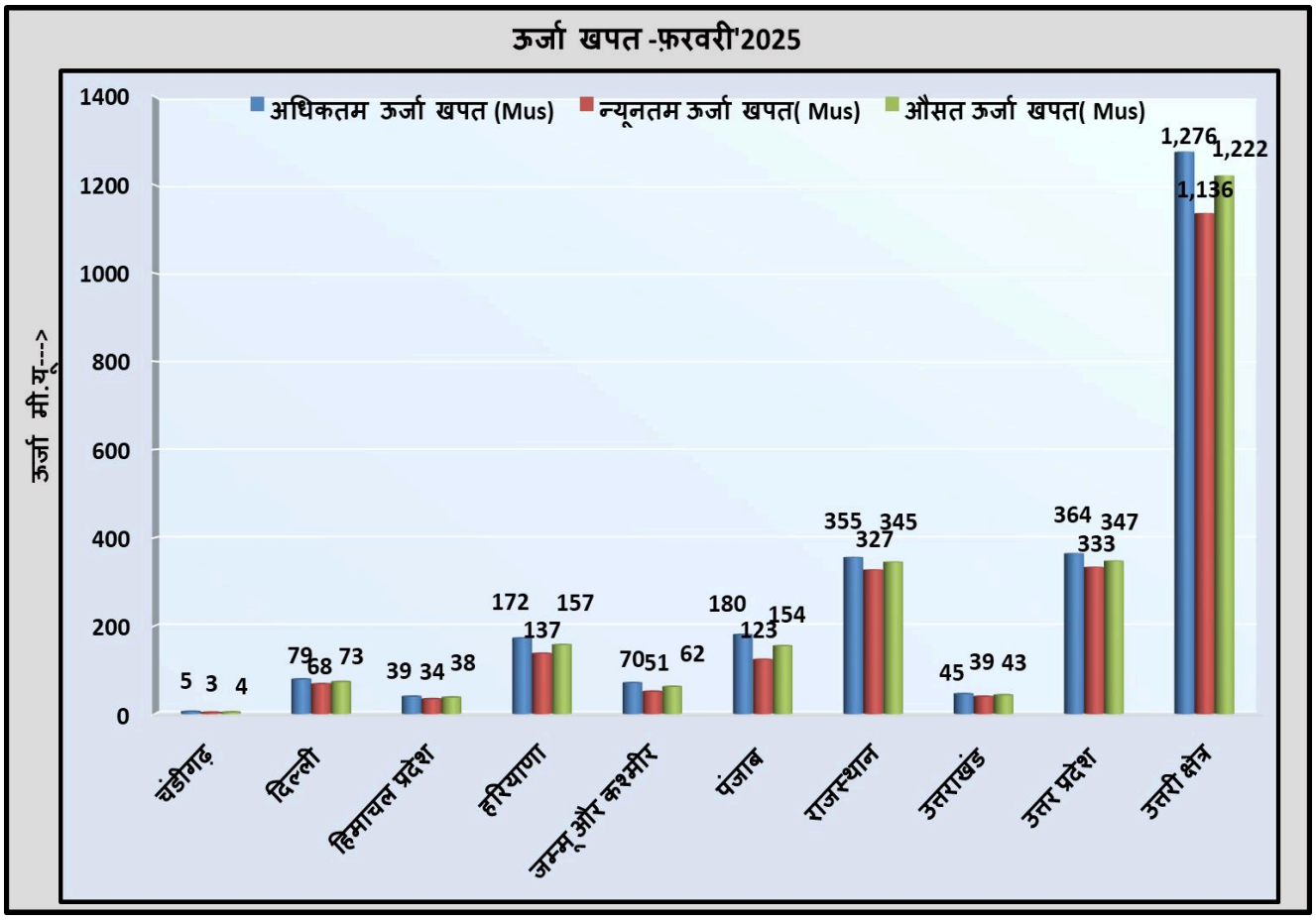
- In Feb'25, the Maximum energy consumption of Northern Region was **1276 MUs** on 08th Feb'25 and it was 6.96 % higher than Feb'24 (1193 MU 16th Feb'24)
- In Feb'25, the Average energy consumption per day of Northern Region was **1221.6 MUs** and it was 5.91 % higher than Feb'24 (1153 MUs/day)

- In Feb'25, the Maximum Demand met of Northern Region was **68573 MW** on 07th Feb'25 @10:00 hours (*as per SCADA data)* as compared to 63481 MW on 16th Feb'24 @10:00hours.

Comparison of Average Energy Consumption (MUs/Day) of NR States for the Feb'24 vs Feb'25

क्षेत्र/राज्य	फ़रवरी- 2024	फ़रवरी- 2025	% अंतर
चंडीगढ़	4	3.9	-3.7%
दिल्ली	75	72.9	-2.8%
हिमाचल प्रदेश	35.5	157.0	5.7%
हरियाणा	146.7	37.5	7.0%
जम्मू और कश्मीर	57.7	61.7	6.9%
पंजाब	155.8	154.4	-0.9%
राजस्थान	315.8	344.6	9.1%
उत्तराखंड	42.4	346.9	0.7%
उत्तर प्रदेश	320.4	42.7	8.3%
उत्तरी क्षेत्र	1153.4	1221.6	5.9%

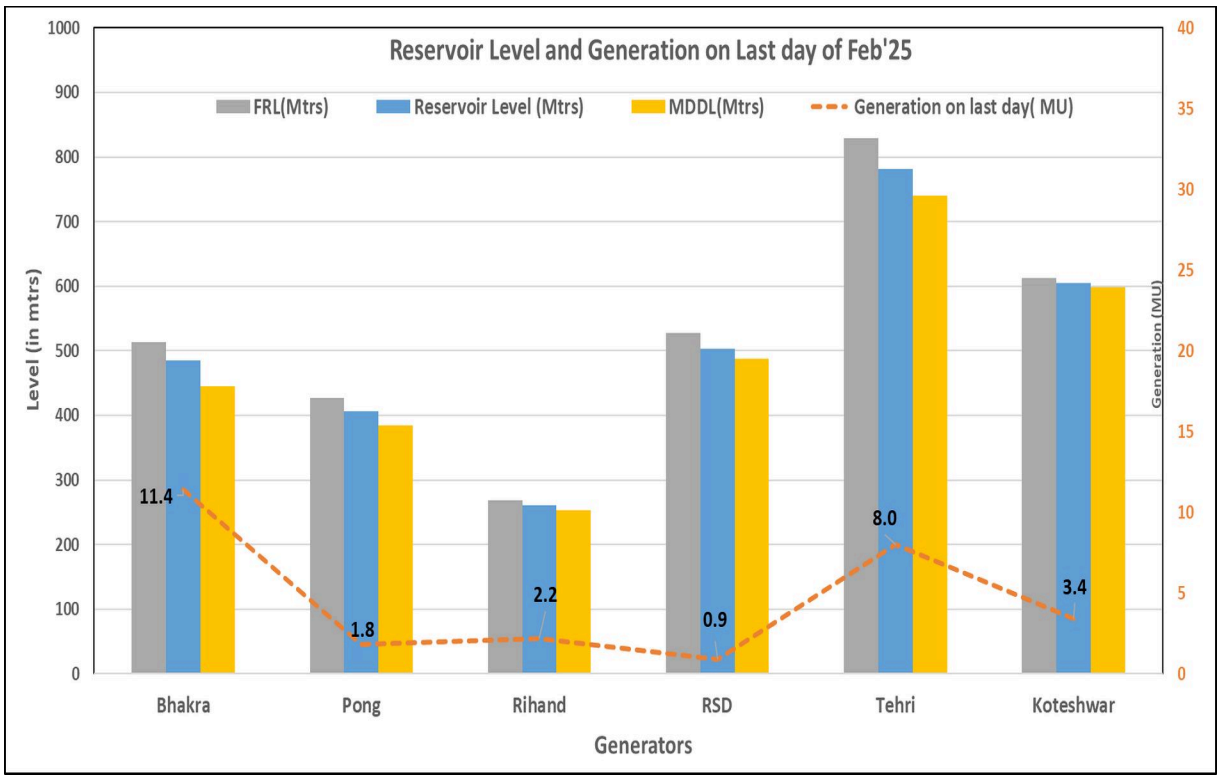
Energy Consumptions



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Feb'25	49.999	50.335 (24.02.25 at 08:00:00 hrs)	49.549 (19.02.25 at 12:43:30 hrs)	6.24	75.35	18.41
Feb'24	50.000	50.346 (01.02.24 at 06:03:00 hrs)	49.574 (18.02.24 at 09:18:50 hrs)	6.23	74.06	19.69

Reservoir Level and Generation on Last Day of Month



RESERVOIR	Parameters			Present Parameters		LAST YEAR	
	MDDL (Mts)	FRL (Mts)	Energy Content at FRL	Level (Mts)	Energy (MU)	Level (Mts)	Energy (MU)
Bhakra	445.62	513.59	1,728.8	480.68	475	485.33	594
Chamera-I	748.75	760	753.95	757.34	9	-	-
Gandhisagar	381	399.9	725	-	-	-	-
Jawahar Sagar	295.96	298.7	2.01	-	-	-	-
Koteshwar	598.5	612.5	610.73	611.4	5	604.33	2
Pong	384.05	426.72	1,084	396.09	146	406.6	389
RPS	343.81	352.81	175.66	-	-	-	-
RSD	487.91	527.91	390.3	492.72	37	502.6	137
Rihand	252.98	268.22	860.5	-	-	-	-
Tehri	740.04	830	1,164.11	781.38	347	781.16	344
TOTAL	-	-	-	-	1,019	-	1,466

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.

Subsequently, a meeting was taken by Hon'ble CERC on 14.02.2025 with all NR SLDCs, NRLDC and NRPC to review the actions being taken at SLDC end on measures related to resource adequacy. Further, as per MOM (Annex B.I) issued by Hon'ble CERC on 05.03.2025, following points are to be noted:

(a) Only few of the NR SLDCs are furnishing the demand estimation and resource adequacy data as per the specified timelines.

(b) NRLDC shall hold discussions and interactions with NR SLDCs to ensure they are well-equipped to assess their resource adequacy and reserve requirements effectively. This may include providing the necessary tools and frameworks for better forecasting and planning.

(c) NR SLDCs are not maintaining the reserves as per the allocated quantum by the NLDC as per the Grid Code. If reserves are to be maintained, a specific portion of capacity must be earmarked exclusively as a reserve and that quantum may not be scheduled unless under contingency. All states must ensure maintaining the reserve for their control area as per the allocation done by the NLDC as per the Grid Code.

(d) To meet the required deficit for the upcoming peak months, the states should do the advance planning for power procurement including bilateral contract and short-term contract. The States should not be dependent on RTM/ DAM Purchases.

(e) The implementation of the SAMAST Project is required to be pushed by SLDCs of Haryana, Uttarakhand, Punjab, J&K, Punjab and Delhi. A specific timeline should be fixed for installation of the SAMAST Project.

(f) The SLDCs having shortage of manpower should proactively take up the matter with the concerned competent authorities for the requirement of additional manpower as per the present sanctioned strength and also for approval of revised sanction strength as per the MoP Workforce Adequacy Guidelines for Load Despatch Centres.

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 February-2025 as per Clause 31(4) (a) & (b) of IEGC-2023 is shown below:

RA data submission by SLDCs (Recent status)

State/Entity	Day Ahead (2025-26)	Week Ahead	Month Ahead (Mar 2025)	Year-Ahead
Punjab	As per Format	As per Format but not as per timeline	As per Format	Not received
Haryana	Demand and Resource not as per format	Not received	Only Demand	Not received
Delhi	As per Format	As per Format	As per Format	Only Demand
Rajasthan	As per Format	Not received	Not received	Not received
Uttar Pradesh	As per Format	Only Demand	Only Demand	Only Demand
Uttarakhand	Demand and Resource not as per format	Only Demand	Not received	Not received
Himachal Pradesh	As per Format	As per Format	As per Format	As per Format
J&K and Ladakh (UT)	As per Format	Not received	As per Format but not as per timeline	Not received
Chandigarh (UT)	As per Format	As per Format	Not received	Not received

In accordance with above, all SLDCs are 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.II:

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 is also requested to share actions being taken at your end to ensure compliance of listed clauses of IEGC 2023 as Annex-B.II.

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*).

During the 228th OCC meeting, CGM, NRLDC, reiterated the importance of conducting the self-audit exercise within the timelines mandated by regulations. He informed that NRLDC has already submitted its self-audit report to CERC and urged all stakeholders to do the same.

As per IEGC Clause 56.2(c), 'The self-audit reports by users, QCAs, and SNAs shall be submitted to the concerned RLDC or SLDC, as the case may be.' Failure to submit the self-audit report within the stipulated timeframe would be considered a non-compliance with IEGC regulations.

Self-audit report has been received from NHPC and Koteshwar THDC.

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

Members may please discuss.

B.3. Monitoring of Data center/Electrolysers and their compliances before connection to the grid

National Green Hydrogen Mission launched in Jan 2023 has included in its objective to build capabilities to produce at least 5 Million Metric Ton (MMT) of Green Hydrogen per annum by 2030, with potential to reach 10 MMT per annum with growth of export markets. Achieving this goal will require an estimated 60-100 GW of electrolyser capacity installations. A significant portion of this load is expected to get connected at the ISTS (Inter-State Transmission System) level, primarily in concentrated green hydrogen zones across the country. In addition to electrolyser load, a large quantum of data centre load is also expected to be connected at intra-state level in Northern region.

Following aspects of data centers and electrolysers need to be studied in detail:

1. Classification and Load Interface Assessment

- State of the art technology for electrolysers, data centres and their characteristics
- Classification of the nature of these bulk consumer loads - distinguishing between Inverter-Based Resources (IBR) and traditional synchronous connections.
- Analyse load characteristics to inform tailored connection requirements and grid support functions.

2. Connection Code/Standard Development

- Ride-Through Capabilities: Define fault ride-through standards to maintain grid connection during disturbances.
- Voltage and Frequency Support: Establish dynamic support criteria for voltage regulation and frequency stability.
- Harmonic Compliance: Set standards for harmonic distortion limits to mitigate power quality impacts on the grid.
- Grid Supportive Control Modes: Specify droop and other frequency-sensitive control modes to contribute to grid frequency containment. Any other technical requirement

3. Reactive Power and Voltage Support Requirements

- Define reactive power requirements, including dynamic reactive capability specifications, to support voltage stability and local grid requirements.
- Establish reactive power capability curves for bulk consumer loads, ensuring alignment with grid voltage regulation needs during both normal and contingency conditions.

4. Ramping Requirements

- Determine acceptable ramp rate limits for bulk loads to prevent adverse impacts on grid stability, considering rapid load variations typical of electrolysers and similar facilities.
- Specify maximum permissible ramping rates based on load characteristics and grid operational needs.

5. Energy Management and Curtailment Mechanisms

- Outline requirements for curtailment capabilities during peak load and contingency conditions to enhance grid flexibility and renewable integration.

6. Requirements to be specified for approval of First-time energization and Integration

- Model submission, telemetry, metering, trial operation, COD, disturbance records etc.

Furthermore, it may be noted that committee has been setup for the same under Member Power System, CEA.

It is requested that SLDCs share the details of Data Centers/Electrolysers functional in their respective states. The below mentioned format may be referred for sharing the details. It is also requested to obtain the telemetered data of active power and reactive power consumption of data centers for one complete year at highest time resolution possible.

S.No.	Data Centre Or Electrolysers	Owner	Capacity	State	Connectivity via line/ICT at 220 kV level	Telemetry available(Yes/No)
1						

Further, information on following points may also be shared and taken up:

1. Availability of PMU on radial feeders supplying to Data Centers/Electrolysers

2. Phase wise power consumption trend as obtained from PMU for atleast three scenarios of a day

3. Taking up with SLDC/DISCOM for PMU placement on the radial supply feeder

Members may please discuss.

B.4. Summer Preparedness 2025 measures:

With the increase in temperature, demand of Northern Region starts increasing from March onwards every year. Summer of Northern region are typically hot and demand is also high during this time, therefore advance actions help in better grid operation.

Due to extreme weather conditions, high demand is observed during summer/monsoon months in Northern region. Along with high demand, high loadings of lines and transformers and low voltages especially at transmission & distribution level are big challenge to safe and secure grid operation.

To overcome the commonly encountered challenges during summer months and ensuring smooth grid operation, following are few points which have been discussed on many occasions in previous OCC and TCC/ NRPC meetings and are required to be followed by all:

S. No.	Issues	Action plan	Action by
1	**Maintenance of reserves** During summer, in anticipation of increasing demand, adequate reserves shall be maintained. During summer, sudden outage of hydro units on silt or other major generation outage affects frequency/voltage, line loading, reliability and security of the corridor/control area/Generation complex etc. In events of sudden load crash, ISGS generators are being instructed to back down to 55% of their installed capacity.	In such cases, apart from portfolio management based on proper forecast as discussed above, re-starting of units under reserve shutdown at state as well as Inter-state level through appropriate transactions is required. Moreover, display window showing reserve available in ISGS generators has been developed at NRLDC. SLDCs are also requested to arrange for such display window at their control centers so that system operators readily know quantum of reserve available and hence better real-time actions can be taken. Rajasthan, Punjab, Haryana, Uttarakhand and Delhi are requested to take actions to ensure backing down of generators to 55% of their	NRLDC, SLDCs, Generators

		capacity in case of critical situations. This would ensure reserves in the system and also make us prepared for extreme situations.	
2	**Furnishing of coal stock position** Advance information of coal stock of thermal plants ensures generating units availability and it is very important during high demand season.	It has been observed in past years that sudden information of outage of thermal units on coal unavailability poses challenges to meet high demand. It is therefore requested to update & share coal stock position of thermal plants at least a week in advance as agreed earlier in TCC/NRPC meeting.	Generators , SLDCs
3	**Portfolio Management, load staggering** As discussed in previous OCC meetings states such as UP, Rajasthan and Haryana connect/ disconnect large quantum of load at hourly boundaries resulting in frequency spikes and instantaneous over voltages. This has also resulted in tripping of lines on overvoltage in recent past. In view of high/increasing demand & transmission constraints (if any) in importing the power or in case of any contingency in the system, states are requested to maximize their internal generation to avoid low frequency/low voltage operation or other related issues.	Apart from GNA based arrangements based on forecast, other short term arrangements should also be planned for real time imbalances. For example, ensuring adequate margin while scheduling own thermal generation, units on bar, maintenance of reserves, technical minimum operation of thermal units in case of load crash, tie up with neighbor states or hydro rich states and utilization of real-time market etc. to bridge the load-generation gap in real time.	SLDCs
4	**Tower Strengthening and availability of ERS** There have been number of instances of tower collapse &	All utilities are requested to ensure availability of Emergency Restoration System (ERS) for early restoration of supply. Each utility shall work on plan for tower repairing work before	STUs and POWERGRID

	damage in the past during thunder storms which resulted in constraints in power transmission for extended duration of time. Number of tower collapse incidents occurred during last summer also in May/Jun 2023 & 2024 in which many EHV lines including 765kV lines were out on tower collapse. Number of 400kV lines were also out in Rajasthan control area leading to curtailment of RE in Western Rajasthan.	April. Extra precautions need to be taken care for important lines which have history of tripping during thunderstorm/ windstorm. **PTCUL, HPPTCL, RRVPNL, JKPTCL and HVPNL are not having ERS as per the government norms**. ERS procurement may be expedited by licensees having deficit ERS than requirement as per the Govt. norms	
5	**Reactive power management** Over the years during summer months, it has been observed that voltage profile during summer has improved. However, it is always essential to remain alert and take all necessary precautions to avoid any issues arising due to low voltages during summer months.	To maintain the voltage profile of Grid within IEGC band during summer, following known actions are suggested: • Switching ON Capacitor/Switching OFF reactor as per system requirement • Tap Optimization at 400/220kV by NRLDC and 220/132kV by respective state control area based on scatter plots of ICTs, offline studies, NRPC RE account etc. • Dynamic reactive support from Generator as per their capability curve. SLDC to monitor the same for intrastate generators. • SCADA Displays for better visualization during real-time	NRLDC, SLDCs
6	**Defense Mechanism** Several defense mechanism schemes have been	Till date it has been observed that performance of SPS is considerably low. Accurate operation of SPS is very essential and hence, mapping of SPS in SCADA is also being done.	

	recommended by various committees and advantages of such defense schemes have been discussed in many fora too. Majority of defense mechanism are to cover protection for under voltage, under frequency, rate of change of frequency, SPS for line/ICTs loading/generator complex evacuation etc. It is pertinent to mention here that SPS is only for operational defense and should not be considered as long term solution.	It is suggested that all state control area/Users shall ensure before start of summer that their protection and defense system are in working conditions and settings are as per the recommendations of NRPC. In addition, all states/user need to provide update for changes or modifications carried out if any.	Transmission utilities (STU/ISTS) and SLDCs
7	**Telemetry** It has been observed number of times, that telemetry of large nos of stations is affected during contingency, inclement weather, or in day to day switching operations etc.	All are requested to ensure the telemetry of all analog & digital points of all stations at respective control centers. Large number of telemetry issues are also encountered with newly commissioned elements. Analog as well as Digital data of from many Rajasthan Stations is not reliable. Matter had been taken up in 24th TEST meeting. Major issues of telemetry data at 400 KV Heerapura, Hindaun, Ratangarh ,Bhilwara and Phagi lines have been reported. At some places isolators are open.	SLDCs STUs

Due to unfavourable weather conditions during summer months, All India demand is on the higher side. On several days, it is observed that frequency is below the band for most of the time. In order to maintain the Grid security all SLDCs are requested to take proactive steps as follows:

- Ensure that ADMS is in service and expedite its implementation if not commissioned. Latest status for NR states is shown below:

◎	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

- Ensure healthiness and availability of AUFLS and df/dt load shedding.
- Ensure revival of intra-state generators under economic shutdown/RSD based on requirement
- Ensure portfolio balancing through T-GNA/RTM market segments
- Ensure no under injection by the generators from schedule
- In case of inadequate margins in intrastate generators measures for emergency load regulation measures may be taken in interest of grid security.
- Pursue generators to expedite revival of thermal units under forced outage wherever feasible.

In this case, the list of radial feeders becomes very important. Utilities have been requested number of times to update list of radial feeders which can be opened on the directions of NRLDC to regulate the demand. List of such radial feeders has been provided by respective utilities and is part of 'Operating Procedure of Northern Region'. Latest list of radial feeders is also attached as **Annexure-B.III**. Following are the attributes for such feeders:

- Feeders shall be radial in nature
- They should usually have substantial load flow so that reduction of drawl can be prominently noticed on opening of such lines.

The opening of feeders is generally an extreme step which shall be required in case of threat to grid security and non-adherence to RLDC instructions to manage over drawl by SLDCs/ DISCOMs. In such a case, every utility needs to take actions to support RLDC by following their instructions including opening of feeders.

SLDCs are once again requested to verify that

- list of feeders are actually radial in nature and are likely to provide the expected relief
- such feeders are not part of any other scheme such as any SPS, UFR or df/dt actuated shedding

Telemetry is to be ensured for all such feeders for monitoring in real time by SLDC/ NRLDC. States are also advised to take remedial measures for minimizing sustained over drawl at low frequencies as per the IEGC.

Members may like to discuss.

B.5. Expediting SPS implementation before summer 2025:

As mentioned in previous agenda point, there is expected to be very high demand in Northern region during the month of May-Sep months. During the high demand period, it is observed that often the transmission system remains heavily loaded and may become N-1 non-compliant on several occasions. To overcome this N-1 non-compliance, planning for new transmission system is being carried out by CTUIL and CEA. However, it is observed that there are certain occasions when the transmission elements approved will take considerable time for commissioning. Due to this delay, the existing transmission system may get overloaded.

To address the issue and avoid major contingency due to cascading tripping, SPS are being designed to minimize impact of outage of one or more transmission elements. As per clause 29.14 of IEGC 2023,

"NLDC, RLDCs, SLDCs, CTU, STUs or users may identify the requirement of System Protection Schemes (SPS) (including inter-tripping and run-back) in the power system to operate the transmission system within operating limits and to protect against situations such as voltage collapse, cascade tripping and tripping of important corridors/flow-gates. Any such SPS at the intra-regional level shall be finalized by the concerned RPC. SPS at the inter-regional and cross-border levels shall be finalized by the NLDC in coordination with the concerned RPCs. SPS shall be installed and commissioned by the concerned users. SPS shall always be kept in service. If any SPS at the intra-regional level is to be taken out of service, the permission of the concerned RLDC shall be required. If any SPS at the inter-regional and cross-border levels is to be taken out of service, permission of NLDC shall be required."

As per NRLDC, SPS at following substations need to be commissioned before summer 2025 so as to avoid major contingency incase of outage of one or more transmission element.

- Delhi SLDC to provide feeder details to be wired under SPS:
    - 765/400kV 2*1500MVA Jhatikara ICTs (Mundka section):
    - 765/400kV 2*1500MVA Jhatikara ICTs (Dwarka/Bamnauli section)
    - 400/220kV 4*500MVA Mandola ICTs
    - 400/220kV 2*315+2*500MVA Maharanibagh ICTs

- Haryana SLDC to provide feeder details to be wired under SPS
    - 765/400kV 2*1000MVA Bhiwani ICTs (two ICT section)
    - 400/220kV 450+500MVA Panipat ICTs (BBMB)
    - 400/220kV 2*315MVA Kabulpur ICTs
    - 400/220kV 3*315MVA Hissar ICTs

Further, as discussed earlier on numerous occasions, as majority of 400/220kV ICTs in Rajasthan state (both interstate as well as intrastate are N-1 non-compliant, RVPNL may identify feeders and discuss with POWERGRID for finalisation of SPS at interstate substations. For intrastate substations, where SPS have not been planned and implemented, the same may be taken up. List of N-1 non-compliant substations is shown below:

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

Delhi, Haryana and Rajasthan SLDCs are requested to provide update.

B.6. Actions taken based on committee recommendation report on 17th June load loss event

On 17th June 2024, a grid event occurred at 13:53 hours in the Northern Region, leading to a substantial load reduction of approximately 16.5 GW. This event started with the tripping of both bipoles of the +/-800 kV HVDC Champa (WR) – Kurukshetra (NR) link, which was transferring 4500 MW of power from the Western Region (WR) to the Northern Region (NR). The tripping of this HVDC link triggered a series of events. There was a sudden voltage drop across the stations in the Northern region which resulted in a significant load drop of around 16.5 GW in the Northern region. There was simultaneous reduction of around 2800 MW of RE-based generation in the Rajasthan RE complex. There was also trippings of conventional generating units leading to a generation loss of 3909 MW at the all India level. The significantly higher load loss resulted in the rise in frequency of the Indian power system from 50.03 Hz to 50.68 Hz. The load drop resulted in a rise in the voltages of stations in the Northern region. This high voltage resulted in the tripping of 18 nos. of EHVAC lines in the Northern Region on over-voltage protection. The power system was normalised after the revival of all the poles of HVDC Champa-Kurukshetra by 15:51 Hrs.

A Committee under the Chairmanship of Member (GO&D), CEA with members from CEA, IIT-Delhi, NRPC, NLDC, NRLDC, POWERGRID, SLDC Delhi & DISCOMs was set up to analyse the above-mentioned issues during which about 16.5 GW of consumer load in Northern Region got interrupted for a brief period.

The committee recommended the following remedial measures for avoiding the recurrence of such grid event:

- **Reactive Power Management (Dynamic/Static) by STU and DISCOMs**: In order to maintain voltage stability, reactive power support is desired from all grid connected utilities without leaning over each other so as to ensure minimum reactive exchange at different voltage levels.

- **Planning for dynamic reactive power sources near load centers based on load composition**: Adequate static/dynamic reactive devices may be planned at the distribution level near loads so that there is minimum drawl from reactive sources at the transmission (STU) level. The dynamic reactive power sources shall be commissioned near load centre stations based on the composition and quantum of individual load type.

- **Enhance reliability of HVDC Link**: Committee recommended POWERGRID to the followings

  a. Review of protection schemes to avoid frequent outages.
  b. Review of transmission line design including cross arms, jumpers, etc.
  c. Design of filter switching logic to support system voltage.

- **Implementation of Overvoltage protection setting**: A committee has already been set up by NRPC protection subgroup for the same and progress is being tracked in protection subcommittee meetings.

- **Frequency Response by Generating Units as per IEGC 2023**: It was recommended that the performance of generating units where inadequate primary response was observed shall be discussed at RPC level.

- **Compliance of CEA Standards by Renewable Generating Plants:** Performance is being monitored by RLDCs for interstate RE plants and SLDCs for intrastate RE plants. NRLDC has already filed petition in Hon'ble CERC regarding non-compliances observed for ISTS connected RE plants.

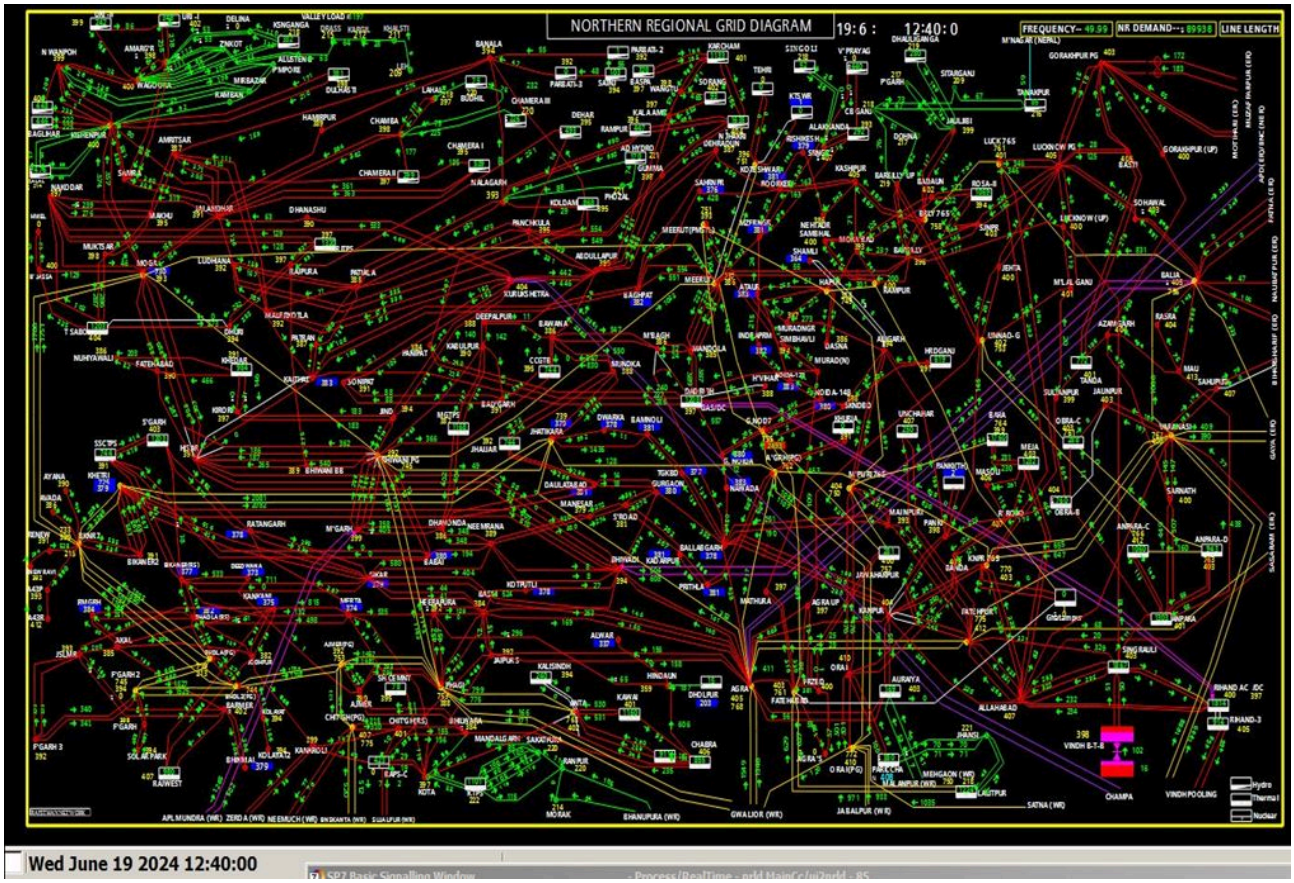
- **Retain of Conventional generators near load centers for providing grid support during such events:** The presence of thermal generators near the load centres may significantly improve the voltage profile and can provide dynamic reactive power support in case of contingencies improving the stability.

The above agenda point was also discussed in 75th NRPC Meeting held on 28 August 2024 through online mode. Forum acknowledged the sensitivity of event and directed the concerned to take appropriate actions based on the recommendations of Committee.

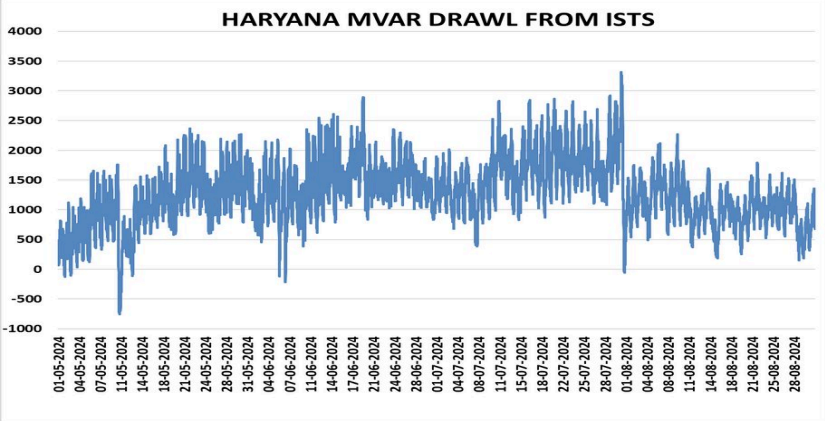
Measures for Low voltages

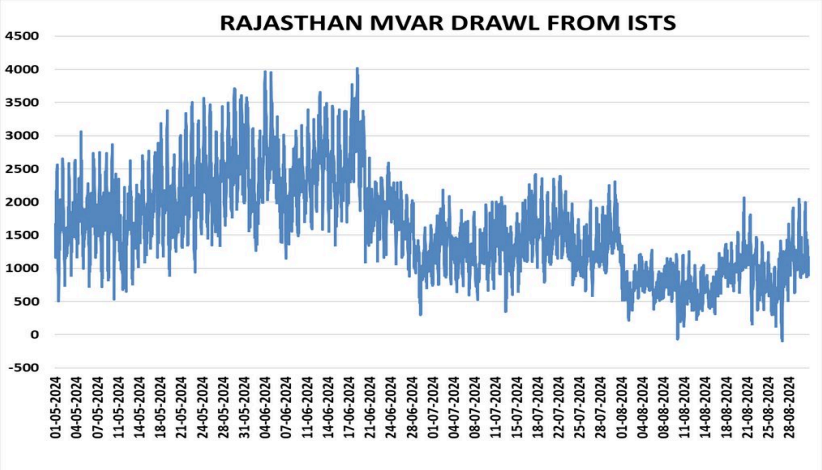
During summer months, reactive power requirement by load also increases due to increased cooling and pumping requirement. Due to lack of sufficient compensation at

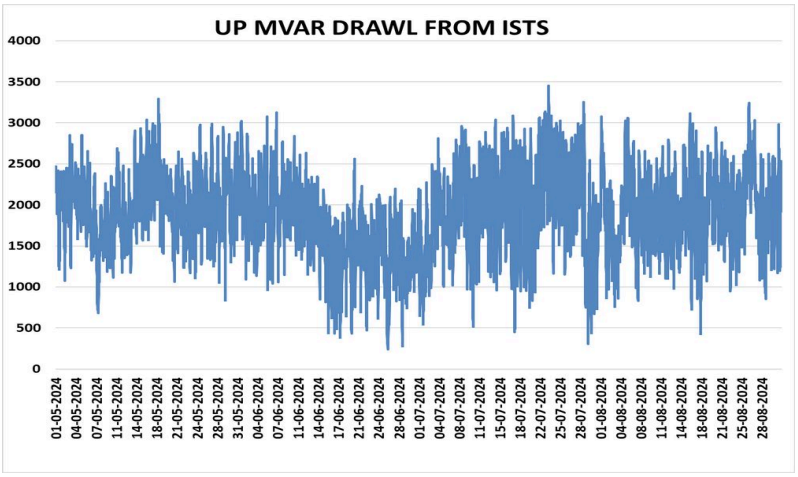
distribution and transmission level, huge reactive power is being drawn from ISTS network. Due to this high reactive power requirement during day-time and high loading of existing transmission lines from RE complex, low voltages are seen in the grid during afternoon time. Sample snapshot of low voltage observed in the grid during summer 2024 is shown below:

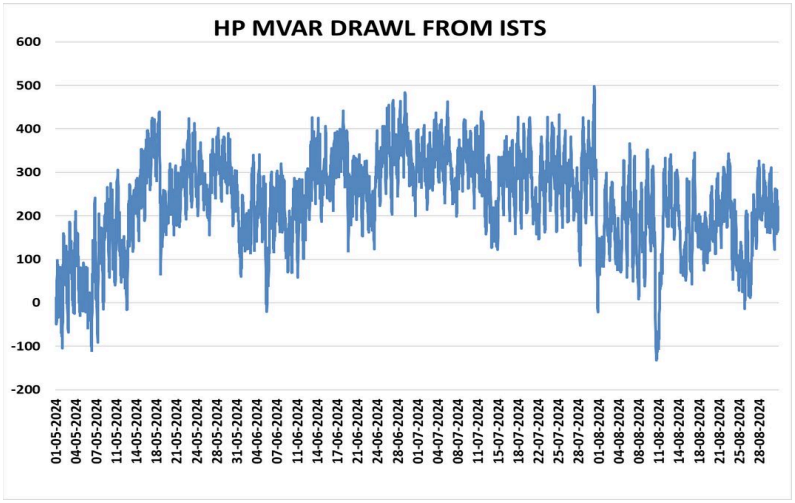


Reactive power drawl by states during May-Jul months is shown below where it can be clearly seen that there is huge MVAR drawl by some of the states such as Haryana, Rajasthan, HP and UP during these months. These huge MVAR drawl leads to low voltages in the grid especially during the day-time as there is high agricultural as well as cooling load requirement during this time.







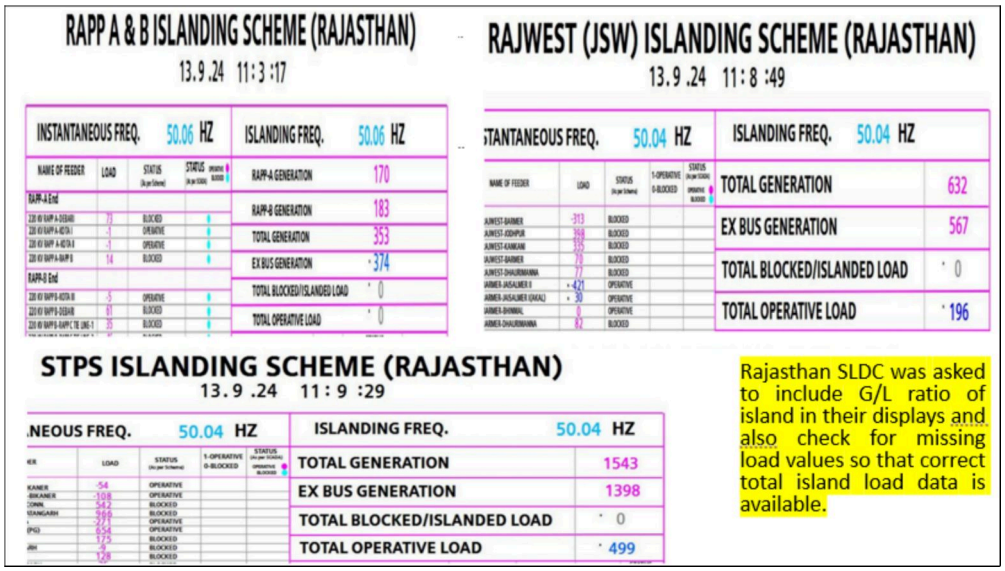


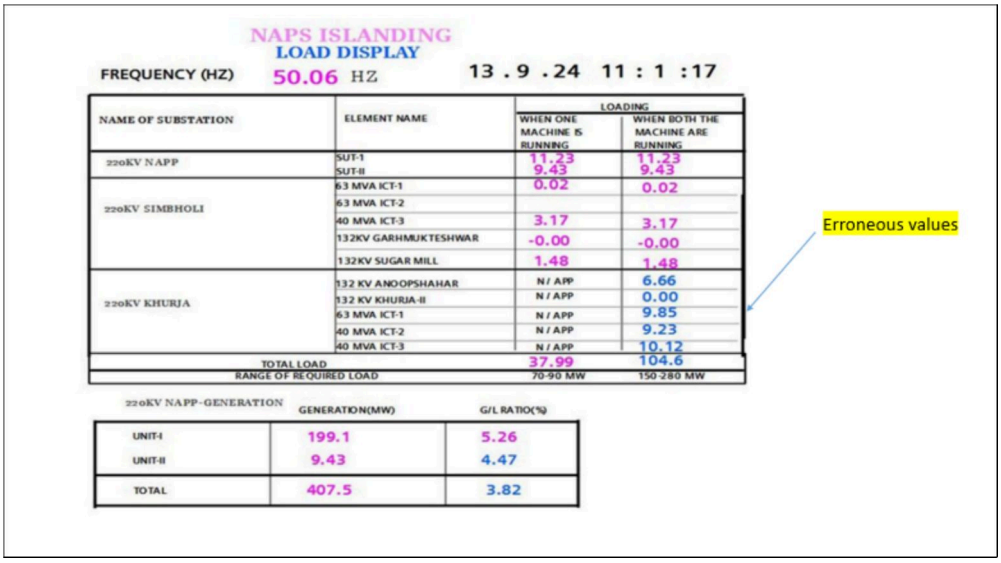
Concerned members are requested to provide update on the actions taken at their end in this regard. Members may please discuss.

B.7. 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.

Recently, a meeting was also convened by NRLDC with states on 06.02.2025 to review the progress.

Following was discussed during the meeting:

Updates from States:

1. Uttar Pradesh (NAPS Islanding Scheme)
   - Dynamic testing done on basecase shared by UP-SLDC.
   - UFR testing report submitted by UP-SLDC
   - SCADA display made by UP-SLDC, however some telemetry data is not coming in display.

2. Rajasthan (RAPS Islanding Scheme)
   - UFR testing report submitted on 06.02.2025 by Rajasthan SLDC
   - PSSE basecase files will be provided by 14.02.2025

3. Delhi (Bawana Islanding Scheme)
   - Mock testing of islanding scheme UFR relays was withheld due to scheduled assembly elections in Delhi. UFR testing report will be submitted by 14.02.2025

- PSSE basecase files will be shared by 14.02.2025
- SCADA display is outdated and new one will be made operational by 21.02.2025

4. Punjab (RSD Islanding Scheme)
   - Punjab SLDC is awaiting dynamic data of RSD and load data from site for islanding scheme and will be shared after receiving them. No firm timeline provided.
   - UFR testing report and SCADA display update will be provided on mail to NRLDC due to non-availability of concerned person in the meeting.

NLDC Recommendations:

The NLDC emphasized the urgency of receiving the PSSE files for the four scenarios to facilitate a dynamic health assessment of the islands and urged all NR states to prioritize sharing these files promptly.

During 228 OCC meeting,

Rajasthan representative informed that the islanding basecase will be submitted to NRLDC within a week.

Punjab representative stated that they are in the process of aggregating dynamic data from the site. Regarding UFR testing and SCADA display, they confirmed that both will be completed and submitted within a week.

Delhi representative informed that UFR testing was delayed due to the legislative assembly elections in Delhi during January-February 2025. Now that the elections are over, the pending UFR testing at Maharanibagh, Bawana, and Electric Lane will be completed within a week, and a consolidated UFR testing report will be submitted to NRLDC thereafter.

OCC Forum urged all concerned SLDCs to expedite the mock testing of the islanding scheme, submission of PSSE islanding basecase, dynamic data and preparation of SCADA display/SCADA map and complete the associated studies before the next OCC meeting**.**

Concerned SLDCs are requested to provide update.

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 & **3-4 February 2025** 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 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 Mar 2025 (M-1)

As discussed in previous OCC meetings, most of the NR states except Ladakh and Chandigarh UTs 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 Apr'2025 are attached as **Annexure-B.IV**.

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.

In 228 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.
- 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.

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

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 point
Himachal	Shared only for 1 cardinal point	Shared only for 1 cardinal point	Shared only for 1 cardinal point	Shared only for 1 cardinal point	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 TTC case, no data regarding cardinal points		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	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

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

Submitted with one month delay

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	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	No	Yes	No	No
Himachal	Yes	No	Yes	No	Yes	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	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

February 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (March-25)		M-12 (February-26)		M-6 (August-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh						
Delhi			Yes	Yes		
Haryana						
Himachal	Yes		Yes		Yes	
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						

Delhi, Haryana and Uttarakhand SLDCs are requested to provide update.

Members may please discuss.

B.9. Multiple element tripping events in Northern region in the month of February 2025:

A total of 16 grid events occurred in the month of February 2025 of which 06 are of GD-1 category, 05 are of GI-2 Category and 05 is of GI-1 Category. The tripping report of all the events have been issued from NRLDC. A list of all these events is attached at **Annexure-B.V.**

Maximum delayed clearance of fault observed in event of multiple elements tripping at 400/220kV Daulatabad(HS) at 08:11 hrs on 27th February, 2025 (As per PMU at Gurgaon(PG), B-N phase to earth fault with delayed fault clearing time of ~1080 msec is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total 04 events out of 16 grid events occurred in the month. In 04 (no.) of grid events, there was no fault in the grid.

Remedial actions taken by constituents to avoid such multiple elements tripping may be shared.

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.

Members may 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.

Members may like to discuss.

B.10. Status of submission of DR/EL and tripping report of utilities for the month of February 2025:

The status of receipt of DR/EL and tripping report of utilities for the month of **February 2025** is attached at **Annexure-B.VI**. 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. However, it is evident from the submitted data that reporting status is 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 trippings 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. Apart from prints of DR outputs, the corresponding COMTRADE files (.cfg/.dat) may please also be submitted in tripping portal / through email.

Members may like to discuss.

B.11. Frequency response performance for the reportable events of month of February 2025:

In the month of February 2025, only 1 no. of reportable event on 20th February 2025 was notified by NLDC for which FRC/ FRP need to be calculated and the same along with high resolution data need to be submitted to RLDC. Description of the event is as given in the Table below:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	Nadir Frequency (in Hz)	End Frequency (in Hz)	*Δf*	NR FRP during the event
1	20-Feb-25	16:20 hrs	As reported, at 16:20 hrs on 20th February 2025, generation loss event of 1777 MW occurred at 400 kV GMR and JITPL generating station (ER). Hence net generation loss of 1777 MW is considered for FRC/FRP Calculation.	49.944	49.800	49.909	-0.035	1.71

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

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

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

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

Status of details received from constituents as on 04th March 2025 is:

S. No	Control Area	Event Date
		20-02-2025
1	Punjab	Not Received
2	Haryana	Not Received
3	Rajasthan	Received
4	Delhi	Not Received
5	Uttar Pradesh	Received
6	Uttarakhand	Received
7	Chandigarh*	NA
8	Himachal Pradesh	Not Received
9	J&K(UT) and Ladakh(UT)	Not Received
10	Dadri -1 (TH)	Received
11	Dadri -2 (TH)	Received
12	Jhajjar (TH)	Received
13	Rihand-1 (TH)	Received
14	Rihand-2 (TH)	Received
15	Rihand-3 (TH)	Received
16	Shree Cement (TH)	Not Received
17	Singrauli (TH)	Received*
18	Tanda-2 (TH)	Received
19	Unchahar-I (TH)	Received
20	Unchahar-II (TH)	Received
21	Unchahar-III (TH)	Received
22	Unchahar-IV (TH)	Received
23	Anta (G)	No Gen
24	Auraiya (G)	No Gen
25	Dadri (G)	No Gen
26	AD Hydro (H)	No Gen

27	**Bairasiul (H)**	No Gen
28	**Bhakra (H)**	Not Received
29	**Budhil (H)**	No Gen
30	**Chamera-1 (H)**	No Gen
31	**Chamera-2 (H)**	No Gen
32	**Chamera-3 (H)**	No Gen
33	**Dehar (H)**	No Gen
34	**Dhauliganga (H)**	No Gen
35	**Dulhasti (H)**	No Gen
36	**Karcham (H)**	No Gen
37	**Kishanganga**	No Gen
38	**Koldam (H)**	No Gen
39	**Koteshwar (H)**	Received
40	**Malana-2 (H)**	NA
41	**Nathpa Jhakri (H)**	No Gen
42	**Parbati-2 (H)**	Not Received
43	**Parbati-3 (H)**	No Gen
44	**Pong (H)**	Not Received
45	**Rampur (H)**	No Gen
46	**Sainj (H)**	No Gen
47	**Salal (H)**	Received
48	**Sewa-II (H)**	No Gen
49	**Singoli Bhatwari (H)**	No Gen
50	**Sorang (H)**	No Gen
51	**Tanakpur (H)**	Received
52	**Tehri (H)**	Received
53	**Uri-1 (H)**	Not Received
54	**Uri-2 (H)**	No Gen

Frequency Response Performance (FRP) of generating stations for each reportable event are calculated based on the submitted high resolution data from generating stations. However, the generating stations for which data is not received till 04th March 2025, FRC/FRP as per NRLDC HDR data is used for computation of Average Monthly Frequency Response Performance, Beta 'β' for Generating Stations.

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

S. No	Control Area	Event Date
		20-02-2025
1	**Punjab**	1.62
2	**Haryana**	2.52
3	**Rajasthan**	0.68
4	**Delhi**	6.07
5	**Uttar Pradesh**	2.00
6	**Uttarakhand**	-0.19
7	**Chandigarh***	NA
8	**Himachal Pradesh**	-1.48
9	**J&K(UT) and Ladakh(UT)**	0.12
10	**Dadri -1 (TH)**	15.07

11	**Dadri -2 (TH)**	23.49
12	**Jhajjar (TH)**	20.72
13	**Rihand-1 (TH)**	10.92
14	**Rihand-2 (TH)**	5.04
15	**Rihand-3 (TH)**	2.58
16	**Shree Cement (TH)**	2.19
17	**Singrauli (TH)**	5.80
18	**Tanda-2 (TH)**	3.62
19	**Unchahar-I (TH)**	5.80
20	**Unchahar-II (TH)**	-7.07
21	**Unchahar-III (TH)**	1.38
22	**Unchahar-IV (TH)**	3.66
23	**Anta (G)**	No Gen
24	**Auraiya (G)**	No Gen
25	**Dadri (G)**	No Gen
26	**AD Hydro (H)**	No Gen
27	**Bairasiul (H)**	No Gen
28	**Bhakra (H)**	0.08
29	**Budhil (H)**	No Gen
30	**Chamera-1 (H)**	No Gen
31	**Chamera-2 (H)**	No Gen
32	**Chamera-3 (H)**	No Gen
33	**Dehar (H)**	No Gen
34	**Dhauliganga (H)**	No Gen
35	**Dulhasti (H)**	No Gen
36	**Karcham (H)**	No Gen
37	**Kishenganga**	No Gen
38	**Koldam (H)**	No Gen
39	**Koteshwar (H)**	25.44
40	**Malana-2 (H)**	NA
41	**Nathpa Jhakri (H)**	No Gen
42	**Parbati-2 (H)**	0.00
43	**Parbati-3 (H)**	No Gen
44	**Pong (H)**	-0.68
45	**Rampur (H)**	No Gen
46	**Sainj (H)**	No Gen
47	**Salal (H)**	0.00
48	**Sewa-II (H)**	No Gen
49	**Singoli Bhatwari (H)**	No Gen
50	**Sorang (H)**	No Gen
51	**Tanakpur (H)**	-2.92
52	**Tehri (H)**	0.79
53	**Uri-1 (H)**	1.56
54	**Uri-2 (H)**	No Gen

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

Sl. No.	Entity	Capacity (MW)	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
1	Dadri-1 (TH)	4*200			
2	Dadri -2 (TH)	2*490			
3	Jhajjar (TH)	3*500			
4	Rihand-1 (TH)	2*500	Yes	5.0	Under Implementation
5	Rihand-2 (TH)	2*500	Yes	5.0	Under Implementation
6	Rihand-3 (TH)	2*500	Yes	5.0	Under Implementation
7	Shree Cement (TH)	(2 * 150)			
8	Singrauli (TH)	2*500+5*200			
9	Tanda-2 (TH)	2*660			
10	Unchahar stg-4 (TH)	1*500			
11	Unchahar (TH)	2*210			
12	Anta (G)	(1 * 153.2 + 3 * 88.71)			
13	Auraiya (G)	(2 * 109.3 + 4 * 111.19)			
14	Dadri (G)	(2 * 154.51 + 4 * 130.19)			
15	AD Hydro (H)	(2 * 96)	YES	4.0	-
16	Bairasiul (H)	(3 * 60)	Yes	4.0	
17	Bhakra (H)	(5 * 126 + 5 * 157)			
18	Budhil (H)	(2 * 35)			
19	Chamera-1 (H)	(3 * 180)	Yes	5.0	
20	Chamera-2 (H)	(3 * 100)	Yes	5.0	
21	Chamera-3 (H)	(3 * 77)	Yes	4.0	
22	Dehar (H)	(6 * 165)			
23	Dhauliganga (H)	(4 * 70)	Yes	5.0	
24	Dulhasti (H)	(3 * 130)	Yes	5.0	
25	Karcham (H)	(4 * 261.25)	Yes	5.0	
26	Kishenganga	(3 * 110)	Yes	4.0	
27	Koldam (H)	(4 * 200)	Yes	4.0	
28	Koteswar (H)	(4 * 100)	Yes	4.0	
29	Malana-2 (H)	(2 * 50)			
30	Nathpa Jhakri (H)	(6 * 250)	Yes	5.5	
31	Parbati-2 (H)	(4 * 200)			
32	Parbati-3 (H)	(4 * 130)	Yes	4.0	
33	Pong (H)	(6 * 66)			

34	Rampur (H)	(6 * 68.67)			
35	Sainj (H)	(2 * 50)			
36	Salal (H)	(6 * 115)	Yes	3.0	
37	Sewa-II (H)	(3 * 40)	Yes	4.0	
38	Singoli Bhatwari (H)	(3 * 33)			
39	Sorang (H)	(2 * 50)			
40	Tanakpur (H)	(1 * 31.42 + 2 * 31.4)	Yes	4.0	
41	Tehri (H)	(4 * 250)	Yes	4.0	
42	Uri-1 (H)	(4 * 120)	Yes	6.0	
43	Uri-2 (H)	(4 * 60)	Yes	5.0	

Constituents are requested to share the details at the earliest.

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

Members are also requested to reconcile the FRP values as considered for the event of February 2025.

Members may like to discuss.

B.12. 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.VII**. Constituents were also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis. In this regard, a communication has already been sent to constituents through NRLDC letter dated 24.04.2024.

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 are as follows:

Sl No	Mock exercise 2023-24	Date
1	GTPS (IPGCL)	10-Apr-24
2	Ranjit Sagar Dam(RSD) HEP	07-May-24
3	Bhakra (Left & Right) HEP	08-Nov-24
4	Kishenganga HEP	09-Nov-24
5	Pong HEP	09-Nov-24
6	Tehri HEP	13-Nov-24
7	Koteshwar HEP	27-Nov-24
8	Nathpa Jhakri & Rampur HEP	08-Dec-24
9	Chamera-I HEP	12-Dec-24
10	Dhauliganga HEP	13-Dec-24
11	Bairasiul HEP	14-Dec-24
12	Salal HEP	16-Dec-24
13	Tanakpur HEP	19-Dec-24

ISGS and SLDCs are requested to take following actions:

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

Members may like to discuss.

B.13. 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 56 numbers of System Protection Scheme (SPS) approved in Northern Region. These SPS are implemented at major generation complexes, important evacuating transmission lines and ICTs which are N-1 non-complaint. System Protection Scheme Document of Northern Region has been revised/updated on 31st February 2025. Revised version of the document is available on the NRLDC website in Document section and can be accessed at below link: https://newnr.nrldc.in/documents/Documents.

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.VIII.** In this regard, communication has already been sent to constituents through NRLDC letter dated 01.05.2024, 21.02.2025 and 05.03.2025 and continuous follow up is being done in OCC & PSC meeting since May 2024.

Update in this regard **received from Uttarakhand, Rajasthan & UP only.**

Members are requested to conduct the mock testing of SPS in their respective control area, share the tentative schedule of mock testing of SPS and share the report of the same.

Members may like to discuss.

Status of action taken on decision of 228th OCC meeting of NRPC

S.N.	Agenda	Decision of 228th OCC meeting of NRPC	Status of action taken
1	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.)	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.
2	A.13. Implementation of SPS arrangement at Jhatikra for load shedding is required to ensure stable transmission in case of contingency of 765/400 kV ICTs in upcoming summer loading (Agenda by POWERGRID NR-1)	Forum asked DTL to identify the feeders for implementing SPS at 765/400kV Jhatikra. Meanwhile, NRLDC was asked to conduct the study and inform, before the next OCC meeting, the amount of load shedding required to provide relief on the 765/400kV ICT at Jhatikra.	DTL and NRLDC to update status.

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 colspan="3">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 colspan="3">Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Sep-2019
◎ DELHI — Nov-2024
◎ HARYANA — Dec-2024
◎ HP — Sep-2024
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Jan-2025
◎ RAJASTHAN — Jan-2025
◎ UP — Dec-2024
◎ UTTARAKHAND — Feb-2025
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Healthiness of defence mechanism: Self-certification</td><td>Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional”.</td><td colspan="3">Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Not Available
◎ DELHI — Dec-2024
◎ HARYANA — Dec-2024
◎ HP — Oct-2024
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Dec-2024
◎ RAJASTHAN — Dec-2024
◎ UP — Dec-2024
◎ UTTARAKHAND — Dec-2024
◎ BBMB — Dec-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 colspan="3">Status:
◎ CHANDIGARH — Not Available
◎ DELHI — Increased
◎ HARYANA — Increased
◎ HP — Increased
◎ J&K and LADAKH — Increased
◎ PUNJAB — Increased
◎ RAJASTHAN — Increased
◎ UP — Increased
◎ UTTARAKHAND — Increased
◎ BBMB — Increased</td></tr>
</table>

<table>
<tr><td>4</td><td>Status of Automatic Demand Management System in NR states/UT's</td><td>The status of ADMS implementation in NR, which is mandated in clause 5.4.2 (d) of IEGC by SLDC/SEB/DISCOMs is presented in the following table:</td><td>The status of ADMS implementation in NR is enclosed in Annexure-A.I.II.<table><tr><td>◎</td><td>DELHI</td><td>Scheme Implemented but operated in manual mode.</td></tr><tr><td>◎</td><td>HARYANA</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>HP</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Under implementation.</td></tr><tr><td>◎</td><td>UP</td><td>Scheme implemented by NPCIL only</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Scheme not implemented</td></tr></table></td></tr>
<tr><td>5</td><td>Status of availability of ERS towers in NR</td><td>As per the decesion of 68th NRPC and 211th OCC meeting, ERS availability monitoring is being taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.</td><td>As per the information received from different utilities in Northern region, updated status of availability of ERS towers in Northern Region attached as Annexure-A.I.III.</td></tr>
<tr><td>6</td><td>Submission of breakup of Energy Consumption by the states</td><td>All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under:<table><tr><td>Category→</td><td>Consumption by Domestic Loads</td><td>Consumption by Commercial Loads</td><td>Consumption by Agricultural Loads</td><td>Consumption by Industrial Loads</td><td>Traction supply load</td><td>Miscellaneous / Others</td></tr><tr><td><Month></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>Status of the information submission (month) from states / utilities is as under:<table><tr><td></td><td>State / UT</td><td>Upto</td></tr><tr><td>◎</td><td>CHANDIGARH</td><td>Not Submitted</td></tr><tr><td>◎</td><td>DELHI</td><td>Nov-24</td></tr><tr><td>◎</td><td>HARYANA</td><td>Jan-25</td></tr><tr><td>◎</td><td>HP</td><td>Dec-24</td></tr><tr><td>◎</td><td>J&K and LADAKH</td><td>JPDCL- Mar'24
KPDCL- Not Submitted</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Dec-24</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Oct-24</td></tr><tr><td>◎</td><td>UP</td><td>Sep-24</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Oct-24</td></tr></table>Chandigarh is requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format</td></tr>
<tr><td>7</td><td>Status of FGD installation vis-à-vis installation plan at identified TPS</td><td>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 meetings.</td><td>Status of the information submission (month) from states / utilities is as under:<table><tr><td>◎</td><td>HARYANA</td><td>Jun-2024</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Jun-2024</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Nov-2024</td></tr><tr><td>◎</td><td>UP</td><td>Jan-2024</td></tr><tr><td>◎</td><td>NTPC</td><td>Feb-2023</td></tr></table>FGD status details are enclosed as Annexure-A.I.IV.
All States/utilities are requested to update status of FGD installation progress on monthly basis.</td></tr>
<tr><td>8</td><td>Information about variable charges of all generating units in the Region</td><td>The variable charges detail for different generating units are available on the MERIT Order Portal.</td><td>All states/UTs are requested to submit daily data on MERIT Order Portal timely.</td></tr>
</table>

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.	Mar'25	Issue related to ROW as intimated in 228th OCC by HVPNL. **Status:** Work was stalled since 29.07.2021 due to ROW issues and farmers agitation and further restarted on 9.10.2023 with the help of district administration. Now, work was again stalled 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	Mar'25	Erection and stringing work will be completed by 18.12.2024. However, the signing of Connection agreement amongst the Utilities is pending. Updated in 228th 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
12	400/220kV Kala Amb GIS (TBCB)	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 2 Under Implementation:2	• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s	Commissioned	Energization date: 31.05.2024 updated by HPPTCL in 220th OCC
				• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Giri S/s	-	Tendering process is yet to be started.Updated in 219th OCC by HPPTCL
				• Network to be planned for 2 bays	-	HPPTCL to update the status.
13	400/220kV Kadarpur Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• D/C line Kadarpur - Pali D/C line Kadarpur - Sec-65	Dec'24	Updated in 228th OCC by HVPNL **Status:-** According to these, 220 kV Palli - 220 kV Sec. 65 Gurgaon line will be LILOed at 400 kV Substn. Kadarpur presently. The progress of work has been informed as under: Foundation : 45/45 Erection- 45/45. Stringing 6.00/6.536km Pending Material:OPGW accessories. Reason For Delay: Forest approval. Likely date of completion :31.12.2024.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• LILO of both circuits of 220kV D/c Sohna-Rangla Rajpur at Roj Ka Meo line at 400kV Sohna Road	Mar'25	Roj Ka Meo station is yet to be commissioned. However, this arrangement will not lead to usage of additional bays i.e. no of utilitsed bays at Sohna road will remain same.Updated in 228th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	The matter is subjudice in Hon'ble Punjab & Haryana High court, Chandigarh Updated in 228th OCC by HVPNL. **Status:-** Earlier 02 nos 220 kV line bays were to be utilized for the 220 kV GIS S/Stn. Sec-77, Gurugram but due to denotification of land of the 220 kV GIS S/Stn. Sec-77 the said substation is now going to be dismantled and a new substation is proposed at Sec-75A, Gurugram. Now, these 02 no. 220 kV line bays may be utilized at 220 kV GIS S/Stn Sec-75A, Gurugram.
15	400/220kV Prithla Sub-station	Commissioned: 8 Aprroved: 2 Total: 10	Utilized: 4 Unutilized: 4 Under Implementation:2	• 220kV D/C line from Prithla to Harfali with LILO of one circuit at 220kV Meerpur Kurali	Mar'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	31.03.2025	Issue related to ROW and Pending crossing approval from Northern Railways and DFCCIL. as intimated in 228th OCC by HVPNL.
				• Prithla - Sector 89 Faridabad 220kV D/c line	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	Mar'25	Updated in 228th 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. Forest approval is pending. Presently, forest case is pending in the O/o Technical officer IRO, Chandigarh.
				• 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 228th OCC by HVPNL. **Status:** Work order has been issued to M/s R.S Infra on dated 09.08.2023 by O/o CE/PD&C, Panchkula for construction of line. Both bays are under construction and erection of electrical equipment is under progress.
17	400/220kV Neemrana Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• LILO of Bhiwadi - Neemrana 220kV S/c line at Neemrana (PG)	-	Work is under progres. Stub Setting: 14/2017. Permission for Highway is awaited from concerned department as updated in 218th OCC by RVPNL.
18	400/220kV Kotputli Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Kotputli - Pathreda 220kV D/c line	-	Date of bid opening has been extended up to 30.04.2024 as updated in 218th OCC by RVPNL.
19	400/220kV 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
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.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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	Revised target date as confirmed by concerned SDO Construction, Panchkula.Updated in 228th 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	Proposal turned down by CEA.Updated in 228th OCC by HVPNL.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	Dec'25	Updated in 228th OCC by HVPNL. **Status:** Tender awarded, but work is yet to be started
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	08.03.2025	Updated in 228th 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.
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 (13.02.2025)
GGSSTP, Ropar
GH TPS (LEH.MOH.)
RRVUNL (12.02.2025)
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 (12.12.2024)
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: 31-12-2029), SURATGARH TPS U#2 (Target: 31-12-2029), SURATGARH TPS U#3 (Target: 31-12-2029), SURATGARH TPS U#4 (Target: 31-12-2029), SURATGARH TPS U#5 (Target: 31-12-2029), SURATGARH TPS U#6 (Target: 31-12-2029), SURATGARH SCTPS U#7 (Target: 28-02-2026), SURATGARH SCTPS U#8 (Target: 28-02-2026), CHHABRA TPP U#1 (Target: 31-12-2029), CHHABRA TPP U#2 (Target: 31-12-2029), CHHABRA TPP U#3 (Target: 31-12-2029), CHHABRA TPP U#4 (Target: 31-12-2029), CHHABRA SCPP U#5 (Target: 28-02-2026), CHHABRA SCPP U#6 (Target: 28-02-2026), KALISINDH TPS U#1 (Target: 28-02-2026), KALISINDH TPS U#2 (Target: 28-02-2026)
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)

MIS Report for Status of Islanding Schemes

Implemented Schemes

Sl. No.	Islanding Scheme	SLDC	Status	Submission of Self Certification of Healitheness	SOP	SCADA Display Page	Remarks
1	NAPS IS	UP	Implemented	Yes (08-10-2021)	Yes	Yes	-
2	RAPS IS	Rajasthan	Implemented	16-Aug-21	Yes	Yes	List of officials in-charge, format for generation, islanding scheme sld and relays in RAPP IS submitted by RVPN on 04.12.2021.
3	Delhi IS	Delhi	Implemented				
4	Pathankot-RSD IS	Punjab	Implemented				

Under Implementation/ Newly Proposed/Under Discussion

Sl. No.	Islanding Scheme	SLDC	Status	Details of progress	DPR for PSDF funding (Required / Not Required)	Timelines Status - Proposed/Actual									
						Study		Design		Approval		Procurement		Commissioning	
						Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual
1	Lucknow-Unchahar IS	UP	Under Implementation	Scheme has been approved in 59th NRPC meeting held on 31.10.2022. In the 228th OCC meeting, UPPTCL representative apprised that Unchahar-Lucknow Islanding scheme has been successfully implemented and same is visible at SCADA of UPSLDC (except 01 Substation: Namely 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 2025.		-		-	-	-	-	-	-	-	-
2	Agra IS	UP	Under Implementation	Scheme has been approved in 71th NRPC meeting held on 29.01.2024. In 228th OCC, UPPTCL representative apprised forum that 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.		-		-	-	-	-	-	-	-	-
3	Jodhpur-Barmer-Rajwest IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 228th OCC, RRVPNL representative mentioned that they have submitted their proposal of Jodhpur-Barmer- Rajwest islanding scheme to PSDF Secretariat on 16.01.2025 for PSDF funding. Status confirmation awaited.	-	-		-	-	-	-	-	-	-	-
4	Suratgarh IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 228th OCC, RRVPNL representative mentioned that DPR for implementation of Suratgarh islanding scheme would be submitted after confirmation of status of PSDF funding from PSDF Sectt for Jodhpur-Barmer Rajwest IS.	-	-		-	-	-	-	-	-	-	-
5	Patiala-Nabha Power Rajpura IS	Punjab	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 227th OCC, Punjab SLDC apprised forum that they have submitted their proposal to PSDF Secretariat and are awaiting confirmation regarding the status of PSDF funding from PSDF Sectt.		-		-	-	-	-	-	-	-	-
6	Kullu-Manali-Mandi IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 228th OCC, HPSLDC representative informed that proposed UFR scheme for Kullu-Manali- Mandi 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 Mar 2025.		-		-	-	-	-	-	-	-	-
7	Shimla-Solan IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. 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. 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, HPSLDC has intimated vide letter dated 06.01.2025 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.											

											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	2	T	CENTRAL SECTOR	Northern	Haryana	APCPL	FALSE	COAL	500	16-Feb-25	22-Feb-25	Boiler License Renewal			
660	TALWANDI SABO TPP	1	T	IPP SECTOR	Northern	Punjab	TSPL	FALSE	COAL	660	1-Feb-25	25-Feb-25	AOH			
210	KOTA TPS	4	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	210	2-Jan-25	15-Feb-25	COH			
660	SURATGARH TPS	8	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	660	1-Feb-25	25-Feb-25	AOH			
200	OBRA TPS	11	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	FALSE	COAL	200	25-Jan-25	23-Feb-25	AOH			
660	HARDUAGANJ TPS	10	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	FALSE	COAL	660	15-Dec-24	12-Feb-25	COH			
210	UNCHAHAR TPS	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	COAL	210	10-Jan-25	13-Feb-25	AOH			
210	DADRI (NCTPP)	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	COAL	210	1-Feb-25	25-Feb-25	Boiler Overhauling			
300	ROSA TPP Ph-I	2	T	IPP SECTOR	Northern	Uttar Pradesh	RPSCL	FALSE	COAL	300	7-Feb-25	28-Feb-25	Boiler Overhauling			
111.19	AURAIYA CCPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	NATURAL GAS	111.19	2-Feb-25	2-Feb-25	Boiler License Renewal			
111.19	AURAIYA CCPP	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	NATURAL GAS	111.19	2-Feb-25	2-Feb-25	Boiler License Renewal			
135	JALIPA KAPURDI TPP	1	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	7-Feb-25	14-Feb-25	AOH			
135	JALIPA KAPURDI TPP	4	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	15-Feb-25	26-Feb-25	Boiler Inspection			
135	JALIPA KAPURDI TPP	8	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	13-Jan-25	6-Feb-25	COH			

UNIT WISE THERMAL ,NUCLEAR STATION TARGET FOR THE YEAR 2025-26

Name of Station	UNIT_NM	STN_TYPE_ID	SECTOR	REGION_NM	ST_NM	SH_NM	FUEL_NM	Capacity (MW) 31-03-2026	Start Date	End Date	Reason	Start Date	End Date	Reason	Start Date	End Date	Reason	Start Date	End Date	Reason	Start Date	End Date	Reason	Start Date	End Date	Reason
I.P.CCPP	1	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00	3-Nov-25	2-Dec-25	Major Inspection															
I.P.CCPP	2	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00	3-Oct-25	28-Oct-25	Hot gas path inspection															
I.P.CCPP	3	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00	3-Nov-25	2-Dec-25	Minor overhauling															
I.P.CCPP	4	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00																		
I.P.CCPP	5	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00																		
I.P.CCPP	6	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00																		
I.P.CCPP	7	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00																		
I.P.CCPP	8	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00																		
I.P.CCPP	9	T	STATE SECTOR	Northern	Delhi	IPGCL	NATURAL GAS	30.00																		
PRAGATI CCPP	1	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	104.60	1-Dec-25	2-Dec-25	Air inlet filter replacement															
PRAGATI CCPP	2	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	104.60	3-Dec-25	4-Dec-25	Air inlet filter replacement	1-Nov-25	2-Nov-25	Boiler Inspection												
PRAGATI CCPP	3	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	121.20																		
PRAGATI CCGT-III	1	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	250.00	29-Nov-25	29-Nov-25	Boiler Inspection	2-Mar-26	5-Mar-26	BI & Transformer testing												
PRAGATI CCGT-III	2	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	250.00	29-Nov-25	29-Nov-25	Boiler Inspection	2-Feb-26	5-Feb-26	BI &Transformer testing												
PRAGATI CCGT-III	3	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	250.00	28-Mar-26	28-Mar-26	Boiler Inspection															
PRAGATI CCGT-III	4	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	250.00	6-Oct-25	6-Oct-25	BI & Transformer testing	28-Mar-26	28-Mar-26	Boiler Inspection												
PRAGATI CCGT-III	5	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	250.00	22-Mar-26	31-Mar-26	Condenser Cleaning															
PRAGATI CCGT-III	6	T	STATE SECTOR	Northern	Delhi	PPCL	NATURAL GAS	250.00																		
RITHALA CCPP	1	T	IPP SECTOR	Northern	Delhi	TPDDL	NATURAL GAS	35.75																		
RITHALA CCPP	2	T	IPP SECTOR	Northern	Delhi	TPDDL	NATURAL GAS	35.75																		
RITHALA CCPP	3	T	IPP SECTOR	Northern	Delhi	TPDDL	NATURAL GAS	36.50																		
PANIPAT TPS	6	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	210.00																		
PANIPAT TPS	7	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	250.00	1-Nov-25	20-Dec-25	Capital Overhauling															
PANIPAT TPS	8	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	250.00	1-Apr-25	23-Apr-25	Annual Overhauling															
YAMUNA NAGAR TPS	1	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	300.00																		
YAMUNA NAGAR TPS	2	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	300.00	1-Mar-26	31-Mar-26	Capital Overhauling															
RAJIV GANDHI TPS	1	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	600.00	15-Mar-26	31-Mar-26	Annual Overhauling															
RAJIV GANDHI TPS	2	T	STATE SECTOR	Northern	Haryana	HPGCL	COAL	600.00	1-Oct-25	14-Nov-25	Annual Overhauling															
INDIRA GANDHI STPP	1	T	CENTRAL SECTOR	Northern	Haryana	APCPL	COAL	500.00	10-Mar-26	16-Mar-26	BLR															
INDIRA GANDHI STPP	2	T	CENTRAL SECTOR	Northern	Haryana	APCPL	COAL	500.00	1-Oct-25	14-Nov-25	Capital OH															
INDIRA GANDHI STPP	3	T	CENTRAL SECTOR	Northern	Haryana	APCPL	COAL	500.00	20-Feb-26	31-Mar-26	Capital OH															
MAHATMA GANDHI TPS	1	T	IPP SECTOR	Northern	Haryana	JhPL(HR)	COAL	660.00																		
MAHATMA GANDHI TPS	2	T	IPP SECTOR	Northern	Haryana	JhPL(HR)	COAL	660.00																		
FARIDABAD CCPP	1	T	CENTRAL SECTOR	Northern	Haryana	NTPC Ltd.	NATURAL GAS	137.76	7-Jul-25	12-Jul-25	Minor Inspection	########	########	Minor Inspection												
FARIDABAD CCPP	2	T	CENTRAL SECTOR	Northern	Haryana	NTPC Ltd.	NATURAL GAS	137.76	14-Jul-25	19-Jul-25	Minor Inspection	########	3-Jan-26	Minor Inspection												
FARIDABAD CCPP	3	T	CENTRAL SECTOR	Northern	Haryana	NTPC Ltd.	NATURAL GAS	156.07																		
PAMPORE GPS (Liq.)	1	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																		
PAMPORE GPS (Liq.)	2	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																		
PAMPORE GPS (Liq.)	3	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																		

PAMPORE GPS (Liq.)	4	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																			
PAMPORE GPS (Liq.)	5	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																			
PAMPORE GPS (Liq.)	6	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																			
PAMPORE GPS (Liq.)	7	T	STATE SECTOR	Northern	Jammu and Kashmir	JKSPDC	HIGH SPEED	25.00																			
GH TPS (LEH.MOH.)	1	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	210.00	1-Nov-25	25-Nov-25	Annual Overhauling																
GH TPS (LEH.MOH.)	2	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	210.00																			
GH TPS (LEH.MOH.)	3	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	250.00																			
GH TPS (LEH.MOH.)	4	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	250.00	1-Feb-26	25-Feb-26	Annual Overhauling																
ROPAR TPS	3	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	210.00	1-Dec-25	30-Dec-25	Annual Overhauling																
ROPAR TPS	4	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	210.00																			
ROPAR TPS	5	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	210.00	1-Jan-26	30-Jan-26	Annual Overhauling																
ROPAR TPS	6	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	210.00																			
GOINDWAL SAHIB TPP	1	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	270.00																			
GOINDWAL SAHIB TPP	2	T	STATE SECTOR	Northern	Punjab	PSPCL	COAL	270.00																			
RAJPURA TPP	1	T	IPP SECTOR	Northern	Punjab	NPL	COAL	700.00	9-Feb-26	28-Feb-26	Annual Overhauling																
RAJPURA TPP	2	T	IPP SECTOR	Northern	Punjab	NPL	COAL	700.00	5-Mar-26	24-Mar-26	Annual Overhauling																
TALWANDI SABO TPP	1	T	IPP SECTOR	Northern	Punjab	TSPL	COAL	660.00	1-Nov-25	15-Dec-25	Annual Overhauling																
TALWANDI SABO TPP	2	T	IPP SECTOR	Northern	Punjab	TSPL	COAL	660.00																			
TALWANDI SABO TPP	3	T	IPP SECTOR	Northern	Punjab	TSPL	COAL	660.00	13-Feb-26	30-Mar-26	Annual Overhauling																
KOTA TPS	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	110.00																			
KOTA TPS	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	110.00																			
KOTA TPS	3	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	210.00	1-Jul-25	21-Jul-25	Annual Boiler Overhauling																
KOTA TPS	4	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	210.00	24-Jul-25	6-Sep-25	Capital Overhauling																
KOTA TPS	5	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	210.00	9-Sep-25	29-Sep-25	Annual Boiler Overhauling																
KOTA TPS	6	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	195.00	1-Feb-26	21-Feb-26	Annual Boiler Overhauling																
KOTA TPS	7	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	195.00	1-Oct-25	21-Oct-25	Annual Boiler Overhauling																
DAE (RAJASTHAN)	1	N	CENTRAL SECTOR	Northern	Rajasthan	DAE	NUCLEAR	100.00																			
RAJASTHAN A.P.S.	2	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	200.00	1-Apr-25	30-Apr-25	Reactor feeder refurbishment and Enmasse thermowell replacement. Material supply is expected by 01 Jan 2025.																
RAJASTHAN A.P.S.	3	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	220.00																			
RAJASTHAN A.P.S.	4	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	220.00																			
RAJASTHAN A.P.S.	5	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	220.00																			
RAJASTHAN A.P.S.	6	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	220.00	1-Oct-25	10-Nov-25	Biennial Shutdown																
RAJASTHAN A.P.S.	7.00	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	700.00																			
RAJASTHAN A.P.S.	8.00	N	CENTRAL SECTOR	Northern	Rajasthan	NPCIL	NUCLEAR	700.00																			
SURATGARH TPS	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	1-Oct-25	14-Nov-25	Capital Overhauling & upgradation work of C&I																
SURATGARH TPS	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	24-Jul-25	13-Aug-25	Annual Boiler Overhauling																

SURATGARH TPS	3	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	16-Aug-25	5-Sep-25	Annual Boiler Overhauling															
SURATGARH TPS	4	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	1-Jul-25	21-Jul-25	Annual Boiler Overhauling															
SURATGARH TPS	5	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	8-Sep-25	28-Sep-25	Annual Boiler Overhauling															
SURATGARH TPS	6	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	15-Apr-25	5-May-25	Annual Boiler Overhauling															
SURATGARH TPS	7	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	660.00	17-May-25	30-Jun-25	Generator Initial Inspection and Annual Boiler & Turbine Overhauling															
SURATGARH TPS	8	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	660.00	1-Oct-25	21-Oct-25	Annual Boiler Overhauling															
GIRAL TPS	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	LIGNITE	125.00																		
GIRAL TPS	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	LIGNITE	125.00																		
JALIPA KAPURDI TPP	1	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	24-May-25	31-May-25	Boiler Licence Renewal	11-Jan-26	4-Feb-26	Capital Overhaul												
JALIPA KAPURDI TPP	2	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	23-Apr-25	30-Apr-25	Boiler License renewal	1-Aug-25	8-Aug-25	Annual Overhaul/ Boiler overhaul	########	########	Refractory maintenance & Boiler Inspection									
JALIPA KAPURDI TPP	3	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	4-Jun-25	15-Jun-25	Refractory maintenance & Boiler Inspection	########	########	Boiler License renewal	4-Mar-26	11-Mar-26	Annual Overhaul/ Boiler overhaul									
JALIPA KAPURDI TPP	4	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	6-May-25	17-May-25	Refractory maintenance & Boiler Inspection	########	########	Annual Overhaul/ Boiler overhaul	########	2-Dec-25	Boiler License renewal									
JALIPA KAPURDI TPP	5	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	15-Jul-25	22-Jul-25	Boiler License renewal	17-Oct-25	24-Oct-25	Annual Overhaul/ Boiler overhaul	6-Feb-26	17-Feb-26	Refractory maintenance & Boiler Inspection									
JALIPA KAPURDI TPP	6	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	4-Jul-25	11-Jul-25	Boiler License renewal	1-Nov-25	8-Nov-25	Annual Overhaul/ Boiler overhaul	17-Mar-26	28-Mar-26	Refractory maintenance & Boiler Inspection									
JALIPA KAPURDI TPP	7	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	20-Sep-25	14-Oct-25	Capital Overhaul	20-Feb-26	27-Feb-26	Boiler License renewal												
JALIPA KAPURDI TPP	8	T	IPP SECTOR	Northern	Rajasthan	JSWBL	LIGNITE	135.00	1-Apr-25	8-Apr-25	Boiler License renewal	2-Sep-25	########	Refractory maintenance & Boiler Inspection	########	########	Annual Overhaul/ Boiler overhaul									
KAWAI TPS	1	T	IPP SECTOR	Northern	Rajasthan	APL	COAL	660.00	1-Sep-25	25-Sep-25	Annual Overhaling															
KAWAI TPS	2	T	IPP SECTOR	Northern	Rajasthan	APL	COAL	660.00																		
BARSINGSAR LIGNITE	1	T	CENTRAL SECTOR	Northern	Rajasthan	NLC	LIGNITE	125.00	1-Oct-25	30-Oct-25	Annual Routine Maintenance including statutory inspection															
BARSINGSAR LIGNITE	2	T	CENTRAL SECTOR	Northern	Rajasthan	NLC	LIGNITE	125.00	1-May-25	9-Jun-25	Annual Routine Maintenance including statutory inspection , Turbine, Major Overhaul & Gen. Minor Overhaul															
CHHABRA TPP	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	1-Aug-25	30-Aug-25	Annual Boiler Overhauling, MPI & NFT of LPT and Bearing inspection of Turbine & Generator															
CHHABRA TPP	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	1-Jul-25	21-Jul-25	Annual Boiler Overhauling															
CHHABRA TPP	3	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	1-Sep-25	21-Sep-25	Annual Boiler Overhauling															
CHHABRA TPP	4	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	250.00	1-Apr-25	15-May-25	Capital Overhauling															
CHHABRA TPP	5	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	660.00	1-Jul-25	14-Aug-25	Capital Overhauling															
CHHABRA TPP	6	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	660.00	15-Aug-25	28-Sep-25	Capital Overhauling															
KALISINDH TPS	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	600.00	1-Mar-26	30-Mar-26	Annual Boiler Overhauling															
KALISINDH TPS	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	COAL	600.00	1-Apr-25	14-Apr-25	Annual Boiler Overhauling and checking of Generator Stator & Rotor															

RAMGARH CCPP	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	3.00																		
RAMGARH CCPP	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	35.50	2-Sep-25	31-Oct-25	HGPI of Gas Turbine															
RAMGARH CCPP	3	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	37.50	17-Nov-25	31-Dec-25	Major Inspection of Steam Turbine															
RAMGARH CCPP	4	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	37.50																		
RAMGARH CCPP	5	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	110.00	31-Jan-26	31-Mar-26	Major Inspection of Gas Turbine															
RAMGARH CCPP	6	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	50.00																		
DHOLPUR CCPP	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	110.00	1-Jul-25	14-Aug-25	Major Inspection of Gas Turbine															
DHOLPUR CCPP	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	110.00																		
DHOLPUR CCPP	3	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	NATURAL GAS	110.00	1-Sep-25	10-Oct-25	Major Overhauling															
ANTA CCPP	1	T	CENTRAL SECTOR	Northern	Rajasthan	NTPC Ltd.	NATURAL GAS	88.71	1-Apr-25	26-Apr-25	Maintenance Type - C (16000 hrs)															
ANTA CCPP	2	T	CENTRAL SECTOR	Northern	Rajasthan	NTPC Ltd.	NATURAL GAS	88.71																		
ANTA CCPP	3	T	CENTRAL SECTOR	Northern	Rajasthan	NTPC Ltd.	NATURAL GAS	88.71																		
ANTA CCPP	4	T	CENTRAL SECTOR	Northern	Rajasthan	NTPC Ltd.	NATURAL GAS	153.20																		
SHREE CEMENT TPS	1.00	T	PVT SECTOR	Northern	Rajasthan	SCL	COAL-I	150.00																		
SHREE CEMENT TPS	2.00	T	PVT SECTOR	Northern	Rajasthan	SCL	COAL-I	150.00																		
OBRA TPS	9	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	200.00																		
OBRA TPS	10	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	200.00																		
OBRA TPS	11	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	200.00																		
OBRA TPS	12	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	200.00																		
OBRA TPS	13	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	200.00																		
OBRA-C STPP	1.00	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	660.00																		
OBRA-C STPP	2.00	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	660.00																		
HARDUAGANJ TPS	7	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	105.00																		
HARDUAGANJ TPS	8	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	250.00	11-Nov-25	24-Dec-25	Annual Overhauling															
HARDUAGANJ TPS	9	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	250.00																		
HARDUAGANJ TPS	10.00	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	660.00	10-Oct-25	8-Nov-25	1st inspection															
PARICHHA TPS	3	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	210.00																		
PARICHHA TPS	4	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	210.00																		
PARICHHA TPS	5	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	250.00																		
PARICHHA TPS	6	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	250.00	15-Jan-26	28-Feb-26	Capital Overhauling															
ANPARA TPS	1	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	210.00																		
ANPARA TPS	2	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	210.00																		
ANPARA TPS	3	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	210.00	1-Jan-26	30-Jan-26	Annual Overhauling															
ANPARA TPS	4	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	500.00																		
ANPARA TPS	5	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	500.00																		
ANPARA TPS	6	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	500.00																		
ANPARA TPS	7	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL-P	500.00																		
JAWAHARPUR STPP	1.00	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	660.00																		
JAWAHARPUR STPP	2.00	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	660.00																		
PANKI TPS EXTN.	1.00	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	COAL	660.00																		
PRAYAGRAJ TPP	1	T	IPP SECTOR	Northern	Uttar Pradesh	PPGCL (Jaypee)	COAL	660.00	15-Jan-26	16-Feb-26	Overhauling work - BTG															
PRAYAGRAJ TPP	2	T	IPP SECTOR	Northern	Uttar Pradesh	PPGCL (Jaypee)	COAL	660.00	15-Nov-25	2-Dec-25	Short Overhauling - BTG															
PRAYAGRAJ TPP	3	T	IPP SECTOR	Northern	Uttar Pradesh	PPGCL (Jaypee)	COAL	660.00																		
LALITPUR TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	LPGCL	COAL	660.00	15-Nov-25	9-Dec-25	Annual Overhauling - BTG															
LALITPUR TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	LPGCL	COAL	660.00	15-Feb-26	24-Feb-26	Boiler License renewal															
LALITPUR TPS	3	T	IPP SECTOR	Northern	Uttar Pradesh	LPGCL	COAL	660.00	5-Jan-26	14-Jan-26	Boiler License renewal															

ANPARA C TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	LAPPL	COAL-P	600.00	15-Nov-25	20-Dec-25	Annual Overhauling																
ANPARA C TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	LAPPL	COAL-P	600.00																			
SINGRAULI STPS	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	200.00	10-Jul-25	23-Aug-25	Boiler+Turbine +Gen																
SINGRAULI STPS	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	200.00																			
SINGRAULI STPS	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	200.00	10-Jan-26	3-Feb-26	Boiler																
SINGRAULI STPS	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	200.00																			
SINGRAULI STPS	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	200.00	26-Aug-25	9-Oct-25	Boiler+Turbine+Gen																
SINGRAULI STPS	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00																			
SINGRAULI STPS	7	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00	10-Oct-25	13-Nov-25	Boiler+LPT(PAUT)																
RIHAND STPS	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00																			
RIHAND STPS	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00																			
RIHAND STPS	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00	5-Oct-25	8-Nov-25	Boiler +Brg Insp+ LPT OH (PAUT)																
RIHAND STPS	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00	27-Mar-26	31-Mar-26	Boiler +LPT+Gen+AH basket repl																
RIHAND STPS	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00	18-Jan-26	21-Feb-26	Boiler + Boiler RLA + LPT																
RIHAND STPS	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL-P	500.00																			
UNCHAHAR TPS	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00																			
UNCHAHAR TPS	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00	1-Nov-25	5-Dec-25	Boiler+Gen																
UNCHAHAR TPS	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00	1-Sep-25	30-Sep-25	Boiler+Boiler RLA+ TG Brg Inspection																
UNCHAHAR TPS	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00																			
UNCHAHAR TPS	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00																			
UNCHAHAR TPS	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	500.00	5-Mar-26	31-Mar-26	Boiler+Turbine+Gen																
MEJA STPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	MUNPL	COAL	660.00	1-Nov-25	5-Dec-25	Capital OH																
MEJA STPP	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	MUNPL	COAL	660.00																			
GHATAMPUR TPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NUPPL	COAL	660.00																			
GHATAMPUR TPP	2.00	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NUPPL	COAL	660.00																			
GHATAMPUR TPP	3.00	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NUPPL	COAL	660.00																			
DADRI (NCTPP)	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00	1-Feb-26	25-Feb-26	Boiler + Gen																
DADRI (NCTPP)	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00	1-Jul-25	9-Aug-25	Boiler + Turbine																
DADRI (NCTPP)	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00																			
DADRI (NCTPP)	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	210.00																			
DADRI (NCTPP)	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	490.00	22-Sep-25	26-Oct-25	Boiler + Gen+GCB +LPT blade repl																
DADRI (NCTPP)	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	490.00																			
TANDA TPS	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	110.00	17-Jan-26	10-Feb-26	Boiler																
TANDA TPS	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	110.00	22-Feb-26	18-Mar-26	Boiler																
TANDA TPS	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	110.00	18-Nov-25	11-Dec-25	Boiler																
TANDA TPS	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	110.00																			
TANDA TPS	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	660.00																			
TANDA TPS	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	COAL	660.00																			
AURAIYA CCPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	111.19																			
AURAIYA CCPP	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	111.19	1-Jul-25	7-Jul-25	Maintenance Type - CI (8500 hrs)																
AURAIYA CCPP	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	111.19																			
AURAIYA CCPP	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	111.19																			
AURAIYA CCPP	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	109.30																			
AURAIYA CCPP	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	109.30																			

DADRI CCPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	130.19																			
DADRI CCPP	2	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	130.19																			
DADRI CCPP	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	130.19	12-Sep-25	19-Sep-25	Maintenance Type - M8 (8000 hrs)																
DADRI CCPP	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	130.19	1-Sep-25	7-Sep-25	Maintenance Type - M8 (8000 hrs)																
DADRI CCPP	5	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	154.51																			
DADRI CCPP	6	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	NATURAL GAS	154.51																			
NARORA A.P.S.	1	N	CENTRAL SECTOR	Northern	Uttar Pradesh	NPCIL	NUCLEAR	220.00	1-Apr-25	15-Jun-25	BSD FOR 90 DAYS																
NARORA A.P.S.	2	N	CENTRAL SECTOR	Northern	Uttar Pradesh	NPCIL	NUCLEAR	220.00																			
ROSA TPP Ph-I	1	T	IPP SECTOR	Northern	Uttar Pradesh	RPSCL	COAL	300.00	5-Feb-26	14-Feb-26	Annual Maintenance																
ROSA TPP Ph-I	2	T	IPP SECTOR	Northern	Uttar Pradesh	RPSCL	COAL	300.00																			
ROSA TPP Ph-I	3	T	IPP SECTOR	Northern	Uttar Pradesh	RPSCL	COAL	300.00	5-Nov-25	29-Nov-25	Annual Maintenance																
ROSA TPP Ph-I	4	T	IPP SECTOR	Northern	Uttar Pradesh	RPSCL	COAL	300.00	18-Feb-26	27-Feb-26	Annual Maintenance																
MAQSOODPUR TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	17-Aug-25	21-Aug-25	Refactory Inspection	12-Jan-26	31-Jan-26	Annual Overhauling													
MAQSOODPUR TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	21-Aug-25	25-Aug-25	Refactory Inspection	26-Jan-26	14-Feb-26	Annual Overhauling													
KHAMBARKHERA TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	1-Aug-25	5-Aug-25	Refactory Inspection	1-Dec-25	########	Annual Overhauling													
KHAMBARKHERA TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	5-Aug-25	9-Aug-25	Refactory Inspection	########	3-Jan-26	Annual Overhauling													
BARKHERA TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	9-Aug-25	13-Aug-25	Refactory Inspection	########	10-Jan-26	Annual Overhauling													
BARKHERA TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	13-Aug-25	17-Aug-25	Refactory Inspection	5-Jan-26	24-Jan-26	Annual Overhauling													
KUNDARKI TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	25-Aug-25	29-Aug-25	Refactory Inspection	1-Dec-25	########	Annual Overhauling													
KUNDARKI TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	29-Aug-25	2-Sep-25	Refactory Inspection	########	3-Jan-26	Annual Overhauling													
UTRAULA TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	2-Sep-25	6-Sep-25	Refactory Inspection	########	17-Jan-26	Annual Overhauling													
UTRAULA TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	COAL	45.00	6-Sep-25	10-Sep-25	Refactory Inspection	12-Jan-26	31-Jan-26	Annual Overhauling													
GAMA CCPP	1	T	IPP SECTOR	Northern	Uttarakhand	GIPL	NATURAL GAS	225.00	1-Aug-25	30-Aug-25	Hpt Gas Path Inspection of 30 Days																
BETA CCPP	1	T	IPP SECTOR	Northern	Uttarakhand	BIPL	NATURAL GAS	0.00																			
SRAVANTHI CCPP	1	T	IPP SECTOR	Northern	Uttarakhand	SrEPL	NATURAL GAS	225.00	5-May-25	7-May-25	Offline water wash	3-Aug-25	5-Aug-25	Offline water wash	1-Nov-25	4-Nov-25	Offline water wash, Boiler inspection	########	3-Jan-26	Offline water wash, Boiler inspection	30-Jan-26	1-Feb-26	Offline water wash	31-Mar-26	31-Mar-26	Offline water wash
SRAVANTHI CCPP	2.00	T	IPP SECTOR	Northern	Uttarakhand	SrEPL	NATURAL GAS	214.00	1-Jul-25	7-Jul-25	Offline water wash	29-29-2025	4-Oct-25	Offline water wash	########	2-Jan-26	Offline water wash	28-Mar-26	31-Mar-26	Offline water wash							
KHURJA TPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	THDC	COAL	660.00																			
KHURJA TPP	2.00	T	CENTRAL SECTOR	Northern	Uttar Pradesh	THDC	COAL	660.00																			

Thermal Generators

Annexure-A.V

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Mode of Fuel Transport (Pit Head/Non Pit-head)	Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																

Hydro Generators

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Type (Pondage/RoR etc.)	Name of Utility	Sector	Control Area	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)					Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	
1	Mahi Power House-I	UNIT-I	25 MW	27.778 MVA	BHEL, Bhopal	22/01/1986	11kV/132kV	31.5 MVA	3/5	RoR	RVUN	Power/ Energy																			
2	Mahi Power House-I	UNIT-II	25 MW	27.778 MVA	BHEL, Bhopal	06/02/1986	11kV/132kV	31.5 MVA	3/5	RoR	RVUN	Power/ Energy																			

As per guidelines the OEM representative must remain present at the time of Generator periodic testing hence looking to the age and present status of Units at Mahi PH-I, Letters Dated 12/07/2024 and 19/12/2024 have been sent to the OEM M/s BHEL, Bhopal, and accordingly the plan may be scheduled .

Nuclear Generators

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Type	Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	

Gas Based Generators

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models	
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)					Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks

Renewable Energy Plants

S. No.	Name of Plant	Pooling Station Name	Installed Capacity	Type (Solar/Wind)	COD	Owner	Sector	Control Area	Inverter/ WTG Make	Inverter/ WTG Model	PPC Make	Real and Reactive Power Capability for Generator			Power Plant Controller Function Test			Frequency Response Test			Active Power Set Point change test			Reactive Power (Voltage / Power Factor / Q) Set Point change test			Revised Simulation Models		
												Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	

HVDC Links

S. No	Name of Link	Type (LCC/VSC/Back-to-Back)	HVDC_Voltage (kV)	Converter-1		Converter-2		Master Converter Station	Pole_number	Length (km)	Capacity (MW)	Owner	Forward Direction			Reverse Direction			Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC.			Revised Simulation Models		
				Station Name	Region	Station Name	Region						Maximum Capacity	Minimum Capacity	Ground_return_capacity	Maximum Capacity	Minimum Capacity	Ground_return_capacity	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	
1			500	APL-Mundra	WR	Mohindargarh	NR		1	989	1,250	ATIL	150	500	1250					Due			Due			
2			500	APL-Mundra		Mohindargarh			2	989	1,250	ATIL	150	500	1250					Due			Due			
3		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	1	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due			
4		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	2	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due			
5		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	3	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due			
6		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	4	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due			

STATCOMs/SVCs

S.No	Station	Statcom	Capacity (MVAR)	Owner	Make	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.			Revised Simulation Models	
						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks
1	Kurukshetra	TCR	500	POWERGRID	GE Vernova T&D	NA	NA	NA	NA	NA	NA	Nov-2023	No	Sep-2028		
2	Fatehgarh-2	STATCOM	-+/-600	POWERGRID	SIEMENS	Oct-2023	No	Sep-2028	NA	NA	NA	Oct-2023	No	Sep-2028		
3	Bhadla-2	STATCOM	-+/-600	POWERGRID	SIEMENS	Jun-2023	No	May-2028	NA	NA	NA	Jun-2023	No	May-2028		
4	Bikaner-2	STATCOM	-+/-300	POWERGRID	SIEMENS	Jul-2023	No	Jun-2028	NA	NA	NA	Jul-2023	No	Jun-2028		

FSCs/TCSCs

S. No	End 1	End 2	Line No.	Compensator Location	Make	Fixed Compensation	Variable Compensation Positive	Variable Compensation Negative	Agency	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.			Revised Simulation Models	
										Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks

Series Reactor

S.No	End 1	End 2	Line No.	End	Capacity	Make	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.			Revised Simulation Models	
							Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks
1																	
2																	

Annexure-A.VI

RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED
[Corporate Identity Number (CIN):U40109RJ2000SGC016485]
(Regd. Office: Vidyut Bhawan, Jan Path, Jyoti Nagar, Jaipur - 302 005)
OFFICE OF THE SUPERINTENDING ENGINEER (PROJECT & PLANNING)
✆ +91-141-2740623,Fax:+91-141-2740794;
e-mail: se.pp@rvpn.co.in; website:www.rvpn.co.in

RVPN
An ISO 9001:2000 Certified Company

No. RVPN/SE(P&P)/XEN(P&P)/AE-2/ F. /D 792 Jaipur, Dt. 02.03.25

The Member Secretary (NRPC),
Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016.

Sub: Regarding inclusion of agenda on revised SPS for 2x315 MVA, 400/220 kV ICTs at 400 kV GSS Merta in 229th OCC Meeting to be held on dated 12.03.25.

Dear Sir,

This is submitted that SPS for the 2x315 MVA, 400/220 kV ICTs at 400 kV GSS Merta approved in the 194th OCC meeting held on dated 20.04.2022 was based on taking the trip command from the 86 relay installed on 220kV side of both the 2x315 MVA, 400/220 kV ICTs at 400 kV GSS Merta. Hence, the existing SPS give the relief in the event of tripping of the lines and it does not take care of the ICT overloading. Hence, a generalized SPS was required which can take care of the tripping of the ICTs and overloading of the ICTs.

In this regard, revised SPS for the 2x315 MVA, 400/220 kV ICTs at 400 kV GSS Merta has been formulated in the meeting was held in RVPN Office on dated 17.02.2025:

The updated SPS of 2x315MVA, 400/220 kV ICTs at 400 kV GSS Merta alongwith revised logics **(Annexure I)** is hereby submitted for inclusion of agenda on revised SPS for 2x315 MVA, 400/220 kV ICTs at 400 kV GSS Merta in 229th OCC Meeting to be held on dated 12.03.25.

Encl: As above

(S.C. Meena)
Chief Engineer (PP&D)

Copy to the following for information and necessary action please-

1. The General Manager (NRLDC), Grid Controller of India Ltd., 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016.
2. The Addl. Chief Engineer (LD/Communications/MPT&S), RVPN, Jaipur/Ajmer.
3. The Chief Engineer, Power System Planning & Appraisal-I Division, CEA, Sewa Bhawan, RK Puram-I, New Delhi-110066.
4. The Superintending Engineer (Automation/P&P/SO&LD/Protection Engineering/T&C), RVPN, Jaipur/Merta.
5. The Superintending Engineer (Operation), NRPC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016.
6. The System Operator-2, NRLDC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016

Encl: As above

Signature valid
Digitally signed by Suresh Chand Meena (Chief Engineer (PP&D))
Designation : Chief Engineer
Date: 2025.03.01 21:52:36 IST
Reason: Approved

RajKaj Ref No.: 13899276

Proposed Revised SPS for 2x315 MVA, 400/220 kV ICTs at 400 kV GSS Merta

A. Transmission Network Associated with 400 kV GSS Merta

- There are two 400/220 kV ICTs at 400 kV GSS Merta each having capacity of 315 MVA.
- Percentage impedance of 315 MVA, 400/220 kV ICT-I is 11.82% (HV-LV) & 40.22% (HV-IV) & 20.08% (IV-LV) and Percentage impedance of 315 MVA, 400/220 kV ICT-II is 13.03% (HV-LV) & 40.50% (HV-IV) & 25.79% (IV-LV). Load sharing on both ICTs will be almost equal.
- 400 kV GSS Merta is connected to 400 kV GSS Jodhpur (Surpura), 400 kV GSS Bhadla, 400 kV GSS Bikaner, 400 kV GSS Kankani, 400 kV GSS Ratangarh, 400 kV GSS Kota (PGCIL) and 400 kV GSS Heerapura. There are following 220 kV and 132 kV lines emanating from 400 kV GSS Merta:-
  - 220 kV S/C Merta-Bhopalgarh line
  - 220 kV S/C Merta-Kuchera line
  - 220 kV S/C Merta-Jethana line
  - 220 kV S/C Merta-Makrana line
  - 3x100MVA, 220/132 kV Transformers at Merta
  - 132 kV Merta (400 kV GSS)-Merta (132 kV GSS) line
  - 132 kV Merta (400 kV GSS)-Roon line.
  - 132 kV Merta (400 kV GSS)-Merta Road line
  - 132 kV Merta (400 kV GSS)-Lamba Jatan line
  - 132 kV Merta (400 kV GSS)-Dhawa line
- 220 kV GSS Bhopalgarh is connected to the 220 kV GSS Bhawad through 220 kV D/C line and to 220 kV GSS Khinvsar through 220 kV S/C line. 220 kV GSS Bhawad is further connected to the 220 kV GSS Aau and 400 kV GSS Jodhpur through 220 kV D/C lines.
- 220 kV GSS Kuchera is connected to the 220 kV GSS Nagaur which is further connected to the 220 kV GSS Nokha and BLTPS through 220 kV S/C lines.
- 220 kV GSS Jethana is connected to the 400 kV GSS Ajmer through 220 kV D/C line and to the RAS LTPS through 220 kV S/C line.
- 220 kV GSS Makrana is connected to the 220 kV GSS Kuchaman and 220 kV GSS Phulera through 220 kV S/C lines.
- 132 kV S/C Merta (400 kV GSS)-Merta (132 kV GSS)-Riyabari-Jethana line is generally kept in ring system.
- 132 kV GSS Merta Road is connected radially to 400 kV GSS Merta and Biomass Generation of capacity 10 MW and solar power plant of 4 MW are connected to this GSS. Railway TSS is also connected to the 132 kV GSS Merta Road.
- 132 kV S/C Merta (400 kV GSS)-Lambajatan-Gotan line supplies power to 03 Nos. EHT consumers of continuous process cement plants.
- Power Map of Transmission System at 400kV GSS Merta is shown in Fig. 1.

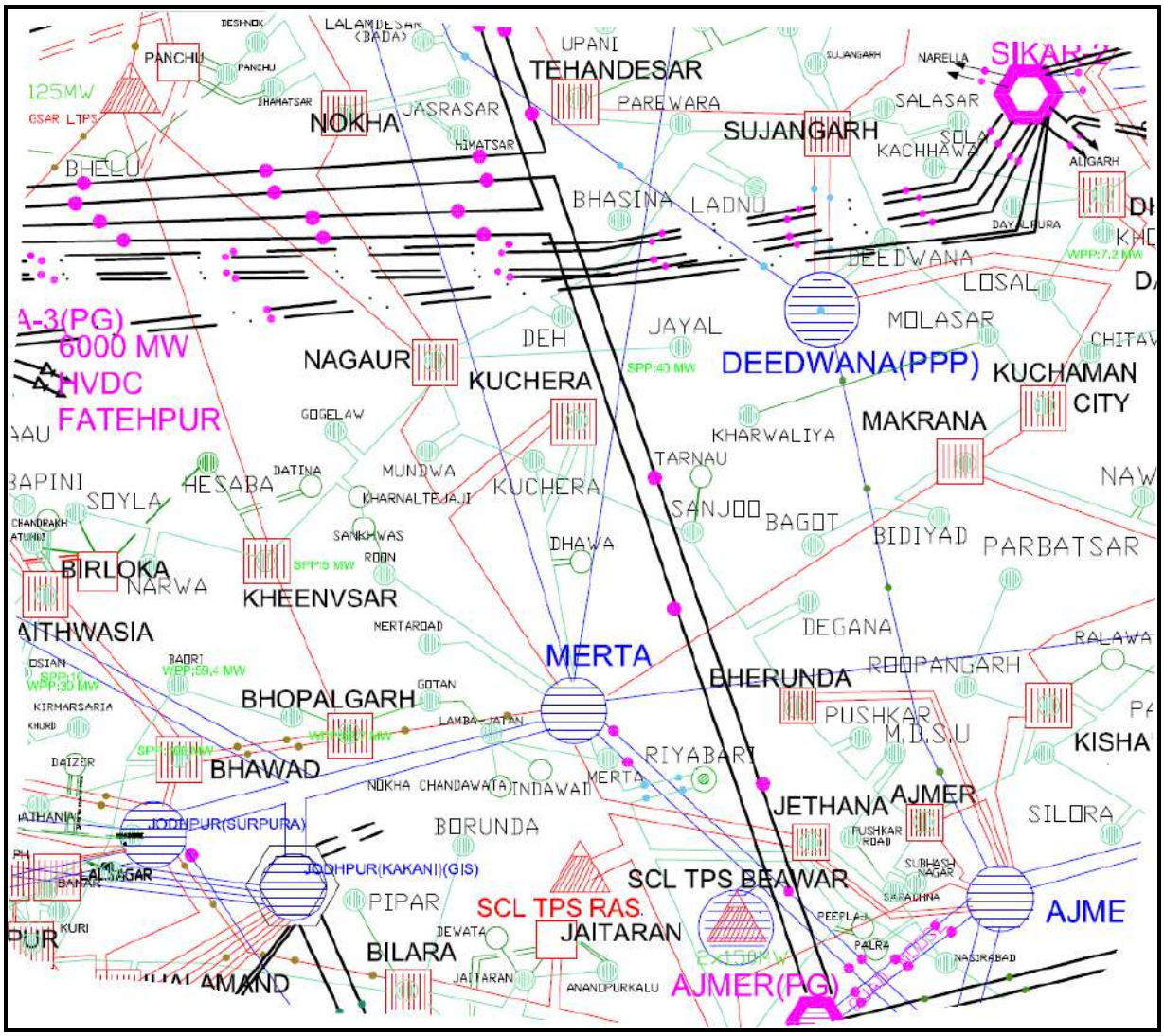


Fig. 1 Power map of merta region

B. <u>Recorded Loads on the Transmission Elements</u>

Recorded peak loads on the transmission lines and transformers are included in Table 1. Critical remarks are also included in the Table 1. 400 kV Bus-A and 400 kV Bus-B are kept integrated.

Table 1: Load Details of Peak and Average Loads on Transformers and Transmission Lines Associated with 400 kV GSS Merta

S. No.	Name of 220 kV line/ICTs	Peak Load	Average Load	Bus to Which connected	SPS Group/Remark
1	315 MVA, 400/220 kV ILT-I	348MVA	290 MVA	Bus-A	
2	315 MVA, 400/220 kV ILT-II	327 MVA	280 MVA	Bus-B	
3	220 kV Merta-Kuchera line	298 MVA	220 MVA	Bus-A	SPS Group-3
4	220 kV Merta-Jethana line	322 MVA	220 MVA	Bus-A	SPS Group-2
5	220 kV Merta-Makrana line	243 MVA	200 MVA	Bus-B	SPS Group-1
6	100MVA, 220/132 kV Transformer-I	85	75	Bus-A	Not included in SPS to ensure the uninterrupted supply in the Merta city, nearby area, and railway TSS connected at 132 kV
7	100MVA, 220/132 kV Transformer-II	85	75	Bus-A	
8	100MVA, 220/132 kV Transformer-III	86	80	Bus-B	

					GSS Merta Road
9	220 kV Merta-Bhopalgarh line	293	250	Bus-B	This line evacuates the RE power during solar generation hours to 400 kV GSS Merta from the Western Rajasthan. Hence, it is not considered for SPS.

C. Approved SPS

The SPS for 2x315MVA, 400/220 kV ICTs at 400 kV GSS Merta was approved in the 194th OCC meeting held on dated 20.04.2022. Approved SPS is placed at **Annexure-A**.

D. Installation of 3rd 500MVA, 400/220 kV ICT at 400 kV GSS Merta

Installation of 3rd 500MVA, 400/220 kV ICT at 400 kV GSS Merta was approved by RVPN and A&FS was issued on dated 27.04.2022 (**Annexure-B**). Work order for installation of this ICT was issued on dated 07.03.2024. Drawings/documents are under approval. Scheduled date of commissioning is September 2025.

E. Need of Revision in the Approved SPS

- The SPS for the 2x315MVA, 400/220 kV ICTs at 400 kV GSS Merta approved in the 194th OCC meeting held on dated 20.04.2022 was based on taking the trip command from the 86 relay installed on 220kV side of both the 2x315MVA, 400/220 kV ICTs at Merta. Hence, the existing SPS give the relief in the event of tripping of the lines and it does not take care of the ICT overloading. Hence, a generalized SPS is required which can take care of the tripping of the ICTs and overloading of the ICTs.
- Generalized SPS can be considered by taking reference from the overcurrent relays of both 315MVA, 400/220 kV ICTs at 400 kV GSS Merta. This has been considered in the revised SPS.

F. Revised SPS for 2x315MVA, 400/220 kV ILTs at 400 kV GSS Merta

- Tripping of 220 kV transmission lines has been considered from the 400 kV GSS Merta end.
- 220 kV S/C Merta-Bhopalgarh line has not been considered for the SPS as this line evacuates RE power from the western Rajasthan.
- 3x100MVA, 220/132 kV Transformers have not been considered for the SPS to ensure uninterrupted power supply in the Merta city and Railway TSS.
- 132 kV lines associated with the 400 kV GSS Merta have not been considered for the SPS to ensure the uninterrupted power supply in the Merta region.
- After detailed analysis of loading conditions, power injection, RE evacuation & grid interconnection issues, following universal logics are proposed for the 2x315MVA, 400/220 kV ICTs at 400 kV GSS Merta which will work for all the operating scenarios:-

1. **SPS Group-1:** Trip commands are generated at time delay of 1.1 second to trip the following transmission line when 105% loading [105% current in all the three phases] on any one of the 2x315MVA, 400/220 kV Transformers at 400 kV GSS Merta is reached due to tripping of one of the transformer or any of the 220 kV lines associated with 400 kV GSS Merta or the overloading of transformers:-
    - 220 kV Merta-Makrana line

Implementation of SPS Logic-1: This logic will be implemented by taking reference from overcurrent relays of both 315MVA, 400/220 kV ICTs at 400 kV GSS Merta. Trip command will be initiated at time delay of 1.1 second when current reached the 105% loading of the ICTs [105% current in all three phases]. This trip command will be used to trip the 220 kV S/C Merta-Makrana line from 400 kV GSS Merta.

2. **SPS Group-2:** Trip commands are generated at time delay of 1.30 second to trip the following transmission line when 105% loading [105% current in all the three phases] on any one of the 2x315MVA, 400/220 kV Transformers at 400 kV GSS Merta is reached due to tripping of one of the transformer or any of the 220 kV lines associated with 400 kV GSS Merta or the overloading of transformers:-
    - 220 kV Merta- Jethana line

    Implementation of SPS Logic-2: This logic will be implemented by taking reference from overcurrent relays of both 315MVA, 400/220 kV ICTs at 400 kV GSS Merta. Trip command will be initiated at time delay of 1.30 second when current reached the 105% loading of the ICTs [105% current in all three phases]. This trip command will be used to trip the 220 kV S/C Merta- Jethana line from 400 kV GSS Merta.

3. **SPS Group-3:** Trip commands are generated at time delay of 1.50 second to trip the following transmission line when 105% loading [105% current in all the three phases] on any one of the 2x315MVA, 400/220 kV Transformers at 400 kV GSS Merta is reached due to tripping of one of the transformer or any of the 220 kV lines associated with 400 kV GSS Merta or the overloading of transformers:-
    - 220 kV Merta-Kuchera line

    Implementation of SPS Logic-3: This logic will be implemented by taking reference from overcurrent relays of both 315MVA, 400/220 kV ICTs at 400 kV GSS Merta. Trip command will be initiated at time delay of 1.50 second when current reached the 105% loading of the ICTs [105% current in all three phases]. This trip command will be used to trip the 220 kV S/C Merta- Kuchera line from 400 kV GSS Merta.

- Schematic diagram of proposed SPS is shown in Fig. 2.

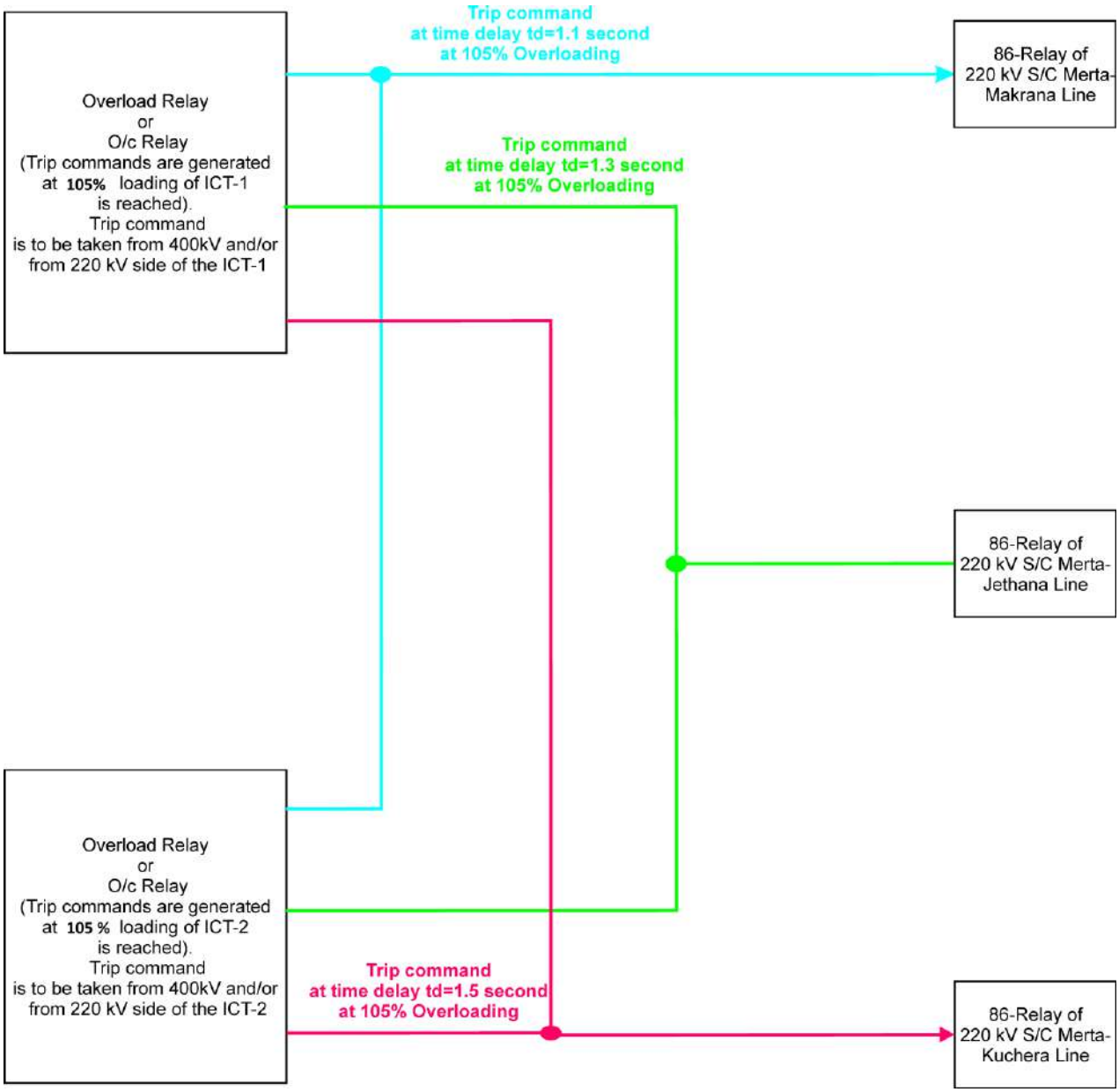


Fig. 2 Schematic diagram for implementation of proposed SPS Logics

- To maintain supply of critical loads connected to all the GSS in the region, tripped transformers and lines may be re-connected after applying load shedding on all the GSS in the region in such a quantum to maintain loadings on both the 315MVA, 400/220 kV ICTs or the healthy 315MVA, 400/220 kV ICT at 400 kV GSS Merta within permissible limits.

G. Requirement of Healthiness of the SPS

This SPS will function only if the present configuration of the transmission lines and transformers remain intact. Any change in configuration of lines and transformers will lead to mal-operation of the SPS. Further, LD Control room and SE (T&C), RVPN, Merta may ensure to take prior approval of NRLDC if any change is required in the configuration for which SPS is designed. Any change in configuration may be restored after the loading conditions are normalized.

Annexure-A

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

संख्या: उ.क्षे.वि.स./ प्रचालन/106/01/2022/ दिनांक: 06.05.2022

विषय: उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 194वीं बैठक का कार्यवृत |

Subject: Minutes of 194th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 194वीं बैठक दिनांक 20.04.2022 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 |

194th meeting of the Operation Co-ordination Sub-Committee of NRPC was held on 20.04.2022. 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

सौमित्र 06/05/2022

(सौमित्र मजूमदार)

अधीक्षण अभियंता (प्रचालन)

सेवा में,

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

18-ए, शहीद जीत सिंह मार्ग, कटवारिया सराय, नई दिल्ली- 110016 फोन:011-26513265 ई-मेल: seo-nrpc@nic.in वेबसाईट: www.nrpc.gov.in
18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016 Phone: 011-26513265 e- mail: seo-nrpc@nic.in Website: www.nrpc.gov.in

UP SLDC had shared their assessment with NRLDC vide letter dated 31-03-2022.

Intra–State Generation(w/o Solar and Co-Gen)	TTC	RM	ATC
10000	15100	600	14500
11000	14400	600	13800
12000	13800	600	13200
13000	13300	600	12700

In 194 OCC meeting, it was discussed that:

- As per assessment done by NRLDC, the TTC computation pertaining to UP state control area seems to be in order. However, local load management would be required at Mau, Azamgarh, Nehtaur, Obra, Sarnath, Moradabad & Gorakhpur (UP) to arrive at these figures. Azamgarh ICTs should also be mentioned in the limiting constraints. Also, the actual load-generation scenario can change the TTC quantum based on the assumed local load distribution.
- UP SLDC was asked to share plan for load management at constained ICTs and also update on progress of underlying network at new stations such as 400/220kV Sambhal, Rasra, Sahupuri, Rampur, Jaunpur etc.

UP SLDC representative stated that 400/220kV Rasra substation is expected to be commissioned shortly. Many constrained ICTs are likely to be relieved with commissioning of Rasra sub-station. Moreover, revised ATC/TTC assessments along with load management plan would be shared shortly. It was also agreed that mock testing of SPS may be carried out before summer season as most of the constrained ICTs have SPS. SPS for 400/220kV Obra and Nehtaur substation would also be planned and commissioned before summer season.

Rajasthan

Rajasthan had shared ATC/TTC calculations with NRLDC on 22.10.2021. On 28.10.2021, NRLDC has shared their observations on basecase as well as simulation studies carried out by Rajasthan.

In 193 OCC meeting, Rajasthan SLDC representative informed there were some changes yet to be incorporated in basecase shared by NRLDC. NRLDC representative stated same may be carried out by Rajasthan before assessment of ATC in basecase shared. It was also informed by Rajasthan that proposal for SPS at constrained locations is under approval and would be brought for discussion in next OCC meeting. ICT Loadings observed above N-1 contingency limits were also discussed in the meeting.

Accordingly, Rajasthan SLDC has proposed SPS at 400/220kV Ajmer, Merta and Chittorgarh (Annexure-B.III of agenda).

In 194 OCC meeting, NRLDC representative stated following were comments from NRLDC side on the proposal:

- Ajmer: Proposed SPS seems to be in order in general as per NRLDC.
- Merta: 220/132kV Merta ICTs not shown in diagram.
- Chittorgarh: Other 220kV line may also need to be added as sought relief may not be provided.

Rajasthan representative agreed to look into the comments from NRLDC side. Rajasthan was given in-principle approval for implementation of SPS at 400/220kV Ajmer, Merta and Chittorgarh, expedite implementation of SPS, and share revised ATC/TTC assessment of Rajasthan state control area.

Delhi

ATC is not being uploaded in website, only violation of ATC is being shown.

Delhi representative was not present in 192 OCC meeting for comments.

In 193 OCC meeting, Delhi SLDC was asked to implement SPS at Mundka and Bamnoli to save supercritical loads under N-1 contingency of one ICT. Delhi representative stated SPS at Mundka would be implemented before summer season. However, same is yet to be confirmed by DTL. NRLDC asked DTL and Delhi SLDC to coordinate and expedite shifting of ICT from Bamnauli to Mundka and implementation of SPS at 400/220kV Mundka. Delhi SLDC was asked to share the revised ATC/TTC limits for summer/monsoon 2022 along with anticipated generation scenario, basecase and reports with NRLDC at the earliest.

In 194 OCC meeting, it was informed that works for Mundka ICT are in place and ICT is expected before 30th April 2022. It was informed that SPS has been implemented at 400/220kV Mundka ICTs. NRLDC representative stated that SPS logic needs to be shared with NRLDC/ NRPC beforehand so that same can be discussed and approved in OCC/TCC/NRPC meeting before implementation. DTL was asked to share the logic and mock-testing exercise & ATC/TTC assessment with NRLDC/ NRPC at the earliest. Moreover, Delhi SLDC should immediately start uploading their ATC/TTC limits on their website.

Haryana

In 194 OCC meeting, Haryana SLDC was once again asked to expedite implementation of SPS and ICT capacity augmentation at 400/220kV Deepalpur and Kurukshetra (PG) to enhance their ATC/TTC limits at the earliest. Haryana SLDC informed SPS works are in process and would be implemented at Deepalpur by May'2022. For Kurukshetra, they have taken up the matter with STU to further take up with POWERGRID.

Haryana SLDC was asked to share the revised ATC/TTC limits for summer/monsoon 2022 along with anticipated generation scenario, basecase and reports with NRLDC at the earliest. Network arrangement for managing loading at Kurukshetra also needs to be shared. Haryana was also asked to expedite utilisation of underlying network at Bhiwani.

RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED.

[Corporate Identity Number (CIN):U40109RJ2000SGC016485]

(Regd. Office: Vidyut Bhawan, Jan Path, Jyoti Nagar, Jaipur - 302 005)

OFFICE OF THE SUPERINTENDING ENGINEER (P&P)

Room No. 336, Vidyut Bhawan, Jaipur ☎ +91-141-2740623

e-mail:se.pp @rvpn.co.in WEBSITE :https://energy.rajasthan.gov.in/rvpnl

No. RVPN/CE (PP&D)/SE (P&P)/XEN-IAE-I/F D 238 Jaipur. Dt. 27/4/22

The Chief Engineer (T&C/Civil/Procurement/Contracts/LD/Communication/IT),
Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,
JAIPUR/ AJMER/ JODHPUR

Sub: Administrative & financial sanction for installation of 500 MVA, 400/220kV transformer each at 400kV GSS Jodhpur(Surpura), Ajmer, Bikaner & Merta.

The Whole Time Directors of RVPN on dated 26.04.2022 have accorded admistrative and financial sanction for installation of 500 MVA, 400/220kV transformer each at 400kV GSS Jodhpur(Surpura), Ajmer, Bikaner & Merta as augmentation works as per the details given hereunder:

S. No.	Name of work	Estimated cost (in Lacs)	
		Without IDC	With IDC
1	Installation of 3rd 1x500 MVA, 400/220 kV transformer alongwith associated 400 kV & 220 kV bays at 400 kV GSS Jodhpur (Surpura)	4704.01	5043.64
2	Installation of 3rd 1x500 MVA, 400/220 kV transformer alongwith associated 400 kV & 220 kV bays at 400 kV GSS Ajmer	4664.86	4980.21
3	Installation of 3rd 1x500 MVA, 400/220 kV transformer alongwith associated 400 kV & 220 kV bays at 400 kV GSS Bikaner (Revsied A&FS approval)	4683.47	5021.62
4	Installation of 3rd 1x500 MVA, 400/220 kV transformer alongwith associated 400 kV & 220 kV bays at 400 kV GSS Merta	4681.42	5019.42

It is also intimate that Revised administrative and financial sanction for installation of 3rd 1x500MVA, 400/220kV transformer at 400kV GSS Bikaner is in place of already approved cost of Rs 2051.005 lacs for installation of 1x315MVA transformer conveyed vide this office letter no. 1807 dated 4.1.2022.

Abstract of cost estimate and and detailed estimates are enclosed herewith. The expenditure of these schemes shall be made from provision made under the head "Augmentation" in Annual plan 2022-23(proposed). Additional funds required (if any) under this head would be provided in Annual Plan 2022-23 at the time of revision. In view of the above, the execution of the aforesaid works may kindly be taken up accordingly.

Encl.: Estimates.

27/4/22
(V.A. KALE)
Superintending Engineer (P&P)

Copy to the following for information & necessary action:-

1. The Chief Controller of Accounts-I/II, RVPN, Jaipur.
2. The Superintending Engineer (Design), RVPN, Jaipur.
3. The Superintending Engineer (T&C), RVPN, Jodhpur/Ajmer/Bikaner/Merta.
4. The Superintending Engineer (Communication), RVPN, Jaipur/ Jodhpur.
5. The Superintending Engineer (QC., Insp. & Montg./ MIS), RVPN, Jaipur.
6. The Superintending Engineer (Procurment-I/ Procurement-II/ Contract-I/ Contract-II), RVPN, Jaipur.
7. The TA to Director (Technical/Operation), RVPN, Jaipur.
8. The Executive Engineer-1 & 2 (P&P), RVPN, Jaipur.
9. The Assistant Engineer-IV (Plan), O/o Executive Engineer-1 (P&P), RVPN, Jaipur.

Encl.: Estimates.

Superintending Engineer (P&P)

D:\AE-I\BoD Approvals

Annexure-A.VII

RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LTD.
Corporate Identity Number (CIN)-U40102RJ2000SGC016484
Regd. Office & H.O.: Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur-302005
OFFICE OF THE CHIEF ENGINEER (O&M)
SURATGARH SUPER THERMAL POWER STATION SURATGARH
Email: ce.stps@rrvun.com;

No. RVUN/STPS/CE (O&M)/F. /D. 688 Date: 07/02/2025

The Zonal Chief Engineer (T&C)
RVPN, Jodhpur

Sub: To Expedite completion of temporary arrangement for 400kV Line and Status Update
Ref.: NRPC Meeting held on 19.10.2024

With reference to the discussions held in the NRPC meeting on 19.10.2024, it was decided that RRVPNL will conduct a field survey by 15.11.2024 for the feasibility of a temporary arrangement to connect one circuit of the 400kV Suratgarh Thermal-Ratangarh line to one circuit of the 400kV Suratgarh Supercritical-Babai D/C line. This work includes the erection of two new towers to facilitate the rearrangement, ensuring the reduction of high loading on the 400kV Switchyard STPS, Suratgarh and 400kV STPS-Ratangarh lines.

During the meeting, RRVPNL had assured that the said work would be completed by December 2024. However, considering the anticipated high load conditions at the 400kV Switchyard of STPS Suratgarh during the upcoming summer season due to increased solar power generation, it is crucial to complete this work at the earliest to avoid any operational challenges and overloading issues.

In view of the above, you are requested to kindly expedite the execution of the proposed arrangement and provide the latest status of work progress. This will help us in ensuring grid stability and smooth power evacuation during peak demand periods.

Your immediate attention to this matter will be highly appreciated. Kindly share an update on the present status of work at the earliest.

Thanking you.

Encl.: Minutes of the meeting held on 19.10.2024

(T. R. Soni)
Chief Engineer (O&M)
STPS, RVUN, Suratgarh

Copy submitted/ forwarded to the following for kind information and necessary action:

1. The Director (Project/ Technical), RVUN, Jaipur.
2. The Director (Operation), RVPN, Jaipur.
3. The Chief Engineer (SSCTPS), RVUN, Suratgarh
4. The Chief Engineer (PPMC & IT), RVUN, Jaipur.
5. The Chief Engineer (MPT &S/ LD), RVPN, Jaipur.
6. The TA to CMD, RVUN, Jaipur for kind perusal of the Hon'ble CMD.
7. The Superintending Engineer (M&P/SO&LD), RVPN, Jaipur
8. The Superintending Engineer (400 KV GSS), RVPN, Bikaner.

Chief Engineer (O&M)

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

विषय: Minutes of the meeting to discuss long pending bilateral issues between state power utilities of Rajasthan reg.

Kindly find attached minutes of the meeting held on **19.10.2024 (10:30 AM)** to discuss long pending bilateral issues between state power utilities of Rajasthan.

Signed by Dharmendra Kumar Meena
Date: 06-11-2024 09:52:56

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

सेवा में,

1. CMD, RRVUNL, (cmd@rrvun.com)
2. MD, RRVPNL (md@rvpn.co.in)
3. CGM(SO), NRLDC (somara.lakra@grid-india.in)
4. Director (Operation), RRVPNL (dir.oper@rvpn.co.in)
5. Director (Technical), RRVUNL (director.tech@rrvun.com)
6. Chief Engineer, SLDC Rajasthan (ce.ld@rvpn.co.in)

Copy for information to:

1. Member, GO&D, CEA

Contents

Minutes of the meeting held on 19.10.2024 (10:30 AM) to discuss long pending bilateral issues between state power utilities of Rajasthan.

A meeting was held in Vidyut Bhawan, Jaipur, Rajasthan on 19.10.2024. List of participants is attached as **Annexure-I**.

Member Secretary, NRPC welcomed the representatives from NRPC, NRLDC, RRVPNL, Rajasthan SLDC, RRVUNL and JVVNL. He mentioned that during a recent meeting held in Ministry of Power, there was a review of the power supply situation in Northern Region, particularly for States of Rajasthan, Uttarakhand, and J&K. It was noted that Rajasthan was experiencing power shortages despite adequate availability in the grid, and constraints within the state's power system were identified. The Ministry inquired about potential measures to alleviate these constraints. Additionally, he emphasized that before considering any additional power allocation from the Central sector, the partial outages of units within Rajasthan's control area must be addressed. It was also mentioned that the overall power system needs to be viewed collectively, as a power shortage in one state can occur even when other states have a surplus. Further, all Northern states have been provided with a format regarding the partial outages prior to considering any additional allocations.

The representative of Suratgarh Super Critical TPS informed that after commissioning stage itself, the issues of partial outage have been observed it has been taken up with the OEM-BHEL. With support from OEM, the Forced Outages have now reduced. Unit Outage due to frequent Boiler tube leakages have come down significantly. It was also informed that NTPC has done technical audit of this plant.

Member Secretary, NRPC further mentioned that this special meeting has been called specially to discuss long-pending bilateral issues of Rajasthan, which was also discussed earlier in OCC meetings of NRPC but somehow could not be resolved fully.

Subsequently, deliberations on following agenda items were held;

1. Delay in transmission lines affecting Grid operation adversely.

NRLDC representative highlighted the following points:

- The commissioning of the 400 kV Suratgarh TPS – Babai (Jhunjhunu) D/C line has been delayed for 6-7 years, impacting grid operations and the constraints in evacuation of full generating capacity of 2820 MW at Suratgarh.
- Currently, only 45 km of the 230 km line has been constructed and energized against theft.

- This delay has led to evacuation challenges and overloading at the 400 kV Ratangarh GSS and Suratgarh TPS.
- There is a need to expedite the commissioning of the remaining line and to provide updates on progress along with a projected commissioning schedule.

- RRVPNL representative apprised that 123 km of the 400kV Suratgarh TPS – Babai (Jhunjhunu) D/C line is scheduled to be charged with anti-theft measures by November 15, 2024. Previously, 23 Nos. towers had collapsed due to theft incident, the123 km line (60 km from SSCTPS and 63 km from SCTPS) will be energized after the erection of three number of new towers. The total length of the line is 245 Km, includes 743 towers and the completion of Line is expected by June 2025, with efforts underway to finish it even earlier, by March 2025. Additionally, it was also informed by RRVPNL that there are currently no Right of Way (ROW) issues affecting the construction of the line.
- Suratgarh TPS representative inquired whether a load flow study had been conducted on the loading pattern of the 400kV Suratgarh TPS – Babai (Jhunjhunu) D/C line after it was energized. He also stated that there is a significant flow of power from Suratgarh Supercritical to Suratgarh Thermal, while low power flow on the Bikaner lines from Suratgarh Thermal.
- CGM (SO) NRLDC replied that due to high RE generation in peak solar hours significant power flow from Surtagrah Thermal to Bikaner is not observed.
- SLDC Rajasthan informed that according to the load flow study conducted, the commissioning of the 400kV Suratgarh Super Critical TPS – Babai (Jhunjhunu) D/C line, the load on the Babai lines is expected to be 1190 MW. Additionally, the loading from 400kV Suratgarh Supercritical to Suratgarh Thermal lines will decrease significantly.
- SLDC Rajasthan proposed a temporary solution to alleviate the high loading on the Suratgarh and Babai lines until the commissioning of the 400kV Suratgarh Super Critical TPS – Babai (Jhunjhunu) D/C lines. SLDC Rajasthan informed according to verbal information received from the STU, both the 400kV Suratgarh Supercritical-Babai D/C lines and the 400kV Suratgarh Thermal-Ratangarh lines run parallel to each other. The proposal involves connecting one circuit of the 400kV Suratgarh Thermal-Ratangarh line to one circuit of the 400kV Suratgarh Supercritical-Babai D/C line. It was informed that two new towers to be erected to facilitate this rearrangement and the line could be energized to reduce the high loading on the 400kV Suratgarh and 400kV Ratangarh lines. This change is expected to lower maintenance requirements at the 400kV Suratgarh. Additionally, RRVPNL confirmed that parallel work would continue for the commissioning of the 400kV Babai lines.
- MS, NRPC stated that since the line is intra-state, approval from the relevant state authorities will be necessary. SE (SOLD) mentioned that data available with them is based on verbal information and a load flow study has been carried out accordingly. However, this data needs to be revised based on the actual available information.
- MS, NRPC and CGM (SO), NRLDC asked to SLDC Rajasthan to share the study files & its results with NRPC and NRLDC for further examining at their end. It was also agreed in the meeting that FTC procedure for the rearrangement will be followed.

- RRVPNL representative informed that the 400 kV Kenchiya and 400 kV Bikaner New lines are being planned in Rajasthan. The 400 kV Kenchiya line will be a LILO (line-in, line-out) of the 400 kV Suratgarh Thermal - Bikaner line, while the 400 kV Bikaner New line will be a LILO of the 400 kV Suratgarh Supercritical - Bikaner D/C line. It was also informed that the work of Bikaner New Project is proposed to be part of their joint venture with PGCIL with approximately 1190 MW of renewable energy generation planned for Bikaner New. Representatives from Suratgarh raised concerns about the increased loading on their switchyard due to the upcoming Kenchiya station and suggested that it should be a LILO of the 400 kV Suratgarh Supercritical - Bikaner D/C line.
- RRVPNL representative stated that if the 400 kV Babai - Suratgarh Supercritical line is commissioned first, there would be no loading issues for the Suratgarh Thermal switchyard. The SLDC Rajasthan representative added that the load flow will depend on grid conditions, and switchyard strengthening work should be undertaken at the generating stations in Suratgarh. During peak solar hours, load flow will be higher in the integrated network, requiring thermal generation to be backed down to a technical minimum. Therefore, RRVUNL will need to ensure their switchyard is maintained accordingly. The SLDC Rajasthan representative also highlighted the advantages of strengthening work at KTPS where connectivity with Kota PG was restored recently and benefiting KTPS with access to multiple evacuation lines.
- CGM (SO) NRLDC emphasized that RRVPNL should keep RRVUNL updated on the planning and execution of the upcoming network. He also mentioned that GRID-INDIA provides quarterly operational feedback to the CTU, and a similar process could be implemented at the state level.

After detailed discussion following was decided:

a) *Field survey to be conducted by RRVPNL by 15.11.2024 for the feasibility of the temporary arrangement and material requirement etc. for connecting one circuit of the 400kV Suratgarh Thermal-Ratangarh line to one circuit of the 400kV Suratgarh Supercritical-Babai D/C line. It was informed that two new towers to be erected to facilitate this rearrangement and the line could be energized to reduce the high loading on the 400kV Suratgarh and 400kV Ratangarh lines. This change is expected to lower maintenance requirements at the 400kV Suratgarh.* ***Additionally, parallel work would continue by RRVPNL for the early commissioning of the 400kV Babai lines****. (Approval from higher management of RRVPNL/RVUNL and concerned authorities to be taken).*

b) *SLDC & RRVPNL will jointly study as per the revised/actual data to check the load flow/loading condition of lines if the new arrangement is carried out so that the benefits are visible explicitly.*

c) *The study will be shared by RRVPNL/SLDC with NRPC & NRLDC and decision is to be conveyed by RRVPNL.*

2. Low voltage issues at Hindaun, Alwar

NRLDC representative stated the following:

- Persistent low voltage problems have been observed in Hindaun, Alwar, and Dholpur.

Annexure-B.I

सत्यमेव जयते

केन्द्रीय विद्युत विनियामक आयोग

CENTRAL ELECTRICITY REGULATORY COMMISSION

के वि वि आयोग
CERC

Chief (Engg.)/CERC/9SM/2025/10 **Dated:05.03.2025**

To,

As per the list enclosed.

Subject: Minutes of Meeting held on 14.02.2025 with the SLDCs of the Northern Region and NRLDC at CERC, New Delhi under Order dated 07.10.2024 in Suo-Motu Petition No. 9/SM/2024

Sir/Madam,

The Minutes of the Meeting dated 14.02.2025 held under the chairmanship of the Member (Technical), at CERC, New Delhi with SLDCs of Northern Region and NRLDC, in Suo-Motu Petition No. 9/SM/2024, is attached herewith for information and necessary action please.

2. This issues with approval of Member (Technical), CERC.

Encl: As above.

Yours Faithfully,

(Shilpa Agarwal)
Joint Chief (Engg.), CERC

वर्ल्ड ट्रेड सेंटर, छठा, सातवां एवं आठवां तल, टावर – बी, नौरोजी नगर, नई दिल्ली – 110029
World Trade Center, 6th,7th & 8th Floor, Tower-B, Nauroji Nagar, New Delhi-110029
Ph.: 91-11-2618 9709, Fax : 91-11-2090 4365, E-mail: info@cercind.gov.in

To,

1. Member Secretary, NRPC
   Shaheed Jeet Singh Marg, Qutab Institutional Area,
   New Delhi -110016

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

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

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

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

6. The Superintending Engineer,
   State Load Dispatch Centre,
   Rajasthan Rajya Vidyut Prasaran Nigam Limited, Ajmer Road,
   Heerapura, Jaipur – 302024

7. The Managing Director,
   State Load Despatch Centre, Haryana,
   Behind BBMB Power house, Sewah,
   Panipat, Haryana - 132103

8. The Chief Engineer,
   State Load Despatch Center,
   SLDC Complex TOTU,
   Shimla, Himachal Pradesh-171011

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

10. The Chief Engineer,
State Load Dispatch Centre,
Vidyut Bhawan, Saharanpur Road Majra,
Near ISBT, Dehradun-248001

11. The Chief Engineer,
State Load Dispatch Centre
Jammu & Kashmir Power Transmission Corporation Limited,
SLDC Building Gladni Complex, Narwal, Jammu -180004

Central Electricity Regulatory Commission
New Delhi

Minutes of Meeting held on 14.02.2025 with the SLDCs of the Northern Region and NRLDC at CERC, New Delhi under Order dated 07.10.2024 in Suo-Motu Petition No. 9/SM/2024

A meeting was held on 14.02.2025 under the chairmanship of the Member (Technical), CERC to discuss the responses submitted by the Northern Region SLDCs in **Order dated 07.10.2024** in Petition No. 9/SM/2024 and the issues flagged in earlier meeting held on 05.11.2024 with the RLDCs and NLDC. The List of Participants is attached as **Annexure-A.**

2. At the outset, Joint Chief (Engg.), gave a brief background of the Order in 9/SM/2024 and stated that during the meeting held on 05.11.2024 with RLDCs/NLDC it was also decided to hold separate meetings with the SLDCs of all the regions to understand the difficulties being faced by the various states and to discuss the preparedness of the respective states to manage the sudden changes in demand in their respective control area and during the upcoming peak season. Joint Chief (Engg.), CERC requested all the state SLDCs to make their submissions.

3. During the meeting representatives from the SLDC of Uttar Pradesh, SLDC Delhi, Rajasthan, Jammu & Kashmir, Punjab, Uttarakhand, Haryana and Himachal Pradesh made their detailed presentation with respect to the issues flagged at Para 18 of the minutes of meeting dated 05.11.2024, which are attached as **Annexure-B, Annexure-C, Annexure-D, Annexure-E, Annexure-F, Annexure-G, Annexure-H,** and **Annexure-I** respectively**.** Representative of NRLDC made a presentation during the meeting which is attached as **Annexure-J.** Representative of NLDC gave a presentation on estimation of reserve quantum which is attached as **Annexure-K**. Following discussions took place during the meeting:

A. Demand estimation & resource adequacy data

(a) Representative of NRLDC submitted as under:

(i) **Day Ahead data:** NR SLDCs are submitting the day ahead Resource Adequacy data including demand estimation, however day ahead data submitted by the Haryana SLDC and Uttarakhand SLDC is not as per the format.

(ii) **Week Ahead data:** SLDC of Punjab, Delhi, H.P. and Chandigarh are submitting the required data. SLDC of U.P. and Uttarakhand are submitting only the demand estimation. SLDC of Haryana, Rajasthan and J&K are not submitting the week ahead data.

(iii) **Month Ahead data:** SLDC of Delhi, H.P. and J&K are submitting the month ahead Resource Adequacy data including demand estimation. UPSLDC is

submitting only the demand data. SLDC of Punjab, Haryana, Rajasthan, Uttarakhand and Chandigarh are not submitting the month ahead data.

(iv) **Year Ahead data:** Only HPSLDC is submitting the Year ahead Resource Adequacy data including demand estimation. UPSLDC and Delhi SLDC are submitting only the demand data. Rest of the SLDCs are not submitting the year ahead data.

(b) Rajasthan SLDC submitted that they currently provide only day-ahead demand estimation and resource adequacy data. They are in the process of hiring a forecasting agency to assess week-ahead, month-ahead and year-ahead demand estimation with an estimated time frame of 4-5 months.

(c) J&K SLDC stated that they are submitting data of demand estimation and resource adequacy for day-ahead basis & month-ahead basis. However, they are not providing the data in other formats due to shortage of manpower.

(d) Member (Technical) asked as to what is the forecasting error of demand forecast on day ahead and week ahead by NRLDC to which NRLDC replied that the same is 2% on day ahead basis and 4-5 % on week ahead basis.

(e) Member (Technical), CERC advised stated that the submission of data is first part of planning hence all the SLDCs should submit the data as per specified timelines on regular basis. If information is received from all the states, analysis would be even better. He also suggested that NRLDC should engage with all SLDCs to establish a common approach for data assessment. He emphasized that NRLDC should share its assumptions with the stakeholders so that they can align their estimations accordingly. This would ensure that stakeholders are aware of potential shortages in advance and can take necessary corrective actions. In addition, he also suggested that Discoms should be asked to arrange power through long term ties ups and not to be relied on RTM/DAM.

(f) Member (Technical), CERC also suggested that the SLDCs which are not submitting the data and citing the issue of shortage of manpower should also endeavor to submit the requisite demand and resource adequacy data with the existing manpower by arranging some trainings etc.

B. Reserve estimation and management

(a) NLDC gave a presentation explaining the quantum of reserves assigned to each State on year ahead basis. It was enquired whether they are reassessing the state wise quantum for three day ahead and day ahead basis to which representative of NLDC replied in negative. Joint Chief Engg. suggested that NLDC may publish such state wise reserve quantum on three day ahead and day ahead basis as per provisions of the Grid Code.

(b) Representative from UPSLDC submitted that they are having reserves in solar hours. They further submitted that in case of shortages, they may procure power through DAM & RTM. He also stated that there are no regulations on AGC in the State. He also stated that in case of shortages, keeping reserve is a challenge.

(c) Delhi SLDC submitted that they have reserve capacity available with CCGT Bawana, which may be utilized in case of contingency.

(d) Rajasthan SLDC submitted that they are maintaining reserves in solar hours and non-solar off-peak demand hours. However, they are scheduling it whenever required. They are not maintaining any reserves in non-solar peak demand hours.

(e) J&K SLDC stated that they are not maintaining the reserves as they are already power-deficit during winters. Currently, they have no spare capacity, but with PPAs totalling over 3000 MW with hydro and solar generators, they expect to have spare capacity from 2027 onwards.

(f) HPSLDC submitted that in HP control area there are mainly RoR power plants and presently they are not maintaining any reserves.

(g) Uttarakhand SLDC submitted that they are currently not maintaining any reserves. They also submitted that, since maintaining reserves incurs costs, DISCOM may have to obtain prior approval from the state regulatory commission.

(h) Haryana SLDC stated that currently they have reserves in the Faridabad gas plant (430 MW). However, they need to maintain additional reserves.

(i) It was stated that Haryana SLDC and Punjab SLDC to submit the information as per table circulated with the meeting notice with regard to the reserve estimation.

(j) Chief (RA) stated that any issue related to expenditure on account of AGC, reserves may be taken up at FOR level on recommendations and requirements cited by States.

(k) Member (Technical), CERC stated that for provision of reserves a specific portion of capacity must be earmarked exclusively as a reserve and that quantum shall not be scheduled unless under contingency.

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

(a) UPSLDC submitted that all of their intra-state thermal generators can achieve MTL of 55%.

(b) Delhi SLDC stated that they do not have any intra-state thermal generation and only have gas-based generating plants.

(c) Rajasthan SLDC submitted that only supercritical thermal generators are able to operate upto 55 % of MCR in state but sub-critical thermal generator are being operated upto 72% of MCR. Accordingly, out of 10711 MW installed capacity, capacity of 5421 MW cannot achieve MTL of 55%. Rajasthan Grid Code provides for MTL of 55% of thermal generating units.

On above, Chief (RA), CERC stated that SLDC should take up the issue with the generators regarding enforcement of operation of thermal generating units at MTL of 55%.

(d) J&K SLDC submitted that they have only run of the river (RoR) generating plants and do not have any thermal generation.

(e) Punjab SLDC stated that out of 5070.45 MW installed capacity, capacity of 1909.05 MW cannot achieve MTL of 55% due to some technical issues. Further, there is no mandate under the State Grid Code for operation of thermal generating units at MTL of 55% and no part load compensation.

(f) Uttarakhand SLDC submitted that they have only two gas-based power plants and the MTL of 85% is being achieved in terms of the provisions of respective PPAs.

(g) HPSLDC submitted that they do not have any intra-state thermal generation.

(h) Haryana SLDC stated that units of PTPS which are legacy units, cannot achieve MTL of 55% due to some technical issues.

(i) Member (Technical), CERC pointed out that many older generating units including sub-critical units in the country are successfully operating at MTL of 55% and suggested that the SLDCs should further investigate and work towards addressing the issues in operation of state-owned thermal generating stations at MTL of 55%.

D. Forecast of generation from wind, solar, ESS and Renewable energy hybrid generating stations:

(a) UPSLDC submitted that they only have solar generation in their state. They stated that they submit day-ahead and intra-day RE forecast data to NRLDC. They do not have an REMC.

(b) SLDC Delhi submitted that they do not have any RE based generating station.

(c) Rajasthan SLDC stated that they are a RE-rich state with an REMC center and they are providing RE forecast data to NRLDC.

(d) J&K SLDC mentioned that they have very little RE generation with only 20 MW of solar generation capacity.

(e) SLDC Punjab submitted that they are providing RE forecast data, but it sometimes has higher errors due to the non-availability of SCADA data.

(f) SLDC Uttarakhand stated that they are providing RE forecast data, but the format is not aligned with NRLDC's format. They assured that they will submit the data as per NRLDC format.

(g) HPSLDC submitted that they are submitting RE forecast data as per the specified timelines and format.

E. Preparedness of the SLDCs for the next upcoming power shortage

(a) SLDC of Uttar Pradesh, Uttarakhand & H.P. mentioned that they may face shortages from March to May. The DISCOMs will manage the shortfall through power purchase from DAM & RTM.

(b) Delhi SLDC submitted that they may face shortages during the summer months. The DISCOMs plan to manage the shortfall through power purchases from DAM & RTM. Additionally, they have reserves in Bawana and Pragati gas-based generating plants, which may be utilized if needed. Member (Technical), CERC stated that the as per the data presented by the Delhi SLDC, the situation of the BRPL is alarming. He directed that Delhi SLDC shall submit that how they have planned to meet the deficit quantum.

(c) SLDC Rajasthan stated that they may have power shortages from March to May. They further added that they have done some short-term contracts to meet the shortfall.

Member (Technical), CERC stated that the deficit/ surplus quantum is to calculated considering the Peak demand vs. availability. Further, any short -term/ bilateral contract is to be included in the LGBR data. Accordingly, Rajasthan SLDC needs to submit the revised data.

(d) SLDC J&K submitted that J&K manages the shortage through TAM/DAM/RTM, banking, URS and additional quantum under unallocated quantum from MoP. If the power in not available they resort to load shedding.

(e) Punjab SLDC submitted that the 300 MW of Ranjit Sagar hydro plant can be brought online to meet peak load requirements. Additionally, any power shortage can be managed through procurement in the real-time market.

(f) Uttarakhand SLDC submitted that during the month of March 2025 to May 2025 they may face the deficit in the range of 500-700 MW. On this Member (Technical), CERC pointed out that if there is a deficit, the SLDCs should have a planned mechanism to meet up such deficit.

(g) Haryana SLDC submitted that they may have power shortages in the month of May 2025. Member (Tech.), CERC asked Haryana SLDC to submit the

information as per table circulated with the meeting notice indicating the source wise availability.

(h) HPSLDC submitted that they experience power shortages during the winter season in the month of December to February but may not face shortages from March to May. In case of any shortfall, DISCOM may procure power from DAM/RTM. Member (Technical), CERC pointed out that the deficit/ surplus quantum is to calculated considering the Peak demand vs. availability. Further, any short -term/ bilateral contract is to be included in the LGBR data. Accordingly, HPSLDC needs to submit the revised data. He also suggested that the planning should not be based on RTM/DAM rather its should be used only in case of contingency.

(i) Member (Technical), CERC, emphasized that SLDCs/DISCOMs should make advance arrangements for power procurement rather than relying solely on the DAM & RTM to meet their power shortages.

(l) Member (Technical), CERC asked other SLDCs to submit their revised Load generation balance data along with their power procurement plan to meet the deficit for the month of March, April & May 2025.

F. Implementation of the SAMAST scheme.

(a) UPSLDC submitted that since 2011 scheduling and energy accounting of Intra-state Generators are done through online scheduling software of UPSLDC. They have integrated 90% of the meters and integration of the remaining meters is under process.

(b) Delhi SLDC stated that the implementation of the SAMAST scheme is in the preliminary stage, and its scope is currently being finalized. Member (Technical), CERC suggested to expedite the implementation of the SAMAST scheme.

(c) SLDC Rajasthan & HPSLDC submitted that they have already implemented the SAMAST scheme in the year 2017 & 2023 respectively.

(d) J&K SLDC stated that the SAMAST scheme is in the preliminary stage, with the draft DPR currently under preparation.

(e) Punjab SLDC submitted that implementation of all modules except DSM module has been completed.

(f) Uttarakhand SLDC submitted that SAMAST scheme is partially implemented in the state.

(g) Haryana SLDC submitted that that SAMAST scheme is under implementation and is expected to complete by March 2025.

G. Shortage of manpower in SLDCs

(a) Representatives from the respective SLDCs have also presented their manpower position including Sanctioned Strength vis-à-vis current available strength in the respective SLDCs.

(b) UP SLDC, Delhi, Uttarakhand & Haryana mentioned that they have shortage of manpower in SLDC and they have taken up the matter with the competent authorities for the additional manpower.

(c) Rajasthan SLDC submitted that that they have a slight manpower shortage and they are taking up the matter with their Management for additional manpower.

(d) J&K SLDC & HPSLDC have submitted that they have acute shortage of manpower. Member (Technical), CERC advised them to take up the matter with the competent authorities.

(e) Punjab SLDC also submitted that they have a manpower shortage and they are taking up the matter with their Management for additional manpower.

(f) Uttarakhand SLDC submitted that it has prepared a draft manpower structure in line with the guidelines of MoP and submitted to their management.

(g) Haryana SLDC submitted that the restructuring proposal of HVPNL including staffing of SLDC is under finalization for onward submission to the competent authority.

(h) Member (Technical), CERC, emphasized that SLDCs should approach their respective State Regulatory Commissions and for approval of additional manpower.

4. Representative of Chandigarh SLDC submitted that as the Chandigarh SLDC has been recently formed pursuant to the restructuring. Accordingly, they were unable to submit the requisite data and stated that they need to take the help of other SLDCs. He further submitted that their maximum demand during the last year was 449 MW. On this Member (Technical), CERC stated that they can take help of the other SLDCs and NRLDC and submit the requisite data.

5. After the detailed deliberations, Member (Technical), CERC concluded that the immediate priority is ensuring data submission which can be improved over the time with appropriate tools. Reserves must be maintained strictly for exigencies. SLDCs should follow a standardized format for resource adequacy, excluding short-term market purchases from RTM/DAM to ensure power sufficiency. While most SLDCs have implemented the SAMAST scheme, the remaining ones must expedite the completion since the mandate for same was given long back. He added that grid stability is a shared responsibility, and SLDCs must assert their independent role by actively engaging with DISCOMs, ensuring data sharing with RLDCs, and holding

stakeholders accountable. To enhance coordination and bring uniformity across states, NRLDC should have more frequent and direct interactions with SLDCs, providing guidance and support wherever required. A collaborative approach will help in improving data quality, ensuring better preparedness, and ultimately strengthening the overall grid management framework.

6. Based on the discussions, following was concluded:

(a) Only few of the NR SLDCs are furnishing the demand estimation and resource adequacy data as per the specified timelines.

(b) NRLDC shall hold discussions and interactions with NR SLDCs to ensure they are well-equipped to assess their resource adequacy and reserve requirements effectively. This may include providing the necessary tools and frameworks for better forecasting and planning.

(c) NR SLDCs are not maintaining the reserves as per the allocated quantum by the NLDC as per the Grid Code. If reserves are to be maintained, a specific portion of capacity must be earmarked exclusively as a reserve and that quantum may not be scheduled unless under contingency. All states must ensure maintaining the reserve for their control area as per the allocation done by the NLDC as per the Grid Code.

(d) To meet the required deficit for the upcoming peak months, the states should do the advance planning for power procurement including bilateral contract and short-term contract. The States should not be dependent on RTM/ DAM Purchases.

(e) The implementation of the SAMAST Project is required to be pushed by SLDCs of Haryana, Uttarakhand, Punjab, J&K, Punjab and Delhi. A specific timeline should be fixed for installation of the SAMAST Project.

(f) The SLDCs having shortage of manpower should proactively take up the matter with the concerned competent authorities for the requirement of additional manpower as per the present sanctioned strength and also for approval of revised sanction strength as per the MoP Workforce Adequacy Guidelines for Load Despatch Centres.

7. Based on the discussions held in the meeting NR SLDCs are directed to submit the following additional information within a period of 07 days from the date of issuance of these minutes.

(a) Reserve to be maintained:

Total reserve capacity to be maintained as per the assessment of NLDC (in MW) for the F.Y 2024-25 and 25-26	Reserves capacity being maintained by the concerned State (in MW)	The detail of generating station with capacity (in MW) in which the said reserve quantum is being maintained	Whether the reserve capacity is being scheduled by the concerned State to meet regular demand. If yes, the quantum (in MW) may be indicated which is used to meet regular demand and the quantum earmarked to meet contingency
Up-reserve			
Down-reserve			

(b) Load Generation Balance data:

(i) Load Generation Balance Data for the month of March 2025 to May 2025 in the following format:

Month:	Time Period	00:00 to 05:00 *	05:00 to 08:30 *	08:30 to 14:00 *	14:00 to 17:00 *	17:00 to 18:30 *	18:30 to 22:30 *	22:30 to 24:00 *
Demand (MW)	Peak **(A)**							
	Average							
Total Availability from various Resources (in MW) **(B)**								
Source wise breakup of total availability:								
Intra-State Thermal#								
Intra-State Hydro#								
Solar# (intra-state)								
Wind# (intra-state)								
Solar#(inter -state)								
Wind# (inter- state)								
Central Sector allocation #								
Other Sources#								
Total								

Peak Surplus (+)/ Peak Deficit (-) **(B-A)** (in MW)								
Measures planned to be taken to meet the above deficit quantum								

 # Indicative available sources with State. The state may include any other available sources.

(ii) SLDCs shall also indicate that how they will meet the peak deficit quantum during the month of March 2025 to May 2025 as per their Load Generation Balance Data viz procurement plan to meet such deficit.

(iii) If the state has planned to meet the deficit quantum during the month of March 2025 to May 2025 through the Purchases in DAM/RTM, SLDCs to submit the percentage of the deficit that has been actually met during the last six months (i.e. from August 2024 to January 2025) by purchase through RTM/ DAM.

Sl. No.	**Month**	**Peak deficit (in MW)**	**Quantum Purchased through RTM/DAM (in MW)**	**% of Peak deficit met through RTM/DAM**

(c) As per para 10 of the order dated 07.10.2024 in Suo-Motu Petition No. 9/SM/2024, the Regional Load Despatch Centres and State Load Despatch Centres were directed to submit the report on the implementation of the measures contained in the order, 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. Further, as per the minutes of meeting dated 05.11.2024, it was directed to file the said report within a period of 15 days of issuance of minutes. However, SLDC of Uttarakhand, J&K, Punjab and Chandigarh have not filed the aforesaid report yet. Accordingly, it is once again requested to file the said report within 07 days of issuance of these minutes at the e-filing portal of CERC.

8. Chandigarh SLDC to submit the details of thermal generation capacity as per following:

Sl. No.	Name of intra - State Thermal generating station	Installed Capacity (in MW)	Minimum Turndown level (in %) as per the respective state regulations or the specifications of the generating station	The capacity which can be backed down to 55% (in MW)	Capacity which cannot be backed down to 55% of MCR and reasons for the same	Timeline by which the generating stations is planned to go up to MTL of 55%
1	Xyz (number of units x capacity in MW says 2x210 MW and 2x500 MW)) *	1420	70% for 210 MW units 55% for 500 MW units	1000	420	
2	Xyz (number of units x capacity in MW says 2x210 MW and 2x500 MW)) *	1420	70% for 210 MW units as well as 500 MW units	0	1420	

Total						

Indicative data

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Annexure-A

List of Participants in the meeting dated 14.02.2025			
Sl. No.	**Name**	**Designation**	**Organization**
1	Sh. Ramesh Babu V.	Member (Technical)	CERC
2	Sh. Harpreet Singh Pruthi	Secretary	CERC
3	Sh. Awdhesh Kumar Yadav	Chief (Engg.)	CERC
4	Sh. S.K. Chatterjee	Chief (RA)	CERC
5	Ms. Shilpa Agarwal	Joint Chief (Engg.)	CERC
6	Sh. Ramakant Yadav	Deputy Chief (Engg.)	CERC
7	Sh. Manmohan Shukla	Asstt. Chief (Engg.)	CERC
8	Sh. Mukesh Kumar	Asstt. Chief (Engg.)	CERC
9	Sh. Rajeev Jha	Asstt. Chief (Engg.)	CERC
10	Sh. Ravindra Kadam	Chief Advisor (RE)	CERC
11	Sh. Pradeep Meena	Dy. Manager	CERC
12	Sh. D.K. Meena	SE	NRPC
13	Sh. Mohit Kumar Walia	Dy. CE	SLDC Punjab
13	Sh. Amit Kumar Singh	SE	SLDC Uttarakhand
14	Sh. Ravi Kant Kalsotra	SE	SLDC Jammu
15	Sh. Sunil Kumar Kanaujia	Chief Manager	NRLDC
16	Sh. P. Karthik	Chief Manager	NRLDC
17	Sh. Gaurav Malviya	Manager	NRLDC
18	Sh. Sarvana Prakash	Manager	NRLDC
19	Sh. Anmol Sharma	Deputy Manager	NLDC
20	Sh. Purushottam Singh	DGM (MTP)	IPGCL/PPCL
21	Sh. Satish Kr Raghav	ED (T)	IPGCL/PPCL
22	Sh. U.K. Patel	EE	SLDC Chandigarh
23	Sh. Kamal Joshi	AE	UPSLDC
24	Sh. Nazmul Hoda	EE	UPPCL
25	Sh. Rohit Kumar	AE	HPSLDC
26	Sh. Jai Ram	EE	SLDC Haryana
27	Sh. Surendra Singh	SE	SLDC Haryana
28	Sh. Sudhir Jain	CE	SLDC Rajasthan
29	Sh. Kamal Patidar	SE	SLDC Rajasthan
30	Sh. Ashok Kumar	DGM (T)	SLDC Delhi
31	Sh. Anish Garg	GM	SLDC Delhi
32	Sh. A.J. Siddiqui	CE (PSO)	UPSLDC
33	Sh. Sunil Aharwal	GM	NRLDC
34	Sh. Amandeep Singh	AE	SLDC Punjab
35	Sh. Ankit Kumar	AE	SLDC Uttarakhand

UPSLDC

Meeting with Hon'ble CERC, 14,February-2025

Resource Adequacy and Demand Estimation

March-2025

Time slot	Total Intra-State	Inter-State			Total Availability	Estimated Demand		Surplus (+) / Deficit(-)
		LTA	STOA	TOTAL		Peak	Average	
00:00-05:00	12883	7181	-3550	3631	16514	18852	13805	2709
05:00-08:30	14915	7920	-3264	4656	19571	20165	15380	4191
08:30-14:00	15803	7463	-324	7139	22941	21463	17093	5848
14:00-17:00	14931	7254	-324	6930	21860	18104	14945	6915
17:00-18:30	13325	7844	-1064	6780	20105	18975	15121	4984
18:30-22:30	13410	8159	-1364	6795	20205	22870	17905	2300
22:30-24:00	12973	7325	-1523	5802	18775	21035	15306	3469

Power procurement from Deep portal and LDC power is under process to meet peak demand. Contingencies will be met through DAM/RTM

April-2025

Time slot	Total Intra-State	Inter-State			Total Availability	Estimated Demand		Surplus (+) / Deficit(-)
		LTA	STOA	TOTAL		Peak	Average	
00:00-05:00	14888	8014	-50	7964	22852	26110	21406	1446
05:00-08:30	16679	8152	-200	7952	24631	23485	19281	5350
08:30-14:00	17466	7872	200	8072	25539	23714	18327	7212
14:00-17:00	16748	8072	200	8272	25020	20742	16133	8887
17:00-18:30	15129	8345	-50	8295	23424	22312	18051	5373
18:30-22:30	15416	9010	-50	8960	24376	27434	23666	710
22:30-24:00	15285	8675	-150	8525	23810	27404	23574	236

Power procurement from Deep portal and LDC power is under process to meet peak demand. Contingencies will be met through DAM/RTM

Annexure-B

May-2025

Time slot	Total Intra-State	Inter-State			Total Availability	Estimated Demand		Surplus (+) / Deficit(-)
		LTA	STOA	TOTAL		Peak	Average	
00:00-05:00	15592	8973	1778	10751	26343	31451	26598	-255
05:00-08:30	17048	8642	635	9277	26326	29140	23184	3142
08:30-14:00	17959	8753	635	9388	27347	31164	25239	2108
14:00-17:00	17137	8826	635	9460	26597	31601	24990	1607
17:00-18:30	15610	9005	635	9640	25250	26394	22733	2517
18:30-22:30	15909	9672	1820	11492	27401	32026	27886	-485
22:30-24:00	15841	9426	1820	11246	27086	32134	28627	-1541

Power procurement from Deep portal and LDC power is under process to meet peak demand. Contingencies will be met through DAM/RTM

Thermal Generation Capacity

Reserve to be maintained

Total Reserve Capacity To Be Maintained As Per The Assessment Of NLDC (In MW) For F.Y 2024-25		Reserve Capacity Being Maintained By The Concerned State (In MW)	Whether The Reserve Capacity Is Being Scheduled By The Concerned State. If Yes, The Quantum (In MW) May Be Indicated
Solar hours	602	Available	Yes
Non-Solar hours	754	In case of shortages, it is managed through DAM / RTM / Demand Management	Yes, if available

UPSLDC Responses In Compliance To CERC Order Dated-07-10-2024

Compliances as per CERC	UPSLDC Response
18(2)(a)- Shortage of manpower in SLDC.	▪ At present 94 Executives are working against sanctioned post of 129. For new works, like cyber security and establishment of Information Security Division (ISD), additional manpower is required. ▪ Interview for posting Executives at SLDC to meet out shortages completed and put-up before management for providing additional manpower. Also posting of 14 IT Executives for Cyber Security and ISD is under process.

Compliances as per CERC	UPSLDC Response
18(2)(b)- Provision of adequate Demand estimation & resource adequacy data in the prescribed format, as mentioned in clause 31 of the Grid Code.	▪ Data related to resource adequacy and demand estimation is regularly provided to NRLDC within prescribed time line, which is reviewed in monthly OCC meetings.

Compliances as per CERC	UPSLDC Response
18(2)(c)- Status of estimation of the reserves requirement and maintaining the reserve capacity as allocated to states as per the provisions of the Grid Code.	▪ Reserves are available during solar hours. ▪ In case of shortages during peak hours it is managed from DAM/RTM/Demand Side.

Compliances as per CERC	UPSLDC Response
18(2)(d) Forecast of generation from wind, solar, ESS and Renewable Energy hybrid generating stations which are intra-state entities for different time horizons and furnishing the time block-wise information to the concerned RLDC as per Regulation 31 (4)(b) of the Grid Code.	▪ UP has only Solar RE generation. Day-ahead and intra-day RE forecast is shared with NRLDC through API in real time.

Compliances as per CERC	UPSLDC Response
18(2)(e)- Preparedness of the SLDCs for the next upcoming expected power shortage in their respective control area	▪ Demand Forecast and Resource Adequacy are provided by Discoms on annual, monthly, day ahead and intra-day basis. ▪ Discoms meet out their shortages through bilateral/banking agreements, Deep portal and DAM/RTM.

Compliances as per CERC	UPSLDC Response
18(2)(f)- Methodology/ mechanism to manage the sudden changes in demand in their control area. The process followed to procure resources through the Real-time Market (RTM) and various other means.	▪ In case of sudden change in demand, shortages are met through DAM, RTM and TAM. ▪ Also UPPCL sell surplus power in DAM/RTM, for which they have deployed Executives on 24X7 basis.

Compliances as per CERC	UPSLDC Response
18(2)(g)- The minimum turndown levels being achieved during low-demand periods which is required for optimal utilization of generation resources.	▪ All Intra-State Generating Stations are backed down to technical minimum level (55%) with ramp rate of 1% per minute. Schedules are revised from N+2 time block. ▪ Scheduling of Inter-state transactions are done as per provisions of IEGC.

Compliances as per CERC	UPSLDC Response
18(2)(h)- Status of implementation of SAMAST scheme.	▪ Since 2011 Scheduling and Energy accounting of Intra-state Generators are done through online scheduling software (EASS) of UPSLDC. ▪ At present out of total 4658 interface meters, data of 4173 AMR is available in MDM system of UPSLDC. Integration of remaining 485 meters in MDM is under process.

Thank You

Total Transfer Capability for May-25

Intra-State Generation	TTC	Reliability Margin	ATC	Load can be Met
14000	18100	600	17500	31500
15000	17600	600	17000	32000
16000	17100	600	16500	32500

Constraint

Mar-25			Time period	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Demand(MW)			**Peak**	18852	20165	21463	18104	18975	22870	21035
			Average	13805	15380	17093	14945	15121	17905	15306
Availability from various resources	**Intra State**	Thermal		11865	11865	11865	11865	11865	11865	11865
		Hydro		268	692	475	290	613	794	357
		Solar		0	1607	2712	2025	96	0	0
		Cogen		750	750	750	750	750	750	750
		Total Intra stae		**12883**	**14915**	**15803**	**14931**	**13325**	**13410**	**12973**
	Inter State	Long Term		7181	7920	7463	7254	7844	8159	7325
		STOA		-3550	-3264	-324	-324	-1064	-1364	-1523
		Total Inter State		3631	4656	7139	6930	6780	6795	5802
	Total Availability			**16514**	**19571**	**22941**	**21860**	**20105**	**20205**	**18775**
Surplus(+)/Deficit(-)				**2709**	**4191**	**5848**	**6915**	**4984**	**2300**	**3469**

Apr-25			Time period	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Demand(MW)			**Peak**	26110	23485	23714	20742	22312	27434	27404
			Average	21406	19281	18327	16133	18051	23666	23574
Availability from various resources	**Intra State**	Thermal		13889	13889	13889	13889	13889	13889	13889
		Hydro		441	545	392	410	561	969	838
		Solar		0	1687	2627	1892	121	0	0
		Cogen		558	558	558	558	558	558	558
		Total Intra stae		**14888**	**16679**	**17466**	**16748**	**15129**	**15416**	**15285**
	Inter State	Long Term		8014	8152	7872	8072	8345	9010	8675
		STOA		-50	-200	200	200	-50	-50	-150
		Total Inter State		7964	7952	8072	8272	8295	8960	8525
	Total Availability			**22852**	**24631**	**25539**	**25020**	**23424**	**24376**	**23810**
Surplus(+)/Deficit(-)				**1446**	**5350**	**7212**	**8887**	**5373**	**710**	**236**

May-25			Time period	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Demand(MW)			**Peak**	31451	29140	31164	31601	26394	32026	32134
			Average	26598	23184	25239	24990	22733	27886	28627
Availability from various resources	**Intra State**	Thermal		14429	14429	14429	14429	14429	14429	14429
		Hydro		908	695	716	666	763	1225	1157
		Solar		0	1669	2559	1787	162	0	0
		Cogen		255	255	255	255	255	255	255
		Total Intra stae		**15592**	**17048**	**17959**	**17137**	**15610**	**15909**	**15841**
	Inter State	Long Term		8973	8642	8753	8826	9005	9672	9426
		STOA		1778	635	635	635	635	1820	1820
		Total Inter State		**10751**	**9277**	**9388**	**9460**	**9640**	**11492**	**11246**
	Total Availability			**26343**	**26326**	**27347**	**26597**	**25250**	**27401**	**27086**
Surplus(+)/Deficit(-)				**-255**	**3142**	**2108**	**1607**	**2517**	**-485**	**-1541**

Delhi SLDC
Resource Adequacy

DELHI GENERATION

Name of the Stn				DISCOMWISE CAPACITY ALLOCATION IN MW					
	Installed capacity	Capacity Allocation	capacity Allocation	BRPL	BYPL	TPDDL	NDMC	MES	RPH
Delhi Generation	**in MW**	**In%**	**in MW**						
GAS TURBINE	90	100	90	37	20	27	4	0	1
PRAGATI	330	100	330	93	53	64	100	20	0
BAWANA CCGT*	1371	80	1097	427	247	298	100	25	0
EDWPCL(WEP)	12	0	0	0	0	0	0	0	0
Bawana(WEP)	24	100	24	10	6	7	1	0	0
TOWMCL(WEP)	23	0	18	9	0	6	0	0	0
Tehkhand	25	100	25	10	6	8	1	0	0
Total Delhi generation	**1875**		**1584**	**587**	**332**	**409**	**206**	**45**	**1**

AVAILABILITY OF DELHI OTHER THEN DELHI GENERATION (IN MW)

AVAILABILITY OTHER THEN DELHI GENERATION	CAPACITY ALLOCATION	DISCOMWISE CAPACITY ALLOCATION IN MW						
		BRPL	BYPL	TPDDL	NDMC	MES	RPH	NR
THERMAL GENERATION	3849	1264	1113	1451	0	0	0	20
HYDRO GENERATION	826	414	166	246	0	0	0	0
NUCLEAR GENERATION	103	57	14	32	0	0	0	0
SOLAR GENERATION	1239	628	286	325	0	0	0	0
WIND GENERATION	550	350	150	50	0	0	0	0
TOTAL AVAILABILITY IN MW	**6566**	**2712**	**1729**	**2103**	**0**	**0**	**0**	**20**

TOTAL AVAILABILITY OF DELHI INCLUDING DELHI OWN GENERATION (IN MW)

Name of the Stn		DISCOMWISE CAPACITY ALLOCATION IN MW						
	Capacity Allocation (in MW)	BRPL	BYPL	TPDDL	NDMC	MES	RPH	NR
DELHI GENERATION	1584	587	332	409	206	45	1	--
AVAILABILITY OTHER THEN DELHI GENERATION	6566	2712	1729	2103	0	0	0	20
TOTAL AVAILABILITY	8150	3299	2062	2513	206	45	1	20

Discoms-wise Anticipated Demand and Availability (in MW) of Delhi for Summer 2025

BYPL Anticipated Demand and Availability (in MW) or Summer 2025

MONTH	1st Fortnight					2nd fortnight				
APRIL 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	923	827	976	1050	965	1061	902	1082	1199	1108
AVAILABILITY	807	1080	1259	1301	1006	1033	1235	1365	1394	1169
SURPLUS (+) / SHORTAGE (-)	**-116**	**253**	**284**	**251**	**41**	**-27**	**333**	**283**	**196**	**60**
MAY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1358	1146	1273	1400	1421	1676	1464	1591	1793	1740
AVAILABILITY	1364	1444	1519	1558	1417	1655	1642	1739	1779	1770
SURPLUS (+) / SHORTAGE (-)	**6**	**298**	**247**	**158**	**-4**	**-21**	**178**	**147**	**-14**	**31**
JUNE 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1729	1485	1591	1803	1761	1761	1591	1676	1909	1824
AVAILABILITY	1669	1542	1597	1806	1784	1763	1601	1681	1924	1827
SURPLUS (+) / SHORTAGE (-)	**-60**	**57**	**6**	**2**	**23**	**2**	**10**	**5**	**15**	**2**
JULY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1581	1400	1591	1718	1697	1655	1400	1570	1740	1697
AVAILABILITY	1575	1604	1705	1787	1681	1672	1602	1707	1779	1717
SURPLUS (+) / SHORTAGE (-)	**-6**	**203**	**114**	**69**	**-16**	**17**	**202**	**137**	**40**	**20**
AUGUST 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1400	1146	1379	1517	1432	1443	1252	1358	1581	1549
AVAILABILITY	1520	1593	1692	1754	1614	1521	1590	1690	1754	1612
SURPLUS (+) / SHORTAGE (-)	**120**	**447**	**313**	**238**	**182**	**78**	**338**	**332**	**174**	**63**
SEPTEMBER 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1400	1188	1315	1485	1453	1421	1177	1390	1527	1485
AVAILABILITY	1495	1536	1589	1634	1485	1475	1521	1579	1624	1476
SURPLUS (+) / SHORTAGE (-)	**95**	**348**	**274**	**149**	**32**	**54**	**343**	**189**	**96**	**-9**

TPDDL Anticipated Demand and Availability (in MW) or Summer 2025

MONTH	1st Fortnight					2nd fortnight				
APRIL 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1232	1104	1302	1401	1288	1416	1203	1444	1600	1479
AVAILABILITY	1625	1738	1941	1918	1720	1656	1769	1972	1949	1751
SURPLUS (+) / SHORTAGE (-)	**393**	**634**	**638**	**517**	**432**	**240**	**566**	**528**	**350**	**271**
MAY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1812	1529	1699	1869	1897	2237	1954	2123	2392	2322
AVAILABILITY	2030	1981	2201	2309	2107	2151	2102	2322	2431	2228
SURPLUS (+) / SHORTAGE (-)	**218**	**452**	**502**	**441**	**210**	**-85**	**149**	**199**	**38**	**-93**
JUNE 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	2308	1982	2123	2407	2350	2350	2123	2237	2548	2435
AVAILABILITY	2367	2286	2346	2529	2457	2367	2286	2346	2529	2457
SURPLUS (+) / SHORTAGE (-)	**60**	**304**	**223**	**122**	**107**	**17**	**162**	**110**	**-19**	**22**
JULY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	2109	1869	2123	2293	2265	2208	1869	2095	2322	2265
AVAILABILITY	2417	2336	2397	2579	2507	2217	2236	2297	2379	2307
SURPLUS (+) / SHORTAGE (-)	**308**	**467**	**273**	**285**	**242**	**9**	**367**	**202**	**57**	**42**
AUGUST 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1869	1529	1840	2024	1911	1925	1670	1812	2109	2067
AVAILABILITY	2177	2065	2277	2501	2258	2177	2065	2277	2501	2258
SURPLUS (+) / SHORTAGE (-)	**309**	**536**	**437**	**477**	**347**	**252**	**395**	**465**	**392**	**192**
SEPTEMBER 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1869	1586	1755	1982	1939	1897	1571	1855	2039	1982
AVAILABILITY	2038	2019	2177	2271	2118	1938	1969	2127	2171	2018
SURPLUS (+) / SHORTAGE (-)	**169**	**434**	**422**	**289**	**178**	**41**	**398**	**273**	**132**	**36**

BRPL Anticipated Demand and Availability (in MW) or Summer 2025

MONTH	1st Fortnight					2nd Fortnight				
APRIL 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	1957	1754	2069	2227	2047	2249	1912	2294	2542	2350
AVAILABILITY	1640	1711	2062	2111	1817	1797	1864	2226	2270	1967
SURPLUS (+) / SHORTAGE (-)	**-316**	**-44**	**-7**	**-116**	**-230**	**-452**	**-48**	**-69**	**-272**	**-383**
MAY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	2879	2429	2699	2969	3014	3554	3104	3374	3801	3689
AVAILABILITY	2056	2187	2494	2483	2202	2172	2298	2629	2597	2330
SURPLUS (+) / SHORTAGE (-)	**-823**	**-242**	**-205**	**-486**	**-812**	**-1382**	**-806**	**-745**	**-1204**	**-1359**
JUNE 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	3666	3149	3374	3824	3734	3734	3374	3554	4049	3869
AVAILABILITY	2367	2438	2828	2908	2555	2404	2467	2822	2909	2577
SURPLUS (+) / SHORTAGE (-)	**-1300**	**-711**	**-546**	**-915**	**-1179**	**-1330**	**-907**	**-732**	**-1139**	**-1291**
JULY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	3351	2969	3374	3644	3599	3509	2969	3329	3689	3599
AVAILABILITY	2350	2421	2811	2891	2352	2180	2242	2598	2685	2353
SURPLUS (+) / SHORTAGE (-)	**-1002**	**-548**	**-563**	**-753**	**-1247**	**-1329**	**-727**	**-731**	**-1003**	**-1245**
AUGUST 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	2969	2429	2924	3216	3036	3059	2654	2879	3351	3284
AVAILABILITY	2180	2253	2591	2682	2329	2141	2191	2520	2625	2304
SURPLUS (+) / SHORTAGE (-)	**-789**	**-176**	**-333**	**-534**	**-708**	**-918**	**-463**	**-359**	**-727**	**-980**
SEPTEMBER 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	2969	2519	2789	3149	3081	3014	2497	2947	3239	3149
AVAILABILITY	2032	2113	2470	2485	2147	1881	1958	2331	2362	1996
SURPLUS (+) / SHORTAGE (-)	**-937**	**-406**	**-319**	**-664**	**-935**	**-1133**	**-539**	**-616**	**-877**	**-1153**

NDMC Anticipated Demand and Availability (in MW) or Summer 2025

MONTH	1st Fortnight					2nd fortnight				
APRIL 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	196	175	207	223	205	225	191	229	254	235
AVAILABILITY	225	225	285	285	225	273	273	333	333	273
SURPLUS (+) / SHORTAGE (-)	**29**	**49**	**78**	**62**	**20**	**48**	**82**	**104**	**79**	**38**
MAY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	288	243	270	297	301	355	310	337	380	369
AVAILABILITY	274	274	394	394	374	307	307	427	427	407
SURPLUS (+) / SHORTAGE (-)	**-14**	**31**	**124**	**97**	**72**	**-48**	**-4**	**90**	**47**	**38**
JUNE 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	367	315	337	382	373	373	337	355	405	387
AVAILABILITY	307	307	427	427	427	307	307	427	427	427
SURPLUS (+) / SHORTAGE (-)	**-60**	**-8**	**90**	**45**	**54**	**-66**	**-30**	**72**	**22**	**40**
JULY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	335	297	337	364	360	351	297	333	369	360
AVAILABILITY	307	307	427	427	407	307	307	427	427	407
SURPLUS (+) / SHORTAGE (-)	**-28**	**10**	**90**	**63**	**47**	**-44**	**10**	**94**	**58**	**47**
AUGUST 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	297	243	292	322	304	306	265	288	335	328
AVAILABILITY	307	307	407	407	307	307	307	407	407	307
SURPLUS (+) / SHORTAGE (-)	**10**	**64**	**115**	**85**	**3**	**1**	**41**	**119**	**72**	**-21**
SEPTEMBER 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	297	252	279	315	308	301	250	295	324	315
AVAILABILITY	307	307	407	407	307	307	307	407	407	307
SURPLUS (+) / SHORTAGE (-)	**10**	**55**	**128**	**92**	**-1**	**6**	**57**	**112**	**83**	**-8**

MES Anticipated Demand and Availability (in MW) or Summer 2025

MONTH	1st Fortnight					2nd fortnight				
APRIL 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	27	24	28	30	28	31	26	31	35	32
AVAILABILITY	23	23	31	32	23	33	33	41	42	33
SURPLUS (+) / SHORTAGE (-)	**-4**	**-1**	**3**	**2**	**-5**	**2**	**7**	**9**	**7**	**1**
MAY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	39	33	37	40	41	48	42	46	52	50
AVAILABILITY	36	36	44	45	36	42	42	50	51	42
SURPLUS (+) / SHORTAGE (-)	**-3**	**3**	**7**	**4**	**-5**	**-6**	**0**	**4**	**0**	**-8**
JUNE 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	50	43	46	52	51	51	46	48	55	53
AVAILABILITY	47	40	55	55	47	47	40	55	55	47
SURPLUS (+) / SHORTAGE (-)	**-3**	**-2**	**9**	**3**	**-3**	**-3**	**-6**	**7**	**0**	**-5**
JULY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	46	40	46	49	49	48	40	45	50	49
AVAILABILITY	47	40	55	55	47	47	40	55	55	47
SURPLUS (+) / SHORTAGE (-)	**2**	**0**	**9**	**6**	**-2**	**0**	**0**	**10**	**5**	**-2**
AUGUST 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	40	33	40	44	41	42	36	39	46	45
AVAILABILITY	37	37	52	52	37	37	37	52	52	37
SURPLUS (+) / SHORTAGE (-)	**-3**	**4**	**13**	**9**	**-4**	**-4**	**1**	**13**	**7**	**-7**
SEPTEMBER 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	40	34	38	43	42	41	34	40	44	43
AVAILABILITY	37	37	52	52	37	37	37	52	52	37
SURPLUS (+) / SHORTAGE (-)	**-3**	**3**	**14**	**10**	**-5**	**-4**	**3**	**12**	**8**	**-5**

Anticipated Demand and Availability (in MW) of Delhi for Summer 2025

Delhi as a whole Anticipated Demand and Availability (in MW) or Summer 2025

MONTH	1st Fortnight					2nd fortnight				
APRIL 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	4350	3900	4600	4950	4550	5000	4250	5100	5650	5225
AVAILABILITY	4338	4795	5596	5665	4809	4810	5192	5954	6007	5211
SURPLUS (+) / SHORTAGE (-)	**-12**	**895**	**996**	**715**	**259**	**-190**	**942**	**854**	**357**	**-14**
MAY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	6400	5400	6000	6600	6700	7900	6900	7500	8450	8200
AVAILABILITY	5778	5940	6670	6807	6154	6346	6409	7185	7303	6796
SURPLUS (+) / SHORTAGE (-)	**-622**	**540**	**670**	**207**	**-546**	**-1554**	**-491**	**-315**	**-1147**	**-1404**
JUNE 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	8150	7000	7500	8500	8300	8300	7500	7900	9000	8600
AVAILABILITY	6776	6632	7272	7743	7288	6907	6719	7350	7863	7353
SURPLUS (+) / SHORTAGE (-)	**-1374**	**-368**	**-228**	**-757**	**-1012**	**-1393**	**-781**	**-551**	**-1137**	**-1247**
JULY 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	7450	6600	7500	8100	8000	7800	6600	7400	8200	8000
AVAILABILITY	6714	6726	7413	7757	7012	6442	6446	7102	7344	6849
SURPLUS (+) / SHORTAGE (-)	**-736**	**126**	**-87**	**-343**	**-988**	**-1358**	**-154**	**-298**	**-856**	**-1151**
AUGUST 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	6600	5400	6500	7150	6750	6800	5900	6400	7450	7300
AVAILABILITY	6240	6273	7038	7415	6564	6202	6209	6965	7357	6537
SURPLUS (+) / SHORTAGE (-)	**-360**	**873**	**538**	**265**	**-186**	**-598**	**309**	**564**	**-93**	**-763**
SEPTEMBER 2025	00-03	03-09	09-12	12-18	18-24	00-03	03-09	09-12	12-18	18-24
DEMAND	6600	5600	6200	7000	6850	6700	5550	6550	7200	7000
AVAILABILITY	5927	6030	6713	6867	6112	5657	5810	6514	6634	5852
SURPLUS (+) / SHORTAGE (-)	**-673**	**430**	**513**	**-133**	**-738**	**-1044**	**260**	**-36**	**-566**	**-1148**

- From above it is quite evident that there are some shortages in some of the slots.
- BRPL has requested Power Department, GNCTD to forward their request to MoP, GoI for temporary allocation of 700MW (April 2025 to Sept. 2025) from unallocated quote of NR Region to meet the peak demand.
- BRPL request is under process.

Reserve Requirement

- CERC vide order dated 28.09.2023, approved the "Detailed Procedure for Assessment of Quantum of Secondary & Tertiary Reserve Capacity, along with Information Exchange and Timelines" as per IEGC Regulations 2023.

Scale for reference contingency /outages	**STATE/REGION**	**Within in ISGS (in MW)**	**Within state (in MW)**	**Total (in MW)**	**Reserve ratio w.r.t. All India**
4500 MW	Delhi	183	144	327	2.23%
	Northern Region	1585	2743	4328	29.49%
	All India	4870.81	9805.19	14676	
7000 MW	**Delhi**	**284**	**164**	**448**	**2.28%**
	Northern Region	2465	3372	5837	29.67%
	All India	7576.81	12099.19	19676	

THANK YOU

RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LIMITED
STATE LOAD DISPATCH CENTRE

POINT WISE REPLY OF RAJASTHAN STATE ON ISSUE FLAGGED AT POINT 18(2) a to 18(2) h of the MoM dated 05.11.2024 at CERC with NLDC and RLDCs

Concern raised by the RLDCs and NLDC

- (a) Shortage of manpower in SLDCs

Reply of SLDC Rajasthan

- As per MOP Workforce Adequacy Guidelines dated 30th Oct 2024, SLDC Rajasthan is in the category of large SLDC. Present Status of manpower working in SLDC Rajasthan is enclosed at Annexure -I

ANNEXURE -I

Manpower status of SLDC Rajasthan as on date (January, 2025)										
S. No.	Name of the SLDC	Total Employees	Total no. of Executives (Technical + Non-Technical like HR, Finance, Admn etc) (X)	Total No. of Non-Executive (Workmen + Supervisor)	Total No. of Technical Executive (Excluding HR, Finance, Admin)	No. of Eligible employees for System Operator Certification	Total Qualified as on date	Optimum Manpower as laid out in MOP Workforce Adequacy Guidelines dated 30th Oct 2024) (Y)	Shortfall/ Excess (Z)=(Y)-(X)	Steps taken to bridge the shortfall, if any
Large SLDCs (Optimum Manpower for Large SLDC is 144 as per MOP Workforce Adequacy Guidelines dated 30th Oct., 2024)										
1	Rajasthan	170	122	48	101	96	18	144	22	Being submitted to management

Concern raised by the RLDC's and NLDC

- (b) Provision of adequate Demand estimation & resource adequacy data in the prescribed format, as mentioned in clause 31 of the Grid Code.

Reply of SLDC Rajasthan

- Presently day ahead Demand forecast is being done by RUVNL on behalf of the Disom's by considering historical data and metrological forecast and same is regularly submitted to NRLDC.
- Further, hiring of forecasting agency is in under process for assessing the Week ahead, month ahead and year ahead demand estimation.

Concern raised by the RLDC's and NLDC

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

Reply of SLDC Rajasthan

- State generating units including IPPs are kept under Maximum Turndown Level (MTL) at the time of low demand/ peak solar generation regularly.
- Presently, unutilized capacity under back down of thermal Units in real time operation due to less demand /peak solar are used as reserve requirement.

Concern raised by the RLDC's and NLDC

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

Reply of SLDC Rajasthan

- Rajasthan is RE rich state and having Renewable Energy Management Center for forecasting and scheduling of Renewable Energy.
- Renewable Energy forecast is being done by the forecasters engaged in REMC center and same is being displayed in NRLDC.

Concern raised by the RLDC's and NLDC

- (e) Preparedness of the SLDCs for the next upcoming expected power shortage in their respective control area

Reply of SLDC Rajasthan

- RUVNL balance the portfolio by selling or purchase of power in the real time market to balance the availability with real time demand. If power is not available in power exchange then RUVNL will have to resort the load shedding to balance the demand with available generation.

Concern raised by the RLDCs and NLDC

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

Reply of SLDC Rajasthan

- RUVNL is managing the power demand scenario on real time basis and arrange to procure/sell power through the Real-Time Market (RTM) to manage the sudden changes in demand
- Load shedding is a last recourse to curtail the over drawal in emergency situation, if power is not available in RTM.

Concern raised by the RLDC's and NLDC

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

Reply of SLDC Rajasthan

- Presently only Supercritical thermal generators are able to operate upto 55 % of MCR in state but sub-critical thermal generator are being operated upto 72% of MCR.

- There is insufficient hydro / Gas / pump storage generation for fast ramping up / ramping down to manage the ramp of state demand.

Concern raised by the RLDC's and NLDC

- (h) Status of implementation of SAMAST scheme.

Reply of SLDC Rajasthan

- SAMAST scheme has been implemented in Rajasthan w.e.f. May 2017. .

Details of Thermal generation capacity of Rajasthan State

S.No.	Name of Intra-state Thermal Generating Station	Installed Capacity (MW)	Minimum Turndown level (in %)	Capacity which can be backed down to 55 % (in MW)	Capacity which cannot be backed down to 55 % of MCR and reasons for the same
1	STPS, Suratgarh	1500	72%		1500
2	SSCTPS, Suratgarh	1320	55%	1320	
3	KTPS, Kota	1240	72%		1240
4	KaTPP, Jhalawar	1200	55%	1200	
5	CTPP, Chhabra	1000	72%		1000
6	CSCTPP, Chhabra	1320	55%	1320	
7	DCCPP, Dholpur	330	72%		330
8	RGTPP, Ramgarh	270	72%		270
9	ADANI (EX BUS CAPACITY)	1200	55%	1200	
10	RAJWEST	1080	72%		1080
11	BTPP	250	55%	250	
TOTAL		10711		5290	5421

Reserve to be maintained by Rajasthan State

Particulars	Total reserve capacity to be maintained as per the assessment of NLDC (in MW) for FY-2024-25	Reserve capacity being maintained (in MW) by Rajasthan state	Whether the reserve capacity is being scheduled by Rajasthan state. If Yes, the quanum (in MW) may be indicated
Solar hours (10:00 Hrs to 16:00 Hrs)	880	1274	Yes, it is scheduled as and when required looking to low solar generation
Non Solar Peak demand Hours (06:00 Hrs to 10:00 Hrs & 18:00 Hrs to 22:00 Hrs	684	NIL (However, sometimes reserve capacity is available due to low demand or diverse demand profile of Rajasthan)	
Non Solar Off Peak demand Hours (16:00 Hrs to 18:00 Hrs)	684	916	Yes, it is scheduled as and when required due to force outage of generating units
Note:- Above data is tabulated on the basis of the diverse profile of demand and generation existing in Rajasthan state during the year			

Load Generation Balance data from March 2025 to May 2025

Month	Time Period	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Mar-25	Peak Demand (MW)	11477	17777	18222	16304	14468	13768	12229
	Average Demand (MW)	9676	13718	15186	13988	12401	11606	10663
Apr-25	Peak Demand (MW)	12436	14685	15283	13986	13100	12933	13018
	Average Demand (MW)	10355	12384	13400	12403	11130	11334	11318
May-25	Peak Demand (MW)	16539	17763	18797	18519	17087	16569	16658
	Average Demand (MW)	13362	14860	16085	15524	13651	13230	13657

Availability (in MW) from various resources from March 2025 to May 2025

Month	Time Period	00:00 to 05:00	05:00 to 08:30	08:30 to 14:00	14:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Mar-25	State owned generation							
	Thermal+Gas+Nuclear	7355	7355	7355	7355	7355	7355	7355
	Hydro		212			212	212	142
	Wind	595	595	595	595	595	595	595
	Solar+Bio mass			3013	3013			
	Inter-state Generating Station							
	Thermal+Gas+Nuclear	1596	1596	1596	1596	1596	1596	1596
	Hydro	190	694	190	190	694	694	190
	LTA	1133	1133	1133	1133	1133	1133	1133
	Total Availability	**10869**	**11585**	**13882**	**13882**	**11585**	**11585**	**11011**
Apr-25	State owned generation							
	Thermal+Gas+Nuclear	7129	7129	7129	7129	7129	7129	7129
	Hydro		90				90	
	Wind	492	492	492	492	492	492	492
	Solar			3925	3925			
	Biomas	113	113	113	113	113	113	113
	Inter-state Generating Station							
	Thermal+Gas+Nuclear	2238	2238	2238	2238	2238	2238	2238
	Hydro	221	810	221	221	810	810	221
	LTA	1230	1230	1230	1230	1230	1230	1230
	Total Availability	**11422**	**12101**	**15347**	**15347**	**12011**	**12101**	**11422**
May-25	State owned generation							
	Thermal+Gas+Nuclear	7296	7296	7296	7296	7296	7296	7296
	Hydro							
	Wind	754	754	754	754	754	754	754
	Solar			3906	3906			
	Biomas	104	104	104	104	104	104	104
	Inter-state Generating Station							
	Thermal+Gas+Nuclear	2225	2225	2225	2225	2225	2225	2225
	Hydro	400	1467	400	400	1467	1467	400
	LTA	1350	1350	1350	1350	1350	1350	1350
	Total Availability	**12129**	**13196**	**16035**	**16035**	**13196**	**13196**	**12129**

Note:- Above Availability data is based on average daily availabilty.

THANK YOU

Order dated 07.10.2024
in
Suo-Motu Petition No. 9/SM/2024

PPT by SLDC J&K

Suo-Motu Petition No. 9/SM/2024

Response of SLDC J&K

9.a	**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.

Reply: For Oct'24 to meet the shortfall number of steps are being taken to address the drop in generation from hydro generators and rise in demand of J&K.

1)The day ahead demand forecast is being made by both discoms, and SLDC uses it to schedule power to the discoms. SLDC also does its own forecast for each day using historical load data, weather forecasting and planned shutdowns.

2)The day ahead generation forecast is being done by JK owned generators operated by JKPDC and the forecast is being shared with SLDC J&K from 06Oct'24.

3)BHEP-I is peaking to meet the demand during high demand hours. BHEP-II was also peaking till water was available, but has stopped generation due to low hydrology.

4) Arrangement has been made with UPPCL to supply power under banking from October and is flowing to J&K.

5) The power from shakti(PPA fo 393MW) is flowing to J&K under Shakti from 19Oct'24.

6)In the meanwhile any shortfall is met by scheduling power from DAM and RTM market.

7)Any mismatch is addressed in realtime by load shedding. Manual Load shedding is carried out by SLDC J&K Controlroom at SLDC Building Gladni Jammu (through official SLDC mobiles (9419212631, 9419212632) to keep the load within the load forecasted by JPDCL and KPDCL and available power. The load from Grid stations of Jammu region are curtailed through JPDCL teams deployed in SLDC J&K who curtail the load from STD or Grid Stations. The SLDC curtails the load directly from Grid Stations if the JPDCL team is not able to curtail the load as instructed. The load from Grid stations of Kashmir region are curtailed by calling the staff posted in 132kV Grid station Bemina controlroom of JKPTCL Kashmir who get the load curtailed from Grid stations.

In all cases the instructions are also communicated to the senior officers on whatsapp group created for monitoring curtailment and also through email to MD and CE of JKPTCL Jammu and JKPTCL Kashmir, CE JKPCL, CE JPDCL and CE KPDCL. In case the load is not curtailed as per instructions the telephonic instructions are repeated and reminder messages are issued on whatsapp and email, and phone calls are also made to senior officers. A daily curtailment report is also shared with NRLDC by SLDC.

9.b	**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.

Reply: For the worst case, wherein demand-availability gap increases, the SLDC takes the following measures to bridge the gap to avoid the OD

- Schedule power from DAM/RTM

Carry out load shedding

9.c to 9.e	**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.

Reply: Please refer point 1-6 of point 9.a above

9.f and 9.g	**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.

Reply: Please refer point 7 of 9.a above and 9.b above

MoM 5Nov2024

Response of SLDC J&K

18.2a	Shortage of manpower in SLDCs

Reply: SLDC J&K is situated in Jammu and is operating from SLDC building, Gladni Grid Complex, Narwal, Jammu.
It has acute shortage of manpower. It has 25 officials(1 AEE, 8 JE, 16 Techinicians/Class-IV). Out of which 16 are in shifts(2 JE and 14 Technicians who handle load management, scheduling including from Power Exchange, realtime outage, SCADA based data preparation etc.), and rest 6 JE and 2 Tech/class-IV, are handling OA, GNA/T-GNA scheduling, FTC, Planned shutdown, forecasting, PSSE, supervising SCADA/URTDSM/UNMS and now ULDC-III and any data needed regarding RE/RPO/IPP.
J&K has Sub-SLDC Kashmir situated at Bemina which is also designated as backup SLDC J&K and manages load of Kashmir as per instructions of SLDC J&K. It has 12 officials consisting of Technicians/class-IV.
As can be seen SLDC J&K has acute shortage of staff.

18.2b	Provision of adequate Demand estimation & resource adequacy data in the prescribed format, as mentioned in clause 31 of the Grid Code.

Reply: The data is prepared on daily basis in the format (attached as Annexure-I) and is emailed to nrldcmis@grid-india.in . From feb25, daywise slotwise data is also being emailed to nrldcmis@grid-india.in, which is updated on daily basis.
SLDC doesnot have enough manpower to prepare all the different formats.

18.2c	Status of estimation of the reserves requirement and maintaining the reserve capacity as allocated to states as per the provisions of the Grid Code.

Reply: J&K operates only run of the river(RoR) hydro projects, and after including the allocation (firm/un-allocated) by MoP(varying from 200MW in summer to about 1400MW in winter) and from shakti policy (393MW), J&K has spare capacity only during summer period from June-Aug. For the rest of the months, J&K is deficit in power, with winter period December to February, being highly energy deficit, hence, at present J&K doesnot have spare capacity, however, J&K has signed PPA's upward of 3000MW with hydro and solar generators, as a result J&K is expected to have some spare capacity from 2027 onwards.

18.2d	Forecast of generation from wind, solar, ESS and Renewable Energy hybrid generating stations which are intra-state entities for different time horizons and furnishing the time block-wise information to the concerned RLDC as per Regulation 31 (4)(b) of the Grid Code.

Reply: J&K has only 20MW of solar generation in its energy portfolio. It doesnot have wind, ESS or hybrid capacity in its power portfolio.

18.2e	Preparedness of the SLDCs for the next upcoming expected power shortage in their respective control area

Reply: SLDC J&K manages next upcoming shortage in the short term through TAM/DAM/RTM, banking, URS and additional quantum under unallocated quantum from MoP; J&K has to resort to load shedding also when power shortage still exists after exhausting all these methods.

18.2f	Methodology/ mechanism to manage the sudden changes in demand in their control area. The process followed to procure resources through the Real- Time Market (RTM) and various other means.

Reply: J&K tries to manage sudden change in demand in their control area, if time period is 1 & ½ hour or more, by scheduling additional power from URS/RTM if load increases and surrendering/selling excess power if load decreases(load shedding/fault/weather). However, if time period is less than 1 & ½ hour, then for increase in load/decrease in generation/less availability, load curtailment is the only option and if the load decreases, then Discoms are asked to connect load(in case any load is curtailed).

18.2g	The minimum turndown levels being achieved during low-demand periods which is required for optimal utilization of generation resources.

Reply: As already stated, as J&K operates only RoR generators, maintaining minimum turn down of these generators

18.2h	Status of implementation of SAMAST scheme.

Reply: The draft DPR is under preparation.

Letter 06Feb2025

Response of SLDC J&K

a	Details of thermal generation capacity

Reply: NIL

b	Reserve to be maintained

Reply: NA as J&K operates only RoR generators

c	LGBR for Mar25 to May25

Reply: Attached as Annexure-II

Annexure-E

Annexure-I

Day Ahead Forecast by State in Respect of Demand,Availability and Shortages

Detail of State		Name of the State: J&K											
For Date:		Next day Date :						(+) sign indicates import/procurement/shortage, (-) sign indicates exports/sale/surplus					
TIME		Forecasted unrestricted demand (A)	Forecasted Generation/Availability					Gap between Demand and Availability (G)=(A)-(F)	Under Short Term Procurement		Shortages (J)=(G)-(H+I)	Planned Restrictions/ Rostering / Power Cuts (K)	Additional load shedding proposed (L)=(J)-(K)
			From its own sources (Excluding Renewable) (B)	From Renewable Sources (C)	From ISGS & other LTA & MTOA (D)	From Bilateral Transaction (Advanced + FCFS) (E)	Total Availability (F) =(B+C+D+E)		Bilateral Transaction (Day Ahead+ Contingency) (H)	Through Power Exchange (I)			
BLOCK	PERIOD	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	**(MW)**	(MW)	(MW)	(MW)
1	00:00-00:15												
2	00:15-00:30												
3	00:30-00:45												
4	00:45-01:00												
94	23:15-23:30												
95	23:30-23:45												
96	23:45-24:00												
Maximum (MW)													
Minimum (MW)													
Average (MW)													
Total energy (Mus)													

Note :- (1) The information shall be provided by the SLDCs to RLDCs by 19:00 hrs of the previous day.

(2) In case the procurement under the day Ahead, Bilateral/PX is lesser than proposed then the quantum under restriction/load shedding shall accordingly be revised.

(3) All values are Instantaneous.

(4) Banking of power shall be included in the Bilateral column (E)

(5) Availability against column D is taken excluding LF and RF Powers and considering surrendering as per merit order.

Annexure-II

in Avg MW

Description			Month		
			Mar-25	Apr-25	May-25
Demand	**Peak**	Unrestricted	3222	3383	3379
		Restricted	3070	3099	3051
	Average	Unrestricted	2761	2566	2664
		Restricted	2631	2497	2534
Availability	**ISGS+Shakti**		1930	2510	2700
	Self		300	420	830
	Total		2230	2930	3530
Surplus(+)/Deficit(-)	**Unrestricted**		-531	364	866
	Restricted		-401	433	996

PUNJAB STATE TRANSMISSION CORPORATION LIMITED

Punjab State Transmission Corporation Limited

(State Load Dispatch Centre)

Punjab State Load Dispatch Centre

Presentation for Meeting to be held on 14.02.2025 in respect of Suo-Motu Petition 09/SM/2024 in Hon'ble CERC

Manpower in Punjab SLDC

Annexure-F

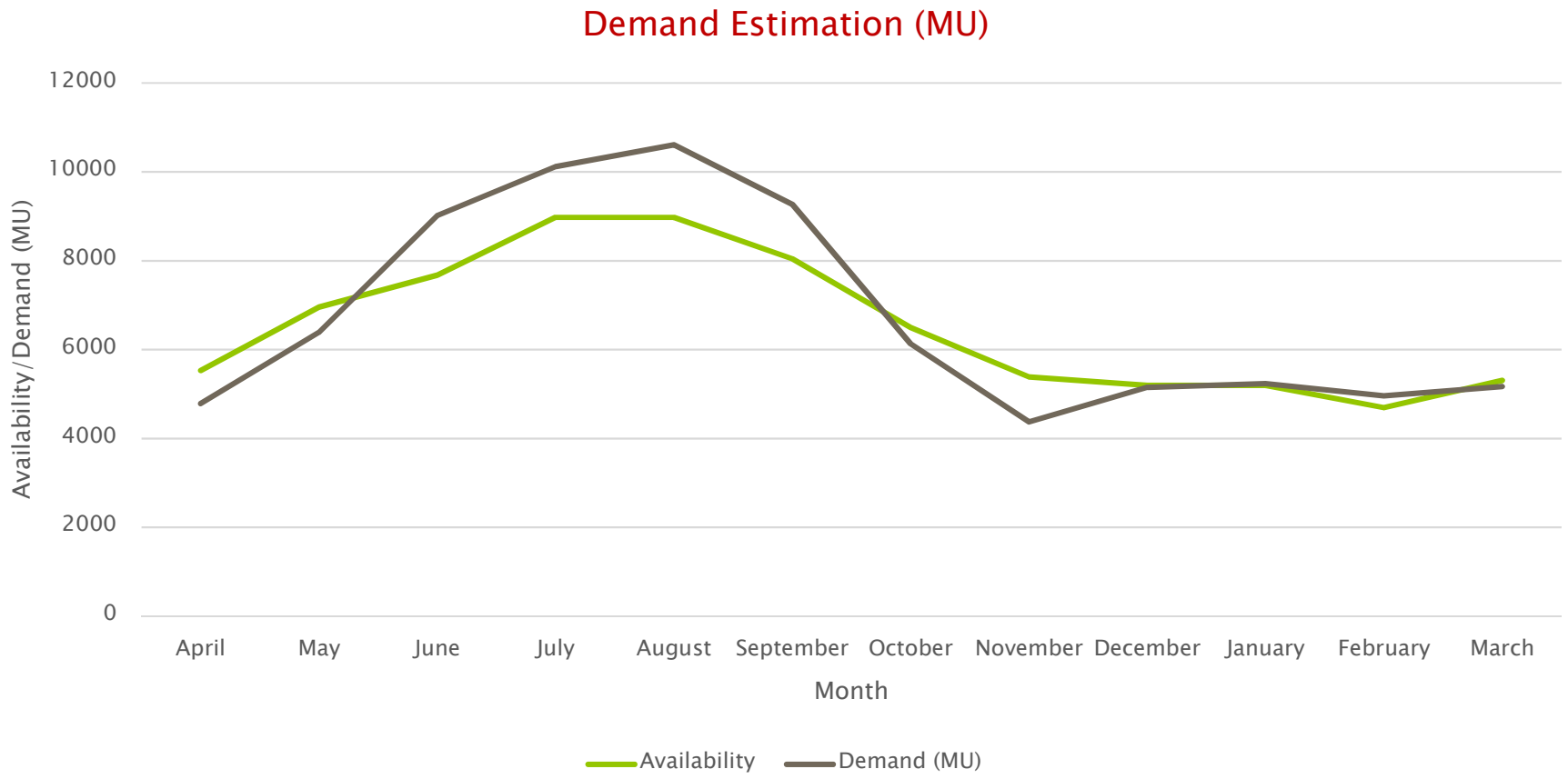
Sr. No	Function	LDCs- Workforce Staffing norms as per Workforce Adequacy Guidelines for Load Despatch Centres for Large SLDC	Manpower considered by Management under Restructuring	Present manpower posted at SLDC (executives only)
1	System Operations	59	22	26
2	Market Operations	21	20	8
3	Logistics	27	10	4
4	REMC			
4.1	REMC Logistics	3		
5	Cyber Security			
5.1	Cyber Security	14	3	
6	Support functions			
6.1	Contract services	3		
6.2	Finance and Accounts	9	7	3
6.3	HR &Admin	8	5	2
	Sub total (Support Functions)	20	12	5
	Grand Total	144	67	44

DEMAND ESTIMATION

Long Term Demand Estimation

Energy Requirement (MU) and Peak Demand (MW) Projections					
	2025-26	2026-27	2027-28	2028-29	2029-30
Energy Requirements (MU)	81597	86901	92549	98565	104972
Year on Year Growth		6.5%	6.5%	6.5%	6.5%
Peak Demand Projections (MW)	16941	17873	18856	19893	20987
Year on Year Growth		5.5%	5.5%	5.5%	5.5%

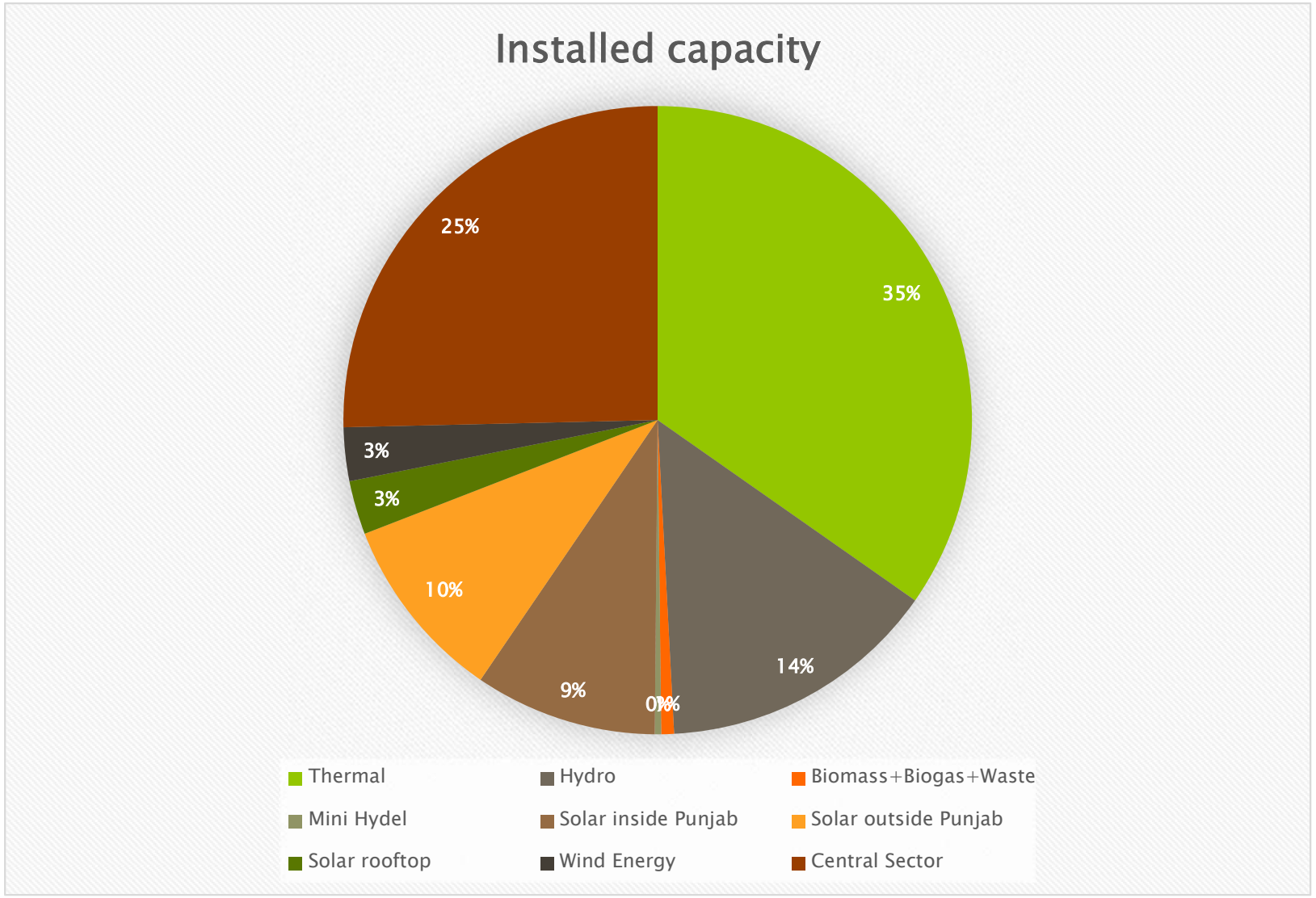
Demand Estimation and Resource adequacy data for FY 2025-26



Resource Adequacy

For the year 2025-26, the total installed capacity for Punjab is 14603MW. Out of the total contracted capacity (CC), the share of non-fossil fuel-based contracted capacity is 47.5%.

Source	Installed capacity	Percentage (%)
Thermal	5680	34.4
Hydro	2362	14.3
Biomass+Biogas+Waste	108.3	0.6
Mini Hydel	53.35	0.3
Solar inside Punjab	1534	9.3
Solar outside Punjab	1567	9.5
Solar rooftop	454	2.7
Wind Energy	450	2.7
Central Sector	4149	27.7
	16500	

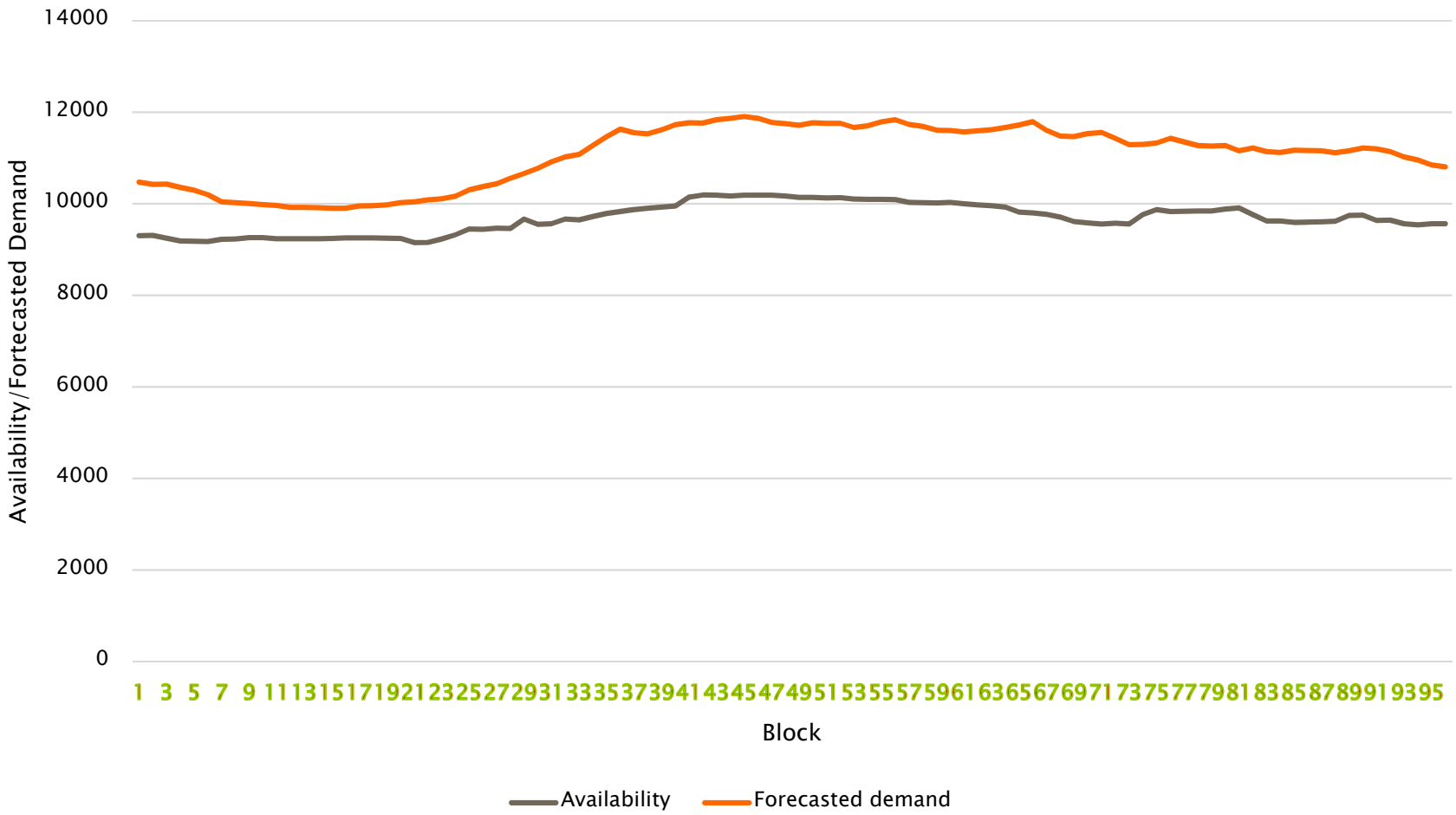

Installed capacity
35%
14%
0%
9%
10%
3%
3%
25%
Thermal
Hydro
Biomass+Biogas+Waste
Mini Hydel
Solar inside Punjab
Solar outside Punjab
Solar rooftop
Wind Energy
Central Sector

Sector-wise Installed Capacity (MW) Within & Outside Punjab (PSPCL Share)

	Description	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2034-35
		Actual	Projected								
A)	**Own Thermal +IPP in Punjab**	**5680**	**5680**	**5680**	**5680**	**5680**	**5680**	**5680**	**6480**	**7280**	**7280**
B)	**Hydro**										
a)	Own Hydro	1015	1015	1221	1221	1221	1221	1221	1221	1221	1221
b)	BBMB	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141
	Total Own Hydro +BBMB	**2156**	**2156**	**2362**	**2362**	**2362**	**2362**	**2362**	**2362**	**2362**	**2362**
C)	**NRSE Powers**										
a)	Bio mass + Bio Gas + Waste	98.20	108.20	108.30	108.30	108.30	108.30	108.30	108.30	108.30	108
b)	Mini Hydel	51.35	51.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35
c)	**Solar power**										
i)	Solar inside Punjab	884.22	1038	1534	1534	1934	1934	1934	1934	1934	1934
ii)	Solar outside Punjab (From Rajsthan & CPSU/ Govt. Scheme)	767	1167	1567	4767	4767	4767	4767	4767	4767	4767
iii)	Solar (Rooftop) (Total)	354	404	454	504	554	604	654	704	754	**904**
d)	Mix Power (Solar/Wind/Battery) (RTC)	0	0	0	0	0	0	0	0	0	0
e)	Baggase + Co-gen (PEDA) + Flywheel	113.04	113.04	142.55	142.55	142.55	142.55	142.55	142.55	142.55	142.55
f)	Wind Energy	450	450	450	750	750	750	750	750	750	750
	Total NRSE Power	**2718**	**3332**	**4309**	**7859**	**8309**	**8359**	**8409**	**8459**	**8509**	**8659**
D)	**Central Sector**										
a)	Thermal	2553	2553	2553	2553	2553	2553	2603	2603	2603	2603
b)	Hydro	1241	1321	1341	1509	1594	1594	1646	1646	1646	1646
c)	Others (Gas)	58	58	58	58	58	58	58	58	58	58
d)	Nuclear	197	197	197	197	197	197	197	197	197	197
	Total Central Sector	**4049**	**4129**	**4149**	**4317**	**4402**	**4402**	**4504**	**4504**	**4504**	**4504**
	Total MW	**14603**	**15297**	**16500**	**20218**	**20753**	**20803**	**20955**	**21805**	**22655**	**22805**

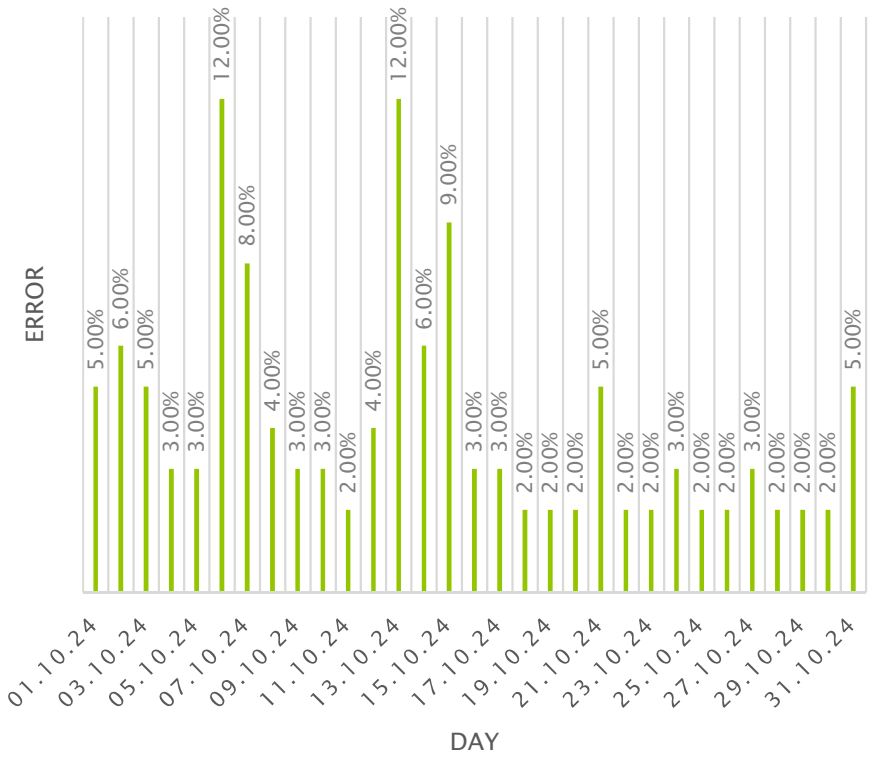
*Out of 137 MW share from Pargati power(gas) project, only 58 MW power is received through out the year.

Availability & Forecasted Demand (Day Ahead) for 01.10.24 (MW)

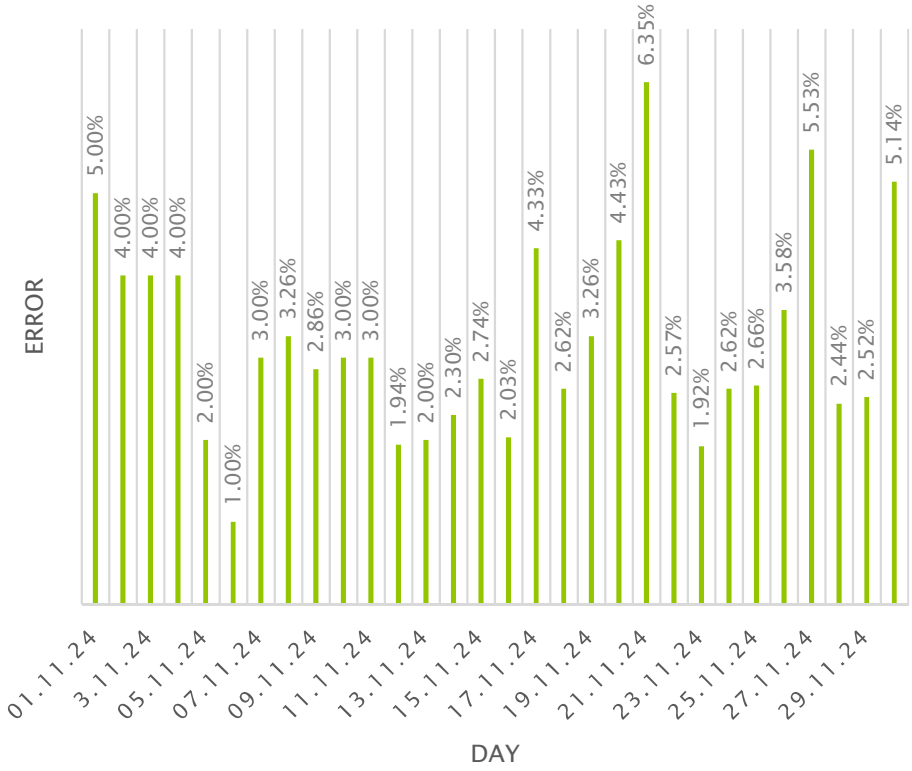


Load Forecast (Intra day)

ERROR(OCT) IN %(INTRA DAY)

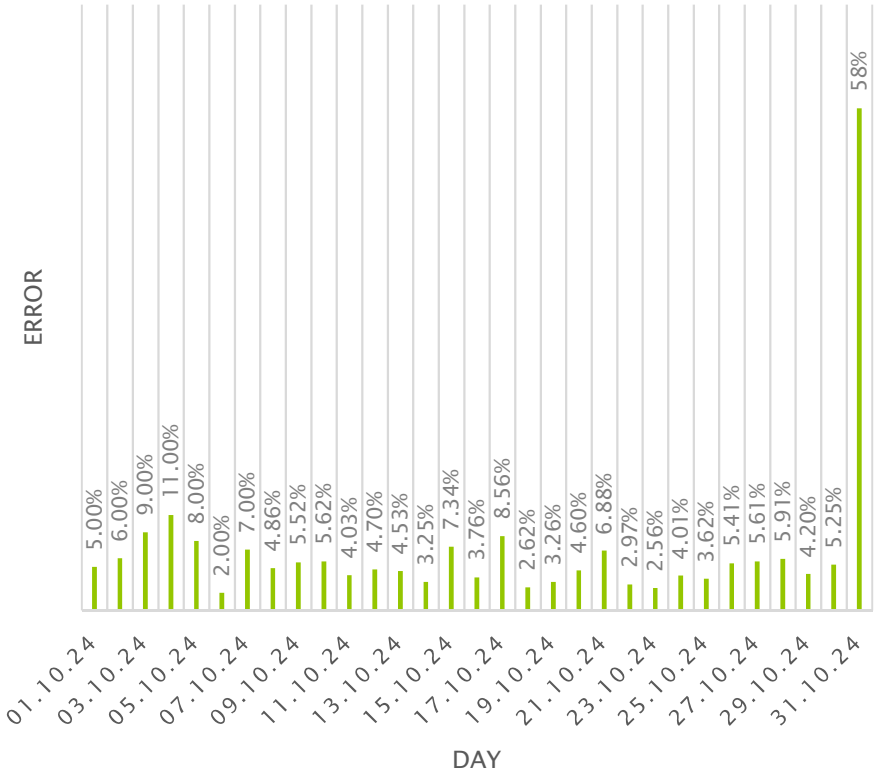


ERROR(NOV) IN %(INTRA DAY)

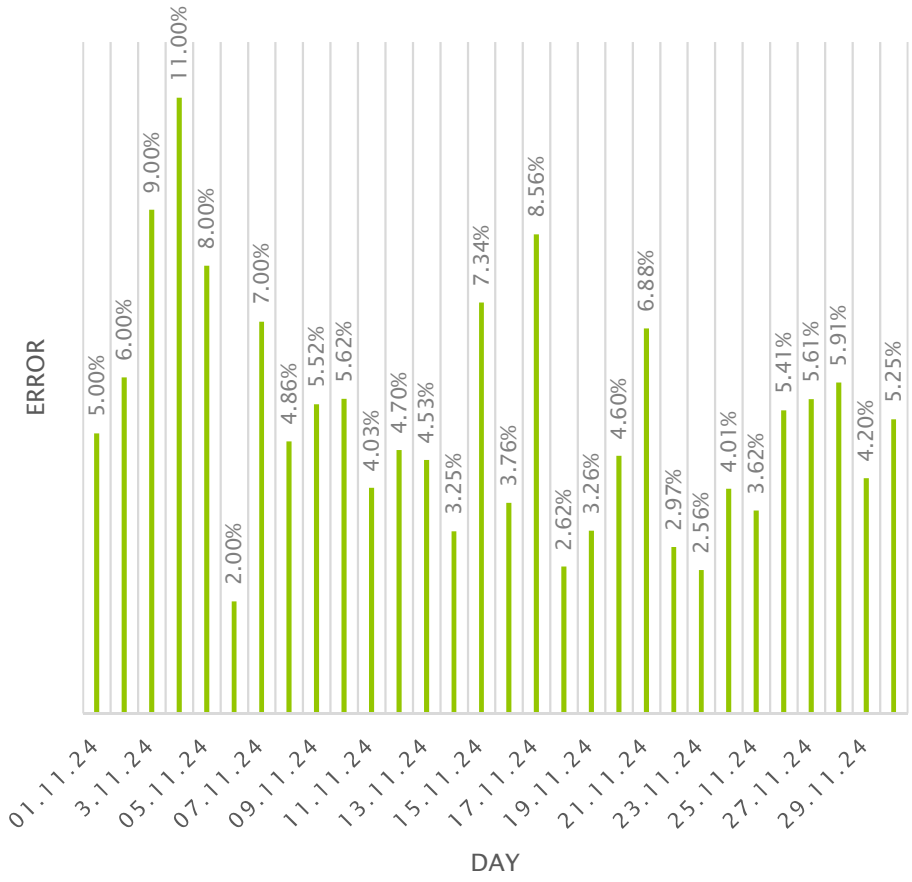


Load Forecast (Day Ahead)

ERROR (OCT) IN %(DAY AHEAD)



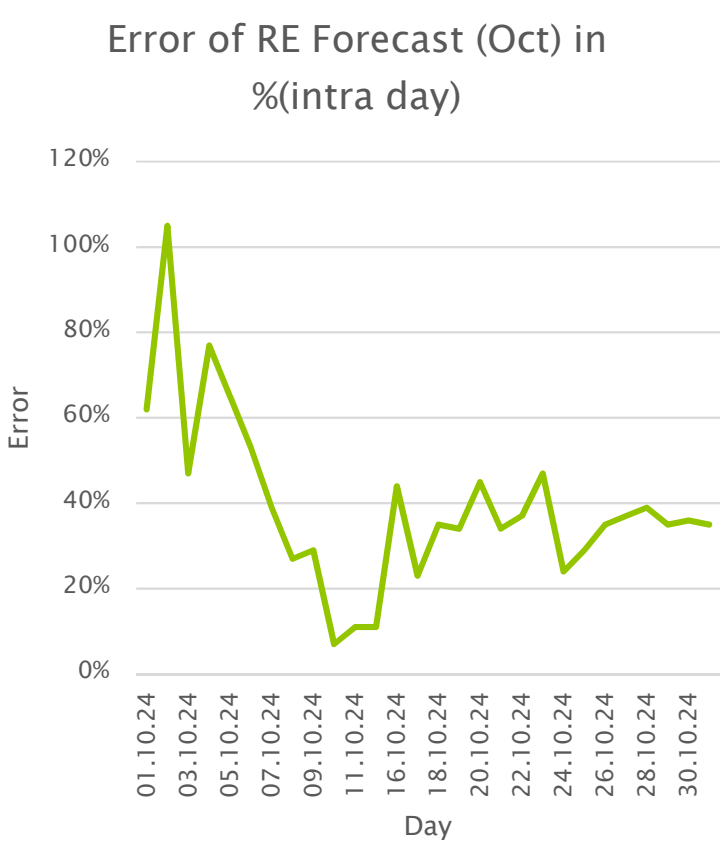
ERROR (NOV) IN %(DAY AHEAD)

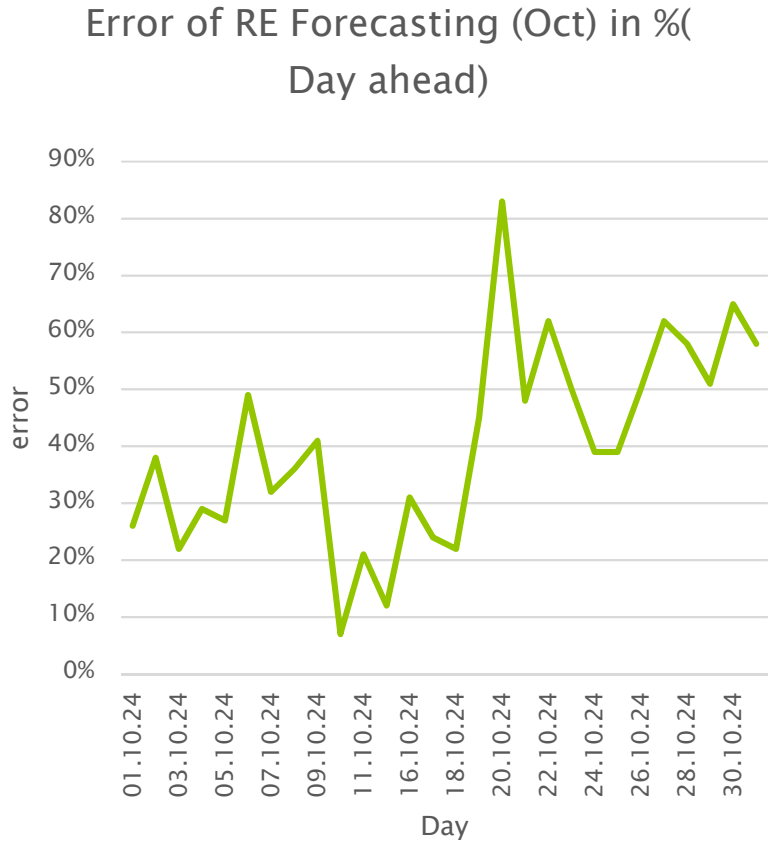


Load Forecast

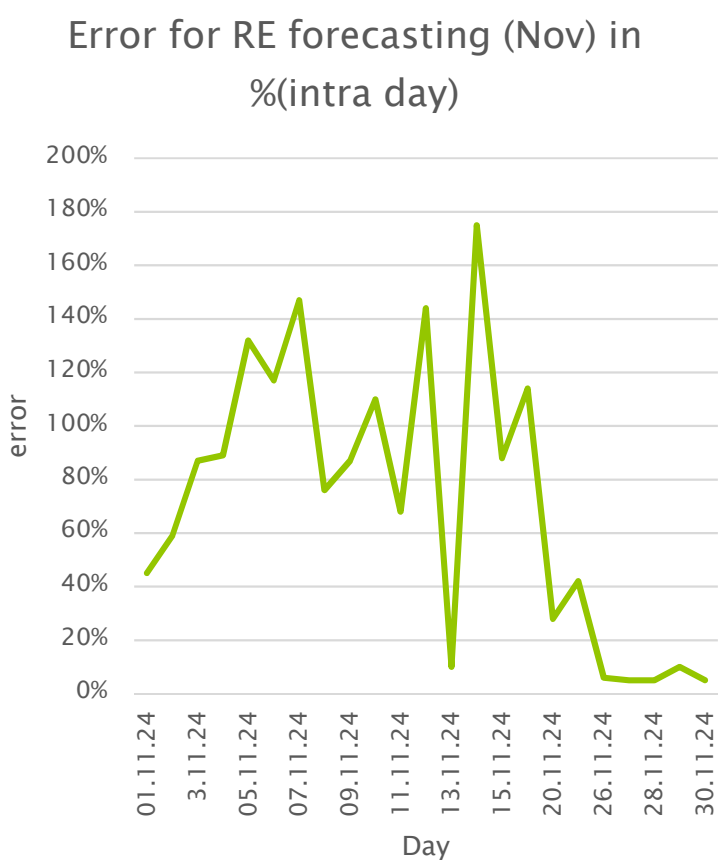
Week	Week Ahead Error (%)
Week 1 (28.10.24-03.11.24)	23
Week 2 (04.11.24-10.11.24)	6
Week 3 (11.11.24-17.11.24)	6
Week 4 (18.11.24-24.11.24)	9

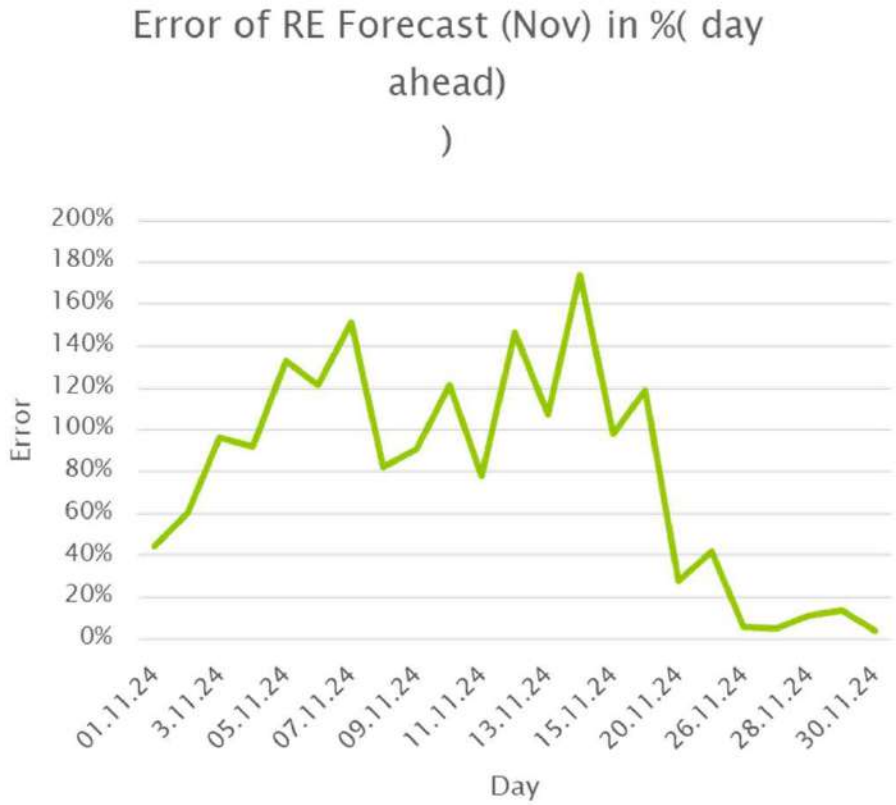
RE Forecast of October'24





RE Forecast of November'24





Note: Inaccuracy in RE Forecasting is mainly due to intermittency of SCADA data.

Preparedness of SLDC for power Shortage.

- 2 No. Unit of 150MW at Ranjit Sagar Dam can be taken on bar to meet peak load requirements.
- The power shortage can be offset by procuring the power in the real time exchange market.

Details of Thermal Generation Capacity

Sr. No	Name of intra-state generator	Installed capacity (Excluding Auxillaries)	Minimum Turndown Level	The capacity which can be backed down to 55%(MW)	Capacity which cannot be backed down to 55% of MCR and reason of the same
1	GATP	491.4	59.01%	--	491.4
2	NPL	1320	50%	1320	--
3	GHTP	649.65	79% for unit 1and 68% for unit 3& 4	--	649.65
4	TSPL	1841.40	50.17%	1841.4	--
5	GGSSTP	768	75% (160MW for single Unit)	--	768

Status of implementation of SAMAST Scheme

- Samast project was awarded to M/s 50HZ and the contract agreement was signed on 29.03.2022.
- Data Centre is operational since December 2022.
- 1464 Meters have been installed till date out of 1481 Meters supplied by the firm.
- Implementation of (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019 through SAMAST software modules has started from 01.02.24 as notified by Hon'ble PSERC.
- As per commercial notification of PSERC, DSM bills are being issued to QCAs w.e.f. 01.02.2024.
- Scheduling for all SGS/IPP through SAMAST Software is being carried out since 10.07.24 and for RE/Solar since 01.09.23.
- Energy Accounting Module, Open Access Module and Scheduling module have been completed.
- Transmission Outage Planning module, Financial Accounting module, Meter Data Acquisition System and Website and Mobile application module are fully operational.

Thank You!

Reply of SLDC Uttarakhand on concerns raised by the RLDCs and NLDC at Para No. 18(2)(a) to 18(2)(h) of the minutes of meeting dated 05.11.2024

Issue: (a) Shortage of manpower in SLDCs

- **Reply**: A committee has been formed by the management of PTCUL to review the manpower structure of SLDC Uttarakhand. SLDC has prepared a draft manpower structure in line with the manpower requirements approved by Ministry of Power, GoI and submitted to HR department of PTCUL so that same may be considered by the above said Committee

Issue: (b) Provision of adequate Demand estimation & resource adequacy data in the prescribed format, as mentioned in clause 31 of the Grid Code.

- **Reply**: Demand estimation like Intra-Day Forecasts (continuously for forward blocks), Day-Ahead Forecasts, Medium-Term Forecasts and Long-Term Forecasts are being carried out by the Distribution Licensee (UPCL) in the State and being submitted to SLDC. Day-ahead, weekly and monthly Forecasts are being provided to NRLDC by SLDC Uttarakhand on regular basis.
- Generation resource adequacy planning like assessment of the existing generation resources and identification of the additional generation resource requirement to meet the estimated demand in different time horizons, and preparation of generation resource procurement plan are being carried out by the Distribution Licensee (UPCL) along with demand estimation. Demand estimation, generation resource planning etc. for the period from March 2025 to May 2025 has been submitted by the Distribution Licensee and is being enclosed as Annexure-1 for ready reference.

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

- **Reply:**

(B)Reserved to be Maintained		
Total reserve capacity to be maintained as per the assement of NLDC (in MW) for the F.Y.2024-25	Reserve capacity being maintained by the concern state (in MW)	Whether the reserve capacity is being schedule by the concerned state . If yes , the quantum (in MW) may be indicated
209 (Non-Solar Hours)	NIL	NIL
304 (Solar Hours)	NIL	NIL

Issue: (e) Preparedness of the SLDCs for the next upcoming expected power shortage in their respective control area

- **Reply:**

Mar-25	Time Period	00:00 to 05:00	05:00 to 9:00	09:00 to 18:00	18:00 to 22:00	22:00 to 24:00
Anticipated Demand	Peak [A]	1540	2069	1891	2038	1605
	Average	1472	1971	1689	1896	1564
Anticipated Availability from Various Resources						
(A)	From its own sources (including Renewable) [B]	303	536	477	454	394
(B)	From ISGS & Other LTA & MTOA [C]	502	764	475	727	515
(C)	Other Sources [D]	593	631	601	623	593
	Total [E = B+C+D]	1398	1931	1553	1804	1502
	Peak Deficit(+)/Surplus(-) [F = A-E]	142	138	338	234	103

Apr-25	Time Period	00:00 to 05:00	05:00 to 9:00	09:00 to 18:00	18:00 to 22:00	22:00 to 24:00
Anticipated Demand	Peak [A]	1834	2085	2046	2211	1974
	Average	1793	2018	1848	2146	1931
Anticipated Availability from Various Resources						
(A)	From its own sources (including Renewable) [B]	688	825	838	918	794
(B)	From ISGS & Other LTA & MTOA [C]	631	718	647	858	747
(C)	Other Sources [D]	153	153	153	153	153
	Total [E = B+C+D]	1472	1696	1638	1929	1694
Peak Deficit(+)/Surplus(-) [F = A-E]		362	389	408	282	280

May-25	Time Period	00:00 to 05:00	05:00 to 9:00	09:00 to 18:00	18:00 to 22:00	22:00 to 24:00
Anticipated Demand	Peak [A]	2373	2312	2498	2629	2533
	Average	2291	2269	2335	2573	2497
Anticipated Availability from Various Resources						
(A)	From its own sources (including Renewable) [B]	905	902	882	999	896
(B)	From ISGS & Other LTA & MTOA [C]	709	667	704	912	926
(C)	Other Sources [D]	153	153	153	153	153
	Total [E = B+C+D]	1767	1722	1739	2064	1975
Peak Deficit(+)/Surplus(-) [F = A-E]		606	590	759	565	558

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

- **Reply:** Time block-wise forecast are being done by the solar generating stations and being submitted to SLDC. SLDC is sharing the same with NRLDC along with the Day-ahead demand forecasts on regular basis.

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

- **Reply**: There is only one Distribution Licensee in the State of Uttarakhand i.e. UPCL which has submitted the reply as follows:
- *"UPCL is actively involved in Demand Forecasting process in which it utilizes the power of AI/ML models through which Demand Forecasts are generated consistently across various time frames like Intra Day Forecasts (continuously for forward blocks), Day Ahead Forecasts, Medium Term Forecasts and Long Term Forecasts utilizing historical demand patterns, weather data (Temperature, Temperature Feels Like, Wind Speed, Wind Gust, Cloud Cover, Relative Humidity, Precipitation Probability, Quantifiable Precipitation Factor etc.), demand growth along with other indicators through advanced AI/ML techniques. These forecasts are refined iteratively as real-time approaches, ensuring optimized power procurement that balances cost efficiency and continuous supply to consumers. In the event of a sudden increase in the demand-supply gap, additional power is sourced from the real-time market to meet the energy needs through automated dashboard system. Conversely, if there's a sudden reduction in the gap, surplus power is either surrendered or sold in the market, depending on the real-time situation. Further, UPCL is also actively participating in other market segments/products to maintain power system balance like DAM, LDC, UPC and DEEP etc. for the sake of reliable supply to the consumers of the state as well as optimization of the State's power portfolio."*

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

- **Reply:**

(A) Detail of Thermal Generation Capacity:					
S.NO	Name of Intra -State Thermal Generating Station	Insatalled Capacity in MW	Minimum Turn Down Level (in %)	The capacity which can be backed down to 55%(in MW)	Capacity which cannot be backed down to 55% of MCR and reason for the same
1	GIPL	3x75	85		
2	SEPL	2x(3x75)	85		

- **Issue: (h) Status of implementation of SAMAST scheme.**
- **Reply**: SAMAST scheme is partially implemented in the State.

Thank You.

Reply/Comments on the points suggested by CERC in 09/SM/2024

Shortage of Manpower in SLDCs

- Restructuring proposal of HVPNL is under finalization for onward submission to the State Government/HBPE with the approval of the competent authority.
- Includes staffing for SLDC.

Preparedness for Power Shortage

- Regular discussions with state generators & HPPC
- Focus on ensuring adequate power availability

Demand Change Management in Control Area

- Monitoring deviation of key system parameters
- Compliance with CERC/HERC regulations
- Use of Real-Time Market (RTM)

Minimum Turndown Levels of HPGCL Generating Units

- PTPS, Panipat: 77% Ex-Bus (Unit 6), 70% Ex-Bus (Units 7 & 8)
- DCRTPP, Yamunanagar: 55% Ex-Bus
- RGTPP, Hisar: 55% Ex-Bus

SAMAST Scheme Implementation

- Site survey, design & engineering completed
- Interface Energy Meters installation near completion
- Site Acceptance Test of 8/13 software modules accepted, remaining 5 will be completed within next 1-2 weeks.
- Equipment at the Centralized Data Centre (CDC) and Disaster Recovery Centre has been installed.
- Completion expected Feb-Mar 2025

Intra-State Thermal Generation Capacity

Sr No.	Thermal Generating Station	Installed Capacity (MW)	Minimum Turndown Level (%)	Capacity Backed Down to 55% (MW)	Capacity Not Backed Down (MW)	Reason
1	PTPS, Unit-VI	210	77%	0	210	Flexible operation to be implemented during capital overhauling
2	PTPS, Unit-VII	250	70%	0	250	Flexibilization process ongoing with OEM
3	PTPS, Unit-VIII	250	70%	0	250	-
4	DCRTPP, Unit-I	300	55%	300	0	-
5	DCRTPP, Unit-II	300	55%	300	0	-
6	RGTPP, Unit-I	600	55%	600	0	-
7	RGTPP, Unit-II	600	55%	600	0	-

Reserve Capacity Maintenance

- Total reserve capacity required: 10,165 MW
- Haryana maintaining: 1,496 MW
- Reserve not currently scheduled

Load Generation Balance report for March-25 to May-25

		00:00 to 05:00	05:00 to 08:30	08:30 to 12:00	12:00 to 15:00	15:00 to 17:00	17:00 to 18:30	18:30 to 22:30	22:30 to 24:00
Mar/2025	Peak	6053	7258	7990	8020	7515	7493	7354	6567
	Average	5046	5908	6584	6751	6389	6222	6226	5621
	Total Availability	9810	9877	10735	10999	10618	10058	9821	9806
	Peak Surplus(+)/ Deficit(-)	3758	2618	2745	2978	3103	2565	2467	3239
	Avg Surplus(+)/ Deficit(-)	4765	3968	4151	4248	4229	3836	3594	4185
Apr/2025	Peak	9330	8485	6721	6998	7232	8070	9879	9877
	Average	6967	6674	5813	5977	6233	6656	7918	7931
	Total Availability	10840	10953	11856	12069	11760	11200	10892	10836
	Peak Surplus(+)/ Deficit(-)	1509	2468	5135	5071	4528	3130	1013	959
	Avg Surplus(+)/ Deficit(-)	3873	4279	6043	6092	5527	4545	2974	2904
May/2025	Peak	11621	11415	12445	12945	12442	11913	12055	12066
	Average	9220	9032	9661	10371	10222	9858	9912	10078
	Total Availability	10821	10983	11910	12119	11781	11210	10886	10819
	Peak Surplus(+)/ Deficit(-)	-801	-432	-535	-826	-661	-703	-1169	-1247
	Avg Surplus(+)/ Deficit(-)	1600	1951	2249	1748	1558	1353	974	741

A Brief Presentation on

Himachal Pradesh State Load Despatch Centre
(HPSLDC)

Government of Himachal Pradesh
Shimla

on

Inputs on the issues flagged at Para No. 18 (2) (a) to 18 (2) (h) of the minutes of meeting dated 05.11.2024 and the additional information as mentioned in the letter dated 06.02.2025

Contents:

1. **Shortage of manpower in HPSLDC**
2. **Provision of adequate Demand estimation & resource adequacy data as mentioned in clause 31 of the Grid Code**
3. **Status of estimation of the reserves requirement and maintaining the reserve capacity.**
4. **Forecast of generation from wind, solar, ESS and Renewable Energy hybrid generating stations which are intra-state entities for different time horizons and the time block-wise information.**
5. **Preparedness of the HPSLDC for the next upcoming expected power shortage in its control area.**
6. **Methodology / mechanism to manage the sudden changes in demand in HP control area.**

Contents:

1. Shortage of manpower in HPSLDC

Detail of manpower in respect of Himachal Pradesh SLDC

Name of the SLDC	Total Employees	Total No. of Executive (Technical +Non-Technical like HR, Finance, Admn etc)	Total No. of Non-Executive (Workmen + Supervisor)	Total No. of Technical Executive (Excluding HR, Finance, Admn)	No. of eligible employees for System Operator Certificate	Total Qualified as on date	Optimum Manpower as laid out in MoP Workforce Adequacy Guidelines dated 30th Oct 2024	Shortfall / Excess	Steps taken to bridge the shortfall, if any
Himachal Pradesh	42#	Technical=13 Non-Technical=2 Total = 15	3	13	13	10	103	85	18 O/s*, 1 Consultation**

#i) HPERC approved manpower for the **FY 2024-25 to FY 2028-29**.

*ii) 18 Nos. Outsourced basis of different categories.

**iii) 1 No. Consultant (PS).

However, all the Executive/Non-Executive except worthy MD staff are working on secondment basis from other utilities. Hence, there is a shortfall of 66 Nos. of manpower in HPSLDC.

2. Provision of adequate Demand estimation & resource adequacy data as mentioned in clause 31 of the Grid Code

- HP State is furnishing day-ahead (15 minutes time block), week-ahead (15 minutes time block), and month-ahead (15 minutes time block), forecasted demand and forecasted generation/availability and submitting it to NRLDC regularly in the prescribed format as provided by the NRLDC.

- Further, the Resource Adequacy Planning for Himachal Pradesh has been carried out & finalized by Central Electricity Authority (CEA) to ensure generation capacity addition at a pace matching the growth in demand and in fact slightly ahead of the demand in line with the guidelines issued in the regard. The tie up of power in line with Resource Adequacy Planning is being initiated and shall be materialized by HPSEBL accordingly.

2. Provision of adequate Demand estimation & resource adequacy data as mentioned in clause 31 of the Grid Code

	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
HPSEBL Energy Projections (in MU)	13,510	14,320	15,170	16,080	17,050	18,070	19,160	20,310	21,520	22,820	24,130
Year on Year Growth	-	6.0%	5.9%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	5.7%
HPSEBL Peak Demand Projections (MW)	Same as 20th EPS Peak Demand Projections										
20th EPS Energy Projections (in MU)	13,829	14,522	15,238	15,979	16,730	17,628	18,222	18,807	-	-	-
Year on Year Growth	-	5.0%	4.9%	4.9%	4.7%	5.4%	3.4%	3.2%	-	-	-
20th EPS Peak Demand Projections (MW)	2,328	2,448	2,571	2,699	2,829	2,983	3,087	3,190	3,286	3,384	3,486
Year on Year Growth	-	5.2%	5.0%	5.0%	4.8%	5.4%	3.5%	3.3%	3.0%	3.0%	3.0%

2. Provision of adequate Demand estimation & resource adequacy data in respect of HP

The capacity projections for HPSEBL are given below:

Table-wise present projection (in MW)

Year	Coal	Nuclear	Biomass	Hydro	Solar	Hybrid	DRE Hydro	DRE Solar	SHP	TOTAL	Storage (MW/MWh)	STOA
2024/25	160	42	3	1679	35	0	419	30	152	**2520**	0/0	1425
2025/26	160	55	3	1679	77	0	431	90	165	**2660**	0/0	1497
2026/27	160	55	3	1679	577	900	440	160	165	**4139**	0/0	1066
2027/28	160	55	3	2131	877	900	453	190	165	**4934**	0/0	1033
2028/29	160	55	3	2275	877	900	479	220	257	**5226**	0/0	1102
2029/30	410	55	3	2275	1640	900	542	250	275	**6350**	0/0	983
2030/31	410	55	3	2275	1940	900	548	250	341	**6722**	42/169	1098
2031/32	410	55	3	2275	2442	900	548	250	379	**7262**	319/1487	1100
2032/33	410	55	3	2275	2742	900	548	250	417	**7600**	341/1576	1300
2033/34	410	55	3	2304	3099	900	548	250	432	**8001**	464/2187	1430
2034/35	410	55	3	2304	3745	900	568	250	446	**8681**	1102/5678	1295

3. Status of estimation of the reserves requirement and maintaining the reserve capacity

The generators in HP control area are run-off river plants with no or little storage. Also, at present there is no mechanism for payment of incentive to the generators for Secondary &Tertiary reserve in the State regulations.

4. Forecast of generation from wind, solar, ESS and Renewable Energy hybrid generating stations which are intra-state entities for different time horizons and the time block-wise information

HP State is submitting day-ahead (15 minutes time block), week-ahead (15 minutes time block), and month-ahead (15 minutes time block), forecasted demand and forecasted generation/availability data to NRLDC regularly in the prescribed format as provided by the NRLDC.

5. Preparedness of the HPSLDC for the next upcoming expected power shortage in its control area

HP State has the power shortage during the winter season. The shortfall has been met by HPSEBL (being the only DISCOM in HP State) by purchasing power in bilateral mode through power exchange(s) during winter season. Further, NRPC vide allocation order no. Alloc04/2025 dated 30.09.2024, order no. Alloc05a dated 21.12.2024 & order No. Alloc06 dated 24.01.2025 has allocated power to HPSEBL for winter season. The real time deficit, if any, shall be managed through real time tools available by HPSEBL.

6. Methodology / mechanism to manage the sudden changes in demand in HP control area.

The sudden changes in demand are managed by HPSEBL through available real time tools i.e., booking/ surrendering of URS & power purchase/sale through power Exchange(s). In addition to this, HPSLDC/HPSEBL takes care of further dynamics by regulation of power house(s) under its control area.

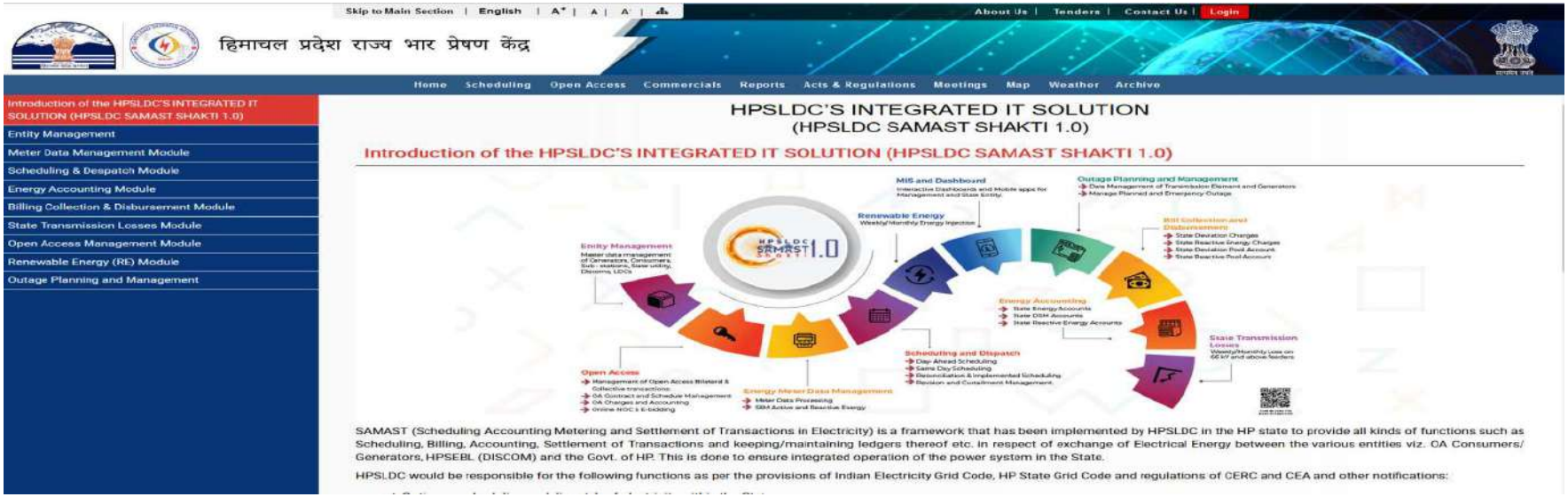
7. Minimum turndown levels being achieved during low-demand periods which is required for optimal utilization of generation of resources.

During low demand periods, being the hydro rich state, HP is regulating all the generating stations under its control area for optimal utilization of generating resources and adhering to the drawl schedules in order to maintain the variation in key parameters within the permissible limits as defined in IEGC/HPEGC.

8.Status of implementation of SAMAST scheme.

- **Implementation of Scheduling Acounting Metering and settlement of Transactions (SAMAST) framework in HP State:**

  HPSLDC has Developed IT soft ware and Applications SAMAST SHAKTI) and Virtual Platform on website: www.hpsldc.com) and also Implemented the Intra-State Deviation Settlement Mechanism



8.Status of implementation of SAMAST scheme.

- Installation and Commissioning of IEMs (Interface Energy Meters) along with associated AMR (Automatic Meter Reading) equipment at all the interfacing points of Open Access Generators & Consumers, Generators of DISCOM including Supply and Commissioning of Meter Data Acquisition Software (M-DAS) at CDCS (Central Data Collection System) at Himachal Pradesh State Load Despactch Centre, Shimla under SAMAST Framework in HP State.

  HPSLDC has installed 215 Special Energy Meters (SEMs) at 47 locations with AMR facility and these meters are integrated with M-DAS of HPSLDC.

8.Status of implementation of SAMAST scheme.

- Installation and Commissioning of Interactive Flat Panels/ Monitoring screens under SAMAST Framework in HP at Himachal Pradesh State Load Despactch Centre, Shimla.
- Expansion of existing Video Projection System (VPS) / Tower type Video Wall by "Providing, installation, testing, and commissioning of (4X1) LED lit DLP 70" base display system" in HPSLDC Control Room in Totu, Shimla (HP) under SAMAST Framework in HP.
- Erection, Testing and Commissioning of Central Data Collection System (CDCS) under SAMAST Framework at HPSLDC Control Centre, Shimla.

8.Status of implementation of SAMAST scheme.

- Installation, Testing and Commissioning of 20 kVA UPS along with DC batteries under SAMAST Framework in the HP State Load Despatch Centre, Govt. of HP, Shimla – 11.
- Consultancy support / services on Information Communication Technology (ICT) roadmap and strategies to the HP State Load Despatch Centre, Govt. of HP, Totu, Shimla (Under SAMAST Framework).

100% physical completion of the works mentioned above had been achieved on 30.11.2023.

9. Detail of Thermal generation capacity

In HP State, there is no Intra-State Thermal Generating Station

10. Reserved Capacity to be maintained

The generators in HP control area are run-off river plants with no or little storage. Also, at present there is no mechanism for payment of incentive to the generators for Secondary &Tertiary reserve in the State regulations.

11. Load Generation Balance data for month of March 2025 to May 2025

All Fig. in MW

Load Generation Balance data for the Month of March 2025						
Mar-25	Time Period	00:00 to 06:00	06:00 to 09:00	09:00 to 18:00	18:00 to 22:00	22:00 to 24:00
Demand	Peak	1333	2059	2014	1742	1346
	Average	968	1682	1481	1419	1070
Total Average Availability from various sources		1000	1361	1181	1178	1030
Total Surplus(+)/Deficit(-)		32	-321	-300	-241	-40

Load Generation Balance data for the Month of April 2025						
Apr-25	Time Period	00:00 to 06:00	06:00 to 09:00	09:00 to 18:00	18:00 to 22:00	22:00 to 24:00
Demand	Peak	1492	1717	1674	1632	1468
	Average	1303	1599	1513	1538	1401
Total Average Availability from various sources		1022	1677	1390	1630	1526
Surplus(+)/Deficit(-)		-281	78	-123	92	125

Load Generation Balance data for the Month of May 2025						
May-25	Time Period	00:00 to 06:00	06:00 to 09:00	09:00 to 18:00	18:00 to 22:00	22:00 to 24:00
Demand	Peak	1629	1833	1844	1692	1576
	Average	1417	1809	1748	1622	1519
Total Average Availability from various sources		1604	2027	2040	2017	1943
Surplus(+)/Deficit(-)		187	218	292	395	424

Thank You

Discussion with Northern Regional SLDCs on the compliance to the Order - Suo-Moto Petition No. 9/SM/2024

NRLDC Submission

ग्रिड-इंडिया
GRID-INDIA

Status of Submission of Data for Oct-2024 as per Clause 31(4) (a) & (b) of IEGC-2023

- ***Format for Demand estimation & resource adequacy data***

Details for State: (Name of the State)
For Date: dd-mmm-yy

Time		Forcasted Generation/Availability												Proposed Procurement						
		Forcasted Demand (A)	From its own sources (excluding Renewable)				From Renewable Sources				From ISGS & Other LTA & MTOA (D)	From Bilateral Transaction (Advance+ FCFS) (E)	Total Availability (F)= (B+C+D+E)	Gap between Demand & Availability (G) = (A)-(F) Surplus(-) / Deficit (+)	Under Bilateral Transaction (Day Ahead+ Contingency) (H)	Through Power Exchange (I)	Shortages after day ahead procurement from market (J) =(G)-(H+I) Surplus(-) / Deficit (+)	Relief through planned restrictions/ rostering/ power cuts (K)	Additional Load shedding proposed (L) = (J)-(K) Surplus(-) / Deficit (+)	Reactive Power Forecast
			Thermal (Coal + Lignite)	Gas	Hydro	Total (B)	Solar	Wind	Other RES (biomass etc.)	Total (C)										
Block	Period	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MVAr
1	00:00 - 00:15																			
2	00:15 - 00:30																			
3	00:30 - 00:45																			
4	00:45 - 01:00																			

- ***Day Ahead data submission status***

S.no	State	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct
1	JK & Ladakh(UT)	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
2	Punjab	Y	N	N	N	N	N	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3	UP	Y	N	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4	Uttrakhand	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	N	N	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	N	N
5	Chandigarh	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6	Rajasthan	Y	N	Y	N	N	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N	N	N	N	N
7	Delhi	N	Y	N	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8	Haryana	N	N	Y	N	Y	Y	N	N	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y	Y	Y	N	Y	Y
9	HP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y

Status of Submission of Data for Oct-2024 as per Clause 31(4) (a) & (b) of IEGC-2023

Week ahead:

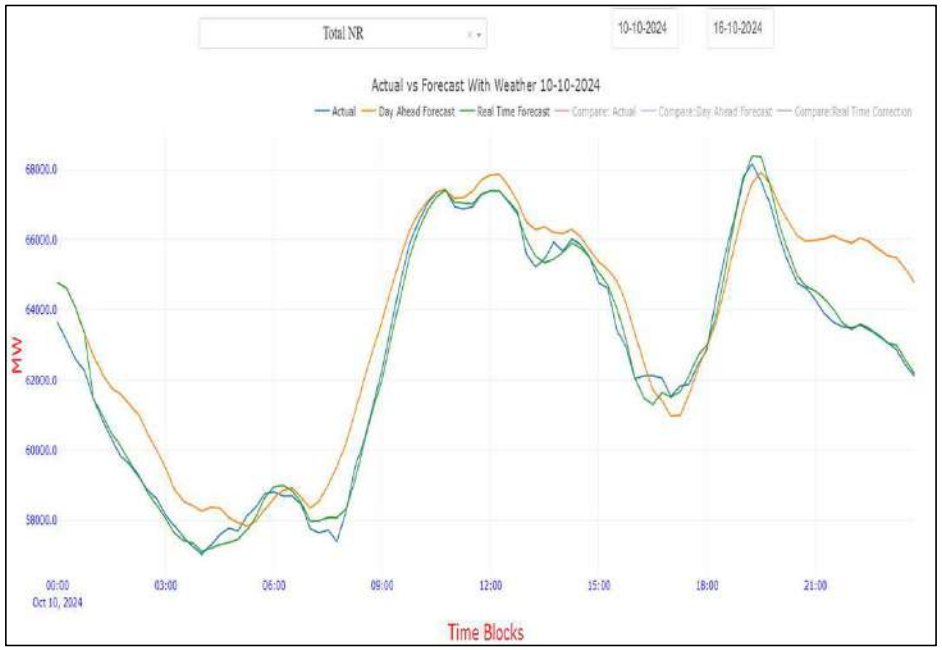
States	Week 1	Week 2	Week 3	Week 4	Week 5
Punjab	Y	Y	Y	Y	Y
Haryana	N	N	N	N	N
Delhi	N	N	N	N	N
Rajasthan	N	N	N	N	N
Uttar Pradesh	Y	Y	Y	Y	Y
Uttarakhand	N	N	N	N	N
Himachal Pradesh	Y	Y	Y	Y	Y
J&K and Ladakh (UT)	N	N	N	N	N
Chandigarh	N	N	N	N	N

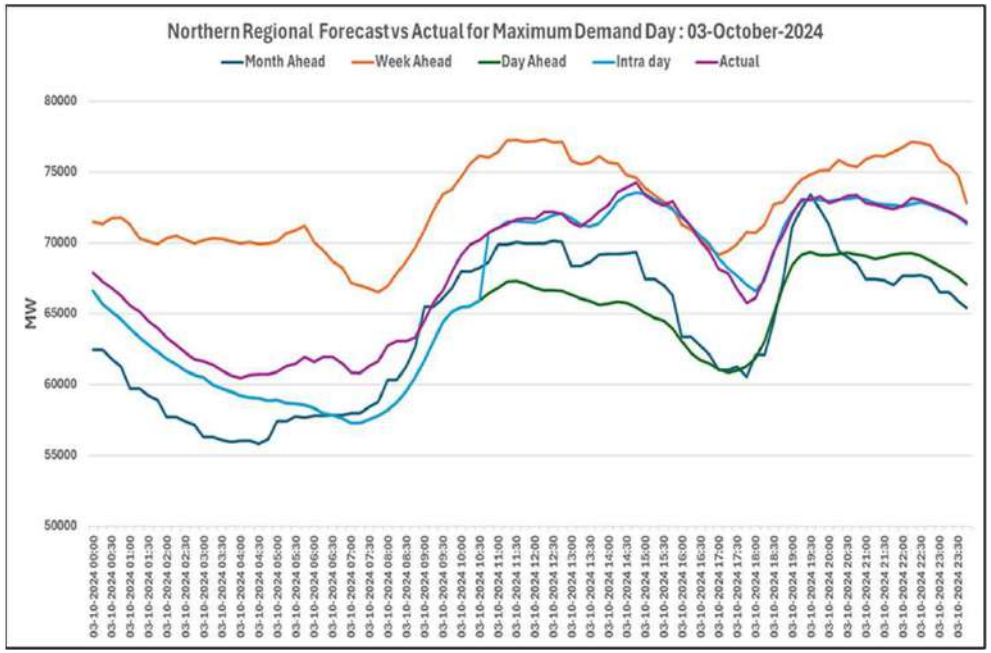
Month ahead:

States	Month Ahead Status
Punjab	N
Haryana	N
Delhi	Y
Rajasthan	N
Uttar Pradesh	Y
Uttarakhand	N
Himachal Pradesh	Y
J&K and Ladakh (UT)	N
Chandigarh	N

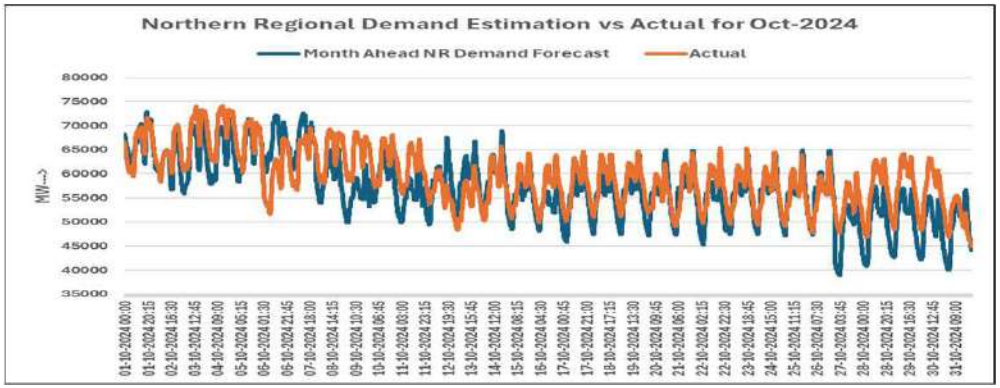
Demand Estimation and analysis at NRLDC

The data submitted by the states is validated and aggregated by NRLDC. In cases where a state fails to provide data on time (status as shown in Table 3), NRLDC uses its own historical data to estimate the regional demand. Additionally, NRLDC has an internal tool that provides demand estimates on a **weekly, monthly, day-ahead, and intra-day basis**.

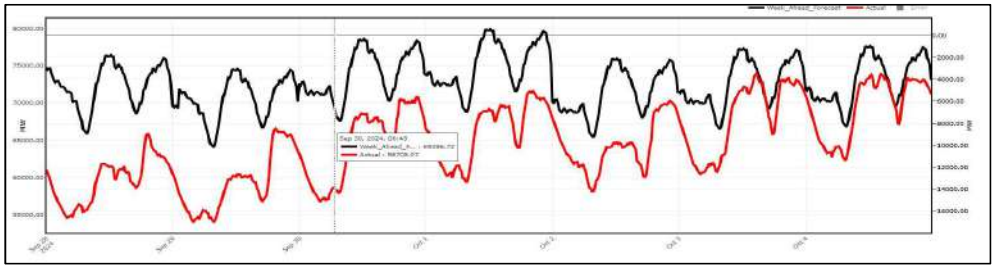


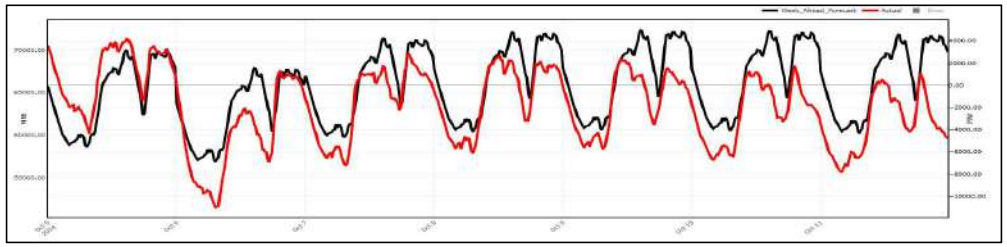


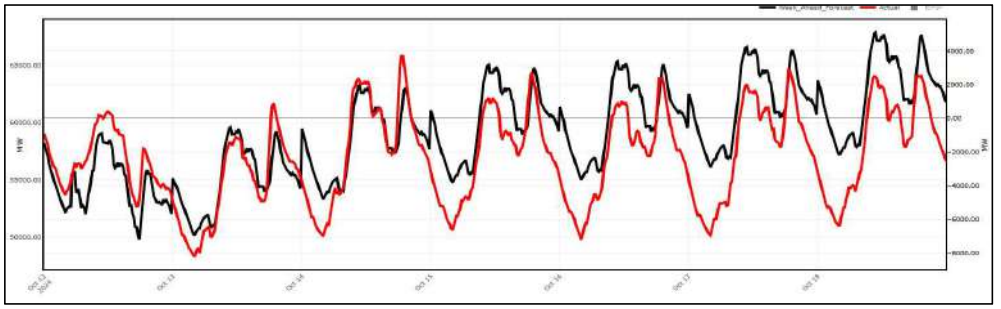
Month Ahead and Week Ahead Demand Estimation vs Actual

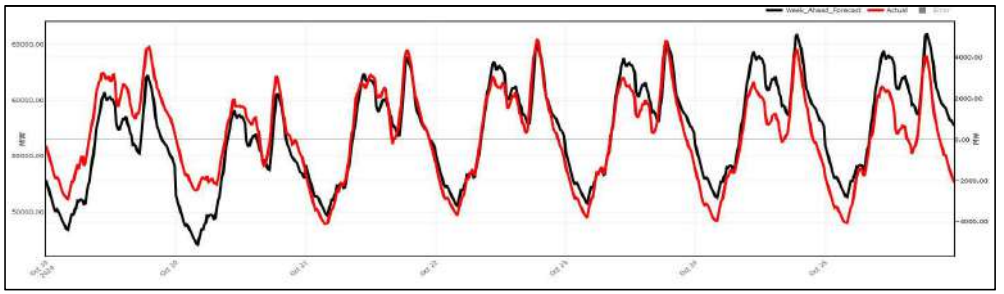


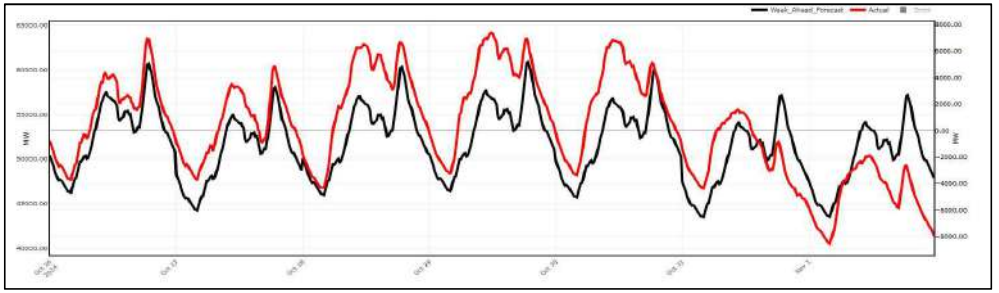
Week wise







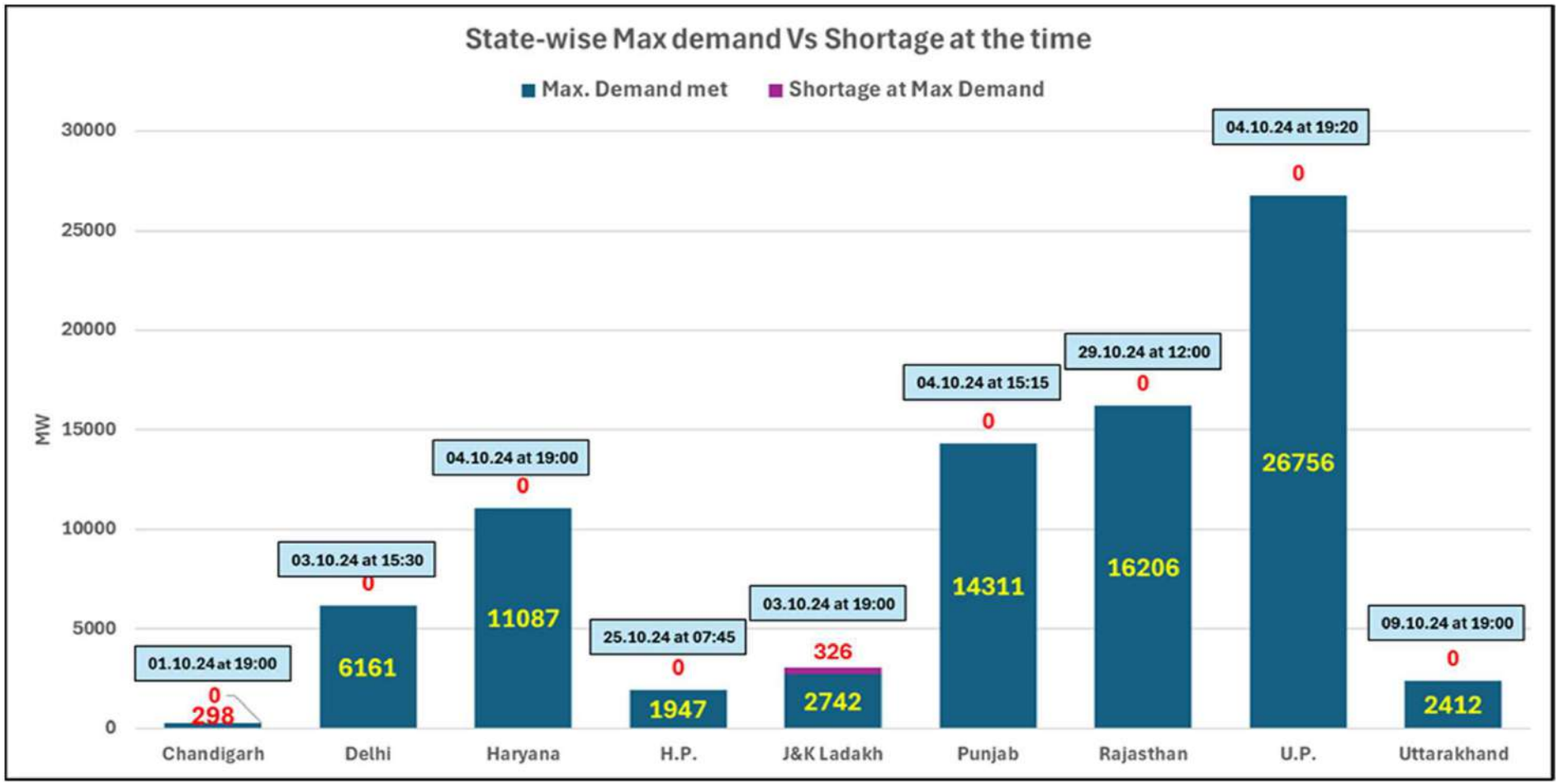




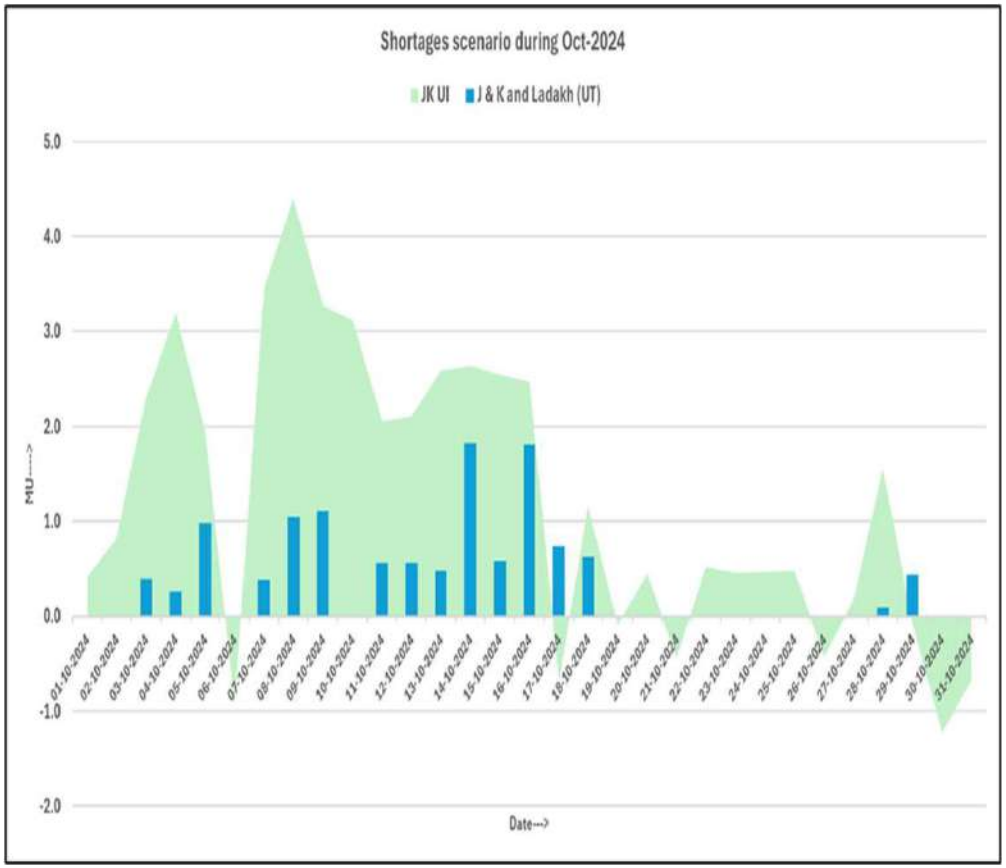
Generation Scenario on Max Demand Day

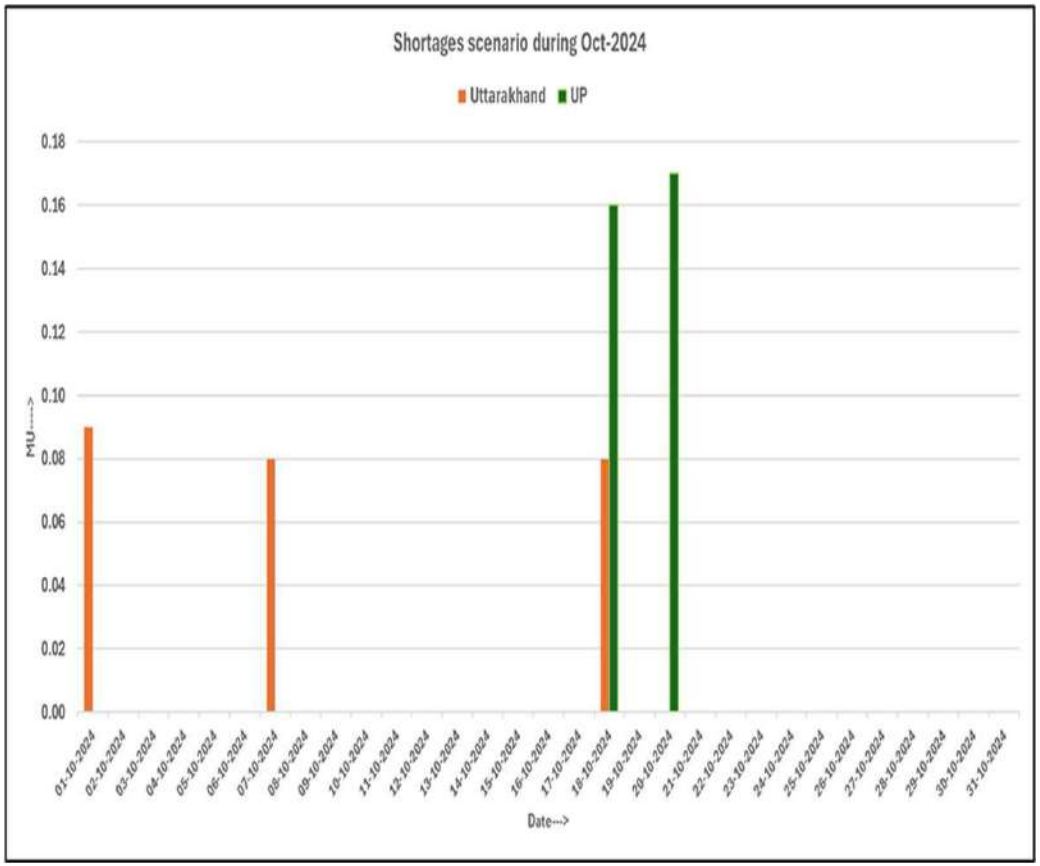
A	Demand Forecast	As per Month ahead forecast 03rd October 2024	As per Actual on 03rd October 2024
1	Peak demand for October-2024	73400	74273
2	Considering Possible additional 5% surge in demand as worst case scenario	77070	-
B	**Generation Resources**		
1	From Intra-state thermal	30886	24457
2	From ISGS thermal	10379	12045
3	From Hydro (Both Intra & Inter-state)	15341	8267
4	From Renewable Sources (Intra-state)	288	7427
5	From Renewable Sources (Inter-state)	39	14949
6	Other GNA transactions (Non-RE & RE)	9804	1609
7	Bilateral	2578	5951
8	Net available generation	69315	74705
9	Surplus (-)/Deficit (+)	7755	-432
10	Additional generation required (with reserve 3% of peak demand)	7988	-

Energy Shortage in Oct-2024



Energy Shortage in Oct-2024

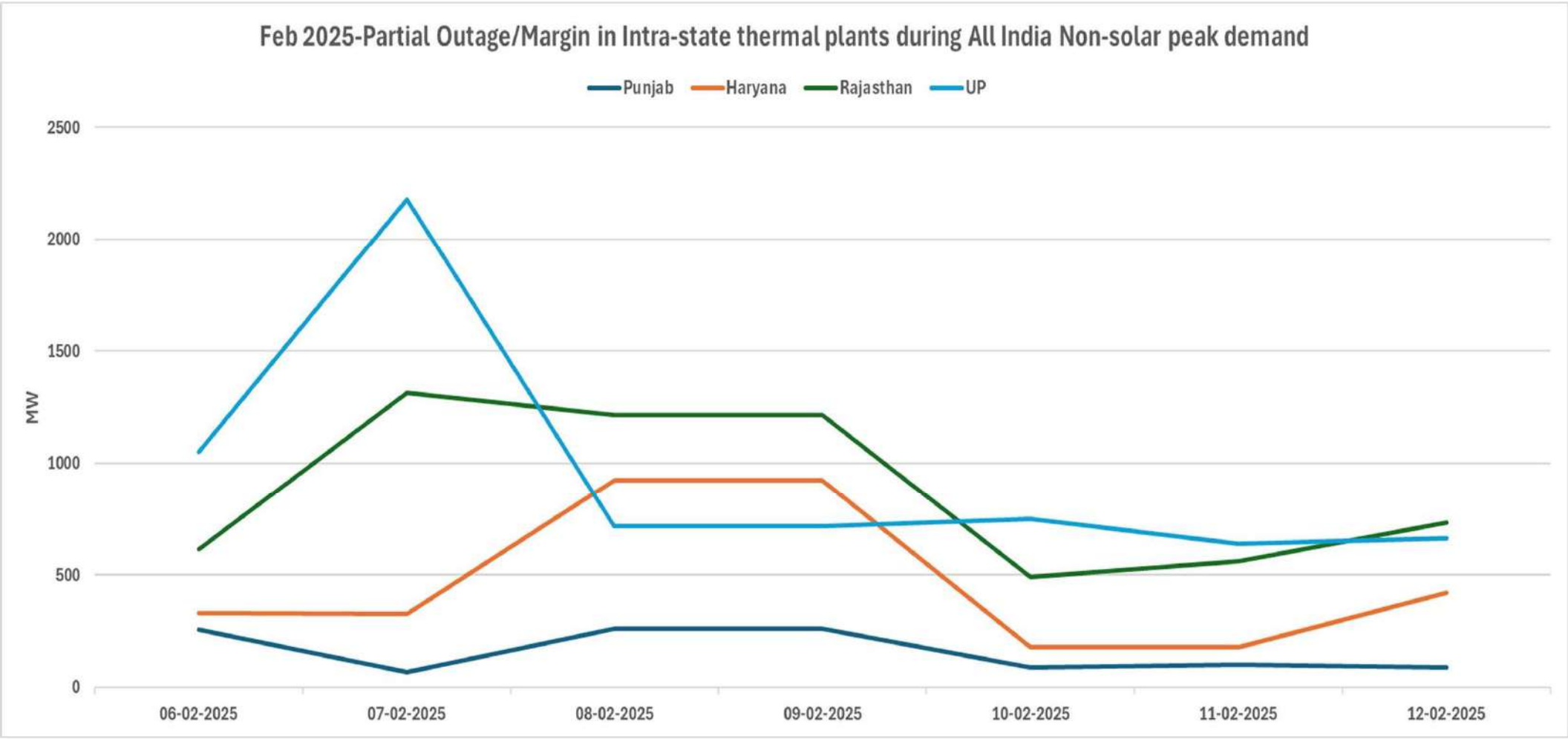




Measures taken to address the deficit of power supply in Oct'24:

- Letters/Mails sent in real-time to ISGSs/IPPs and SLDCs, with surplus generation, to maximize the generation by offering the surplus in the market.
- Partial Outages Monitoring through Real time Generation (RTG) portal.
- Deviation of all regional entities continuously monitored in real time and OD/UD messages issued.

Annexure-J


Feb 2025-Partial Outage/Margin in Intra-state thermal plants during All India Non-solar peak demand
Punjab
Haryana
Rajasthan
UP
MW
2500
2000
1500
1000
500
0
06-02-2025
07-02-2025
08-02-2025
09-02-2025
10-02-2025
11-02-2025
12-02-2025

Estimation for Feb-May, 2025

Day ahead RA data submission by SLDCs

SNo	State	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb
1	Chandigarh	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
2	Delhi	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3	Haryana	Y	N	N		N	N	N	Y	Y	Y	Y	N
4	HP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5	JK & Ladakh(UT)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
6	Punjab	Y		N	Y	Y	Y	Y	N	N	N	N	N
7	Rajasthan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8	UP	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	N
9	Uttrakhand	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

RA data submission by SLDCs

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

Communication from CGM (SO), NRLDC to all SLDCs dated 09-01-2025

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
भारत सरकार का उद्यम
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर क्षेत्रीय भार प्रेषण केन्द्र / Northern Regional Load Despatch Centre
कार्यालय : 18-ए, शहीद जीत सिंह सनसनवाल मार्ग, कटवारिया सराय, नई दिल्ली-110016
Office : 18-A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi-110016
CIN : U40105DL2009GOI188682, Website : www.nrldc.in, E-mail : nrldc@grid-india.in, Tel: 011 26519406, 26523869, Fax: 011 26852747

Ref: NRLDC /RA/2024-25/01 Date: 09-01-2025

To,
As per the distribution list

Subject: Implementation of Resource Adequacy (RA) Framework as per IEGC and CEA Guidelines

Respected Ma'am/Sir,

Maintaining an adequate power supply is essential for grid reliability and stability. The Indian Electricity Grid Code (IEGC), 2023, and Resource Adequacy (RA) guidelines issued by the Central Electricity Authority (CEA) in June 2023 (Annexure-I) highlight the importance of comprehensive RA planning to meet future electricity needs efficiently.

The IEGC, in Clauses 5.2 and 5.3, mandates demand estimation and generation adequacy across different time horizons. Additionally, Section 31 of IEGC emphasizes operational planning by NLDC, RLDCs, and SLDCs in advance for various time horizons, where SLDCs are specifically required to submit demand estimation and generation adequacy data to the respective RLDCs in the prescribed format. While day-ahead demand estimation with generation adequacy is being received from most utilities, submissions for week-ahead, month-ahead, and year-ahead timeframes remain intermittent. The status of data submission is enclosed at **Annexure-II** for your necessary action to ensure timely and consistent submissions.

Furthermore, the 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 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 (**MoM copy enclosed at Annexure-III**). The RA framework and the status of submissions are also being reviewed regularly in OCC meetings.

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).

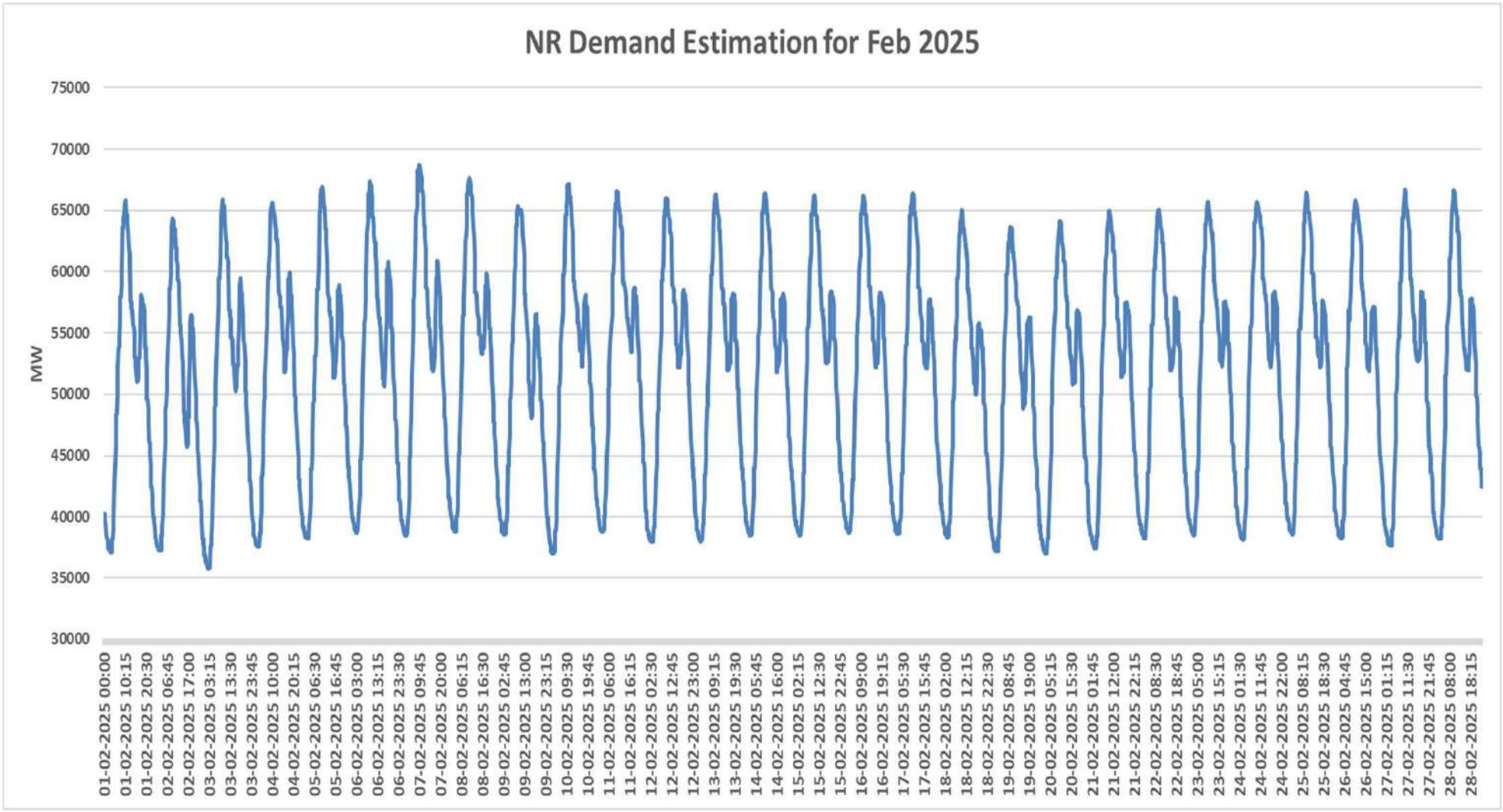
In this regard, SLDCs are requested to ensure timely submission and validation of data from DISCOMs to support effective RA monitoring and the preparation of ST-NRAP and LT-NRAP. Your cooperation is crucial for the preparation and monitoring of RA plans, which are essential for ensuring a reliable and resilient power supply across the country.

With Regards,

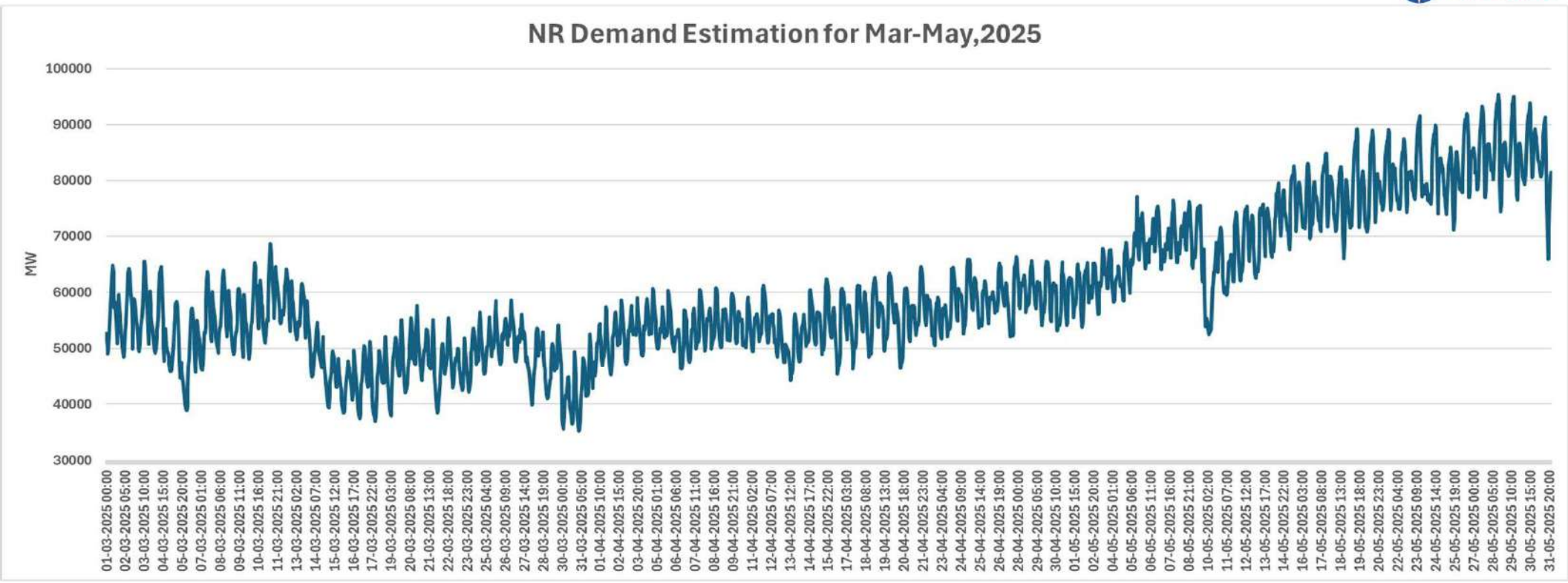
(Somara Lakra)
CGM(SO), NRLDC

For kind information:
1. Director (SO), GRID-INDIA
2. Member Secretary, NRPC
3. Executive Director, NRLDC

ग्रिड-इंडिया
GRID-INDIA



Annexure-J



Month	Max. forecasted demand during Solar hour (06-18 Hrs) (MW)	Max. forecasted demand during Non-solar hour (18-6 Hrs) (MW)
April	63125	66430
May	95429	89394

In 2024, Northern Regional Maximum demand of 91,234 MW was met on 19.06.2024 at 14:37 Hrs

Anticipated Power Supply Position in Northern Region for March 2025- Submitted in OCC 228

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	130	330	No Revision submitted
	Requirement	128	289	
	Surplus / Shortfall	2	41	
	% Surplus / Shortfall	1.3%	14.4%	
DELHI	Availability	3380	5960	No Revision submitted
	Requirement	2296	4794	
	Surplus / Shortfall	1084	1166	
	% Surplus / Shortfall	47.2%	24.3%	
HARYANA	Availability	5880	10500	No Revision submitted
	Requirement	5136	8504	
	Surplus / Shortfall	744	1996	
	% Surplus / Shortfall	14.5%	23.5%	
HIMACHAL PRADESH	Availability	780	2560	No Revision submitted
	Requirement	1071	2058	
	Surplus / Shortfall	-291	502	
	% Surplus / Shortfall	-27.2%	24.4%	
J&K and LADAKH	Availability	1370	3240	No Revision submitted
	Requirement	1977	3634	
	Surplus / Shortfall	-607	-394	
	% Surplus / Shortfall	-30.7%	-10.8%	
PUNJAB	Availability	6610	10860	No Revision submitted
	Requirement	5203	9629	
	Surplus / Shortfall	1407	1231	
	% Surplus / Shortfall	27.0%	12.8%	
RAJASTHAN	Availability	8790	18020	No Revision submitted
	Requirement	10008	18666	
	Surplus / Shortfall	-1218	-646	
	% Surplus / Shortfall	-12.2%	-3.5%	
UTTAR PRADESH	Availability	11100	23300	07-Feb-25
	Requirement	10950	23300	
	Surplus / Shortfall	150	0	
	% Surplus / Shortfall	1.4%	0.0%	
UTTARAKHAND	Availability	1280	2300	07-Feb-25
	Requirement	1287	2350	
	Surplus / Shortfall	-6	-50	
	% Surplus / Shortfall	-0.5%	-2.1%	

Thank You

Estimation of Quantum of Secondary and Tertiary Reserves

Grid Controller of India Limited

Regulations & Procedures

1. Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023.

1. Gazette
2. Notification
3. Gazette - effective date 1.10.2023 (Gazette No. 575)
4. Notification - effective date 1.10.2023

2. Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2022.

1. Gazette
2. Notification
3. Statement of Reasons
4. Gazette - effective date 05.12.2022 (Gazette No. 546)
4. Notification - effective date 05.12.2022

3. Detailed Procedure for Assessment of quantum of Secondary & Tertiary Reserve Capacity, along with Information Exchange and Timelines

https://posoco.in/wp-content/uploads/2024/02/Detailed-Procedure-for-Assessment-of-quantum-of-Secondary-Tertiary-Res_.pdf

4. Detailed Procedure for Secondary Reserve Ancillary Services (SRAS) – 2022.

https://posoco.in/download/detailed-procedure-for-secondary-reserve-ancillary-services-sras-2022/?wpdmdl=49193

5. Detailed Procedure for Tertiary Reserve Ancillary Services (TRAS) – 2023.

https://posoco.in/download/detailed-procedure-for-tertiary-reserve-ancillary-services-tras/?wpdmdl=51157

Background

- Objective of Ancillary Services
  - To maintain grid frequency close to 50 Hz,
  - Quick restoration of the grid frequency within the allowable band as specified in the Grid Code, and
  - For relieving congestion in the transmission network, to ensure reliable and secure grid operation
- Reserve Estimation
  - Adequate reserves are required to be maintained in a distributed manner at regional level as well as state control area
    - NLDC (Nodal Agency) in coordination with RLDCs and SLDCs
    - Publication of reserve requirement on the website

Time frames for Reserve Estimation

- **Year-Ahead Basis**
  - For year-ahead reserves requirement computation for the next Financial Year (FY+1), data for the last Calendar Year (CY-1) shall be used.
- **Three Day-Ahead Basis**
  - For three day ahead reserve estimation, last seven days data (D-4 to D-10) shall be used.
- **Day-Ahead Basis**
  - For day ahead reserve estimation, last seven days data (D-2 to D-8) shall be used.
- **Real Time Basis**
  - For incremental requirement based on availability of reserves on day ahead basis, real time system conditions, load/RE forecast errors, load generation balance, weather, contingencies, congestion and other related parameters.

Basis of Estimation

Influencing Factors

- Load forecast error
- Wind Forecast Error
- Solar Forecast Error
- Forced outage
- Schedule leaps

↓

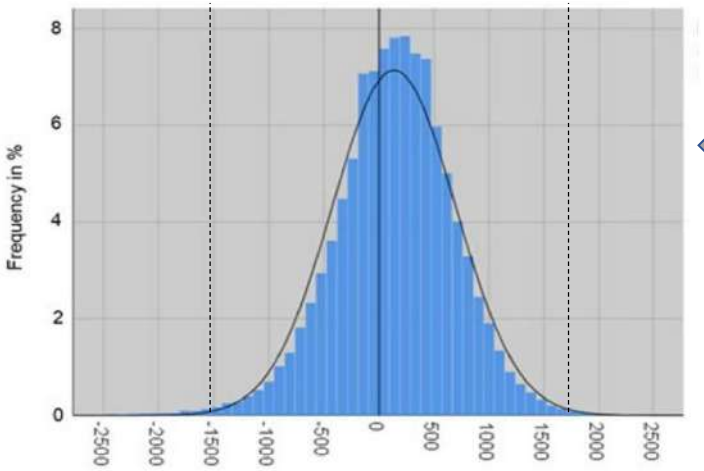
Distribution of Area Control Error

↓

99 percentile value of ACE

↓

Required balancing reserve



Estimation of Secondary Reserves (1 of 2)

- The positive (Up Reserve) and negative (Down Reserve) secondary reserve capacity requirement on regional basis would be computed
  - 99 percentile of negative and positive ACE respectively of that region for year ahead
- The 99 percentile of the positive and negative ACE of each state control shall be computed and aggregated at regional level.
  - This shall be scaled using 99 percentiles of the regional ACE to factor diversity at regional level
- The scaled values of 99 percentile of the state ACE shall be used to arrive at the reserve requirement at Inter-state and Intra-state levels.

Estimation of Reserves (Secondary) (2 of 2)

- The drawl by the respective state and its internal-generation at the time of peak demand during the period under consideration shall be used for apportionment of the reserve requirement.
- The intra state reserve requirement shall be in proportion to the contribution of internal generation at the time of peak demand.
- The Inter-state reserves shall be in proportion to the drawl from the grid at the time of peak demand.
- The state level requirement shall be aggregated to arrive at the regional and all India reserve requirement.

Estimation of Tertiary Reserves

- The estimated quantum of tertiary reserve requirement at regional level would be considered equal to the secondary reserve requirement at regional level

- The estimated quantum of tertiary reserve requirement at state level would be considered equal to the sum of secondary reserve requirement at state level and 50 % of the largest unit size in the respective state control area.

Reserve Estimation Procedure

- Calculation of 99 Percentile ACE for each state control area
- Scaling of state ACE up to regional ACE harnessing diversity benefit
- Calculating of apportionment factor based on state demand and drawl from ISTS at the time of maximum demand
- Computation of secondary reserves to be kept at ISGS and within state based on apportionment factors calculated
- Computation of tertiary reserves to be kept at ISGS and within state factoring secondary reserves and size of largest unit within each state

Estimation of Up Reserves : Sample Calculation for Uttar Pradesh

S.No.	Steps	Computation
1	**Calculation of 99 Percentile of ACE**	Uttar Pradesh Actual 99 Percentile Negative ACE (MW) = 853, Northern Region Actual 99 Percentile Negative ACE (MW) = 3993, NR state Sum of Actual 99 Percentile Negative ACE (MW) = 4129
2	**Scaling of ACE**	Uttar Pradesh Scaled 99 Percentile Negative ACE (MW) = 825 { 853*(3993/4129)}
3	**Inputs from States**	Uttar Pradesh Max. Demand met = 30570 MW Internal generation at the time of Max. demand = 14387 MW Drawl from ISTS = 16183 MW (30570-14387)
4	**Computation and apportionment of Secondary Reserves**	Ratio of Uttar Pradesh drawl from ISTS with max. demand met = 16183/30570 = 0.53 Uttar Pradesh Secondary Reserves in ISGS = 437 MW {825 *0.53} Ratio of Uttar Pradesh internal generation with max. demand met = 14387/30570 = 0.47 Uttar Pradesh Secondary Reserves within state = 388 MW {825*0.47}
5	**Computation and apportionment of Tertiary Reserves**	Uttar Pradesh Tertiary Reserves in ISGS = 437 MW (equal to Uttar Pradesh Secondary Reserves in ISGS) Uttar Pradesh Tertiary Reserves within state = 718 MW {Uttar Pradesh Secondary Reserves within state(388) + 50 % of largest unit size within state (660) }

Balancing Reserves Dimensioning (FY 2025-26)

Up Reserve Requirement

Type of Reserve	Within State (MW)	ISGS (MW)	All India Total (MW)
Secondary	4958	6672	11630
Tertiary	10638	6672	17310
Total (MW)	15596	13344	28940

Down Reserve Requirement

Type of Reserve	Within State (MW)	ISGS (MW)	All India Total (MW)
Secondary	5497	7429	12926
Tertiary	11177	7429	18606
Total (MW)	16674	14858	31532

Region-wise summary of Up Reserve Requirement

	Year-Ahead Up Reserve Requirement (2025 - 2026)								
	Secondary Reserves			Tertiary Reserves			Total Reserves (Secondary + Tertiary)		
Region	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total
Northern Region	2561	1432	3993	2561	3043	5604	5122	4475	9597
Western Region	1308	1464	2772	1308	2774	4082	2617	4237	6854
Southern Region	1562	1154	2716	1562	2719	4281	3123	3874	6997
Eastern Region	981	815	1796	981	1925	2906	1961	2741	4702
North-Eastern Region	261	92	353	261	176	437	521	269	790
All India	6672	4958	11630	6672	10638	17310	13345	15595	28940

Region-wise summary of Down Reserve Requirement

	Year-Ahead Down Reserve Requirement (2025 - 2026)								
	Secondary Reserves			Tertiary Reserves			Total Reserves (Secondary + Tertiary)		
Region	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total
Northern Region	2064	1140	3204	2064	2751	4815	4128	3891	8019
Western Region	1661	1854	3515	1661	3164	4825	3322	5018	8340
Southern Region	2276	1692	3968	2276	3257	5533	4551	4950	9501
Eastern Region	1068	714	1782	1068	1824	2892	2136	2538	4674
North-Eastern Region	361	96	457	361	180	541	722	276	998
All India	7429	5497	12926	7429	11177	18606	14858	16674	31532

Information Dissemination (1 of 2)

- The requirement of SRAS and TRAS reserves on year ahead basis would be displayed and updated on the Nodal Agency website.
- The assessment of the reserve capacity requirement for SRAS and TRAS on **Year Ahead Basis** would be declared by Nodal Agency by 25th January of the current year (Format – RAS4)
  - *(Illustration: The reserve requirement for SRAS and TRAS for financial year 2025-26 would be declared by 25th January, 2025)*

Information Dissemination (2 of 2)

- The reference contingency shall be declared by Nodal Agency by 25th January before the start of each financial year (Format – RAS3).
  - The review of reference contingency may be done by the Nodal Agency, any time after the declaration, during the financial year.
  - Accordingly, the figures of reference contingency would be revised and updated on the Nodal Agency website.
  - *(Illustration: The reference contingency for financial year 2025-26 would be declared by 31st January, 2025)*

Data to be furnished by SLDCs

- **Year Ahead Basis** – For reserve estimation for the next financial year (FY+1), the data for the previous calendar year shall be furnished by 15th January of the current financial year (FY) (Format – RAS1)
  - *(Illustration: If the assessment is being carried out for FY 2025-26, the data for the period 1st Jan 2024 to 31st December 2024 has to be provided by 15th January, 2025)*
- Advanced procured reserves before D-2 for SRAS and TRAS. (Format - RAS2)

(Illustration: The reserves booked in advance for Friday may be intimated to NLDC on Wednesday by 1100 hrs.)

Resolution of Data

- 10 second data to be used for ACE computation for reserve estimation
  - Frequency
  - Actual interchange
- Frequency Bias Coefficient (Bf) used based on median FRC during previous FY
- Peak Demand and Intra-state generation at time of peak demand during previous FY

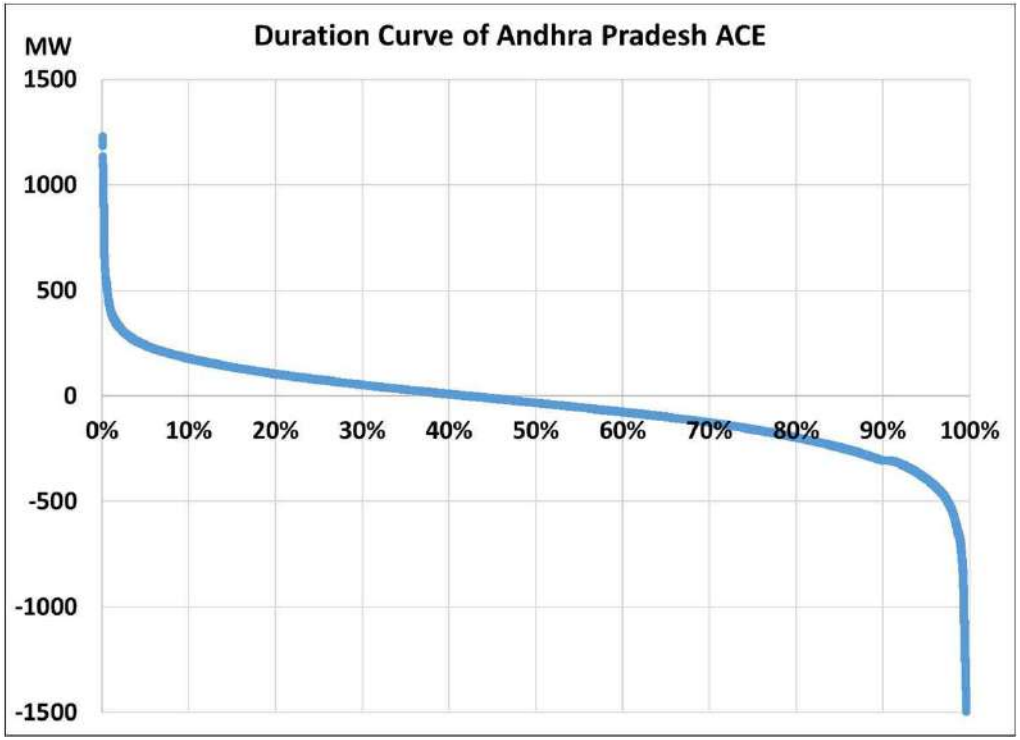
10 second resolution captures contingency events and primary response

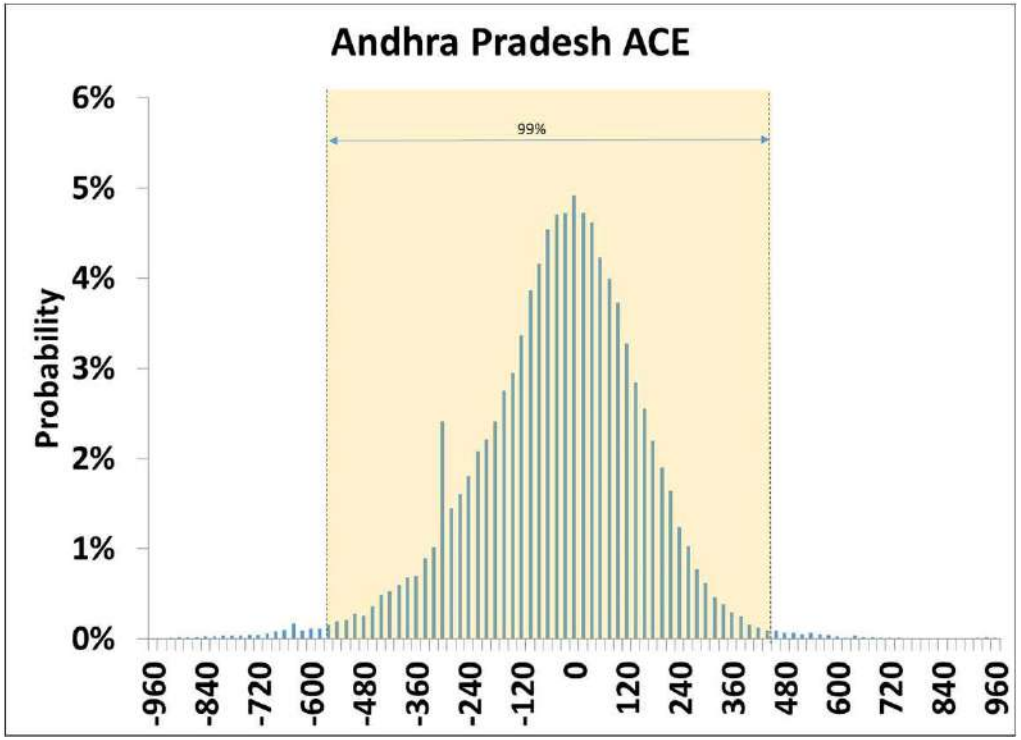
Action Points for Constituents

- *Measure And Archive Frequency & Tie line flows in resolution of 10 seconds*
- *Compute & Monitor ACE in real time*
  - *Archive ACE in resolution of 10 seconds.*
- Measure & Record Frequency Response Characteristic (FRC) for events involving generation/load loss of more than 1000 MW, when informed by RLDCs.
  - Compute Bias Factor
- *Compute Primary Frequency Response from intra state generating units/ stations.*
- *Accurate Forecasting of Load and Renewable Generation*
  - *Archive Error Measurement*
- *Planning ahead of time*
  - *Resource Adequacy*
  - *Unit Commitment with Reserves*

Thank You !

Example: Sample Area Control Error of Uttar Pradesh





ACE = ((-2811) – (- 2547)) - 10 * (-150) * (50.07 – 50) = -159 (Sample Representation of ACE)

ACE = (Ia - Is) -10 * Bf * (Fa - Fs)

Format - RAS1 (SLDC to RLDC)

- Actual interchange of the State (10 seconds resolution), (Number of samples = 365*24*60*6 = 3153600 nos.) in excel format
- Frequency Response Characteristics of the State for the events posted on NLDC website (https://posoco.in/frc/)
- Peak Demand met
- Intra-State Generation (other than ISGS) at the time of peak demand
- In case of non-availability of data from SLDCs as mentioned above, the data available at RLDCs/Nodal Agency shall be used.

Actual interchange of the State (10 seconds resolution) for calendar: 01.01.yyyy to 31.12.yyyy	
Date & Time (DD-MMM-YY HH:MM:SS)	Actual interchange of the State (MW)
01-jan-2021 00:00:10	452
01-jan-2021 00:00:20	456
01-jan-2021 00:00:30	461
.....	
.....	
31-Dec-2021 23:59:50	498

Frequency Response Characteristics of the State for calendar: 01.01.yyyy to 31.12.yyyy	
Event Details	Frequency Response Characteristics (MW/Hz)
Events 1:	800
Event 2:	815
Event 3:	756

Peak Demand and Intra-State Generation of the State for calendar: 01.01.yyyy to 31.12.yyyy		
State/UT	Peak Demand met (MW)	Intra-State Generation (other than ISGS) at the time of peak demand (MW)
.....		

Format – RAS2 (SLDC to RLDC)

- The quantum and location of advance procured reserves (before D-2) by SLDCs and RLDCs/NLDC by any means, would be intimated to the Nodal Agency two days before the day of scheduling.
- The information shall be submitted by the respective SLDCs/RLDCs on the web portal hosted by NLDC. URL and password for the secure web portal may be collected by SLDC from the respective RLDCs.

Format – RAS2: Information Exchange Format for intimation of Advance Procured Reserves before 1100 hrs on D-2 by SLDCs to NLDC

Note: Format in line with Regulations 30(11)(q), 30(12)(d) and 30(12)(l) of IEGC

For date: DD/MM/YYYY

Submitted by: <Name of the State/RLDC>

S.no.	Region	State	Plant Name	From time block to time block	Method of dispatch (Secondary/Tertiary)	Earmarked Spinning Reserve as on D-2 (MW)
1	WR	State-1	Station-A	1-96	Tertiary	30
2	WR	State-1	Station-B	1-96	Secondary	20
3						
4						
5						
	Total					50

Format – RAS3

Reference contingency for Indian Power System

Date: 31 January 2023	**Revision No.**	
Applicable for FY 2023-24		
Reference Contingency for generation loss (MW)	**4500**	
Reference Contingency for load loss (MW)	**4500**	

Format – RAS4

State/UT	SRAS and TRAS Reserve requirement for year 2022-23															
	Actual 99 Percentile Negative ACE (MW)	Actual 99 Percentile Positive ACE (MW)	Scaled 99 Percentile Negative ACE (MW) {a}	Scaled 99 Percentile Positive ACE (MW) {b}	Max. Demand met {c}	Internal Gen. at the time of max demand {d}	Drawl from ISTS {e=c-d}	State Internal Generation/ State Maximum Demand {f=d/c}	State drawl from ISTS/ State Maximum Demand {g=e/c}	Secondary Reserves in ISGS {h=a*g}	Secondary Reserves at Regional Level {sum of reserves in all states of the region as given in	Secondary Reserves within state {i=a*f}	Tertiary Reserves in ISGS {j = h}	Tertiary Reserves within state {k = i}	Largest Unit Size of internal generation {l}	Total Tertiary Reserves within state {m=k + 0.5*l}
Andhra Pradesh	571	442	302	265	11472	5319	6153	0.46	0.54	162		140	162	140	800	540
Tamil Nadu	609	641	322	384	16846	7624	9222	0.45	0.55	176		146	176	146	600	446
Karnataka	587	535	311	320	14367	9354	5013	0.65	0.35	108		202	108	202	800	602
Kerala	183	191	97	114	4284	1519	2765	0.35	0.65	62	620	34	62	34	130	99
UT Puducherry	35	60	19	36	452	0	452	0.00	1.00	19		0	19	0	0	0
Telangana	391	418	207	250	13688	7561	6127	0.55	0.45	93		114	93	114	800	514
SR State Sum	2376	2287	1257	1369												2202
Southern Region	1257	1369														
All India	5333	6096	5333	6096									2850			8237
									Total Tertiary Reserves Requirement in India		11087					

Format – RAS5

Format RAS5: Assessment of the reserve capacity requirement for SRAS and TRAS on a three day-ahead basis

State/ Union Territory (UT)	Actual 99 Percentile Negative ACE (MW)	Actual 99 Percentile Positive ACE (MW)	Scaled 99 Percentile Negative ACE (MW) (a)	Scaled 99 Percentile Positive ACE (MW) (b)	Max. Demand met (c)	Internal Gen. at the time of max demand (d)	Drawl from ISTS (e=c-d)	State Internal Generation/ State Maximum Demand (f=d/c)	State drawl from ISTS/ State Maximum Demand (g=e/c)	Secondary Reserves in ISGS (h=a*g)	Secondary Reserves at Regional Level (sum of reserves in all states of the region as given in "h")	Secondary Reserves within state (i=a*f)	Tertiary Reserves in ISGS (j = h)	Tertiary Reserves within state (k = i)	Largest Unit Size of internal generation (l)	Total Tertiary Reserves within state (m=k + 0.5*l)
UT of Chandigarh																
Delhi																
Haryana																
Himachal Pradesh																
UT of Jammu and Kashmir and UT of Ladakh*																
Punjab																
Rajasthan																
Uttar Pradesh																
Uttarakhand																
NR state Sum																
Northern Region (NR)																
Chhattisgarh																
UT Daman and Diu#																
UT Dadra and Nagar Haveli#																
Gujarat																
Goa																
Madhya Pradesh																
Maharashtra																
WR States Sum																
Western Region (WR)																
Andhra Pradesh																
Karnataka																
Kerala																
UT of Puducherry																
Tamil Nadu																
Telangana																
SR State Sum																
Southern Region (SR)																
Bihar																
Damodar Valley Corporation																
Jharkhand																
Odisha																
Sikkim																
West Bengal																
ER state Sum																
Eastern Region (ER)																
Arunanchal Pradesh																
Assam																
Manipur																
Meghalaya																
Mizoram																
Nagaland																
Tripura																
NER State Sum																
North-Eastern Region (NER)																
All India																
											Total Tertiary Reserves Requirement in India					
	Note: * UT of Jammu and Kashmir and UT of Ladakh have been considered as single entity inline with data availability at NLDC. # UT Daman and Diu & UT Dadra and Nagar Haveli have been considered as separate entities inline with data shared with NLDC.															

Format – RAS6

Format RAS6: Range of Reserve Requirement from the Day-ahead AS Market

Note: Format to be published on NLDC website everyday by 1100 hrs

Date	TRAS Regulation Up	TRAS Regulation Down
02-June-2023	0 to 3800 MW	0 MW
03-June-2023	0 to 4000 MW	0 to 2500 MW
04-June-2023	0 to 4500 MW	0 to 2500 MW
05-June-2023	0 to 4500 MW	0 MW

Format – RAS7

	Year-Ahead						Quarter-Ahead						Week-Ahead					
	Secondary Reserves			Tertiary Reserves			Secondary Reserves			Tertiary Reserves			Secondary Reserves			Tertiary Reserves		
State/UT	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total
Andhra Pradesh	162	140	302	162	540	702	223	196	418	223	596	818	228	218	446	228	618	846
Tamil Nadu	176	146	322	176	446	622	191	166	357	191	466	657	278	189	467	278	489	767
Karnataka	108	202	311	108	602	711	136	216	352	136	616	752	199	318	517	199	718	917
Kerala	62	34	97	62	99	162	67	41	108	67	106	173	80	47	126	80	112	191
UT Puducherry	19	0	19	19	0	19	20	0	20	20	0	20	24	0	24	24	0	24
Telangana	93	114	207	93	514	607	135	115	250	135	515	650	183	189	373	183	589	773
Region-wise and All-India																		
Northern Region	725	480	1205	725	2091	2816	406	433	838	406	2044	2449	591	361	952	591	1972	2563
Western Region	829	769	1598	829	2079	2908	853	1181	2034	853	2491	3344	791	703	1494	791	2013	2804
Southern Region	620	637	1257	620	2202	2822	771	733	1504	771	2298	3069	993	960	1953	993	2525	3518
Eastern Region	522	677	1200	522	1757	2280	734	803	1537	734	1883	2617	447	585	1032	447	1665	2112
North-Eastern Region	154	44	198	154	108	262	227	51	278	227	115	342	147	33	180	147	97	243
All India	2850	2607	5458	2850	8237	11087	2992	3200	6192	2992	8830	11821	2969	2642	5611	2969	8271	11240

Estimation of Reserves (Secondary) (3 of 3)

- The all-India total of positive (and negative) secondary reserves capacity requirement on regional basis shall be equal to the reference contingency or secondary reserve capacity requirement as computed above, whichever is higher.
- If the all-India reserve requirement is less than the reference contingency such additional reserves shall be considered in the regional requirement.

Estimation of Reserves (Tertiary) (2 of 2)

- Reserve procurement from market factoring the reserves likely to be available in real time --- CERC Regulations & SOR.
  - The regulations allow for the un-requisitioned surplus (URS) available in section 62 power plants to be utilized under Shortfall TRAS.
- The quantum and location of advance procured reserves (before D-2) by SLDCs, would be intimated to the Nodal Agency two days before the day of scheduling (Format RAS-2).
- As per CERC (Ancillary Services) Regulations, 2022, only tertiary reserve procurement through TRAS day-ahead and real-time markets has been mandated.
- Similar procedure may be adopted in the future for secondary reserve procurement as and when such market segments are made operational by CERC.

Information Dissemination (2 of 3)

- The assessment of the reserves capacity requirement for SRAS and TRAS on **Year Ahead Basis** would be declared by Nodal Agency by 25th January of the current year (Format – RAS4)
  - *(Illustration: The reserve requirement for SRAS and TRAS for financial year 2025-26 would be declared by 25th January, 2025)*

- The assessment of the reserve capacity requirement for SRAS and TRAS on a three day-ahead basis would be declared by the Nodal Agency daily by 1100 hrs (Format – RAS5)
  - *(Illustration: The reserve requirement for SRAS and TRAS on Friday would be published by 1100 hrs of Tuesday)*

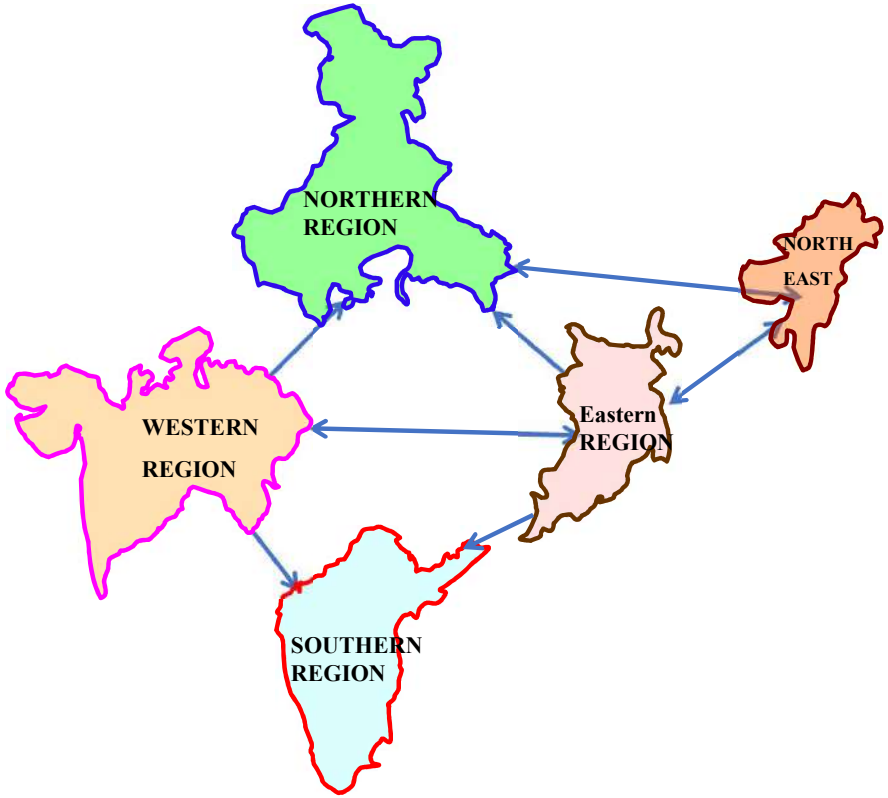
Information Dissemination (3 of 3)

- The range of requirement of TRAS on Day Ahead Basis would be declared by Nodal Agency by 1100 hrs everyday (Format – RAS6)

- The status of data received by the nodal agency from various sources and static data such as peak demand of the state, internal generation, frequency bias etc. shall also be published on the nodal agency website.

Area Control Error (ACE)

"ACE" is the instantaneous difference between a control area's net actual interchange and net scheduled interchange, taking into account the effects of frequency bias and correction of measurement errors.



ACE = (Ia - Is) - 10 * Bf * (Fa - Fs) + Offset

- **Ia = Actual net interchange in MW (positive for export)**
- **Is = Scheduled net interchange in MW (positive for export)**
- **Bf = Frequency Bias Coefficient in MW/0.1 Hz (negative value)**
- **Fa = Actual system frequency in Hz**
- **Fs = Schedule system frequency in Hz (default 50 Hz)**
- **Offset = Provision for compensating errors such as measurement error; default value zero**
- **ACE positive means area is in surplus and its internal generation has to back down**
- **ACE negative means area is in deficit and its internal generation has to increase**

IEEE Task Force Report. 2017. "Measurement, Monitoring, and Reliability Issues Related to Primary Governing Frequency Response," Technical Report PES-R-24, October. https://resourcecenter.ieee-pes.org/publications/technical-reports/PESTECRPTGS0001.html

Sample Calculation of ACE

- ACE is ‘positive’ means that the control area has surplus generation and the control area’s internal generation has to be backed down.
  - Example ACE = ((-800) – (- 1050)) - 10 * (-200) * (50.07 – 50) = 390

ACE = (Ia - Is) -10 * Bf * (Fa - Fs)

- ACE is ‘negative’ means the control area is in deficit and the control area’s internal generation has to be increased.
  - Example ACE = ((-800) – (-1050)) - 10 * (-200) * (49.80 – 50) = - 150

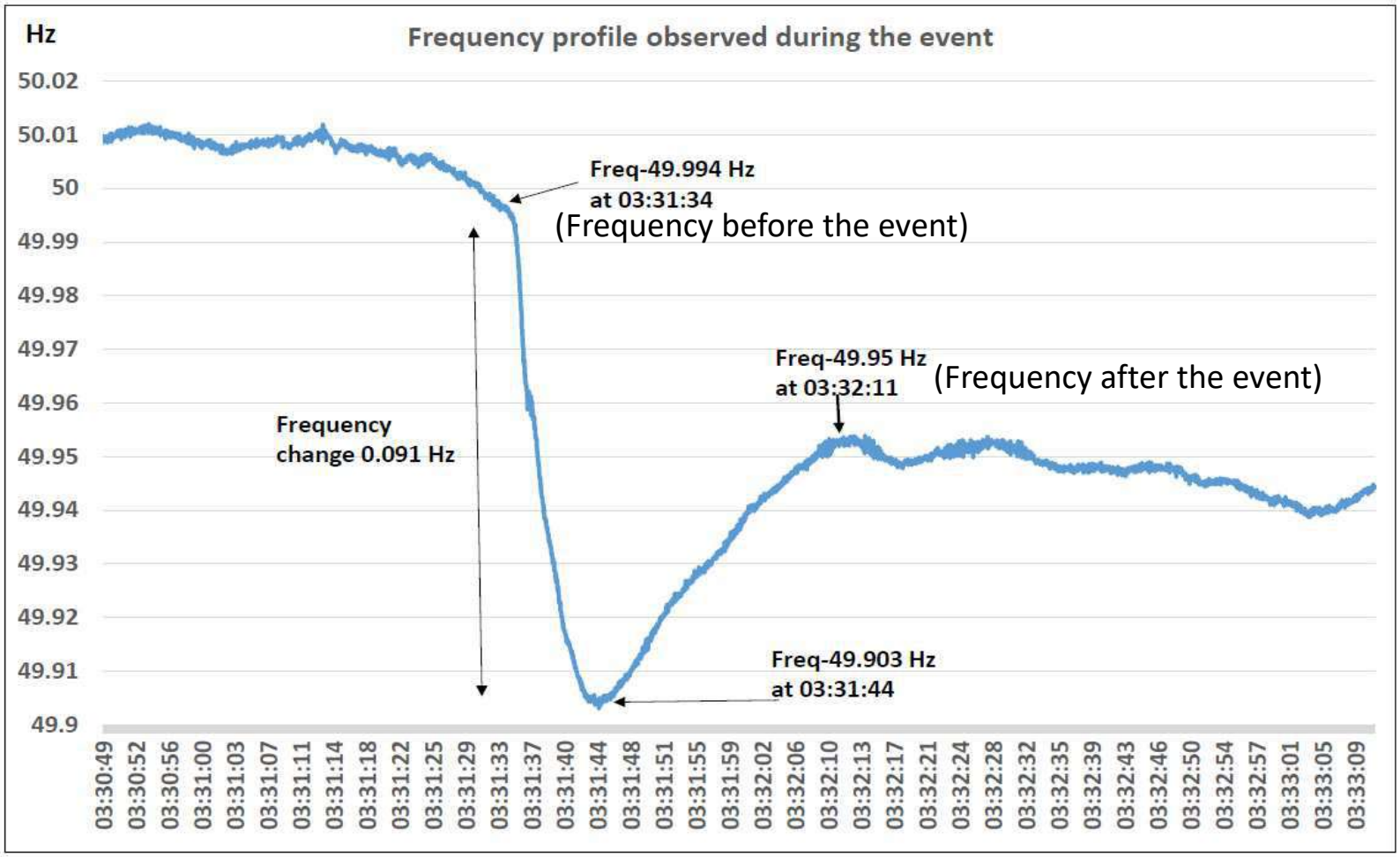
Detailed methodology to be followed by Nodal Agency for calculation and monitoring of Area Control Error (ACE) *(Annexure – 1)*

Bias Factor Computation (1)

Frequency Response Characteristic Calculation based on SCADA Data			
EVENT:	On 8th April, multiple elements tripped at Tuticorin Thermal Power station(TTPS) , which resulted in tripping of Unit 1,2,3,4 and 5(210MW each) of Tuticorin. It was confirmed that a Generation loss of 1045 MW in all five units (5x210 MW) was observed.		
S No	Particulars	**Dimension**	**SR**
1	Actual Net Interchange before the Event (03:31:30)	**MW**	-9850
2	Actual Net Interchange after the Event (03:32:50)	**MW**	-10416
3	Change in Net Interchange (2 - 1)	**MW**	-567
4	Generation Loss (-) / Load Throw off (+) during the Event	**MW**	-1045
5	Control Area Response (3 - 4)	**MW**	479
6	Frequency before the Event	**HZ**	49.99
7	Frequency after the Event	**HZ**	49.95
8	Change in Frequency (7 - 6)	**HZ**	-0.044
9	Frequency Response Characteristic (5 / 8)	**MW/Hz**	**-10875**
10	Frequency Bias ((5/ 8)/10)	**MW/0.1Hz**	**-1088**

IEEE Task Force Report. 2017. "Measurement, Monitoring, and Reliability Issues Related to Primary Governing Frequency Response," Technical Report PES-R-24, October. https://resourcecenter.ieee-pes.org/publications/technical-reports/PESTECRPTGS0001.html

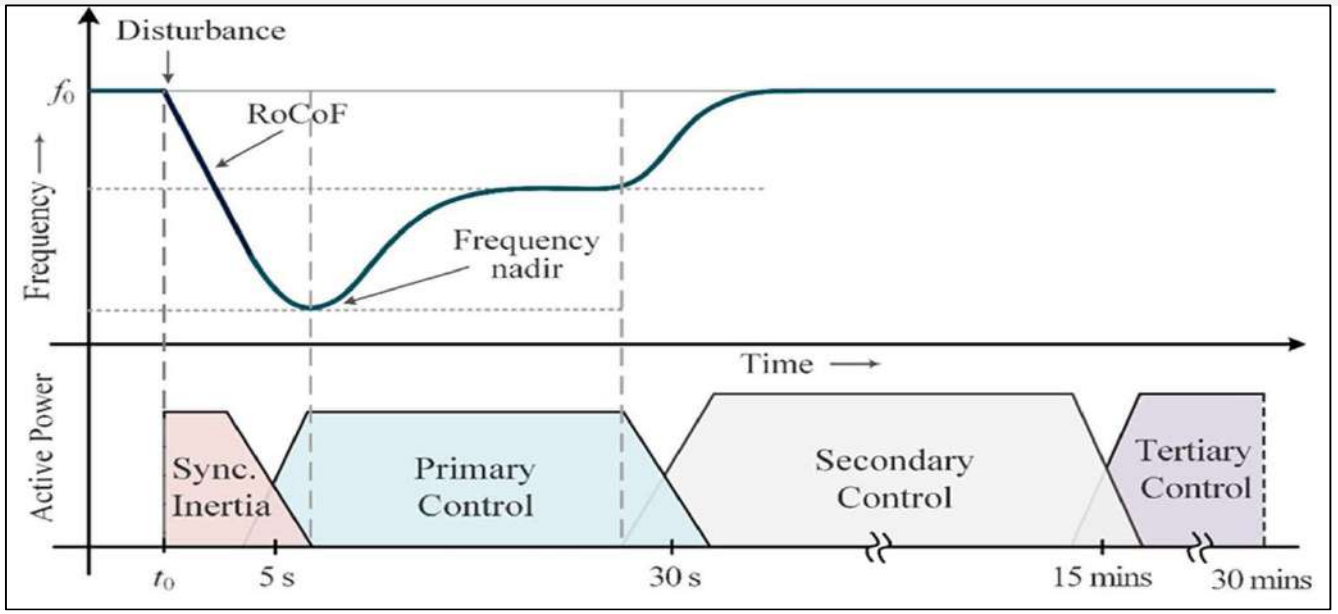
Bias Factor Computation (2)



Roles

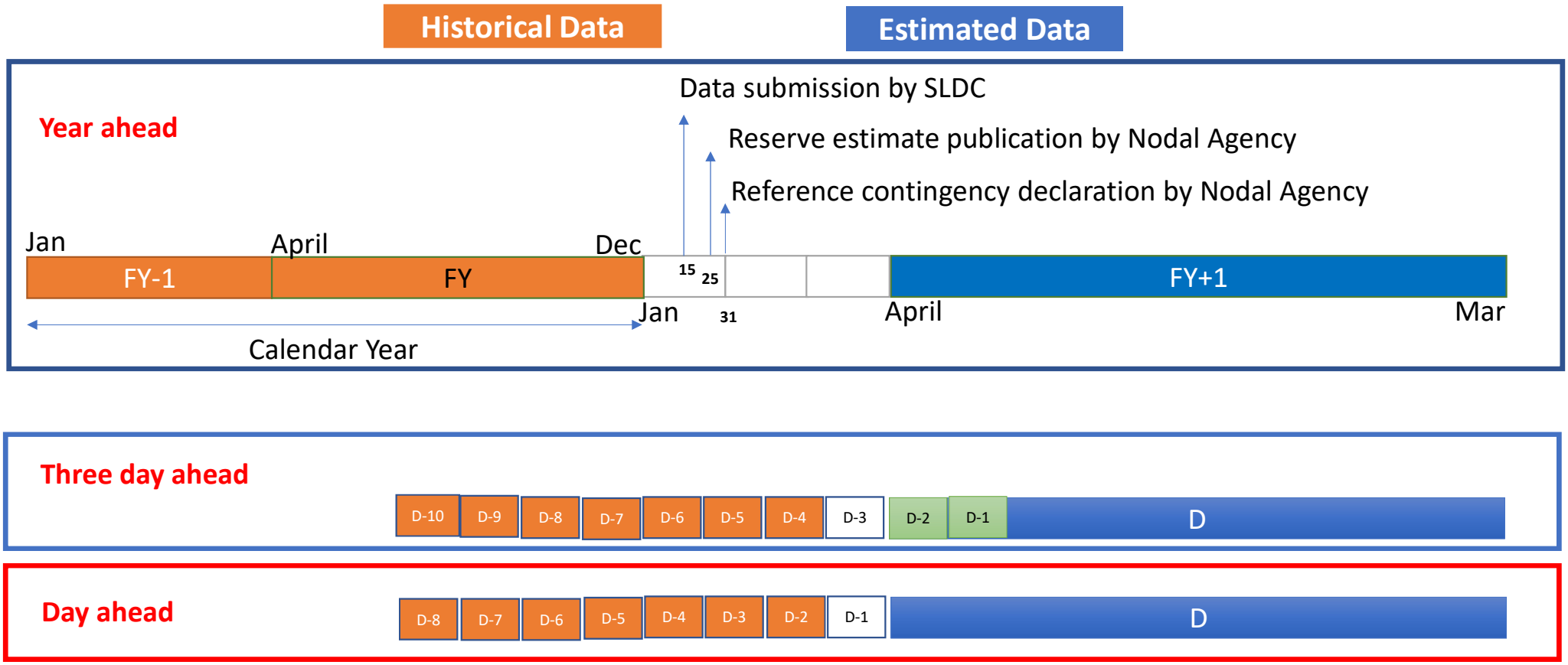
- NLDC (Nodal Agency)
  - To estimate the quantum of requirement of secondary and tertiary reserves
  - To assess and declare Frequency Bias Coefficient (Bf)
- SLDCs
  - To furnish data in the stipulated formats to the Nodal Agency for estimation of quantum of requirement of secondary and tertiary reserves
  - To maintain reserves
    - As estimated by Nodal Agency or
    - As per estimation carried out by SLDC (as per IEGC or State Grid Code)

Reserves in Indian Power System



Reserve	Start of activation	Full Availability/ deployment	Ability to sustain the full deployment
Primary Response	Immediately as soon as frequency crosses the dead band	Within 45 seconds	Up to 5 min
Secondary control Reserve	Within 30 seconds after the receipt of Automatic Generation Control (AGC) signal	within 15 Minutes	Up to 30 min or till replaced by Tertiary Reserves
Tertiary control Reserve	Within 15 minutes of dispatch instruction from NLDC/RLDC		Up to 60 minutes

Summary of Time Frames



Balancing Reserves Dimensioning

Uttar Pradesh

Type of Reserve	Requirement within State (MW)	Requirement in ISGS (MW)	Total (MW)
Secondary	218	228	**446**
Tertiary	618	228	**846**
Total (MW)	836	456	**1292**

Time frames for Reserve Estimation

- Year-ahead
- Three day-ahead

Resource Adequacy/LGBR

Operational planning/Unit Commitment

- Day-ahead
- Intra-day

Reserve Procurement

Incremental Procurement

Clause No.	Responsible Entity	Compliance Assignment
5.2(i)	Each distribution licensee within a State	Estimate the demand in its control area including the demand of open access consumers and factoring in captive generating plants, energy efficiency measures, distributed generation, demand response, in different time horizons, namely long-term, medium term and short-term.
5.2(ii)	STU (on behanlf of distribution licensee)/other designated agency	Estimate the demand for the entire State duly considering the diversity in different time horizons, namely long-term, medium term and short-term.
5.3(a)	Each distribution licensee	(i) assess the existing generation resources and identify the additional generation resource requirement to meet the estimated demand in different time horizons, (ii) prepare generation resource procurement plan.
5.3(c)	Each distribution licensee	Generation resource procurement planning (specifying procurement from resources under State control area and regional control area) shall be undertaken in different time horizons, namely long-term, medium term and short-term to ensure (i) adequacy of generation resources and (ii) planning reserve margin (PRM) taking into account loss of load probability and energy not served as specified by CEA.
5.3(d)	STU (on behalf of distribution licensee)/other designated agency	STU or other designated agency by state comission shall provide to NLDC, •the details regarding demand forecasting, •assessment of existing generation resources •such other details as may be required for carrying out a national level simulation for generation resource adequacy for States.
5.3(e)	NLDC	Based on the information received, NLDC shall carry out a simulation to assist the States in drawing their optimal generation resource adequacy plan.
5.3(f)	Each distribution licensee	Each distribution licensee shall ensure demonstrable generation resource adequacy for such period as specified by the respective SERC
31.1(a)	NLDC/RLDC/SLDC	Operational planning in advance by NLDC, RLDCs and SLDCs within their respective control areas: Monthly and Yearly time horizons in co-ordination with CTU, RPCs or STUs, as applicable.
31.1(b)	NLDC/RLDC/SLDC	Operational planning shall be carried out in advance by NLDC, RLDCs and SLDCs within their respective control areas on Intra-day, Day Ahead, Weekly time horizons.

31.1(c)	NLDC/RLDC	Procedure and data format by NLDC/RLDC for following activity •Operational planning analysis •Real-time monitoring, •Real-time assessments. Format is available at *https://posoco.in/wp-content/uploads/2024/03/Final-NLDC-Operating-Procedure_as-submitted-to-CERC-dated-290923.pdf*
31.1(d)	SLDC	SLDC may also issue procedures and formats for data collection for the above purposes.
31.2(a)	SLDC	Each SLDC shall carry out demand estimation (active & reactive) as part of operational planning after duly factoring in the demand estimation done by STU as part of resource adequacy planning referred to in Chapter 2 of these regulations.
31.2(b)	SLDC	Each SLDC shall develop methodology for daily, weekly, monthly, yearly demand estimation in MW and MWh for operational analysis as well as resource adequacy purposes
31.2(c)	SLDC	The demand estimation by each SLDC shall be done on day ahead basis with time block wise granularity for the daily operation and scheduling . Revision in real-time demand estimate by SLDC if major change is observed and sharing with RLDC
31.2(d)	SLDC	Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVA on a monthly and quarterly basis for the nodes 110 kV and above
31.2(e)	SLDC	SLDC shall also estimate peak and off-peak demand (active as well as reactive power) on a weekly and monthly basis for load -generation balance planning as well as for operational planning analysis
31.2(f)	ISTS connected bulk consumers or distribution licensees	The entities such as bulk consumers or distribution licensees that are directly connected to ISTS shall estimate and furnish such a demand estimate to the concerned RLDC
31.2(g)	RLDC/NLDC	Based on the demand estimate furnished by the SLDCs and other entities directly connected to ISTS, each RLDC shall prepare the regional demand estimate and submit it to the NLDC. NLDC, based on regional demand estimates furnished by RLDCs, shall prepare national demand estimate
31.2(h)	SLDC	Submission of demand estimate data by SLDCs or other entities directly connected to ISTS, as applicable, to the respective RLDC and RPC as per below timeline : - Daily: 10:00 hrs of previous day - Weekly: First workinh day of previus week - Monhtly: Fifth day of previous month - Yearly: 30th September of the previous year

31.2(i)	SLDC/RLDC/NLDC	Compute forecasting error for intra-day, dayahead, weekly, monthly and yearly forecasts and analyse the same in order to reduce forecasting error in the future. The computed forecasting errors shall be made available by SLDCs, RLDCs and NLDC on their respective websites.
31.3(a)	SLDC	The generation estimation by each SLDC shall be done on day ahead basis with time block wise granularity for the daily operation and scheduling . Revision in real-time generation estimate by SLDC if major change is observed and sharing with RLDC
31.3(b)	RLDC	RLDC shall forecast generation from wind, solar, ESS and Renewable Energy hybrid generating stations that are regional entities and SLDC shall forecast generation from such sources that are intra-state entities, for different time horizons as referred to in clause (1) of Regulation 31 of these regulations for the purpose of operational planning
31.4(a)	SLDC	SLDCs estimate and ensure the adequacy of resources, identify generation reserves, demand response capacity and generation flexibility requirements with due regard to the resource adequacy framework as specified under Chapter 2 of these regulations
31.4(b)	SLDC	Furnishing time block-wise information for the following day in SLDC respect of all intra-state entities to the concerned RLDC who shall validate the adequacy of resources with due regard to the following: (i) Demand forecast aggregated for the control area; (ii) Renewable energy generation forecast for the control area; (iii) Injection schedule for intra-State entity generating station; (iv) Requisition from regional entity generating stations (v) Secondary and planned procurement through Tertiary reserve requirement; (vi) Planned procurement of power through other bilateral or collective transactions, if any.
33.1	NLDC, RLDC, SLDC & (RPC: Monthly & Yearly)	Based on the operational planning analysis data, operational planning study shall be carried out by various agencies for time horizons such as Real time, Intra Day , Weekly , Monthly & Yearly
33.2	SLDC, RLDCs and NLDC	SLDCs, RLDCs and NLDC shall utilize network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study.

33.3	SLDC	SLDCs shall perform day-ahead, weekly, monthly and yearly operational studies for the concerned State for: (a) assessment and declaration of total transfer capability (TTC) and available transfer capability (ATC) for the import or export of electricity by the State. TTC and ATC shall be revised from time to time based on the commissioning of new elements and other grid conditions and shall be published on SLDC website with all the assumptions and limiting constraints; (b) planned outage assessment; (c) special scenario assessment; (d) system protection scheme assessment; (e) natural disaster assessment; and (f) any other study relevant in operational scenario.
33.4	RLDCs and NLDC	RLDCs and NLDC shall perform day-ahead, weekly, monthly and yearly operational studies for: (a) assessment of TTC and ATC at inter-regional, intra-regional, and inter-state levels; (b) planned outage assessment; (c) special scenario assessment; (d) system protection scheme assessment; (e) natural disaster assessment; and (f) any other study relevant to operational scenarios
33.5	RLDCs	RLDC shall assess intra-regional and inter-state level TTC and ATC and submit them to NLDC. NLDC shall declare TTC and ATC for import or export of electricity between regions including simultaneous import or export capability for a region, and crossborder interconnections 11 (Eleven) months in advance for each month on a rolling basis.
33.6	RLDCs	Operational planning study shall be done to assess whether the planned operations shall result in deviations from any of the system operational limits defined under these regulations and applicable CEA Standards. The deviations, if any, shall be reviewed in the monthly operational meeting of RPC and significant deviations shall be monitored by RPC for early resolution.
33.7	NLDC, RLDCs, RPCs and SLDCs	NLDC, RLDCs, RPCs and SLDCs shall maintain records of the completed operational planning study, including date specific power flow study results, the operational plan and minutes of meetings on operational study.
33.8	NLDC, RLDCs, RPCs and SLDCs	NLDC, RLDCs, RPCs and SLDCs shall have operating plans to address potential deviations from system operational limit identified as a result of the operational planning study.
33.9	SLDCs	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

33.10	RLDCs	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 intrastate system on the inter-state system and share the results of the studies with NLDC
33.11	NLDC	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) intraregional system on the inter-regional system.
33.12	NLDC, RLDCs and SLDCs	NLDC, RLDCs and SLDCs shall compare the results of the studies of the impact of new elements on the system and transfer capability addition with those of the interconnection and planning studies by CTU and STUs
33.13	concerned user or SLDC or RLDC or NLDC	Defense mechanisms like system protection scheme, load-rejection scheme, generation run-back, islanding scheme or any other scheme for system security shall be proposed by the concerned user or SLDC or RLDC or NLDC and shall be deployed as finalized by the respective RPC

Annex-VII

List of feeders for physical regulation in Supply

Uttar Pradesh

S No	Name of Feeder	Affected area	Approx Load relief (MW)	Remarks
1	220kV Meerut-Gajraula	Gajraula	100	Not Radial
2	220kV Baghpat(PG)-Baghpat D/C	Baghpat	60	Radial
3	220kV Allahabad(PG)-Jhusi	Jhusi	200	Not Radial
4	220kV Sohawal(PG)-Barabanki D/C	Barabanki	120	Not Radial
5	220kV Mainpuri(PG)-Neemkarori D/C	Farukkhabad	120	Not Radial
6	220kV Gorakhpur(PG)-Gola D/C	Gorakhpur	80	Radial
7	132kV Ballia(PG)-Bansdeeh	Ballia	15	Radial
8	132kV Ballia(PG)-Sikandarpur	Ballia	30	Radial

50 no.s 132kV feeders can also be opened from SLDC and testing was also carried out few days back at SLDC level

Punjab

S No	Name of Feeder	Affected area	Approx Load relief (MW)	Remarks
1	132kV Jamalpur-Ghulal D/C	Ghulal	91	High loading during paddy
2	66kV Jamalpur-Chandigarh Road	Chandigarh Road	37	To be preferred
3	66kV Jamalpur-Sherpur	Ludhiana	13	-
4	220/132kV Sangrur ICT 1,2, 3	Shamsabad	166	High loading during paddy
5	220kV Amritsar-Naraingarh D/C	Amritsar adjoining area	100	To be preferred
6	220kV Patiala-Nabha D/C	Nabha	190	To be opened after discussion with SLDC
7	220kV Jalandhar-Kanjli D/C	Kapurthala	64	To be preferred

120 no.s 66kV feeders may be tripped from SLDC control room to control over drawl (usually when freq below 49.8Hz)

Annex-VII

Rajasthan				
S. No.	Transmission line / Transformers to be opened	Power supply interruption	Approx load relief (MW)	Remark
1	220kV Anta-Lalsot	Lalsot	130	The load of 220 kV GSS Lalsot is normally fed from Anta radially. However If ring of 220kV Anta-Lalsot-Dausa is closed then SLDC will open 220 kV Dausa – Lalsot line immediately after physical regulation message received from NRLDC.
2	220 kV Bhinmal (PG) –Sayla Ckt-I & II	Sayla	40	However 220 kV GSS Saylais also fed from 220 kV GSS Jalore. SLDC will open 220 kV Sayla – Jalore line immediately after physical regulation message received from NRLDC.
3	220 kV Bassi(PG) - Bagru line	Bagru	80	However 220 kV GSS Bagruis also fed from 220 kV GSS Phulera. SLDC will open 220kV Bagru – Phulera line immediately after physical regulation message received from NRLDC.
4	220kV Bhiwadi(PG) -Khushkera 220kV Neemrana(PG)-Khushkera	Khushkhera & Kishangarh Bas	170	Limited alternate supply may be available. 220kV Alwar-K.G.Bas - Khushkhera linemay get overloaded.
5	220/132 kV, 160 MVA Transformer at 220kV GSS Behror	Behror	80	SLDC will open 220/132kV transformer of 220kV GSS Behror immediately after physical regulation message received from NRLDC.
J&K				
S No	Name of Feeder	Affected area	Approx Loadrelief (MW)	Remarks
1	220kV Kishenpur-Baran D/C	Baran	200	Radial feeder
2	220kV New Wampoh-Mirbazar	Mirbazar	200	Radial feeder
3	132kV Gladni-Kalakote S/C	Jammu	80	Priority 1
4	Kashmir Bemina	Kashmir	50	
5	132kV Barn-KalakoteD/C	Jammu	80	Priority 2
6	132kV Zainakote - Pattan D/C	Kashmir	70	
220kV Samba-Hiranagar may not be opened as it also supplies to Railways				

Annex-VII

Uttarakhand				
SNo	Name of Feeder	Affected area	Approx Loadrelief (MW)	Remarks
1	132kV Pithoragarh(PG)-Pithoragarh	Pithoragarh	50	Radial feeder
2	220kV Sitarganj-Eldeco	Eldeco	40-60	Industrial load (only in caseof extreme situations)
No control available from SLDC control room for physical regulation. It was discussed that such feeders may be identified which are fed from two resources and will provide relief. Compiled list of such feeders after discussion at state level needs to be shared with NRLDC at the earliest. In case it is difficult to identify such feeders, contingency plan needsto be developed at SLDC level and shared with NRLDC.				
Himachal Pradesh				
SNo	Name of Feeder	Affected area	Approx Loadrelief (MW)	Remarks
1	66kV Bhakra-Rakkar	Rakkar/ Una	10-18	Area being fed from 66kV Rakkar (Una)
2	66kV Pong-Sansarpur	Sansarpur	2-5	Radial feeder
3	132kV Dehar-Kangoo	Kunihar/Shimla	80-140	Priority 1. 400/220kV DeharICT may overload
4	220kV Dehar-Kangoo			
5	220kV Nallagarh-Upernangal D/C	Baddi/ Nallagarh	180-315	Industrial load (only in caseof extreme situations)
6	220kV Khodri-Majri D/C	Kala Amb/ Paonta Sahib/ Nahan	80-190	Limited supply may be available from Kunihar.Many essential loads, Oxygen plants, administrative buildings
7	132kV Kulhal-Giri			
8	66kV Parwanoo-Pinjore	Parwanoo	-	Generally kept open
9	33kV Ganguwal-Bilaspur	Bilaspur	6-8	-
Delhi				
SNo	Name of Feeder	Affected area	Approx Loadrelief (MW)	Remarks
1	220kV Mundka-Peeragarhi D/C	Peeragarhi	100-150	Radial feeder
2	220kV BTPS-Okhla D/C	Okhla	200-350	Radial feeder
3	33kV Delhi ckts 1,2,3,4feeders from Rohtak road (BBMB)	Rohtak Road	20-30	Radial feeder
4	220kV MaharaniBagh-Lodhi Road D/C	Lodi Road	200-300	May not be opened as VIP area
5	220kV Maharanibagh-Masjid Moth D/C	Masjid Moth		Radial feeder

Annex-VII

Haryana				
S.No.	**Transmission element to be opened**	**Power supply Interruption in**	**Approx Relief (MW}**	**Remarks**
1	Feeders in schedule A Panipat: a) 33kV Panipat-Sewah b) 33kV Panipat-Untla c) 33kV Panipat-lsrana d) 33kV Panipat-Narayana e) 33kV Panipat-Sanoli road Kurukshetra: a) 33kV Kurukshetra-Mathana b) 33kV Kurukshetra-Ajrana c) 33kV Kurukshetra-Kirmich d) 33KV KuruKshetra-REC d) 11kV Kurukshetra-Bahadurpura e) 11kV Kurukshetra-Pipli -2 Dhulkote: a) 66kV Dhulkote-Barnala b) 66kV Dhulkote-Babyal c) 66kV Dhulkote-Sadopur d) Narela: a) 132kV Kundli line emanating from Narela BBMB	Panipat , Kurukshetra, Dhulkote, Kundli (Sonipat)	200 MW (Approx.)	Radial Lines or fed radially (These feeders were already Included In schedule A&B)
2	**Feeders in Schedule B** a) 220kV Sector-72 PG - Sector-33 ckt-1&2 b) 220kV Kaithal PG- Neemwala ckt-1&2	Kaithal, Gurugram,	180 MW (approx.)	Radial Lines (Additional one feeder included in Schedule-B now to achieve desired load relief

National Load Despatch Centre
Import Capability of Uttar Pradesh for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	17300	600	16700	10165	6535		https://www.upsldc.org/documents/20182/0/ttc_atc_24-11-16/4c79978e-35f2-4aef-8c0f-7f30d878dbde
Limiting Constraints	N-1 contingency of 400/220kV Obra, Allahabad(PG), Gorakhpur (UP), Agra(PG), Lucknow (PG) ICTs							

National Load Despatch Centre
Import Capability of Haryana for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	10300	300	10000	5418	4582		https://hvpn.org.in/#/atcttc
Limiting Constraints	N-1 contingency of 400/220kV ICT at Deepalpur, Hisar, Kabulpur and Panipat(BBMB)							

National Load Despatch Centre
Import Capability of Rajasthan for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	7600	600	7000	5755	1245		https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
Limiting Constraints		N-1 contingency of 400/220kV Heerapura, Jodhpur, Bikaner, Ajmer, Merta, Hindaun and Ratangarh ICTs. Low voltage issues at Hindaun, Alwar, Bhinmal, Bikaner etc.						

National Load Despatch Centre
Import Capability of Delhi for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	7300	300	7000	4810	2190		https://www.delhisldc.org/resources/atcttcreport.pdf
Limiting Constraints	N-1 contingency of 400/220kV Mundka, HarshVihar and Bawana (bus-split) ICTs.							

National Load Despatch Centre
Import Capability of Uttarakhand for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	1810	100	1710	1402	308		https://uksldc.in/ttc-atc
Limiting Constraints		N-1 contingency of 400/220kV Kashipur ICTs. High loading of 220kV Roorkee-Roorkee and 220kV CBGanj-Pantnagar lines						

National Load Despatch Centre
Import Capability of HP for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	2386	100	2286	1181	1105		https://hpsldc.com/mrm_category/ttc-atc-report/
Limiting Constraints		Overloading of 2*100MVA Giri transformers						

National Load Despatch Centre
Import Capability of J&K for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-09 & 14-24	3500	100	3400	1977	1423		
	09-14	2800	100	2700	1977	723		
Limiting Constraints		N-1 contigency of 400/220KV ICTs at Amargarh 220 kV underlying network at Amargarh, Wagoora Low voltages in J&K control area due to high MVAR drawl						

National Load Despatch Centre
Import Capability of Chandigarh for April 2025

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2025 to 30th April 2025	00-24	480	20	460	342	118		
Limiting Constraints		N-1 contigency of 220kV Nallagarh-Kishengarh						

Annexure-B.V

Grid Event summary for February 2025

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-1 to GD-V)				Date	Time		Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
1	GI-1	i)220 kV Saharanpur(UP)-Khodri(UK) (UP) Ckt ii)220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 iii)220 KV Khodri - Chibro (UK) Ckt-2	Uttarakhand	PTCUL, HPTCL & UPPTCL	1-Feb-25	09:01	i)220KV Khodri(UK) generating station has 4 generating units of 30MW each and has double main bus scheme. The power is evacuated mainly through 220kV Khodri(UK)-Majri(HP) (UK) Ckt-1 & 2, 220kV Saharanpur(UP)-Khodri(UK) (UP) Ckt, 220KV Khodri – Sarsawan Ckt, 220KV Khodri – Jhajra Ckt and 220KV Khodri – Chibro Ckt-1 & 2. ii)As reported, at 09:01 hrs, while stopping of 30MW Unit-4 at Khodri(UK), its R-phase pole of CB stucked and the trip coil of R-phase burnt. Due to this, pole discrepancy operated which as per logic, led to LBB protection operation resulting in tripping of 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2, 220 KV Saharanpur(UP)-Khodri(UK) (UP) Ckt and 220 KV Khodri - Chibro (UK) Ckt-2. iii)As per PMU at Dehradun(PG), no fault was found in the system. iv)As per SCADA, no change in demand/generation in Uttarakhand control area was observed. v)As reported by SLDC-UK, testing of Generator CB of Unit -4 by expert service engineer has been carried out and fault has been rectified. As remedial action taken, the stuck pole of R-phase was opened manually and the control valve assembly was replaced with a new one.	0	0	NA	Y(d)	N (Partial detail received)	N (Partial detail received)
2	GI-2	i)220 KV Bhakra_R-Ganguwal (BB) Ckt-2 ii)220KV Bus 1 at Bhakra_R(BB) iii)220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 iv)157 MW Bhakra HPS - UNIT 6	Himachal Pradesh	BBMB and PSTCL	3-Feb-25	03:57	i)220KV Bhakra(BBMB) generating station has 6 generating units of 157MW each. Unit-I , VI and VII were connected to Bus-I of 220KV along with 220 KV Bhakra_R-Ganguwal (BB) Ckt-2 and 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 . ii)During the antecedent condition only Bhakra HPS - UNIT 6 was operational and generating 157MW. 220 KV Bhakra_R-Ganguwal (BB) Ckt-2 and 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 were carrying 1 MW and 48MW of load respectively. iii)As reported, at 03:57 hrs, R-N phase to earth fault occurred in 220 kV Bhakra- Jamalpur Ckt-2. At the same time Bus Bar protection for 220KV Bus-I operated. This led to tripping of 220KV Bus-I, 220 KV Bhakra_R-Ganguwal (BB) Ckt-2, 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 and 157 MW Bhakra HPS - UNIT 6 (Details Awaited) iv)As per PMU at Bhakra(BBMB), R-N phase to earth fault was found in the system. v)As per SCADA, approx 157 MW hydro generation loss is observed at 220 kV Bhakra Dam S/S.	157	0	120	Y(d)	N	N
3	GI-2	i)400 KV Parbati_2(NH)-Sainj(HP) (PKTCL) Ckt-1 ii)400 KV Parbati_3(NH)-Parbati Pooling Banala(PG) (PKTCL) Ckt-1 iii)400 KV Parbati_3(NH)-Sainj(HP) (PKTCL) Ckt-1	Himachal Pradesh	NHPC, PGCIL & PKTCL	3-Feb-25	19:35	i)Total generated power of Sainj HEP(HP), Parbati_2(NH) and parbati_3(NH) evacuates through 400 kV Parbati_2(NH)- Banala(PG) (PKTCL) Ckt and 400 kV Parbati_3(NH)- Banala(PG) (PKTCL) Ckt via 400 KV Parbati_2(NH)-Sainj(HP) (PKTCL) Ckt and 400 KV Parbati_3(NH)-Sainj(HP) (PKTCL) Ckt. ii)During antecedent condition, only 50MW Unit-1 at Sainj HEP(HP) was running (generating approx. ~45MW) and 130MW Unit-4 at Parbati-3 HEP(NHPC) (generating approx. ~132MW). iii)As reported, at 06:31 hrs, R-N fault occurred on 400 KV Parbati_3(NH)-Sainj (HP) (PKTCL) Ckt-1 in Z-2 and fault current was 2.92 KA from Sainj end. iv)As per DR of the line of Parabati3 end, fault was sensed in Z-1 and tripping command to R-ph CB was given. However, R-ph pole failed to open leading to operation of LBB protection. This led to tripping of all the elements connected to the Bus (Tripping details awaited) and complete blackout of 400KV Parbati-3 s/stn occurred. v)As per PMU, R-N fault with delayed clearance of fault in 400msec is observed. vi)During this event, Approx 132 MW hydro generation loss is observed at Parbati-III and 45 MW hydro generation loss is observed at Sainj. (As per SCADA).	177	0	440	Y(d)	N (Partial detail received)	N (Partial detail received)
4	GI-1	i)220 KV Bhakra_R-Ganguwal (BB) Ckt-2 ii)220KV Bus 1 at Bhakra_R(BB) iii)220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 iv)157 MW Bhakra HPS - UNIT 6 v)157 MW Bhakra HPS - UNIT 7	Himachal Pradesh	BBMB and PSTCL	5-Feb-25	18:45	i)220KV Bhakra(BBMB) generating station has 6 generating units of 157MW each. Unit-I , VI and VII were connected to Bus-I of 220KV along with 220 KV Bhakra_R-Ganguwal (BB) Ckt-2 and 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 . ii)During the antecedent condition only Bhakra HPS - UNIT 6 and 7 were operational and generating 156MW and 157MW respectively. 220 KV Bhakra_R-Ganguwal (BB) Ckt-2 and 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 were carrying 33 MW and 110MW of load respectively. iii)As reported, at 03:57 hrs, Bus Bar protection for 220KV Bus-I operated. This led to tripping of 220KV Bus-I, 220 KV Bhakra_R-Ganguwal (BB) Ckt-2, 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 and 157 MW Bhakra HPS - UNIT 6 and 7(Details Awaited) iv)As per PMU at Bhakra(BBMB), Y-N phase to earth fault was found in the system. v)As per SCADA, approx 427 MW hydro generation loss is observed at 220 kV Bhakra Dam S/S.	427	0	120	N	N	N
5	GI-2	i)400/220 KV 315 MVA ICT 1 AT AJMER(RS) ii)400/220 KV 315 MVA ICT 3 AT AJMER(RS) iii)400 KV AJMER-BHILWARA (RS) CKT-2	Rajathan	RVPNL	8-Feb-25	20:54	i)400/220KV Ajmer substation has One and half breaker scheme in 400KV and Double Main & Transfer bus scheme in 220KV system. ii)During antecedent condition, 400 KV AJMER-BHILWARA (RS) CKT-2 was carrying 23MW, 400/220 KV 315 MVA ICT 1 & 3 were loaded 214 and 223MW each. iii)As reported, at 20:54 hrs, B-N fault occurred on 400 KV AJMER-BHILWARA (RS) CKT-2. As per DR/ EL, two B-N faults occurred. The fault was detected in Z1 and the fault current was 3.88KA. iv)However, at the same time 400/220KV ICT-1 and ICT-3 tripped. As per DR/EL of ICT-1 & 3, 50-N (High Set Overcurrent Earth fault) and 67-N (Directional Overcurrent earth fault) operated respectively. v)SLDC Rajasthan confirmed that due to low current relay settings of 50N and 67N on ICT 1 & 3, both elements picked up the current earth fault of 400 KV AJMER-BHILWARA (RS) CKT-2 and tripped. RVPNL has confirmed that relay settings have been corrected. vi)During this event, approx 170 MW of demand change was observed in Rajasthan control area. (As per SCADA).	0	170	280	Y(d)	N (Partial detail received)	Y(d)
6	GI-2	i)400 KV MURADNAGAR_2-MATHURA (UP) CKT-1 ii)400KV BUS 1 AT MURADNAGAR_2(UP)	Uttar Pradesh	UPPTCL	9-Feb-25	00:54	i)400/220/132kV Muradnagar-New(UP) has one and half breaker scheme at 400kV level and double main and transfer bus scheme at 220kV level. ii)As reported, at 00:54 hrs, 400kV Muradnagar_2-Mathura (UP) Ckt tripped on Y-N phase to earth fault with fault current of 4.084kA from Muradnagar_2 end and fault clearing time of 287 ms; zone-1 distance protection operated (as per DR at Muradnagar_2 end) and DT received at Mathura end (as reported). iii)Due to delayed opening of CB at Muradnagar_2 end of 400kV Muradnagar_2-Mathura (UP) Ckt, LBB protection operated and both main and tie CBs at Muradnagar_2 end of 400 KV MURADNAGAR_2-MATHURA (UP) CKT-1 opened and all the 400kV CBs connected at 400KV Bus-1 of Muradnagar_2 tripped. DT received at remote ends (as reported). iv)As per PMU at Muradnagar1(UP), Y-N phase to earth fault with delayed fault clearing time of 280ms is observed. v)As per SCADA, no change in demand is observed in UP control area.	0	0	280	Y	Y	Y
7	GI-1	i)220 KV Hissar(BB)-Hissar IA(HV) (BBMB) Ckt-2 ii)220 KV Hissar(BB)-Hissar IA(HV) (HVPNL) Ckt-1 iii)220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-2 iv)220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-1 v)220 KV Hissar IA(HV) Bus-2	Haryana	BBMB, PGCIL and HVPNL	11-Feb-25	21:13	i)220KV Hissar Sub-station has double main bus system. ii)During antecedent condition, 220 KV Hissar IA(HV) – Narwana Ckt, 220 KV Hissar IA – Masudpur Ckt 1 & 2, 220/132 KV 100 MVA ICT-1 & 160 MVA ICT-2 were connected to 220kV Bus-1 at Hissar IA(HV) and 220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-1 & 2 and 220 KV Hissar(BB)-Hissar IA(HV) (HVPNL) Ckt-1 & 2 were connected to 220kV Bus-2 at Hissar IA(HV). 220 kV Bus Coupler at Hissar IA(HV) was in open condition. iii)As reported, at 21:13hrs, Y- phase CT of 220 KV Hissar(BB)-Hissar IA(HV) (BBMB) Ckt-2 got damaged with a heavy blast which caused collateral damage to 220kV L&E isolator. iv)220 KV Hissar(BB)-Hissar IA(HV) (BBMB) Ckt-2 tripped on distance protection operation (zone-1, fault distance=0 km from Hissa IA end; zone-2, fault current=5.18kA and fault distance-=4.06km from Hissar(BB)). v)During the same time, busbar protection operated at 220kV Bus-2 at Hissar IA(HV) end and all the elements connected to Bus-2 tripped. vi)As per PMU at Hissar(PG), Y-N phase to earth fault with fault clearing time of 80ms is observed. vii)As per SCADA, change in demand of approx. 112MW was observed in Haryana control area.	0	112	80	Y	N (Partial details received)	Y
8	GD-1	i)220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-1, 2 & 3 ii)220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 & 2 iii)220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1& 2 iv)220 KV DSIDC Bawana-Narela(DV) (DTL) Ckt-1 & 2 v)220 KV Bus-1 and Bus-2 at Narela(DTL) vi)220/66kV 100 MVA ICT-1, 2 and 3 at Narela(DTL)	Delhi	DTL, BBMB and PGCIL	15-Feb-25	09:35	i)220kV Narela(DTL) S/s has double main bus arrangement at 220kV level. 220/132kV 50MVA ICT-1 and 100MVA ICT-2 at Narela(BB) are connected on the same extended Bus of 220KV Narela(DTL). ii)During antecedent condition, 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-1, 2 & 3, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1& 2 and 220/66kV 100 MVA ICT-1, 2 and 3 at Narela(DTL) were connected to 220kV Bus-1 at Narela(DTL) and 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 & 2, 220 KV DSIDC Bawana-Narela(DV) (DTL) Ckt-1 & 2 and 220/132kV 50MVA ICT-1 and 100MVA ICT-2 at Narela(BB) were connected to 220kV Bus-2 at Narela(DTL). 220kV Bus coupler at Narela(DTL) was in OFF position. iii)As reported, sequence of event is as follows: a.At 09:19 hrs, both CBs at 220kV side of 220/132kV 50MVA and 100 MVA ICT-1 & 2 at Narela(BB) were manually opened for 220kV Bus isolator changeover operation from Bus-2 to Bus-1. b.At 09:30 hrs, 89A Bus-1 isolator of 220/132kV 100MVA ICT-2 at Narela(BB) was closed. c.Since the 220kV Bus Coupler CB at Narela(DTL) was already in OFF position since 08.09hrs, the said closure of 89A isolator with 89B Isolator already closed of 220/132kV 100MVA ICT-2 at Narela(BB) resulted in a position to function as a 220kV Bus Coupler. d.At 09:34 hrs, 89B Bus-2 isolator of 220/132kV 100MVA ICT-2 at Narela(BB) was tried to open, but the operation could not be done completely due to 89B isolator struck in between and heavy arcing flames evolved due to said ON load 89B isolator opening operation. e.It caused ionization in air around 89B isolator of 220/132kV 100MVA ICT-2 at Narela(BB) and R-B-N double phase to earth fault occurred due to arcing via isolator structure. f.This resulted in zone-2 busbar protection operation (as confirmed from DR) and all the elements connected to 220kV Bus-2 at Narela(DTL) tripped. g.Since 89B isolator opening operation was not complete, fault continued to be fed from Bus-1 through 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-1, 2 & 3 via 89A Bus-1 Isolator of 220/132kV 100MVA ICT-2 at Narela(BB) to faulty 89B Bus-2 Isolator. This led to zone-1 busbar protection operation (as confirmed from DR) and all the elements connected to 220kV Bus-1 at Narela(DTL) also tripped and complete blackout occurred at 220kV Narela(DTL). iv)As per DR at Narela(DTL), Zone 2 Bus Bar protection operated followed Zone 1 Bus Bar protection operation. v)As per PMU at Maharani Bagh(PG), Y-N phase to earth fault followed by Y-B phase to phase fault with fault clearing time of 120msec and 80msec is observed. vi)As per SCADA, change in demand of approx. 58 MW is observed in Delhi control area. However, SLDC-Delhi has reported load loss of approx. 194 MW.	0	194	120	N (Partial details received)	N (Partial details received)	N (Partial details received)
9	GD-1	i)220/33 kV 150 MVA ICT 1 at AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) ii)220/33 kV 150 MVA ICT 2 at AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L)	Rajathan	AHEJ4L	15-Feb-25	06:55	i)Generation of 220kV AHEJ4L(IP) station evacuates through 220 KV Adani Renew Park SL_FGARH_FBTL (AREPRL)-AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) (AREPRL) Ckt. During antecedent condition, at 220kV AHEJ4L PSS 4 station was generating approx. 228 MW (as per PMU). ii)As reported, at 06:55hrs, transient B-N phase to earth fault occurred at 220 KV Adani Renew Park SL_FGARH_FBTL (AREPRL)-AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) (AREPRL) Ckt and line successfully auto-reclosed. iii)However, during the same time, 220/33 kV 150 MVA ICT 1 and 2 at AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) tripped (Exact reason and nature of protection operated yet to be shared) which led to complete blackout out of 220kV AHEJ4L PSS4(IP) S/s. iv)As per PMU at Fatehgarh_2(PG), B-N phase to earth fault (voltage dipped upto 0.87 p.u.) is observed with fault clearing time of 120ms. v)As per PMU at AWPS2(IP), wind generation loss of approx. 228 MW is observed at AHEJ4L PSS4(IP).	228	0	120	Y	N	N
10	GD-1	i) 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt	Rajathan	JGCPL	16-Feb-25	14:27	i)Generation of 220kV JGCPL(IP) station evacuates through 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt. During antecedent condition, 220kV JGCPL(IP) station was generating approx. 90 MW. ii)As reported, at 14:27hrs, 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt tripped on B-N phase to earth fault due to differential protection operation (exact reason and location of fault yet to be shared). iii)Due to tripping of 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt, JGCPL(IP) S/s lost its connectivity from grid and blackout occurred at 220kV JGCPL(IP)S/s. iv)As per PMU at Bikaner_2(PG), B-N phase to earth fault (voltage dipped upto 0.75 p.u.) with unsuccessful A/R is observed with fault clearing time of 80ms. After the fault clearance voltage increased upto 1.04 p.u. v)As per PMU, solar generation loss of approx. 90 MW is observed respectively at JGCPL(IP). vi)As per SCADA, dip in ISTS total solar generation of approx. 211 MW is observed.	90	0	80	N (Partial details received)	N (Partial details received)	N (Partial details received)
11	GI-1	i) 220/132kV 160MVA ICT -1 at Delina (JK) ii) 220/132kV 160MVA ICT -2 at Delina (JK) iii) 220/132kV 160MVA ICT -3 at Delina (JK)	J&K	PDD-JK	17-Feb-25	14:54	i)220/132kV Delina substation has Double main and transfer bus scheme. ii)During antecedent condition, 220kV Amargarh (INDIGRID) –Delina(JK) D/C was carrying 106 MW each and feeding Delina load. iii)As reported, at 14:54 hrs, 132KV Delina – Pattan line tripped due to broken jumper condition while returning the same line from shutdown (exact reason, nature and location of fault need to be shared). iv)During the same time, 220/132kV 160MVA ICT -1 at Delina(JK) tripped on earth fault (exact nature of protection operated need to be shared). v)Subsequently, this led to overloading of 220/132kV 160MVA ICT -2 & 3 at Delina(JK) and got tripped on over-current protection operation. vi)As per PMU at Amargarh (INDIGRID), R-Y-B 3 phase to earth fault with fault clearing time of 80 msec is observed. vii)As per SCADA, change in demand of approx. 210 MW is observed in J&K control area.	0	210	80	N	N	N

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-I to GD-V)				Date	Time		Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
12	GI-2	i) 400/220 KV 500 MVA ICT 1 at Moradabad(UP) ii) 220/132 KV 160 MVA ICT 2 at Moradabad-2(UP) iii) 220/132 KV 160 MVA ICT 3 at Moradabad-2(UP) iv) 220KV Moradabad-2 – Amroha (UP) Ckt v) 220KV Muradabad-2 – Sambhal (UP) Ckt	UP	UPPTCL	22-Feb-25	17:18	i)400/220kV Moradabad(UP) has double main and transfer bus scheme in both 400KV and 220KV system. 220/132KV Moradabad-2(UP) was connected to the same 220kV bus as that of 400/220kV Moradabad(UP). ii)During the antecedent condition, 400/220 KV 500 MVA ICT 1 at Moradabad(UP), 220/132 KV 160 MVA ICT 2 & ICT 3 at Moradabad-2(UP) were carrying 79MW, 20MW and 20MW. 400/220 KV 240 MVA ICT 3 at Moradabad(UP) was under shutdown. iii)As reported, at 17:18hrs, fault occurred in 132KV Moradabad-2 – Golbari Ckt (Exact reason, nature and location of fault yet to be shared). iv)Since the fault wasn't cleared at 132KV level, it propagated further into 220KV system which led to Bus Bar protection operation at both 220kV Bus-1 & 2 at Moradabad-2(UP) and all the elements connected to both the 220kV buses at Moradabad-2(UP) tripped. v)As per PMU at Bareilly(PG), Y-B phase to phase fault is observed with fault clearing time of 80ms. vi)As per SCADA, change in demand of approx. 106MW is observed in UP control area.	0	106	80	N	N	N
13	GD-1	i) 400 KV Bikaner(PG)-AzurePSS43 SL_BKN_PG(Azure) (Azure) Ckt ii) 400 KV AzurePSS43 SL_BKN_PG-AzureRS43 SL_BKN_PG (Azure) Ckt iii) 400/33 kV 150 MVA ICT 1 at AzurePSS43 SL_BKN_PG(Azure) iv) 400/33 kV 150 MVA ICT 2 at AzurePSS43 SL_BKN_PG(Azure) v) 400/33 kV 150 MVA ICT 1 at AzureRS43 SL_BKN_PG(Azure) vi) 400/33 kV 150 MVA ICT 2 at AzureRS43 SL_BKN_PG(Azure)	Rajasthan	Azure43(IP) & PGCIL	23-Feb-25	18:05	i)Generation of 400kV Azure43(IP) (both PSS and RS) evacuates through 400 KV Bikaner(PG)-AzurePSS43 SL_BKN_PG(Azure) (Azure) Ckt. ii)During antecedent condition, Azure43(IP) was generating approx. 29 MW (as per PMU). iii)As reported, at 18:05hrs, 400 KV Bikaner(PG)-AzurePSS43 SL_BKN_PG(Azure) (Azure) Ckt tripped due to DT received at Bikaner(PG) end. (Exact reason yet to be shared) iv)During the same time, 400 KV AzurePSS43 SL_BKN_PG-AzureRS43 SL_BKN_PG (Azure) Ckt, 400/33 kV 150 MVA ICT 1 & 2 at AzurePSS43 SL_BKN_PG(Azure) and 400/33 kV 150 MVA ICT 1 & 2 at AzureRS43 SL_BKN_PG(Azure) also tripped due to loss of evacuation path (Exact reason and nature of protection operated yet to be shared). This led to complete blackout of 400kV Azure43(IP) S/s. v)As per PMU at Bikaner(PG), no fault was observed in the system. vi)As per PMU at Azure43(IP), solar generation loss of approx. 29 MW is observed.	29	0	NA	N	N	N
14	GD-1	i)400 KV GURGAON(PG)-DAULATABAD(HV) (HV) CKT-2 ii)400/220 KV 315 MVA ICT 1 AT DAULATABAD(HV) iii)400/220 KV 315 MVA ICT 2 AT DAULATABAD(HV) iv)400/220 KV 315 MVA ICT 3 AT DAULATABAD(HV) v)400/220 KV 315 MVA ICT 4 AT DAULATABAD(HV) vi)400 KV JHAJJAR(APCL)-DAULATABAD(HV) (HV) CKT-2 vii)400 KV JHAJJAR(APCL)-DAULATABAD(HV) (HV) CKT-1 viii)400 KV GURGAON(PG)-DAULATABAD(HV) (HV) CKT-1	Haryana	Haryana, PGCIL &APCL	27-Feb-25	08:11	i)400kV Daulatabad(HV) has one and half breaker bus scheme in 400KV and double main bus transfer for 220KV system. ii)During the antecedent condition, 400 KV GURGAON(PG)-DAULATABAD(HV) (HV) CKT-1&2, 400 KV JHAJJAR(APCL)-DAULATABAD(HV) (HV) CKT-1 & 2 and 400kV DAULTABAD-DHANONDA CKT-1&2 were carrying 228MW (each circuit), 353MW (each circuit) and 138MW (each circuit) respectively. iii)As reported, at 08:11hrs, B-N fault occurred on 400 KV GURGAON(PG)-DAULATABAD(HV) (HV) CKT-2. On this fault, line successfully autoreclosed from Gurgaon(PG) end but CB at Daulatabad end failed to open. During patrolling, flag was found wrapped on phase conductor at tower location no. 54-55. iv)During inspection, both trip coils of 400 KV GURGAON(PG)-DAULATABAD(HV) (HV) CKT-2 at Daulatabad end were found burnt. v)As CB at Daulatabad end failed to open, LBB of Gurgaon Bay should have operated. However, LBB protection also didn't operate. During the inspection, it was found that bus bar relay was in error mode. vi)Further, all the 400kV lines i.e., 400 KV GURGAON(PG)-DAULATABAD(HV) (HV) CKT-1, 400 KV JHAJJAR(APCL)-DAULATABAD(HV) (HV) CKT-1 & 2 and 400kV DAULTABAD-DHANONDA CKT-1&2 tripped on operation of distance protection in Z-2. vii)Further, 400/220kV 315MVA ICT-1,2,3&4 at Daulatabad(HR) tripped on operation of non-directional O/C E/F protection operation and fault got cleared. Tripping of all the elements led to blackout of the 400/220kV Daulatabad(HR) S/s. viii)As per PMU at Gurgaon(PG), B-N phase to earth fault with delayed clearance of ~1080 msec is observed. ix)As per SCADA, change in demand of approx. 414MW is observed in Haryana control area. x)As reported, fault trip coils have been replaced and bus bar relay was reboot. Bus bar relay is working properly however it has been kept under observation and feedback has been given to relay OEM for review of relay.	0	414	1080	N (Partial details received)	N (Partial details received)	N (Partial details received)
15	GD-1	220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt-1	Rajasthan	PBTSL & Juniper	28-Feb-25	11:52	i)Generation of 220kV JUNIPER GREEN COSMIC Pvt Ltd (JGCPL)(IP) evacuates through 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt-1 and 220KV JGCPL_SL_BIK2_PG (Juniper_NEPL) – MSEEPL Ckt. ii)During antecedent condition, 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt-1 was carrying approx. 140 MW of load (as per PMU) and 220KV JGCPL_SL_BIK2_PG (Juniper_NEPL) – MSEEPL Ckt was in shutdown. iii)As reported, at 11:52hrs, 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt tripped due to relay malfunctioning. (Exact reason yet to be shared) iv)Due to tripping of the line, complete RE generation of JGCPL(IP) got affected due to loss of evacuation path. v)As per PMU at JGCPL(IP), no fault was observed in the system. vi)As per PMU at JGCPL(IP), solar generation loss of approx. 140 MW is observed.	140	0	NA	N (Partial details received)	N (Partial details received)	N (Partial details received)
16	GI-1	i)220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 ii)220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2	J&K	INDIGRID & JKPDD	28-Feb-25	03:30	i)220/132kV Ziankote S/s have two bus at 220kV side i.e., main bus & reserve bus. 220kV Amargarh-Ziankote ckt-1&2 are on the same tower (D/C tower) and line length is ~21.4km. ii)During antecedent condition, 220kV Amargarh (INDIGRID) –Ziankote (JK) ckt-2 was carrying 139 MW and feeding Ziankote load. 220kV Amargarh (INDIGRID) –Ziankote (JK) ckt-1 was already tripped at 02:40 hrs on R-N fault. iii)As reported, at 03:30 hrs 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2 also tripped on R-N fault (details of cause of fault and location of fault yet to be received). iv)As per PMU at Amargarh (INDIGRID), no fault was observed in system. v)As per SCADA, change in demand of approx. 126 MW is observed in J&K control area.	0	126	NA	N	N	N

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal

Time Period: 1st February 2025 - 28th February 2025

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
1	ABC RENEWABLE_RJ01	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
2	AD HYDRO	1	0	0	0	0	0	0	0	0	0	0	0	Details received
3	AHEJ4L	3	1	33	3	0	100	1	0	33	3	0	100	DR, EL & Tripping report not submitted
4	ALTRA XERGI POWER PVT LTD	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
5	ANTA-NT	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
6	AP43L	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
7	APTFL	2	2	100	2	0	100	2	0	100	2	0	100	DR, EL & Tripping report not submitted
8	AURAIYA-NT	3	3	100	0	0	0	2	0	67	2	0	67	DR, EL & Tripping report not submitted
9	BANDERWALA_TPSL	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
10	BBMB	32	9	28	12	7	48	12	7	48	13	0	41	DR, EL & Tripping report not submitted
11	CHAMERA-I-NH	2	0	0	0	1	0	0	0	0	0	0	0	Details received
12	CHAMERA-II-NH	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
13	CPCC1	20	0	0	0	9	0	2	7	15	0	0	0	Details received
14	CPCC2	23	3	13	3	4	16	3	2	14	3	0	13	DR, EL & Tripping report not submitted
15	CPCC3	19	0	0	0	1	0	0	1	0	0	1	0	Details received
16	JHAJJAR	2	0	0	0	0	0	0	0	0	0	0	0	Details received
17	JUNIPER GREEN COSMIC PRIVATE LIMITE	3	3	100	3	0	100	3	0	100	3	0	100	DR, EL & Tripping report not submitted
18	KOLDAM-NT	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
19	MAHINDRA	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
20	PARBATI-II-NH	1	0	0	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
21	PARBATI-III-NH	2	0	0	0	1	0	0	1	0	0	0	0	Details received
22	RAPPA	13	13	100	13	0	100	13	0	100	12	0	92	DR, EL & Tripping report not submitted

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal

Time Period: 1st February 2025 - 28th February 2025

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
23	RAPPB	3	3	**100**	1	0	**33**	1	0	**33**	3	0	**100**	DR, EL & Tripping report not submitted
24	RAPPC	2	2	**100**	0	0	**0**	0	0	**0**	2	0	**100**	DR, EL & Tripping report not submitted
25	RIHAND-NT	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**	DR, EL & Tripping report not submitted
26	SALAL-NH	3	2	**67**	2	0	**67**	2	0	**67**	2	0	**67**	DR, EL & Tripping report not submitted
27	SHREE CEMENT	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**	DR, EL & Tripping report not submitted
28	SINGRAULI-NT	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**	DR, EL & Tripping report not submitted
29	SLDC-DV	13	12	**92**	2	1	**17**	2	1	**17**	2	0	**15**	DR, EL & Tripping report not submitted
30	SLDC-HP	15	0	**0**	0	7	**0**	0	7	**0**	0	0	**0**	Details received
31	SLDC-HR	19	10	**53**	9	6	**69**	9	4	**60**	10	0	**53**	DR, EL & Tripping report not submitted
32	SLDC-JK	5	4	**80**	4	1	**100**	4	1	**100**	4	0	**80**	DR, EL & Tripping report not submitted
33	SLDC-PS	15	0	**0**	9	5	**90**	9	5	**90**	14	0	**93**	DR, EL & Tripping report not submitted
34	SLDC-RS	40	0	**0**	3	1	**8**	3	1	**8**	1	1	**3**	DR, EL & Tripping report not submitted
35	SLDC-UK	8	0	**0**	0	3	**0**	0	1	**0**	0	0	**0**	Details received
36	SLDC-UP	32	9	**28**	10	11	**48**	9	4	**32**	10	1	**32**	DR, EL & Tripping report not submitted
37	SORANG	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**	DR, EL & Tripping report not submitted
38	STERLITE	4	4	**100**	4	0	**100**	4	0	**100**	4	0	**100**	DR, EL & Tripping report not submitted
39	URI-I-NH	2	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	Details received
Total in NR Region		**302**	**95**	**31**	**96**	**58**	**39**	**97**	**42**	**37**	**106**	**3**	**35**	

As per the IEGC provision under clause 37.2 (c), detailed tripping report along with DR & EL has to be furnished within 24 hrs of the occurrence of the event

Mock trial run/black start schedule plan for 2024-25

S.No.	Name of Generatiing Station	Fuel Type	Installed Capacity (in MW)	Whether Generating station has black start capability (Yes/ No)	Type of Black Start Source (DG set etc.)	Capacity of DG Set / Small Generator / Battery	Source of power supply to Communication and Telemetry during black start.	Compliance to 34.3 of IEGC for mock trial runs (Last date on which mock drill carried out)	Tentaive schedule plan for mock trial run		Remarks
									Black start exercise of generating unit (dead bus charging)	Mock black start of subsytem (black start of generating unit / island operation / synchronidation)	
NTPC											
1	Dadri GPS	Gas	4*130.19 + 2*154.51	Yes	DG Set	2.4 MW		15-Dec-23	31-Oct-24	NA	
2	Anta GPS	Gas	3*88.71 + 1*153.2	Yes	EGT	2.968 MW		29-Feb-24			
3	Auraiya GPS	Gas	4*111.19 + 2*109.3	Yes	DG Set	2900 kVA			09-07-2024	09-07-2024	Not conducted because of railway line connection
4	Faridabad GPS	Gas	2*137.75 + 1* 156.07	Yes	DG Set	3.3 MW / 4.125 MVA		25-Nov-24			
5	Koldam HEP	Hydro	4*200	Yes	DG Set	2X1250 KVA		14-Mar-24	12-03-2025	12-03-2025	
NHPC											
6	Bairasuil	Hydro	3*60	Yes	DG Set	2X1010 KVA		14-Dec-24	2nd week of November	2nd week of November	
7	Salal Stage-I	Hydro	3*115	Yes	DG Set	2X875 KVA			3rd week of October	3rd week of October	
8	Salal Stage-II	Hydro	3*115	Yes	DG Set	3X1020 KVA			3rd week of October	3rd week of October	
9	Tanakpur HPS	Hydro	3*31.4	Yes	DG Set	2X625 KVA & 1X312.5 KVA		19-Dec-24	4th week of December	4th week of December	
10	Chamera HPS-I	Hydro	3*180	Yes	DG Set	1X1010 KVA & 2x1000 KVA		12-Dec-24	1st week of December	1st week of December	
11	Chamera HPS-II	Hydro	3*100	Yes	DG Set	2x1250 KVA		02-Dec-22	1st week of December	1st week of December	
12	Chamera HPS-III	Hydro	3*77	Yes	DG Set	2x725 KVA		04-Dec-17	1st week of December	1st week of December	
13	URI-I	Hydro	4*120	Yes	DG Set	2x1000 KVA		20-Dec-16	1st week of December	1st week of December	
14	URI-II	Hydro	4*60	Yes	DG Set	2x1010 KVA		20-Dec-16	1st week of December	1st week of December	
15	Dhauliganga	Hydro	4*70	Yes	DG Set	2x625 KVA		13-Dec-24	4th week of December	4th week of December	
16	Dulhasti	Hydro	3*130		DG Set	2x640 KVA			4th week of November	4th week of November	
17	Sewa-II	Hydro	3*40	Yes	DG Set	2x500 KVA		29-May-22	3rd week of November	3rd week of November	
18	Parbati-3	Hydro	4*130	Yes	DG Set	2x1010 KVA		22-Dec-20	4th week of December	4th week of December	
19	Kishanganga	Hydro	3*110	Yes	DG Set	2x1010 KVA		09-Nov-24	4th week of October	4th week of October	
SJVNL											
20	Nathpa-Jhakri	Hydro	6*250	Yes	DG Sets	2x750 kVA	DC Battery Bank/DG sets	08-Dec-24	20.11.2024	20.11.2024	
21	Rampur	Hydro	6*68.67	Yes	DG Sets	2x1010 kVA	DC Battery Bank/DG sets	08-Dec-24	20.11.2024	20.11.2024	
THDC											
22	Tehri	Hydro	4*250	Yes	DG set	110 KVA	DG Set	13-Nov-24	06-11-24	06-11-24	
23	Koteshwar	Hydro	4*100	Yes	DG Set	2*1010kVA	UPS	27-Nov-24	Dec-24	Dec-24	
BBMB											
24	Bhakra (L)	Hydro	3*108 + 2*126	Yes				08-Nov-24			
25	Bhakra (**R**)	Hydro	5*157	Yes	DG Set	500kVA		08-Nov-24			
26	Ganguwal	Hydro	1*27.99 + 2*24.2								
27	Kotla	Hydro	1*28.94 + 2*24.2								
28	Dehar	Hydro	6*165								
29	Pong	Hydro	6*66		DG Set	500kVA, 380kVA		08-Jun-14			
*: Rampur can be black started only after starting of Nathpa Jhakri units due to Tandem operation											
IPPGCL(Indraprashta power generating Corporation Ltd.)/ Delhi Gencos											
30	I.P. Gas Turbine (IPGCL G.T.)	Gas	6*30+ 3*30	Yes	DG Set	500kVA		10-04-2024	10-04-2024	10-04-2024	Conducted
31	Pragati Gas Turbine (PPCL)	Gas	2*104.6 + 1*121.2	No							
32	Bawana GT	Gas	2*253+4*216	No							
33	Rithala(TPPDL)	Gas	3*36								Not in operation
Haryana											
34	Western Yamuna Canal (WYC-I & II)	Hydro	6*8+ 2*7.2								
Himachal Pradesh											
35	Bhabha	Hydro	3*40		DG Set	500kVA					
36	Bassi	Hydro	4*16.5		DG Set	400kVA					
37	Ghanvi	Hydro	2*11.25		DG Set	400kVA					
38	Giri	Hydro	2*30		DG Set	250kVA					
39	Larji	Hydro	3*42		DG Set	500kVA					
40	Phojal	Hydro	24		DG Set	200kVA					
41	Sainj HEP	Hydro	2*50		DG Set	500kVA					
42	Swara Kuddu HEP	Hydro	3*37		DG Set	2x625 KVA					
43	Bajoli Holi HEP	Hydro	3*60								
Malana Power Company Ltd.											
44	Malana-I	Hydro	2*43	Yes	DG Set	250kVA		12-Mar-24			Currently due to flash flood on dated 01.08.2024, Malana-I HEP Reservoir blocks has been severely damaged although restoration work is on progress and it may take one more year to complete the work consequently plant would not be available to perform this black start exercise for the year 2025 due to non availability of water storage in reservoir. Currently plant is operated on ROR scheme.
Everest Power Company Ltd.											
45	Malana-II	Hydro	2*50	Yes	DG Set	725kVA		27-Jan-23			
AD Hydro Power Ltd.											
46	AD Hydro	Hydro	2*96	Yes	DG Set	750 kVA		27-Jan-23	**24-02-2025**	**24-02-2025**	
JSW											
47	Karcham Wangtoo	Hydro	4*250	Yes	DG Set	2*1500kVA		29-Dec-21			It is submitted that we shall perform black start Mock trial test after completion of M4 and M5 of GIS overhauling. In the meantime, Karcham Wangtoo HEP can carry out black start exercise of generating unit only at this point (dead bus charging).
48	Baspa	Hydro	3*100	Yes	DG Set	2*625kVA					
Greenco											
49	Budhil	Hydro	2*35	Yes							inability to carry out Mock Black start exercise keeping in view the Unit safety being installed capacity low and issue of Governing system. The Governing system of Budhil HEP is of M/S Dong Fong China make and we are not ge ng any support from OEM a er COVID-19.. The planning for changing the governing system is in Process.
50	Sorang HEP	Hydro	2*50								
Jammu & Kashmir											
51	Baghlihar-I	Hydro	3*150								
52	Baghlihar-II	Hydro	3*150								
53	Lower Jhelum	Hydro	3*35					20-Dec-16			
54	Upper Sindh	Hydro	2*11.3+ 3*35	Yes				20-Dec-16			
Punjab											
55	Jogendernagar/ Shanan	Hydro	4*15+ 1*50								
56	UBDC	Hydro	3*15+ 3*15.45								

Mock trial run/black start schedule plan for 2024-25

S.No.	Name of Generatiing	Fuel	Installed Capacity (in	Whether Generating station has black	Type of Black Start Source	Capacity of DG Set / Small	Source of power supply to Communication	Compliance to 34.3 of IEGC for mock trial runs (Last date on	Tentaive schedule plan for mock trial run		Remarks
57	Mukerian	Hydro	6*15+ 6*19.5								
58	Anandpur Sahib (APS)	Hydro	4*33.5								
59	Ranjit Sagar (Thein Dam)	Hydro	4*150	Yes	DG Set	2*500kVA		07-May-24	04-May-24	04-May-24	Conducted
Rajasthan											
60	Ramgarh GT Extn.	Gas	1*3+1*35.5+2 *37.5+1*110+ 1*50		DG Set	625kVA and 750kVA					
61	Dholpur CCPP	Gas	3*110		DG Set	1500kVA					
62	Rana Pratap Sagar (RPS)	Hydro	4*43	Yes	DG Set	250kVA		16-Jan-11			
63	Jawahar Sagar	Hydro	3*33		---	---					
64	Mahi Bajaj Sagar I	Hydro	2*25	Yes	DG Set	200kVA		21-Jul-15			
65	Mahi Bajaj Sagar II	Hydro	2*45	Yes	DG Set	2*200kVA (DG-1 is healthy)		24-Mar-16			
Uttar Pradesh											
66	Rihand (H) or Pipri	Hydro	6*50	Yes	DG Set	2*320kVA (DG-1 is healthy)		16-Feb-24			
67	Obra(H)	Hydro	3*33	Yes	DG Set	1*320kVA 1*250kVA		16-Feb-24			
68	Khara	Hydro	3*24								
69	Matatila	Hydro	3*10.2	Yes	DG Set	2*190kVA (DG-1 is healthy)					
GVK											
70	Alaknanda HEP	Hydro	4*82.5								
Jaiprakash power Venture Ltd.											
71	Vishnu Prayag IPP	Hydro	4*100								
Uttrakhand											
72	Ramganga	Hydro	3*66								
73	Chibro	Hydro	4*60	Yes							
74	Dhalipur	Hydro	3*17								
75	Khodri	Hydro	4*30								
76	Khatima	Hydro	3*13.8								
77	Chilla	Hydro	4*36								
78	Maneri Bhali-I	Hydro	3*30								
79	Maneri Bhali-II	Hydro	4*76								
80	Vyasi HEP	Hydro	2*60								
81	Dhakrani HEP	Hydro	3*11.25								
82	Kulhal HEP	Hydro	3*10								
83	Gamma GPS	Gas	3*75								
84	Sravanti GPS	Gas	3*75	No	NA	NA	NA	NA	NA	NA	
L&T											
85	Singoli Bhatwari	Hydro	3*33	Yes	DG set	500kVA DG	15 kVA UPS connected with 600AH Battery Bank	Not done yet	03rd Dec 2024	03rd Dec 2024	Consent did not given for mock drill by SLDC Dehradun due to constraint of partial power evacuation

Status of Mock Test of SPS in NR

Sr. No.	Scheme Name	Control Area	Mock testing conducted before 2024-25	Date of SPS Mock testing conducted during 2024-25	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID	12-03-2024	Not conducted for FY 24-25	Schedule yet to be received
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI			Review is being done at OCC/PSC forum
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID			Schedule yet to be received
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID			
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID			
6	SPS for contingency due to tripping of multiple lines at Dadri(NTPC)	NTPC			Review is being done at OCC/PSC forum
7	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JSW		conducted on 19-12-2024	Conducted for FY 24-25
8	SPS for Reliable Evacuation of Ropar Generation	Punjab		Not conducted for FY 24-25	Schedule yet to be received
9	SPS for Reliable Evacuation of Rosa Generation	Uttar Pradesh	07-05-2022	conducted on 20-04-2024	Conducted for FY 24-25
10	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS		Not conducted for FY 24-25	Schedule yet to be received
11	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	Rajasthan			
12	SPS for evacuation of Anpara Generation Complex	Uttar Pradesh	06-07-2020	conducted on 08.10.2024 (unit-7) and 19.10.2024 (unit-6)	Conducted for FY 24-25
13	SPS for evacuation of Lalitpur TPS Generation	Uttar Pradesh	14-07-2018	conducted on 21.05.2024	
14	SPS for Reliable Evacuation of Bara TPS Generation	Uttar Pradesh		conducted on 20.11.2024	
15	SPS for Lahal Generation	Himachal Pradesh	08-07-2020	Not conducted for FY 24-25	Schedule yet to be received
16	SPS for Transformers at Ballabhgarh (PG) substation	POWERGRID			Not in service, Review is being done in OCC/PSC forum
17	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID			
18	SPS for Transformers at Mandola (PG) substation	POWERGRID			
19	SPS for Transformers at Bamnauli (DTL) Substation	Delhi			Review is being done at OCC/PSC forum
20	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh		conducted on 20-04-2024	Conducted for FY 24-25
21	SPS for Transformers at Muradnagar (UPPTCL) Substation	Uttar Pradesh	07-02-2023	conducted on 20-04-2024	
22	SPS for Transformers at Muzaffarnagar(UPPTCL) Substation	Uttar Pradesh		conducted on 20-04-2024	
23	SPS for Transformers at Greater Noida(UPPTCL) Substation	Uttar Pradesh		SPS Unhealthy	SPS not required now, as informed by Transmission wing; Hence SPS may be reviewed
24	SPS for Transformers at Agra (UPPTCL) Substation	Uttar Pradesh	12-07-2023	Not conducted for FY 24-25	Schedule yet to be received
25	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh	17-05-2023		
26	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh	18-05-2022		
27	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	Uttar Pradesh	19-05-2023	SPS Unhealthy	SPS need to be made healthy; Expected functioning before 20.03.2025, as informed by Transmission wing.
28	SPS for Transformers at 220kV Unnao (UPPTCL) Substation	Uttar Pradesh		Not conducted for FY 24-25	Schedule yet to be received
29	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	Uttar Pradesh		SPS Unhealthy	SPS not required now, as informed by Transmission wing; Hence SPS may be reviewed
30	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	Uttar Pradesh		Not conducted for FY 24-25	Schedule yet to be received
31	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	Uttar Pradesh	14-05-2023	conducted on 06-05-2024	Conducted for FY 24-25
32	SPS for Transformers at 400kV Mau (UPPTCL) Substation	Uttar Pradesh	17-01-2019	conducted on 27-04-2024	
33	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	Uttar Pradesh	14-05-2023	conducted on 27-04-2024	
34	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	Uttar Pradesh	19-05-2023	conducted on 23-05-2024	
35	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	Punjab		Not conducted for FY 24-25	Not in service, Review is being done in OCC/PSC forum
36	SPS for Transformers at 400kV Mundka (DTL) Substation	Delhi	19-06-2023		Schedule yet to be received
37	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	Haryana			
38	SPS for Transformers at 400kV Ajmer (RVPN) Substation	Rajasthan		conducted on 10.09.2024	Conducted for FY 24-25
39	SPS for Transformers at 400kV Merta (RVPN) Substation	Rajasthan		conducted on 12.09.2024	
40	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	Rajasthan		conducted on 31.08.2024 & 05.09.2024	
41	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	Rajasthan		conducted on 24.09.2024	
42	SPS for Transformers at 400kV Bhadla (RVPN) Substation	Rajasthan		conducted on 27.09.2024	
43	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	Rajasthan		Conducted on 20.09.2024	
44	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	Uttar Pradesh	05-07-2022	Conducted on 11.01.2025	
45	SPS for Transformers at Obra TPS	Uttar Pradesh		conducted on 20-05-2024	
46	SPS for Transformers at 400KV Kashipur (PTCUL) substation	Uttarakhand	03-09-2023	Septemeber 2024	
47	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI		Not conducted for FY 24-25	Schedule yet to be received
48	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID			
49	SPS for Transformers at 400kV Bikaner (RVPN) Substation	Rajasthan		conducted on 26.09.2024	Conducted for FY 24-25
50	SPS for Transformers at 400kV Bawana (DTL) Substation	Delhi	06-09-2023		Schedule yet to be received
51	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	Rajasthan		conducted on 09.07.2024 & 10.07.2024	Conducted for FY 24-25
52	SPS for Transformers at 400kV Hinduan (RVPN) Substation	Rajasthan		conducted on 26.09.2024	
53	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	Rajasthan		Not conducted for FY 24-25	Schedule yet to be received
54	SPS for Transformers at 400kV Babai(RS) Substation	Rajasthan			Schedule yet to be received. Implemented in 2024-25
55	SPS for Transformers at 400kV Allahabad(PG) Substation	Uttar Pradesh			
56	SPS for Transformers at 400kV Jaunpur(UP) Substation	Uttar Pradesh			