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

संख्या: उ.क्षे.वि.स./प्रचालन/106/01/2022/7006-7047 दिनांक: 05.08.2022

विषय: उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 197वीं बैठक का कार्यवृत |

Subject: Minutes of 197th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 197वीं बैठक दिनांक 22.07.2022 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 |

197th meeting of the Operation Co-ordination Sub-Committee of NRPC was held on 22.07.2022. 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

05/08/2022.

(सौमित्र मजूमदार)
अधीक्षण अभियंता (प्रचालन)

सेवा में,

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

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की **197**वीं बैठक का कार्यवृत्त

197th meeting of OCC of NRPC was held on 22.07.2022 through video conferencing.

खण्ड-क: उ.क्षे.वि.स. **PART-A:NRPC**

1. Confirmation of Minutes

Minutes of 196th OCC meeting was issued on 11.07.2022. OCC confirmed the minutes.

In regard to agenda No. 16, BBMB representative requested OCC forum that in accordance to the decision held in 196th OCC the statement

"BBMB representative was asked to submit to letter to CERC stating that BBMB has not completed PFR testing citing the reasons for the same. BBMB representative agreed for the same." **shall be replaced with** *"BBMB representative was asked to submit to letter to CERC stating that BBMB has not completed PFR testing citing the reasons for the same."*

2. Review of Grid operations of June 2022

2.1. Anticipated vis-à-vis Actual Power Supply Position (Provisional) for June 2022

Reasons submitted by states for significant deviation of actual demand from anticipated figures during the month of June 2022 are as under:

- **Delhi**

The positive variation in Demand was due to humid and hot weather condition in last week of June-2022. The negative variation in energy consumption was due to light rain and drop in temperature in 2nd fortnight of June-2022.

- **Punjab**

It is intimated that actual maximum demand and actual energy requirement are less as compared to anticipated maximum demand and anticipated energy requirement respectively because of less demand of agricultural load and all other categories due to heavy rainfall in the state of Punjab during month of June 2022.

- **Himachal Pradesh**

The anticipation in Peak Demand in respect of Himachal Pradesh for the month of June 2022 came on the higher side due to consistent dry weather.

- **Uttarakhand**

The reasons for significant deviation of actual demand and anticipated figures during the month of June 2022 is mainly due to unprecedented changes in weather

conditions in summer season, significant rise in temperature, delay in monsoon in comparison to the historical data as well as increase in demand of electricity due to economy bounce back after Covid pandemic.

- **Rajasthan**

The Energy consumption & Peak Demand increased by 3.8 % & 6.7 % respectively w.r.t. Anticipated Energy requirement & Anticipated Peak Demand for June '2022. As per Govt. policy, all agriculture load is to be fed in 2 blocks (day hours) in phase manner up to March'2023, therefore due to addition of some agriculture load in day hours block, actual peak increased w.r.t. Anticipated Peak.

2.2. Power Supply Position for NCR:

The Sub-Committee was informed that the NCR Planning Board (NCRPB) is closely monitoring the power supply position of National Capital Region. Monthly power supply position for NCR till the month of June 2022 was enclosed in the agenda and same was discussed in the meeting.

3. Maintenance Programme of Generating units and Transmission Lines

The maintenance programme of generating units and transmission lines for the month of August 2022 was deliberated in the meeting on 21.07.2022.

4. Planning of Grid Operation

4.1. Anticipated Power Supply Position in Northern Region for August 2022

The updated anticipated Power Supply Position for August 2022 is as below:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	200	430	No Revision submitted
	Requirement	200	440	
	Surplus / Shortfall	0	-10	
	% Surplus / Shortfall	0.0%	-2.3%	
DELHI	Availability	5076	8200	21-Jul-22
	Requirement	4030	8200	
	Surplus / Shortfall	1046	0	
	% Surplus / Shortfall	25.9%	0.0%	
HARYANA	Availability	5770	11700	No Revision submitted
	Requirement	6991	12700	
	Surplus / Shortfall	-1221	-1000	
	% Surplus / Shortfall	-17.5%	-7.9%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
HIMACHAL PRADESH	Availability	1104	1700	12-Jul-22
	Requirement	1109	1727	
	Surplus / Shortfall	-5	-27	
	% Surplus / Shortfall	-0.5%	-1.6%	
J&K and LADAKH	Availability	2150	3550	No Revision submitted
	Requirement	1690	2610	
	Surplus / Shortfall	460	940	
	% Surplus / Shortfall	27.2%	36.0%	
PUNJAB	Availability	7650	14200	21-Jul-22
	Requirement	8590	15320	
	Surplus / Shortfall	-940	-1120	
	% Surplus / Shortfall	-10.9%	-7.3%	
RAJASTHAN	Availability	9250	18050	22-Jul-22
	Requirement	8630	14790	
	Surplus / Shortfall	620	3260	
	% Surplus / Shortfall	7.2%	22.0%	
UTTAR PRADESH	Availability	15810	26000	12-Jul-22
	Requirement	15500	26000	
	Surplus / Shortfall	310	0	
	% Surplus / Shortfall	2.0%	0.0%	
UTTARAKHAND	Availability	1333	2316	08-Jul-22
	Requirement	1380	2350	
	Surplus / Shortfall	-47	-34	
	% Surplus / Shortfall	-3.4%	-1.4%	
NORTHERN REGION	Availability	48342	77600	
	Requirement	47788	75800	
	Surplus / Shortfall	554	1800	
	% Surplus / Shortfall	1.2%	2.4%	

5. Submission of breakup of Energy Consumption by the states

5.1. The updated status on the submission of energy consumption breakup is presented below:

State / UT	From	To
Delhi	Apr-2018	Mar-2022

State / UT	From	To
Haryana	Apr-2018	May-2022
Himachal Pradesh	Apr-2018	Apr-2022
Punjab	Apr-2018	Mar-2022
Rajasthan	Apr-2018	May-2022
Uttar Pradesh	Apr-2018	Apr-2022
Uttarakhand	Apr-2018	Mar-2022

5.2. OCC forum again raised expressed concern on non-submission of energy breakup data by UTs of J&K & Ladakh, and Chandigarh despite repeated reminders.

6. Automatic Demand Management System

6.1. Forum was informed that as decided in the 175th OCC meeting, to conduct separate meeting with states, nominations are pending from PuVVNL, PVVNL, MVVNL, DVVNL, UPPTCL, UPCL, PTCUL, SLDC Uttarakhand, and J&K. They were requested on 01.03.2021 to submit nominations for the meeting.

6.2. Meetings on ADMS implementation roadmap have been held with the officers of Haryana, HP, Punjab and UP on 05.02.2021, 19.02.2021, 05.03.2021 and 14.07.2021 respectively. In these meetings, issues and apprehensions on ADMS were discussed along with vital aspects like addressing the commercial issues, basic architecture for scheme and funding possibilities for the scheme.

6.3. As per the request of states for DPR of any state that has got PSDF support for ADMS, website link of PSDF Sectt. has been shared with Haryana, Himachal Pradesh, Punjab and Uttar Pradesh for accessing DPR. SLDCs were also requested to expedite the submission of pending nominations.

6.4. In 186th OCC, In-charge, NRLDC stated that as per IEGC, implementation of ADMS is mandatory. It helps in reducing DSM charges also. States must take it seriously.

6.5. MS, NRPC stated that non-implementation of ADMS by states is indistinguishably non-adherence to directions of CERC. He enquired from NRLDC whether POSOCO has made any communication with CERC regarding non-adherence of its deadline i.e., 31.06.2016. NRLDC representative stated that he would look into and inform in next meeting.

6.6. NRPC representative added that initial deadline for ADMS implementation was 1st January 2011 as per para 5.4.2 (d) of IEGC. Later, CERC has taken suo-motu cognizance of non-implementation of ADMS by states and given 31.06.2016 as deadline vide its order dt. 31.12.2015 in petition no. 5/SM/2014. Implementation deadline given by the statutory and regulatory body need to complied by concerned SLDC / SEB / distribution licensee as per regulation no. 5.4.2 (a) & (b) of IEGC. Moreover, hand holding process for project proposal preparation in respect of four NR states has already been done by NRPC

6.7. Forum decided that NRLDC may file a report to CERC based on compiled status of ADMS implementation in states of Northern Region.

6.8. In 187th OCC, NRLDC representative quoted the texts of CERC order dt. 31.12.2015 in petition no. 5/SM/2014. He apprised the status of ADMS implementation till 2015. Further, he requested the states to update the status so that NRLDC may file petition in CERC on the basis of compiled status.

6.9. In 188th OCC, NRLDC informed that it has not received comments from states in this matter. Accordingly, all SLDC/DISCOMs are requested to furnish the latest status of ADMS implementation in their respective control areas latest by 31st October 2021 to NRLDC. Status as received till 31.10.2021 would be reported to CERC by NRLDC.

6.10. In the 189th OCC, NRLDC informed that status of ADMS has been sent to CERC twice (Aug'16 and Sep'16) in the past. The same is recorded in MoM of 127th OCC also.

6.11. NRLDC representative informed that CERC will be apprised again within next 10 days about the latest status of ADMS as per the updated information available with them.

6.12. In the 190th OCC, NRLDC representative informed that vide letter dated 09.12.2021 (enclosed as Annexure-A.0 of minutes of 190th OCC), CERC has been apprised about the latest status of ADMS as per the updated information available with them.

6.13. In 192nd OCC, forum was intimated that no further update has been received on this matter. Rajasthan representative intimated that ADMS implementation schedule in their state has been extended till Dec'22 and this agenda may be continued in OCC meetings for monitoring the ADMS implementation schedule.

6.14. In 193rd OCC, Rajasthan representative informed that first trail is tentatively scheduled in May 2022.

6.15. In 194th OCC, Rajasthan representative reiterated its commitment for the first trials in May 2022. MS, NRPC asked representatives of other states to regularly update the status on ADMS implementation.

6.16. In 195th OCC, Rajasthan SLDC representative informed that in consultation with state STU, ADMS implementation schedule in their state has been extended till Dec'22.

6.17. In the 196th OCC, Rajasthan SLDC representative informed that due to the power crises, the scheduled trials could not be done. Likely completion schedule for ADMS project is 31.12.2022.

6.18. In the meeting (197th OCC), forum was of the view that agenda of Automatic Demand Management System may be included in the follow-up issues from various OCC meetings instead of taking it as a separate agenda.

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

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

7.2. In 195th OCC, SLDCs were requested to again to coordinate with respective Transmission utilities of states/UT's and submit details about the updated status of Down Stream network by State utilities from ISTS Station (enclosed as ***Annexure-A-I.I***) before every OCC meeting.

8. NR Islanding scheme

8.1. Based on the decisions taken in the meeting taken by Hon'ble Minister of State (IC) for Power and New & Renewable Energy on 28.12.2020, Islanding Schemes for NR have been continuously reviewed/discussed in various forums.

8.2. In 187th OCC, it was decided that states shall submit MIS report before every OCC meeting so that same may be discussed. Format was circulated vide agenda of 187th OCC.

8.3. It was also highlighted that MoP has agreed for PSDF funding for implementation of islanding schemes and states were requested to prepare and submit DPR for the same. Further, a sample DPR on implementation of Islanding scheme for PSDF funding has been already circulated vide email dated 07.10.2021 and requested to expedite the preparation of DPR.

8.4. Utilities were requested to refer and submit SOP for every Islanding scheme in their control area.

8.5. A meeting was also taken by Honorable Cabinet Minister (Power, New & Renewable Energy) on 07.10.2021 wherein emphasis was given on PSDF funding for Islanding schemes and DPR submission for the same. MoM has been issued and copy of the same was enclosed as Annexure-A.II of 189th OCC agenda.

8.6. In the 189th OCC, NRPC representative highlighted no progress from states of Punjab, Uttarakhand, Himachal, J&K, Ladakh.

8.7. UP and Punjab representatives stated that they have sent the offer along with data to CPRI for study of Islanding Schemes. HP intimated that system study is under process at DISCOM end. Rajasthan SLDC assured the submission of RAPS SCADA display on the same day.

8.8. NRLDC submitted that they use PSSE software for system study but Rajasthan has submitted details of Islands in MI Power Software, therefore, they are exploring whether they can use that file.

8.9. MS, NRPC desired to know the reason for sending data to CPRI for system study. He stated that it may be done at state level itself.

8.10. UP representative stated that they are not able to perform dynamic system study as it involves parameters like rotor inertia, hunting, etc.

8.11. MS, NRPC expressed concern regarding apathy of states in implementation of Islanding Schemes. He stated that all SLDCs will intimate the names of Islands for which system study from CPRI is required along with justification for the same by 30th Nov, 2021. He also set timeline of 30th Nov, 2021 for Delhi to submit SOP data. He stated that communication may be sent to RAPS for submission of SOP data at the earliest.

8.12. In 190th OCC, NRPC representative informed that SOP data in respect of Delhi and RAPS have been received.

8.13. UPSLDC vide letter dated 01.12.2021 has submitted the names of islands for which system study from CPRI is required. UPSLDC has highlighted, inter-alia, that involvement of long length 765kV line and high number of buses necessitates them to go for system study by CPRI. It has mentioned that SLDC/STU has no expertise in such studies and before doing any investment on the project, proper study is must for successful implementation and operation of Islands.

8.14. HPSLDC vide lett er dtd. 18.12.2021 has intimated that a meeting was held on 26.11.2021 between HPSLDC and HPSEBL wherein a team of officers from HPSLDC and HPSEBL has been formed to carry out transient study of all islands within a month.

8.15. UPSLDC representative informed that CPRI has asked for some additional details and technical commercial offer would be provided to them by CPRI by 15th Jan 22.

8.16. NRLDC representative informed that report received from Rajasthan regarding the Jodhpur-Barmer-Rajwest islanding scheme is in order and Rajasthan SLDC can proceed ahead. Further, NRLDC submitted that they use PSSE software for system study but Rajasthan has submitted details of Islands in MI Power Software, therefore, they are not able to access the file.

8.17. Rajasthan SLDC representative informed that they have given the details in the hard copy of the load and generation to be considered for islanding scheme, and based on that have requested NRLDC to simulate it in PSSE software for validation. NRLDC representative agreed to the request of the Rajasthan SLDC.

8.18. Uttarakhand SLDC representative informed that hydro stations near Dehradun are peaking stations and the proposed Dehradun islanding scheme appears to be infeasible. NRPC representative informed that some schemes in NR have been proposed by considering Hydro stations and Dehradun islanding scheme was proposed by the state SLDC itself in view of all factors. Thus, Uttarakhand SLDC shall immediately conduct study on the proposed Islanding Scheme having Khodri & Chibro units and provide status on the feasibility of scheme with supporting data so that same may be communicated to the Ministry.

8.19. In the meeting (191st OCC), HPSLDC representative informed that they need further two weeks to submit the outcome of transient study of all islands.

8.20. Uttarakhand representative informed that major hydro stations e.g. Chibro, Khodri etc at Dehradun Region in Yamuna valley are non-must run and peaking stations. Therefore, it is technically not feasible to implement Dehradun as an islanding scheme. However, nominations of nodal officers from various utilities (PTCUL, UJVN Ltd & UPCL) are being sought for the formation of internal committee for accessing the possibility of Dehradun as Islanding scheme and the report shall be submitted to NRPC Secretariat subsequently.

8.21. NRPC representative asked Uttarakhand to expedite the submission regarding the status on feasibility of the proposed Islanding scheme.

8.22. MS, NRPC stated that all constituents that have given their information about the planning of islanding scheme shall take up the work on top priority and submit the progress in time bound manner by submitting the updated MIS format every month.

8.23. NRLDC representative informed that Rajasthan SLDC is modelling data on PSSE software and it is expected to be completed within one week. Thereafter, NRLDC will submit its comments on the same. Rajasthan representative consented for the same.

8.24. UP and Punjab were asked to update the status of their study being done by CPRI. Both informed that there is no progress since last OCC and they are waiting for response from CPRI.

8.25. In 192nd OCC, UPSLDC informed that they have received techno-commercial offer from CPRI for both the islanding schemes of UP and accessing the inputs from CPRI they will be conveying a meeting in last week of February 2022.

8.26. NRLDC representative informed modelling data on PSSE software received from Rajasthan has not been modelled for islanding scheme. Further, NRLDC representative asked Rajasthan SLDC to send their team next week for modelling the data on PSSE software.

8.27. MS, NRPC asked Uttarakhand SLDC to expedite the study they are conducting to access the feasibility of Dehradun islanding scheme.

8.28. NRPC representative informed that a meeting was convened by HPSLDC with officials of NRPC Sectt., NRLDC, HPSEBL, & HPPTCL on 11.02.2022. It was observed that system study work has been pending due to pre-occupation of the concerned resource. Therefore, it was decided that HPSLDC shall write letters to MDs of HPSEBL & HPPTCL. It was decided to review the status in another meeting in the first week of March 22. It was intimated that HPSLDC has written letter dt. 14.02.2022 to HPSEBL, & HPPTCL.

8.29. Punjab SLDC also informed that they will be convening a meeting with STU within a week to track the progress.

8.30. In meeting (193rd OCC), NRPC representative informed forum that HPSLDC convened a meeting on 4th March 2022 wherein they presented the results of

static and dynamic study conducted by them. NRLDC suggested that dynamic data used by HPSLDC is common data and it was decided that they will use data of particular generators and then apprise about the same.

8.31. UPSLDC also convened a meeting on 7th March 2022 wherein they informed that CPRI has submitted the offer with a completion target of 5 months. It was also discussed that as there are two islanding schemes in UP control area hence it was suggested that CPRI may be asked to do it in 2 parts preferably 2.5 months each for both the islanding scheme.

8.32. UPSLDC representative informed that CPRI would not be able to bifurcate the time separately for both the islanding scheme and acceptance is under consideration by the management.

8.33. HPSLDC representative informed that they have communicated to all generators for providing dynamic data, and only reply from Karcham Wangtoo has been received from till date.

8.34. Rajasthan representative informed that next week they will send their team to NRLDC for modelling the data on PSSE software.

8.35. J&K representative informed that load has been identified and no further update. MS, NRPC asked J&K representative expedite the study work.

8.36. Further, MS NRPC suggested that states shall coordinate with NRPC and NRLDC officials for carrying out the study.

8.37. Further, Punjab and J&K representative were requested to convene a meeting in the last week of March with the officials of NRPC and NRLDC to deliberate about the updated status of the islanding scheme in their control area.

8.38. In the 194th OCC, Punjab representative informed that CPRI has asked for PSSE file for dynamic study which is being coordinated with NRLDC. STU has given timeline of 6 months for implementation after CPRI study.

8.39. MS, NRPC along with NRLDC have desired that all states of northern region where islanding scheme is to be implemented shall convene meeting with the officials of NRPC and NRLDC wherein the study requirements can be discussed.

8.40. OCC forum was of opinion that all generating units (especially 660MW units) shall make an effort to ensure successful household operations. UP representative was requested to expedite the implementation work of Unchahar-Lucknow Islanding scheme after analyzing load-generation balance and conducting steady state study.

8.41. Further, OCC forum was of view that states shall go for implementation of islanding scheme after steady state study along with load generation balancing and dynamic study, if desired, may be carried out in later stage.

8.42. In the 195th OCC, NRLDC representative intimated that steady state study for Rajasthan islanding scheme has been completed. It was decided that Rajasthan may go ahead for implementing the scheme.

8.43. NRPC representative informed that a sub-group will be formulated shortly that would review all proposed islanding schemes of NR and assess the reason for delay.

8.44. In the 196th OCC, MS NRPC asked UP representative to take up the matter with CPRI for Agra islanding scheme and ask them to complete the work in one month time from the date of acceptance of offer by CPRI.

8.45. UP representative informed that steady state study along with load generation balancing is complete for Unchahar-Lucknow Islanding scheme and the same would be submitted to NRLDC in one week time.

8.46. Rajasthan representative informed that for Jodhpur-Barmer-Rajwest and Suratgarh islanding scheme work of DPR preparation is under progress and same would be submitted to NLDC to avail PSDF funding before next OCC meeting.

8.47. MS, NRPC asked Uttarakhand representative to expedite the submission regarding the status on feasibility of the proposed Islanding scheme.

8.48. MS NRPC asked Himachal Pradesh representative to coordinate with NRLDC officials to converge the study carried out by them.

8.49. Further, MS NRPC also asked Punjab representative to coordinate with NRLDC officials in order to converge the steady state study carried out by them.

8.50. In the meeting (197th OCC), NRPC representative informed that UPSLDC has submitted the updated status of Unchahar Islanding scheme as per the deliberation held in the review meeting held on 07.07.2020. Moreover, order for system study of Agra-Lalitpur IS has been placed on CPRI.

8.51. In regard to Delhi Islanding scheme, NRPC representative informed that as per the deliberation held in the review meeting held on 13.07.2020, response from Delhi Discoms is awaited regarding whether trippings through ADMS system can be facilitated for Delhi Islanding scheme.

8.52. MS, NRPC expressed apathy over no significant progress in implementation of Delhi Islanding Scheme since last 18 months. He suggested that in view of allocation of Dadri-II to Haryana and non-scheduling of Jhajjar and Dadri-II due to high cost, the proposed islanding may not survive. Therefore, it would be better to have two small islands – one with GTs and the other with Bawana. Mostly, these plants operate and therefore survival chances for islands would be more. Moreover, these islands could be controlled through UFRs at 220kV level by STU and not at 33kV by Discoms as envisaged in proposed scheme. It was suggested that DTL may bring out proposal for further discussion at NRPC Sectt and NRLDC level.

8.53. NRPC representative informed that HPSLDC has been requested to provide load wise details for the islanding scheme finalized by them.

9. Coal Supply Position of Thermal Plants in Northern Region

9.1. In the meeting, NRPC representative apprised the forum about the coal stock position of generating stations in northern region during current month (till 10th July 2022).

9.2. Average coal stock position of generating stations in northern region, having critical stock, during first ten days of July 2022 is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd. (Days)	Actual Stock (Days)
ANPARA C TPS	1200	72.01	14	1.9
GOINDWAL SAHIB TPP	540	46.30	22	2.7
HARDUAGANJ TPS	1265	76.35	22	1.2
KHAMBARKHERA TPS	90	42.85	22	3.2
KUNDARKI TPS	90	46.99	22	3.4
LALITPUR TPS	1980	73.25	22	1.6
OBRA TPS	1094	56.09	22	4.0
PARICHHA TPS	1140	62.13	22	0.6
ROSA TPP Ph-I	1200	76.37	22	0.7
CHHABRA-I PH-1 TPP	500	86.85	22	0.9

9.3. In the meeting, above mentioned generating stations were requested to take adequate measures.

10. Declaration of high demand season and low demand season

10.1. In the meeting, NRPC representative apprised the forum that CERC has notified regulatory framework of differential tariff, applicable to thermal generating station, during peak and off-peak hours, during high demand season of three months and low demand season of remaining nine months in Tariff Regulations, 2019. The concerned RLDC has to declare high demand season and low demand season in region after consultation with stakeholders six months before any financial year.

10.2. Further, forum was informed that based on the deliberations in 176th OCC meeting, it was decided that peak season be decided after considering average NR consumption data of all months for previous five years.

10.3. Forum was apprised that in the same manner, energy demand data has been compiled from CEA website and is as under:

Year	May	June	July	August	September

2018	35206	37624	38331	38567	33405
2019	37338	41624	41377	39153	38422
2020	30905	37782	41309	39527	40958
2021	32109	39393	45180	44175	36878
2022	43463	46083	47240	46450	46040
Average	**35804**	**40501**	**42687**	**41574**	**39141**

10.4. Forum decided that June-July-August shall be considered as high demand season for NR for FY 2023-24.

11. Deemed Availability of relocation/height raising of 400 kV Jharli-Mundka Transmission line at Silani Chowk (Km. 396+400) in Jhajjar Distt. (Agenda by NHAI)

11.1. NHAI representative informed that the outage schedule would be finalized by next OCC scheduled in August.

11.2. MS, NRPC was of the view that the matter regarding the generation outage of 500 MW unit of APCL may be deliberated in next OCC after the finalization of outage schedule by NHAI. APCL representative was also asked to start with the preparatory work and be ready in case generator outage of 500 MW is approved in the next OCC.

11.3. Further, MS NRPC opined that RPC Sectt. has the mandate to provide deemed availability certificate only for the shutdown period of transmission line and not for generator outage.

12. Adequacy of Transmission Lines emanating from Bhakra Power House Complex post uprating of Bhakra Left Bank Power House - approval for replacement of ACSR conductor of five no. Bhakra-Ganguwal circuits with HTLS conductor (Agenda by BBMB)

12.1. BBMB representative intimated forum that result of study were submitted to NRLDC and NRLDC validated the load flow studies as carried out by HPPTCL.

12.2. OCC forum agreed to BBMB proposal to replace the existing ACSR conductors with relevant HTLS conductors at all the five circuits emanating from Bhakra Complex to Ganguwal i.e., Bhakra-Ganguwal circuit No. 1 to 5, so as to get the constraints removed along with making it N-1 complaint.

13. Proposed SPS for 400/220 kV ICTs at RVPN's 400kV GSS Jodhpur/ Bhadla/ Ratangarh (Agenda by RVPN)

13.1. NRPC representative apprised the forum with the proposed SPS for 400/220 kV ICTs at RVPN's 400kV GSS the Jodhpur/ Bhadla/ Ratangarh.

13.2. NRLDC representative asked RVPN if there would be any cascaded tripping for the proposed SPS. Rajasthan STU representative stated that there would not be any load loss or cascade tripping for the proposed SPS.

13.3. NRLDC representative suggested that Rajasthan STU may consider % loading of ICTs (in MW or Amperes) as part of logic for SPS of these ICTs i.e., the SPS would be active only in case loading in antecedent condition is higher than some value or if loading of one/ two ICTs gets higher than some value say 90% of capacity. It was also requested to consider this logic for previous SPS at Ajmer, Chittorgarh and Merta.

13.4. The proposed SPS for Jodhpur and Ratangarh were in principally agreed in OCC, however Rajasthan to revert on % loading logic implementation.

13.5. NRLDC representative requested RVPN to share the studies/simulation study of the proposed SPS for 400/220 kV ICTs at RVPN's 400kV GSS Bhadla for further analysis. Further, NRPC representative suggested RVPN to consider the interchanging of the proposed tripping for ICT-1 and ICT-2 at RVPN's 400kV GSS Bhadla.

13.6. NRPC representative informed that outages taken by POWERGRID for diversion cases related to NHAI from January, 2022 to April, 2022 was already circulated to beneficiaries vide mail and despite reminder also, no observation from any beneficiary state for these outages is received. The forum was of the view that for the outages from January, 2022 to April, 2022 NRPC Sectt. shall go ahead with the certification of these outages as provisionally deemed available and certification process for remaining period of 2021-22 may be done after 30th June 2022.

14. Modification in SPS (SPS/NR/GEN/01) for reliable evacuation of power of NJHPS, Rampur, Baspa KWHEP, and Sawra-Kuddu required for evacuation of power from 60 MW Naitwar-Mori HEP (Agenda by HPPTCL)

14.1. HPPTCL representative presented the proposed SPS scheme to the forum.

14.2. NRLDC representative stated that proposed SPS scheme is in order. Further, he asked HPPTCL to share mock testing report after implementing proposed SPS logic as it would be required before stating injection of Naitwar-Mori HEP.

14.3. NRLDC representative mentioned that for case-7 only contingency for current (any phase) on 220kV Sawra-Kuddu-Hatkoti is needed.

15. Calibration and testing of Interface Energy Meters installed at Generating stations (Agenda by NHPC)

15.1. POWERGRID representative informed that it would take four to five months to finalize the agency for carrying out the testing of Interface Energy Meters installed at Generating stations in Northern region and thereafter the work would be carried out.

16. Outage regularization of 765 kV Bus-I at Kanpur (GIS) for root cause analysis of unbalance current in tie bays (Agenda by NR-III Powergrid)

16.1. MS, NRPC mentioned that outage regularization related agenda shall not be taken up in OCC meetings.

17. Confirmation requested from beneficiary states for allowing deemed availability to POWERGRID due to outages for NHAI diversion cases in month of June-2022 (Agenda by NRPC Sectt.)

17.1. NRPC representative informed that outages taken by POWERGRID for diversion cases related to NHAI for June'22 has been circulated to beneficiaries and no comment/objection from any beneficiary state for these outages is received.

17.2. Even in the meeting, beneficiary state did not raise any concern for being affected by the said line shutdowns.

17.3. The forum was of the view that NRPC Sectt. can go ahead with the certification of these outages as provisionally deemed available as per the direction of Ministry of Power.

18. Issues with NTPC NR NCT Stations (Agenda by NTPC)

18.1. NTPC presented the matter to the forum.

18.2. NRLDC representative suggested that if UP agrees then it may enter into a bilateral agreement with NTPC for the remaining quantum of power needed to run the machine at technical minimum.

19. Revised Islanding Schemes for the Rajasthan Atomic Power Station (RAPS-A & B) (Agenda by RRVPNL)

19.1. NRPC and RVPN representatives apprised the forum about the revised Islanding Schemes for the Rajasthan Atomic Power Station (RAPS-A & B).

19.2. It was intimated that RPVN has revised the condition for the low load (point no. 6 of the revised scheme).

19.3. RAPS-B representative apprised the forum about the impact of past grid disturbance event of 2012 and related issues in the then islanding scheme of RAPS-A and RAPS-B.

19.4. The proposed islanding scheme was deliberated by the forum and recommended for the approval of NRPC. It was also suggested to RVPN to prepare the documented procedure for changing the island load in various scenario and share the same with NRPC and NRLDC.

19.5. RAPS-B representative suggested RVPN to replace the phrase "switched off" (in point no. 5 & 6) with "manually taken out due to poisoning of the Reactor".

20. NR Grid Highlights for June 2022

NRLDC representative highlighted the major grid highlights of June 2022:

- Maximum energy consumption of Northern Region was 1737.09 MUs on 28th June'22 and it was 9.0 % higher than June' 2021(1594.09 MUs 30th June'21)
- Average energy consumption per day of Northern Region was 1520.09 MUs and it was 16.90 % higher than June'21 (1300.35 Mus per day)
- Maximum Demand met of Northern Region was 76572 MW on 28th June'22 @12:00 hours (based on data submitted by Constituents) as compared to 70691 MW on 30th June'21 @21:00 hours.

Northern Region all time high value recorded in June'22:

State (Maximum Demand Met)	All Time High Record		Previous Record (upto May-22)	
	Value (MW)	Achieved on	Value (MW)	Achieved on
Uttar Pradesh	25755	07.06 .22 at 21:00	25046	On 15.05.22 @ 22:00 hrs
Uttarakhand	2517	15.06 .22 at 17:00	2468	On 24.01.22 @ 09:00 hrs
Delhi	7528	28.06.22 at 17:00	7409	On 02.07.19 @ 15:35 hrs
Haryana	12540	28.06.22 at 12:00	12120	On 07.07.21 @ 14:45 hrs
Rajasthan	15850	28.06.22 at 14:00	15797	On 19.05.22 @ 13:00 hrs
Punjab	14189	29.06.22 at 13:00	13633	On 01.07.19 @ 12:00 hrs

State (Max Energy Consumption)	All Time High Record		Previous Record (upto May-22)	
	Value (MU)	Achieved on	Value (MU)	Achieved on
Rajasthan	323.84	09.06.22	311.080	20.05.22
Uttar Pradesh	536.97	09.06.22	514.49	07.07.21
Uttarakhand	54.27	15.06.22	50.37	31.05.22
Delhi	153.52	28.06.22	147.10	02.07.19
Himachal Pradesh	36.91	28.06.22	36.90	29.12.20
Punjab	334.45	29.06.22	306.09	01.07.21

	All Time High Record		Previous Record (upto May-22)	
Solar Generation	Value (MU)	Achieved on	Value (MU)	Achieved on
	116.78	26.06.22	109.85	14.05.22

Frequency Data Comparison

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
June'22	49.99	50.36	49.48	12.5	73.4	14.2
June'21	50.00	50.27	49.64	6.1	74.5	19.4

New element charged and unit outages due to high silt content were also presented in the meeting. Detailed presentation presented by NRLDC in 197 OCC meeting is attached as Annexure-B.I.

In June'22, frequency remained within IEGC band for only 74.5 % of the time. All utilities were advised to follow all the measures discussed in previous OCC/ NRPC meetings for improving the frequency profile.

Members agreed for the same.

21. TTC/ATC of state control areas for summer 2022

In the meeting, it was deliberated that most of the NR states except J&K, Ladakh and Chandigarh U/Ts 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.

Based on feedbacks received till date, SLDCs were requested to go through the tentative ATC/TTC limits for August 2022 (Annexure-B.I of agenda) and provide comments. If no comments are received, these limits will be assumed confirmed and uploaded on NLDC website. SLDCs were also requested to upload these limits in their respective websites. States were also requested to regularly provide update regarding the upcoming transmission elements which would improve import capability of respective state control area.

Loading of 400/220kV ICTs observed above or close to N-1 contingency limits is also attached as Annexure-B.II of agenda.

Punjab

In 197 OCC meeting, NRLDC representative stated that with import of Punjab close to its ATC limits, loading beyond N-1 contingency limits were observed for 400/220kV Nakodar ICTs. The loading of other 400/220kV ICTs such as Ludhiana, Malerkotla, Patran, Moga and Patiala were close to their N-1 contingency limits. Relevant plots were presented in the meeting. Punjab SLDC was asked to ensure loading of these 400/220kV ICTs below contingency N-1 limits.

Increased generation at 220 kV level (Ropar, Lehramohabbat, Goindwal) will help in meeting the high demand, expected at the time of paddy season as well as improvement in reliability due to increased voltage support. Thus, full generation at 220kV generating stations such as Goindwal, Ropar and Lehramohabbat is recommended to maintain this ATC/TTC limit for Punjab.

Punjab SLDC was asked to take up the matter for selling power in Real Time Market in case of load crash events on priority. It was also mentioned that proposal may be put up for approval by Punjab SLDC with their higher officials to effectively develop and implement the procedure. Punjab SLDC agreed for the same.

On 30th June and 1st July 2022, it was observed that Punjab had continuous overdrawl for number of time blocks as shown below. For example on 30th June, Punjab had underdrawl for more than 6 hours whereas on 1st July it had under drawl for more than 8-10 hrs. Thus, it is important that Punjab SLDC starts selling power in real-time market in such situations and also instructs for backing down internal generation as specified by CEA standards.

Punjab SLDC representative informed that:

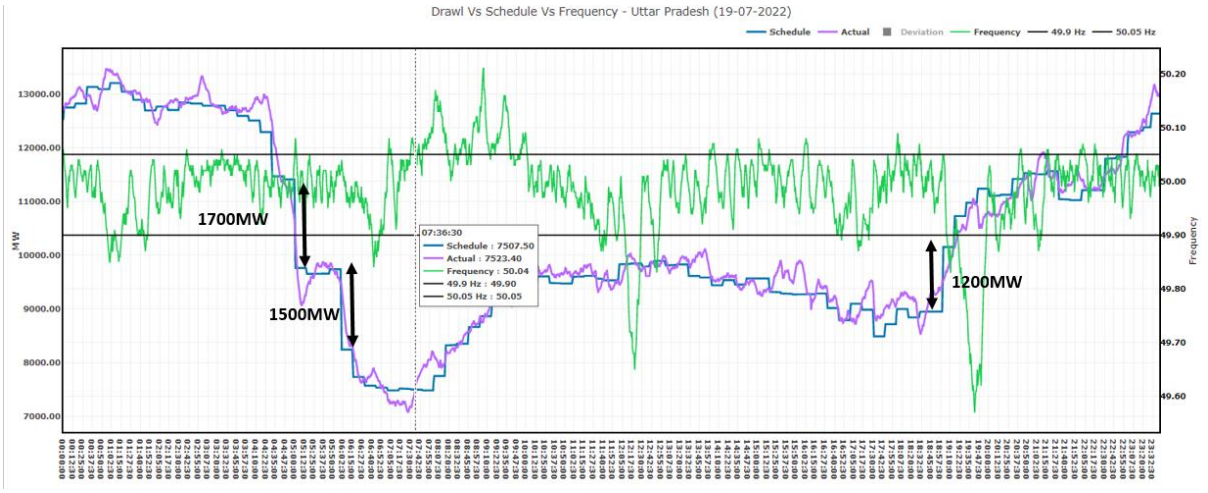
- Reconductoring of Jalandhar-Kartarpur 2nd ckt is likely to be completed within one week.
- They shall try and manage loading of all 400/220kV ICTs within their N-1 contingency limits. At Nakodar, SPS is implemented, so sometimes loading may be higher than N-1 contingency limit.
- Punjab has started selling power in real-time market from 21st July onwards and power was sold in few time blocks in real-time on trial basis. Based on analysis for savings, the matter would be put up for approval from higher management and a procedure would be formulated on the same.
- Meeting with TSPL is scheduled in last week of July to discuss issues related to frequent outages of TSPL generating units. Outcome of the meeting would be shared with NRPC/ NRLDC.

NRLDC representative stated that selling power in real-time market is a welcome step, however, same needs to be done as per requirement, as even after selling some power in real-time market, Punjab still had under drawl of 16MUs on 21.07.2022. Punjab SLDC agreed to work on the same.

UP

In 197 OCC meeting, NRLDC representative highlighted following issues:

- SPS implementation at Obra and Sohawal
- Status of 765kV AnparaD-Obra-Unnao revival
- Requirement of SPS at Allahabad(PG)
- New ICT implementation at Gorakhpur(UP)
- Minimising change in schedule in consecutive time blocks



UP SLDC representative provided following information:

- SPS scheme is being shifted from Bareilly to Sohawal. Order to be placed to synergy within next 10 days (stated by UP-STU)
- For Obra SPS, budgetary offer is being collected from vendors.
- Capacity augmentation of ICT at Gorakhpur (UP) is delayed due to delay in transformer allotment.
- Regarding change in schedule in consecutive time blocks, matter is being taken up with Power Management cell (PMC).

OCC advised that UP SLDC may arrange separate discussions with PMC cell, if required NRPC and NRLDC may also be invited.

Rajasthan

In 197 OCC meeting, Rajasthan SLDC representative was requested to provide the plan to ensure loadings at constrained 400/220kV ICTs such as Ajmer, Merta, Chittorgarh, Bikaner and Jodhpur below their N-1 contingency limits and also status of implementation of SPS as agreed in last OCC meetings.

Rajasthan SLDC representative provided following information:

- SPS implementation at Merta and Chittorgarh has been completed. SPS implementation would be completed at Ajmer in next week.
- SPS for 400/220kV Bikaner would be developed and shared with NRPC/ NRLDC.
- New ICT has been approved at Ajmer, Merta, Bikaner and Jodhpur. NRLDC representative stated that documents for approval of these ICTs may be shared by RVPN as same would also be required during FTC of elements. RVPN agreed to share approval of these new ICTs with NRPC/ NRLDC.

Delhi

In 197 OCC meeting, NRLDC representative highlighted following issues:

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

- Loading of 400/220kV Mundka, Bawana (section having two ICTs) and Harshvihar ICTs was close to N-1 contingency limits

Delhi SLDC representative informed that issue of N-1 non-compliance at Bawana would be there, however it has been ensured that the ICTs are in split operation i.e. if one split ICT trips, there would be tripping of some load and other ICT would not be overloaded. It was confirmed by Delhi SLDC that there would not be any critical load effected in case of tripping of these ICTs.

Regarding, upload of ATC/TTC limits on website, Delhi representative stated that same would be uploaded on website as soon as possible.

Haryana

In 197 OCC meeting, it was discussed that N-1 non-compliance was observed at 400/220kV Deepalpur and Panipat (BBMB) ICTs. It was discussed that Haryana and Delhi may mutually discuss and resolve the issue of loading of 400/220kV Panipat ICTs and in case same is not resolved it could be discussed in separate meeting or next OCC meeting after agenda by Haryana/ Delhi.

NRLDC representative expressed concern on the slow progress of SPS implementation at 400/220kV Kurukshetra and asked HVPN to coordinate with POWERGRID and expedite SPS implementation. It was also discussed that loading of 400/220kV Deepalpur ICTs may be ensured to level such that SPS relief is able to ensure loading of ICTs below their safe limits in case of contingency.

In the meeting, Haryana SLDC representative stated that Delhi SLDC has submitted that their load can not be shifted from Panipat(BBMB). Panipat(BBMB) has also informed that there is no space for additional ICT at Panipat(BBMB). Accordingly, matter will be taken up with planning division of HVPN. New ICT addition at Deepalpur is delayed due to PPP model and tariff issues. Status of SPS at Kurukshetra would be shared within one week.

OCC advised Haryana for ensuring loading of 400/220kV Deepalpur ICTs such that SPS relief is able to ensure loading of ICTs below their safe limits in case of contingency and expedite SPS implementation at 400/220kV Kurukshetra.

Uttarakhand

In the meeting, it was discussed that for Uttarakhand, N-1 compliance was observed at 400/220kV Kashipur ICTs along with high loading of 220kV CBGanj-Pantnagar. Uttarakhand SLDC was also asked to explore requirement of SPS at Kashipur. Two tripping events were also observed since last OCC meeting, in which after tripping of 220kV CBGanj-Pantnagar, loading of 400/220kV Kashipur ICTs also increased ultimately tripping on overload and leading to load loss. In last OCC meeting, Uttarakhand SLDC was also advised to explore possibility of SPS at Kashipur or any other option of load management to avoid tripping on overloading.

In the meeting, Uttarakhand STU representative stated that SPS proposal is under development stage and same would be shared with NRPC/ NRLDC after discussions internally. As per preliminary logic, around 100MW would be shed to avoid tripping of ICTs on overload.

HP have shared their ATC/TTC assessment for summer 2022. Loading was observed beyond N-1 compliant limit for 400/220kV Nallagarh ICTs. High loading of 220kV Nallagarh-Upernangal D/C was observed.

J&K

Not assessing its ATC. J&K representatives had intimated during 47th TCC and 49th NRPC meeting that they would be sharing ATC/TTC assessment with NRLDC from October 2021, however the same is still awaited. J&K and Ladakh U/Ts are once again requested to advise the concerned officers to evaluate their ATC/TTC limits in coordination with NRLDC and share latest assessment with NRLDC and NRPC.

As discussed in last several OCC meetings, all SLDCs need to furnish ATC/TTC details of their control area at respective SLDC websites. Now, it is being observed that most of the SLDCs except J&K and Delhi are uploading ATC/TTC limits on their websites.

SLDC	Link for ATC on website
UP	https://www.upsldc.org/documents/20182/0/ttc_atc_24-11-16/4c79978e-35f2-4aef-8c0f-7f30d878dbde
Punjab	https://www.punjabsldc.org/downloads/ATC-TTC0321.pdf
Haryana	https://hvpn.org.in/#/atcttc
Delhi	**NA**
Rajasthan	https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
HP	https://hpsldc.com/mrm_category/ttc-atc-report/
Uttarakhand	http://uksldc.in/transfer-capability
J&K and Ladakh U/T	**NA**

It was again requested that SLDCs may ensure that loading of ICTs and lines are below their N-1 contingency limits. While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC.

NRLDC is continuously sending emails in real-time for ensuring N-1 compliances as well as restricting schedule till ATC limit and maximizing internal generation. SLDCs need to ensure this during real-time operation.

OCC agreed for the same.

22. Grid operation related issues

(i) Long outage of transmission elements/ generating units

Reasons and revival date for elements under long outage are being discussed regularly in OCC meetings. Utilities were requested to provide update on the status of these elements from last OCC meeting (Latest status as received is attached as **Annexure-B.II**).

All utilities were requested to make it a practice to update status of elements under long outage in the NRLDC outage software portal. Utilities were requested to take necessary actions to revive elements which are under long outage.

Revival of following critical transmission elements needs to be expedited:

- 400/220 kV 240 MVA ICT 3 at Moradabad(UP)
- 765 KV ANPARA_D-UNNAO (UP) CKT-1
- 400/220 kV 315 MVA ICT 1 at Muradnagar_1(UP)
- 400/220 kV 500 MVA ICT 2 at Noida Sec 148(UP)
- 220 KV Kishenpur(PG)-Mir Bazar(PDD) (PDD) Ckt-1
- 400KV Bus 1 at Vishnuprayag(JP)

Members agreed to take actions for early revival of transmission elements.

Information about new transmission elements/ generating units to be commissioned in next 45 days

In 176th OCC meeting, it was discussed that first time charging procedure is not being diligently followed by some entities. The documents are being submitted at the last minute and thereafter it is being urged to NRLDC to give the code for charging. In the meeting it was also requested that utilities should inform about elements expected for first time charging in the next one month in advance in OCC meeting. This information would be helpful in carrying out studies, SPS requirement/modification etc. in time.

Utilities are also requested to make sure that list of 220kV and underlying intra-state lines and ICTs is readily available with them, so that the same can be shared with NRLDC/NRPC as and when required. This data is to be shared with NRLDC/NRPC for timely updation of Powermaps, PSSe basecase, Protection analysis etc.

In line with the above decisions, all utilities were requested to share the information about transmission elements/ generating units which are expected to be first time charged in the next 45 days.

(ii) Calculation of Drawal points based on SLDC end data

Haryana and Uttarakhand SLDCs were requested to provide update on the agenda point.

Haryana SLDC representative informed that SCADA team is working on the same and trying to determine additional RTUs required for the work. Haryana SLDC was asked to share the details so that same can be incorporated in OCC minutes. However, reply was not received.

Uttarakhand SLDC representative informed that data calculation was already done from SLDC enddata and there is difference between the values from NRLDC end and Uttarakhand SLDC end drawl data; few data points are suspected. The screen shot of display of drawl values at NRLDC and Uttarakhand SLDC end in the control room is attached as **Annexure-B.III**.

There are shortages of Multi-Funcational Meters, and issues of faulty PLCC links. It was informed by SCADA wing of PTCUL that SCADA had initiated tenders of procurement of MFM and for re-locations of Digital PLCC Panels and expected to be completed by Aug'2022.

OCC asked states to expedite the work.

(iii) Switching operation without NRLDC code

In the meeting, it was deliberated that the subject matter has already been deliberated in 175th, 178th, 179th and 184th OCC meetings. In the meetings it was mentioned that this is clear violation of IEGC as well as procedure agreed in Operating procedure document. NRLDC has also been communicating the same vide letters:

- NRLDC/SO-I/ dtd. 27.10.2020
- NRLDC/SO-I/151/1088-1090 dtd. 10.12.2020
- NRLDC/SO-I/151/1134-1136 dtd. 07.01.2021
- NRLDC/SO-I/151/ dtd 08.06.2021

It has already been deliberated number of times that it is always better to inform NRLDC before taking any element under outage/ charging of element, since it may result in increased flows on parallel paths and the substation personnel does not have the holistic scenario/ load-flows of the grid.

On 29th June 2022, at 11:40 hrs both 400/220kV 315MVA ICTs at Kashipur tripped due to over loading and both ICTS were charged at 11:52hrs without taking NRLDC code. It is clear violation of IEGC.

Uttarakhand SLDC representative stated that some new officers have joined SLDC and in case of hurry it was missed by them. Officers have been given instructions to take care in future. NRLDC representative suggested that new officers may be given detailed training before joining the real time operation duty in control centers so as to make them aware of day-to-day operational rules. Uttarakhand representative agreed to look into the matter.

All NR constituents were once again advised to avoid unilateral switching operation of Grid elements in future in the interest of smooth and reliable Grid operation.

Members agreed for the same.

(iv) Schedule >ATC for state control areas

In the meeting, it was deliberated that ATC/TTC assessment exercise for respective state control area is being carried out by SLDCs in coordination with NRLDC. Some of the states are also publishing ATC/TTC limits on their website. ATC limits suggest that there are likely n-1 violations in system if import of state is close to or higher than ATC limits. These constraints are also mentioned in ATC/TTC assessment reports of SLDC/ NRLDC. However, it is being observed that some of the states such as Haryana, UP, Uttarakhand and Delhi are scheduling power beyond the ATC limits assessed by SLDCs/NRLDC. Details attached as Annexure-B.IV of agenda.

It was requested that SLDCs may request schedule within their ATC limits so that system operates in safe and secure manner. Sufficient internal generation needs to be on bar

so as to safely meet demand without violating import capability limits. Moreover, if no constraint are being observed when drawl crosses ATC limit, same may be duly intimated to studies team of SLDC/ NRLDC so that ATC/TTC limits are accordingly revised. Uttarakhand and Haryana had schedule and actual drawl beyond the ATC/TTC limits on number of occasions while Haryana and Delhi only had schedule higher than ATC only for few blocks.

Uttarakhand representative stated that there was unprecedented demand growth and therefore it was not expected that there would be this much drawl from grid. It was mentioned that gas based generation at Shravanti and Gamma Infra are not running which is leading to constraint in import of power by Uttarakhand state. Since these plants are now generally not running, proposal for new ICT at Kashipur is being studied.

Haryana SLDC representative stated that one DCRTPP Yamuna Nagar unit was not available during this time. If unit was available, Haryana import would have been below the TTC although it would have been higher than ATC. However, steps are being taken to maximise internal generation. Actions for enhancing ATC/TTC limits would also be expedited.

Members agreed for restricting their schedule as well as actual drawl below their ATC/TTC limits as assessed by SLDC and NRLDC.

(v) High MVAR drawl from 400kVgrid

NRLDC representative stated that with demand of Northern region increasing beyond 76GW, loading of ICTs has increased substantially. Apart from high loading on various 400/220 kV ICT nodes, it has been observed that MVAr drawal (400kV to 220kV) is also very high leading to low voltages in that pocket.

As per IEGC 6.6.1,

"Reactive power compensation should ideally be provided locally, by generating reactive power as close to the reactive power consumption as possible. The Regional Entities except Generating Stations are therefore expected to provide local VAr compensation/generation such that they do not draw VArs from the EHV grid, particularly under low-voltage condition."

Poor power factor (less than 0.9) for some of the nodes based on SCADA data of June-2022 is tabulated below along with plots at Annexure-B.V of agenda:

State	400/220kV ICT
J&K	Kishenpur, Wagoora, Amargarh
Haryana	Kaithal, Fatehabad, Panchkul Sonepat
HP	Hamirpur
Uttarakhand	Dehradun, Roorkee, Kashipur
UP	Saharanpur, Bagpat, Nehtaur
Punjab	Amritsar

As per NRPC reactive power account of 13th June 2022 to 19th June 2022, reactive power drawal at low voltages is observed at following nodes:

Drawl of MVAr at ISTS during Low voltage (As per NRPC Reactive energy account)

State	As per NRPC Reactive energy account: drawl of MVAr at ISTS during Low voltage most of the time
Punjab	Govindgarh (BBMB), Jamsher(BBMB), Jalandhar(BBMB), Ropar(BBMB), Mohali(BBMB),
Haryana	Bhiwani(BBMB), Sohna Road
Rajasthan	Khetri(BBMB), Hisar(BBMB), Kotputli(PG),
Uttar Pradesh	Saharanpur(PG), Sahupuri, CBganj
Uttarakhand	Sitarganj
J&K	Mahanpur, Kathua,
HP	Banala, Pong(BBMB), Bhakra(BBMB), Kangoo(BBMB)

It is well known that high reactive power drawal from 400kV system lead to low voltages and high losses in the system. Hence such reactive power transfer should be avoided by proper planning of reactive power compensation locally.

All the users were requested to limit the reactive power transfer from the EHV grid and take appropriate action to compensate it locally. Identification of nodes at lower voltage level where actual MVAR drawl/injection is taking place need to be ascertained. New reactors and capacitors are being planned at several locations. Therefore, it is necessary to identify locations where actually there is need for MVAR support. This would help in better and more efficient utilization of resources.

Members agreed for taking necessary actions in this regard.

(vi) Statutory Clearances for Modification/Replacement/Diversion

In the meeting, it was discussed that as per the Central Electricity Authority (Measures Relating to Safety & Electric Supply) Regulations,2010 and Amendment Regulations 2015 & 2018 and MoM of the meeting held with Chief Electrical Inspector, CEA dated 26.05.2022, approval of concerned Electrical Inspectorate is to be taken in writing before charging an element after replacement/alteration.

However, in some cases, State utilities are not submitting concerned Electrical Inspector clearance timely resulting in delay in restoration of elements after replacement/modification. State utilities were requested to take up the matter with respective Electrical Inspectorate to avoid such delay and last minute difficulties.

As per the letter dated 06.05.2022 from CEA-PCD division, for diversion cases involving change in course of transmission line or change in nature of power flow, suitable advisory on requirement of fresh PTCC clearance obtained from CEA-PCD division is to be submitted along with the Electrical safety clearance.

The Minutes of the meeting held with Chief Electrical Inspector, CEA and the letter dated 06.05.2022 from CEA-PCD division is enclosed at Annexure-B.VI of agenda for reference.

NRLDC representative also stated that ISTS licenses are following the procedures as per the meeting quoted above. Respective State Electrical Inspector may also be advised to take actions in accordance with the deliberations held in the meeting with Chief Electrical Inspector, CEA. MS NRPC also suggested the same to state transmission utilities.

MS NRPC added that Draft Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2022 have been notified for public comments and comments have been requested till 28th July, 2022. Accordingly, all stakeholders may provide their comments on these regulations to CEA within the timeline mentioned in notice. Utilities may provide their challenges faced in day-to-day functioning and accordingly if there is need for change in regulations same may be incorporated.

Members agreed for taking necessary actions in this regard.

(vii) Near Real Time Silt Monitoring of hydro stations

In the meeting, it was discussed that Silt data has been made available in NRLDC control room from 07.07.2022 onwards for monsoon 2022 and is being utilized by NRLDC system operators for advance actions and better system operation during hydro unit outages due to silt.

All concerned hydro stations were advised to regularly and timely update on the silt measurements from site and upload on portal for monitoring at NRLDC control room. It was also advised to timely intimate in case of requirement of silt flushing so that adequate time is available with NRLDC so as to take necessary actions.

Members agreed for taking necessary actions in this regard.

(viii) Maximising hydro generation during peak hydro season:

In the meeting, it was discussed that Jun-Sep months are generally associated with high hydro generation period in Northern region. However, it is being observed that some of the generators are generating less than 100%. Detailed list was attached as Annexure-B.VII of agenda. It was highlighted that following stations were generating less than 110% of their capacity.

- Rihand HPS
- Parbati-II
- Pong
- Tehri
- Koteshwar
- RSD
- Sewa-II
- Mukerian

- Singrauli Hydro
- Parbati-III
- Dehar
- Bhakra

NHPC representative informed that Parbati-2 is generating infirm power. Sewa-II and Bairasuil are also generating full now, earlier there was inflow issue therefore there was lower generation on few days.

***Members agreed for taking necessary actions* for maximizing generation during peak hydro season.**

(ix) Update of Operating Procedure document in line with IEGC:

Based on the inputs received from utilities and discussions held in 195th and 196th OCC meetings, Operating Procedure document has been updated by NRLDC in mid-July 2022.

NRLDC vide their letter dated 5th July 2022 had again requested for feedback from utilities

Latest available document updated in July 2022 is available @https://nrldc.in/download/final-operating-procedure-for-northern-region-2022-23/?wpdmdl=10826

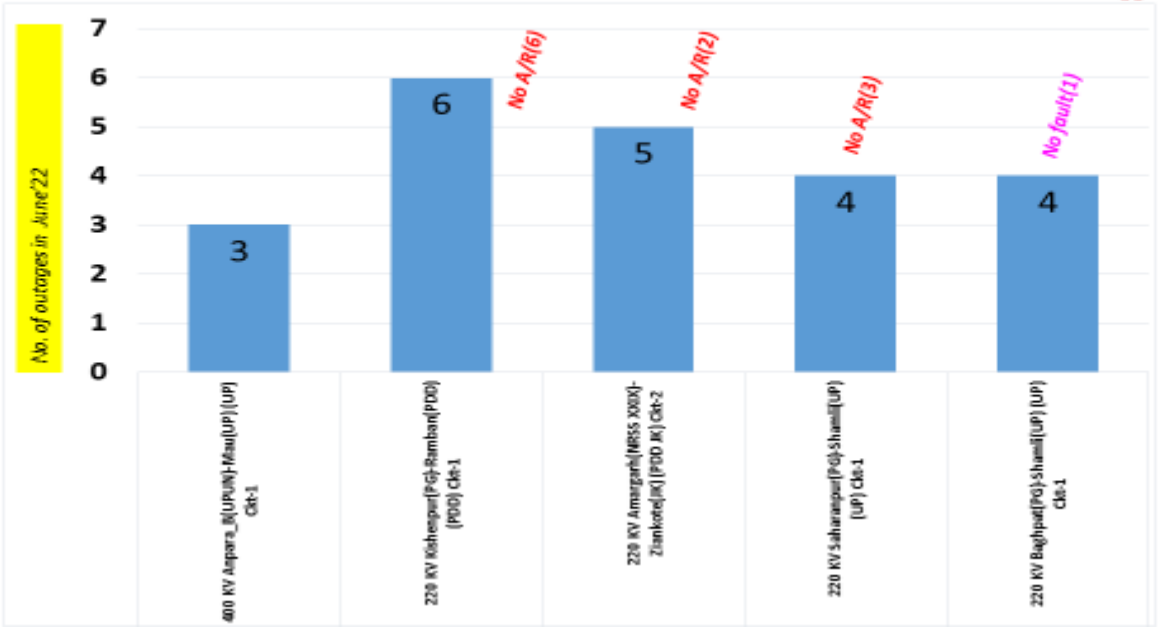
OCC noted the information.

23. Frequent forced outages of transmission elements in the month of June'22:

The following transmission elements were frequently under forced outages during the month of **June'22**:

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	400 KV Anpara_B(UPUN)-Mau(UP) (UP) Ckt-1	3	UP
2	220 KV Kishenpur(PG)-Ramban(PDD) (PDD) Ckt-1	6	POWERGRID/PDD
3	220 KV Amargarh(INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2	5	PDD JK
4	220 KV Saharanpur(PG)-Shamli(UP) (UP) Ckt-1	4	UP/POWERGRID
5	220 KV Baghpat(PG)-Shamli(UP) (UP) Ckt-1	4	UP/POWERGRID

B.23 Frequent Forced outages: June '22



The complete details are attached at Annexure-B.IX of the Agenda**.**

Discussion during the meeting:

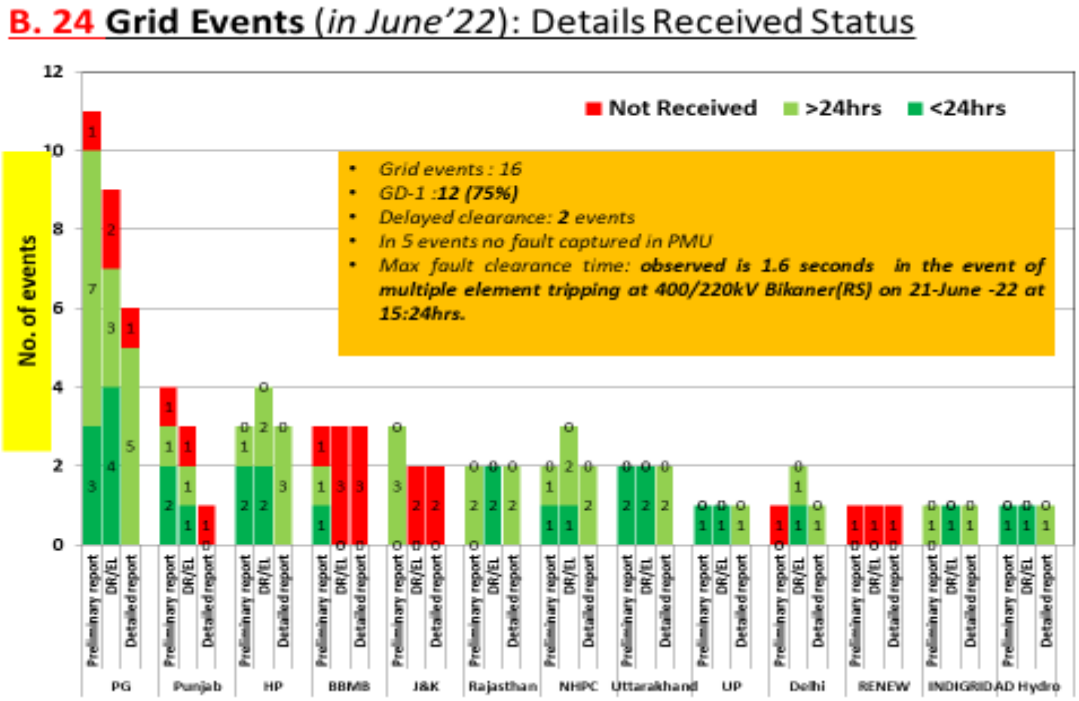
- **400 kV Anpara_B (UPUN)-Mau (UP) (UP) Ckt-1-**: *UPPTCL representative stated that cause of multiple tripping was bird droppings and nests (at tower locations 120,121,127,128,132 etc.)Further those were removed.*
- **220 kV Saharanpur (PG)-Shamli (UP) (UP) Ckt-1:** *UPPTCL representative informed that tripping on 3rd & 18th June, 2022successful A/R operation from their end. However, asked clarification from other end i.e. POWERGRID why A/R failed.*
- **220 kV Baghpat (PG)-Shamli (UP) (UP) Ckt-1:** *UPPTCL representative stated that multiple tripping was due to some construction work where proper clearance was being compromised so necessary steps were taken to restore clearance. UPPTCL representative also inquired about Z2 settings at POWERGRID end (as per UPPTCL representative Z2 delay is 100ms).*

- **220 kV Kishenpur (PG)-Ramban (PDD) (PDD) Ckt-1:** POWERGRID representative stated that status of A/R will be checked.

NRLDC representative emphasized that A/R (auto recloser) issue was found in many of these tripping. He further sensitized all the utilities to ensure healthiness/ in service of A/R in 220 kV and above transmission lines in compliance to CEA Grid Standards. He further informed that most of the tripping are transient in nature but due to non-operation of A/R, it resulted into tripping of the transmission element thus and reducing the reliability of the grid. All the utilities shall endeavor to keep auto recloser in service and in healthy condition for 220 kV and above voltage level transmission line.

Frequent outages of such elements affect the reliability and security of the grid. Hence, utilities are once again requested to look into such frequent outages and share the remedial measures taken/being taken in this respect

24. Multiple element tripping events in Northern region in the month of June '22



A total of 16 grid events occurred in the month of June'22 of which **12** are of GD-1 category. The preliminary report of all the events have been issued from NRLDC. A list of all these events is attached as Annexure-B.X of agenda**.**

Further, despite persistent discussions/follow-up in various OCC/PCC meetings, it is observed that provisions 5.2(r) and 5.9.4(d) of the IEGC, pertaining to reporting of events / tripping to RLDC, is not being complied with by many utilities.

Maximum Fault Duration observed is 1.6 seconds in the event of multiple element tripping at 400/220kV Bikaner(RS) on 21-June -22 at 15:24hrs.

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **2** events out of **16** grid events occurred in the month. In 5 number of events, fault signature couldn't be captured from PMU data.

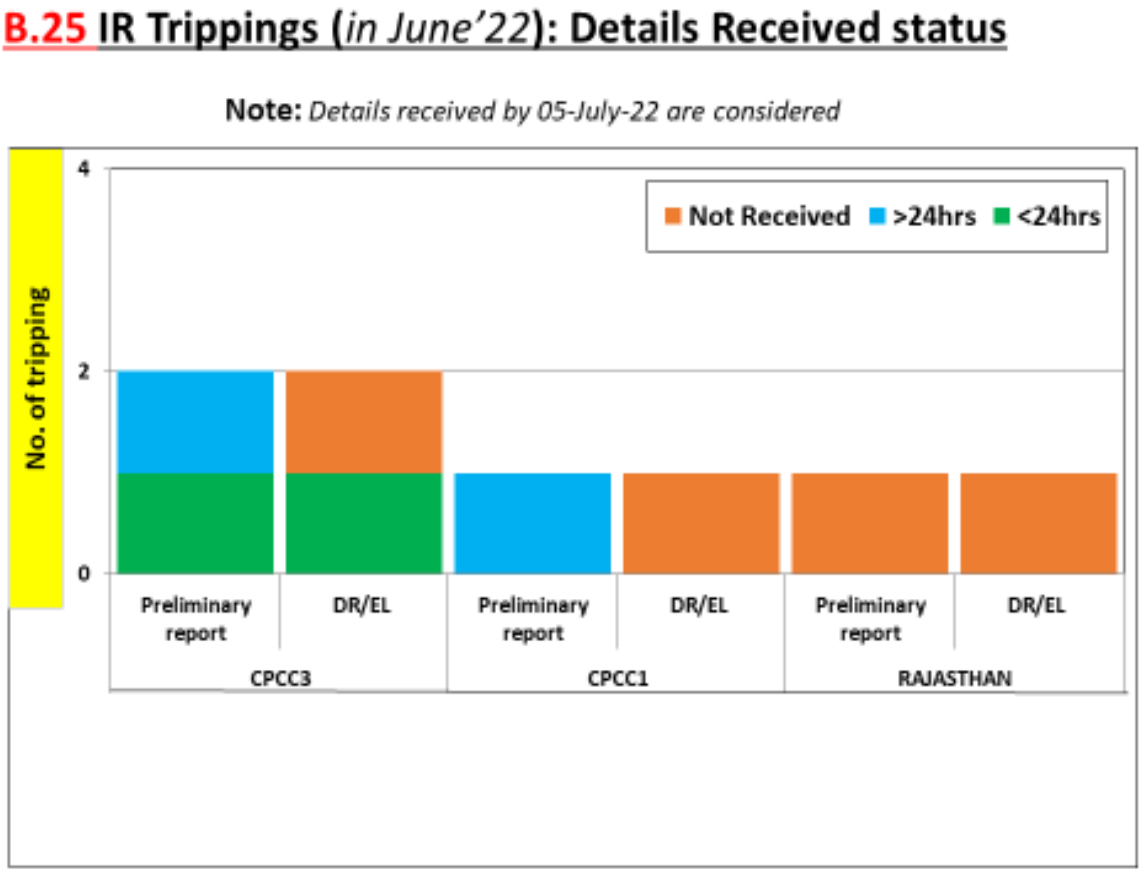
NRLDC representative raised concern about poor status of report updation by POWERGRID, MAHINDRA, BBMB, Rajasthan & J&K on the tripping portal. He further stated that timely report submission is an important activity and all constituents are advised to take this on priority and upload the reports.

OCC suggested all the NR constituents to update the information on tripping portal developed by NRLDC. All the constituents agreed to take proactive actions in this regard to minimize the tripping.

Members were asked to take expeditious actions to avoid such tripping in future, Moreover, utilities may impress upon all concerned for providing the Preliminary Report, DR/EL & Detailed Report of the events in line with the regulations.

Members agreed to take action in this regard.

25. Details of tripping of Inter-Regional lines from Northern Region for June'22



A total of 4 inter-regional lines tripping occurred in the month of June'22. The list is attached at Annexure-B.XI of agenda**.** The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event from SLDCs / ISTS licensees / ISGSs is in violation of regulation 5.2(r) of IEGC and regulation 15(3) of CEA Grid Standards. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if fault clearance time is higher than that mandated by CEA (Grid Standard) Regulations.

NRLDC representative raised concern about poor status of report updation by POWERGRID CPCC1, CPCC3 and Rajasthan on the tripping portal. He further stated that timely report submission is an important activity and all constituents are advised to take this on priority and upload the reports.

Members may please note and advise the concerned for taking corrective action to avoid such tripping as well as timely submission of the information.

26. Status of submission of DR/EL and tripping report of utilities for the month of June'22

NRLDC representative informed the current status (as on 05th June 2022) of DR/EL and tripping report of utilities for the month of June 2022. Consolidated information is tabulated below:

1st June 2022 - 30th June 2022														
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	ACME	1	1	100	1	0	100	1	0	100	1	0	100	DR/EL & Tripping report needs to be submitted
2	AD HYDRO	3	0	0	0	1	0	0	1	0	0	0	0	
3	ADANI	1	1	100	1	0	100	1	0	100	1	0	100	
4	AHEJ3L	1	1	100	1	0	100	1	0	100	1	0	100	
5	AHEJ4L	1	1	100	1	0	100	1	0	100	1	0	100	
6	ANTA-NT	3	0	0	1	0	33	1	0	33	0	0	0	DR/EL & Tripping report needs to be submitted
7	APMPL	1	1	100	1	0	100	1	0	100	1	0	100	
8	AREPRL	1	1	100	1	0	100	1	0	100	1	0	100	
9	BAIRASUIL-NH	1	0	0	0	0	0	0	0	0	0	0	0	
10	BBMB	42	19	45	21	5	0	23	10	0	20	1	49	
11	BUDHIL	2	0	0	0	0	0	0	0	0	2	0	100	
12	CHAMERA-III-NH	2	0	0	0	0	0	0	0	0	0	0	0	
13	CHAMERA-II-NH	2	0	0	0	2	0	0	2	0	0	0	0	
14	CHAMERA-I-NH	1	0	0	0	0	0	0	0	0	0	0	0	
15	CLEANSOLAR_JODHPUR	1	1	100	1	0	100	1	0	100	1	0	100	
16	CPCC1	72	8	11	9	12	15	8	12	13	8	10	13	DR/EL & Tripping report needs to be submitted
17	CPCC2	60	5	8	5	6	9	5	7	9	5	6	9	
18	CPCC3	35	15	43	15	1	44	16	1	47	16	0	46	
19	DADRI-NT	2	0	0	0	0	0	0	0	0	0	0	0	
20	DHAULIGANGA-NH	5	1	20	1	4	100	1	0	20	1	0	20	DR/EL & Tripping report needs to be submitted
21	DULHASTI-NH	2	0	0	0	0	0	0	0	0	0	0	0	

B.26 DR/EL Status: June'22

22	ESUCPL	1	1	100	1	0	100	1	0	100	1	0	100	
23	INDIGRID	3	1	33	1	0	0	1	0	0	1	2	100	DR/EL & Tripping report needs to be submitted
24	JHAJJAR	2	2	100	2	0	100	2	0	100	2	0	100	
25	KARCHAM	1	0	0	0	0	0	0	0	0	1	0	100	
26	KISHENGANGA-NH	5	0	0	0	0	0	0	0	0	0	0	0	
27	KOLDAM-NT	2	1	50	1	0	50	1	0	50	2	0	100	DR/EL & Tripping report needs to be submitted
28	Mega_SuryaUrja	2	2	100	2	0	100	2	0	100	2	0	100	
29	NAPP	1	0	0	0	0	0	0	0	0	0	0	0	
30	NIPC	1	0	0	0	0	0	0	0	0	0	0	0	
31	PARBATI-II-NH	2	0	0	0	0	0	0	0	0	0	0	0	
32	PKTSL	1	1	100	1	0	100	1	0	100	1	0	100	DR/EL & Tripping report needs to be submitted
33	RAMPUR	1	0	0	0	0	0	0	0	0	0	0	0	
34	RAPPA	1	1	100	1	0	100	1	0	100	1	0	100	DR/EL & Tripping report needs to be submitted
35	RENEW	1	1	100	1	0	100	1	0	100	1	0	100	
36	RSE/SPL	1	1	100	1	0	100	1	0	100	1	0	100	
37	SALAL-NH	1	0	0	0	0	0	0	0	0	0	0	0	
38	SBSRPC-11	1	1	100	1	0	100	1	0	100	1	0	100	DR/EL & Tripping report needs to be submitted
39	SEWA-2-NH	2	0	0	0	0	0	0	0	0	0	0	0	
40	SHREE CEMENT	1	0	0	0	0	0	0	0	0	0	0	0	
41	SINGRAULI-NT	4	0	0	4	0	100	4	0	100	4	0	100	DR/EL & Tripping report needs to be submitted
42	SLDC-GV	20	6	30	8	1	0	8	1	0	8	0	40	
43	SLDC-HP	6	0	0	0	3	0	0	2	0	0	0	0	
44	SLDC-HR	16	0	0	0	1	0	0	1	0	0	0	0	
45	SLDC-JK	28	0	0	28	0	100	28	0	100	28	0	100	
46	SLDC-PS	16	5	31	9	1	60	9	0	56	14	0	88	
47	SLDC-RS	85	7	8	48	0	56	48	0	56	48	0	56	DR/EL & Tripping report needs to be submitted
48	SLDC-UK	11	3	27	2	3	25	3	3	38	3	1	30	
49	SLDC-UP	91	14	15	17	11	21	17	23	25	16	6	19	
50	STERLITE	13	1	8	0	6	0	0	6	0	1	6	14	
51	UMIAMWAR-NT	1	1	100	1	0	100	1	0	100	1	0	100	

As per the IEGC provision under clause 5.2 (r), detailed tripping report along with DR & EL has to be furnished within 24 hrs of the occurrence of the event

It is to be noted that as per the IEGC provision under clause 5.2 (r), detailed 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. Also, it is observed that reporting status has been improved from POWERGRID, Haryana, Uttar Pradesh and Himachal Pradesh in June, 2022 compared to the previous month.

NRLDC representative raised concern about poor status of report updation by Rajasthan, Punjab, BBMB, J&K, CPCC3 and RE developers on the tripping portal.

All the members were once again requested to provide timely details of the grid events, detailed report in desired format along with remedial measure report. DR/EL of all the tripping needs to 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 5.2.r and clause 15.3 of CEA grid standard.

Members agreed for the same.

27. Mock trial run for crises management plant

As per IEGC clause 5.8 (b) "*Detailed plans and procedures for restoration after partial/total blackout of each Constituents' system within a Region, will be finalized by the concerned User's/STU/CTU in coordination with the RLDC. The procedure will be reviewed, confirmed and/or revised once every subsequent year. Mock trial runs of the procedure for different sub-systems shall be carried out by the User's/STU/CTU at least once every six months under intimation to the RLDC. Diesel Generator sets for black start would be tested on weekly basis and test report shall be sent to RLDC on quarterly basis*."

In view of above concerned constituent are requested to conduct mock trial run of their DG sets and share the test report with NRPC/NRLDC.

NRLDC representative stated that Mock trial runs of the procedure for different sub-systems shall be carried out by the User's/STU/CTU regularly and report should be shared with NRLDC.

28. Black start procedure of Ramgarh Gas Power Station

As per Indian Electricity Grid Code (IEGC) clause 5.8(b) *"Mock trial run of the procedure for different sub-systems shall be carried out by the Users/ CTU/ STU at least once every six months under intimation to the RLDC".*

Mock Black-start exercise of power stations therefore needs to be carried out in-order to ensure healthiness of black start facility. We don't have any restoration procedure for RE complex of Rajasthan subsystem. As large quantum of state and central sector RE generation evacuates from this complex, there is a needs of restoration procedure for this region. Ramgarh gas power station is only gas station near to this region. Hence, SLDC-Rajasthan is requested to explore the possibility of black start of Ramgarh GTs and prepare a black start procedure by identifying nearby load and necessary facility required at Ramgarh & nearby substation to carry out the black start exercise. SLDC-

Rajasthan may share the black start procedure with NRPC/NRLDC by September 2022, so that mock exercise can be conducted during winter 2022-23.

RVUNL representative stated that Ramgarh is ready to perform black start of Unit .Further representative from Ramgarh Plant stated that 35.5 MW GT1 is ready for black start, Ramgarh plant has 720 kVA DG set for auxiliary supply.GT1 will charge Dead bus and could supply full load provided by RVPNL. Ramgarh has requested for schedule from RVPNL (LD). Procedure is shared with RVPNL and NRLDC in January 2020 and will be again forwarded to NRLDC.

29. Frequent Grid disturbance in Uttarakhand control area due to overloading of transmission network

Since last month frequent events of multiple elements tripping has been observed in Uttarakhand control area specifically in Kashipur, Dhauliganga, and Pithoragarh complex area. It is observed that outage of transmission lines in this complex led to overloading of ICTs & other transmission lines and resulted into tripping of multiple lines / ICTs on over current protection. The list of all the tripped elements along with supporting graph as per SCADA data is attached as Annexure-B.XII of agenda.

Uttarakhand representative stated that 400/220 kV 315 MVA ICT 1 and ICT 2 normally carries average load of 250 MW each, average load shifting due to outage of line is 230 MW .100 MW load shedding will be required that will be implemented through Digital PLCC logic. Skeleton of scheme has been discussed, 33kV feeders will be tripped at Pantnagar and Kashipur with 60 MW and 40MW load respectively.

NRLDC representative stated that detail of digital PLCC logic should be shared with NRLDC Uttarakhand representative agreed for the same.

30. Status of PSS tuning/ re-tuning and Step Response Test of generator

In last 15 OCC meetings, this point was discussed and Utilities were requested to submit the present status of PSS tuning/re-tuning and Step Response Test of their respective generators as per the below mentioned format.

S. No.	Name of the Generating Station	Date of last PSS tuning / re-tuning performed (in DD/MM/YYYY format)	Date of last Step Response Test performed (in DD/MM/YYYY format)	Report submitted to NRLDC (Yes/ No)	Remarks (if any)

The status of test performed till date is attached at Annexure-B.XIII of the Agenda**.**

It may be noted that Tehri HEP conducted PSS tuning/ Step response test of their units and submitted report. In UP Control area, Step response test of Rosa Unit#1 & Unit#4

done on 5th Oct, 2021, test of Lalitpur Unit#2 on 30th March 2021, unit#1 on 23rd February, 2022 & Unit#3 on 15th January 2022. Step response test of Bara Unit#2 done on 1st February, 2022, Anpara A unit#1 & Unit#2 done on 27th September, 2021, Harduaganj Unit#7 & Unit#9 done on 16th July, 2021.

In Rajasthan control area, PSS tuning/ retuning and step response of Unit #1, 2,3,4,6 & 7 of KTPS, Kota carried out during the period 02.03.22 to 04.03.22 and Unit #2 & 4 of STPS, Suratgarh was conducted on 06.06.22.

NRLDC representative informed that all the units who have done Step response test before 2018 were requested to plan the exciter step-response test as soon as possible and submit the tentative schedule of step-response test on the units with NRPC/ NRLDC. He further informed that till date Schedule has been received from Rajasthan and UP Control area. He further requested that members may kindly Accord due priority in this regard and update about their future plan for PSS tuning as there is little progress despite including this agenda in every OCC meeting.

Members agreed for the same.

31. HVRT/LVRT non-compliance at RE stations

Issue of LVRT/HVRT non-compliance of RE generators have been raised many a times. From number of events during recent past, it is observed there is dip in power of RE generators during occurrence of any through fault and does not revive back to its antecedent value in defined time. In view of the same, detailed analysis of behavior of RE generators during grid disturbance which occurred on 09th July, 2022 is attached as Annexure-B.XV of agenda. It can be observed that almost all the RE stations dropped their active power during through fault and revived back with delay. Hence, RE generators are LVRT/HVRT non-compliance.

Sudden drop in this much of quantum of RE generations lead to significant drop in frequency / rise in voltage. Thus, Non-compliance of LVRT/HVRT of RE generators hampers the security and reliability of grid. Hence, corrective actions need to be taken to ensure to LVRT/HVRT compliance of RE generators on priority.

NRLDC representative stated that due to reduction in power, Reactive power loss decreases causing high voltage on lines and active power restoration of 0.9 per unit of prefault level takes 2-3 minutes in all the past events. This causes high voltage in grid (triggering Over Voltage tripping of lines having HV setting of 107-110% voltage with delay of 10 seconds and HVRT operations). This has led to cascaded trippings with uncertain elements.

For example, generation reduction took place at followings RE station:

ABC Renewable: Active Power Generation was restored in 2-3 minutes even restoration of voltage though took 80ms.

Adani Hybrid: Active power restored in 1 minute

Azure power 43: Active power reduced from 110MW to 0 mw and came back to its pre-fault generation in 3 minutes though voltage was restored within 80ms.

Eden: Active power reduced from 280MW-0MW and came back in 2 minutes to its prefault value though voltage was restored within 80ms.

32. Delhi Load Loss

Frequent events of load loss have occurred in Delhi control area in recent past. In most of the events, detailed analysis report of the event has not been submitted to NRLDC. Delhi SLDC was asked to share the detailed report of load loss event in their control along with the remedial action taken to avoid such events in future.

Date	**Event**	**Load loss (MWhrs)**	**Remark**	**Preliminary Report submitted**
23.05.2022	Transmission constraint	111.6	Transmission constraint	NO
07.06.2022	Transmission constraint	736	Transmission constraint and Distribution constraint	NO
11.06.2022 (19:00 Hrs)	Transmission constraint	188	Transmission constraint	NO
12.06.2022 (23:00 Hrs)	SUPPLY FAIL FROM 220KV PPG DUE TO TRIPPING OF I/C NO.1 &2	137	Transmission constraint	NO
14.06.2022 (15:00 Hrs)	62MW DUE TO SUPPLY FAIL FROM 220KV LODHI ROAD & DUE TO SUPPLY FAIL FROM 220KV IP & 10MW TRIPPING 220KV LODHI RD TO HUDCO	72	Transmission constraint and Distribution constraint	NO
14.06.2022 (16:00 Hrs)	DUE TO TRIPPING OF WZP3 GRID TO 33KV I/C - 1 AND ASHOK VIHAR CKT1 & CKT2 TIPPED AT 16:17 HRS.AT WZP-3 END ONLY A/W ASHOK VIHAR - CKT3 AT ASHOK VIHAR END ONLY.	91	Distribution constraint	NO

27.06.2022 (11:00 Hrs)	Transmission constraint	80	Transmission constraint	NO
27.06.2022 (15:00 Hrs)	Transmission constraint	49.4	Transmission constraint	NO
27.06.2022 (21:00 Hrs)	Emergency load shedding due to Security and reliability of the Grid- Over Drawl	198.4	Emergency load shedding due to Security and reliability of the Grid- Over Drawl	NO
28.06.2022 (13:00 Hrs)	SUPPLY FAILED FROM 220KV PPK-3, 220KV MEHRAULI & 220KV VKJ, SUPPLY FAIL FROM 220KV RAJGHAT DUE TO FIRE IN I/C NO-1 ISOLATOR	268	Transmission constraint	NO
28.06.2022 (14:00 Hrs)	SUPPLY FAILED FROM 220KV PPK-1	110.7	Transmission constraint	NO
01.07.2022 (09:49 Hrs)	A monkey electrocuted in GTPS Yard (Pragati Power station)	35(MW)	220 kV Bus coupler was in open condition at 220 kV Pragati EXT) Generation loss at GTPS# GT 4 - 28MW and GTPS#STG 3 -8.8MW	YES
08.07.2022 (11:54 Hrs)	Tripping occurred in Delhi system on 08.07.2022 at 400kV Bawana S/Stn& 220kV Khanjawala S/Stn.	165(MW)	400kV inter connector was in OFF position	YES

14.07.2022 (08:56 Hrs)	Tripping occurred in Delhi system on 14.07.2022 at 220kV Wazirabad S/Stn.220kV Mandola -Wazirabad ckt-4 tripped on Z1 at same time other Bus Bus Bar protection operated.	135 (MW)	Bus inter connector Wazirabad was ON.	YES
16.07.2022 (11:35 Hrs)	As informed by DTL both BUS at 220kV Shalimarbagh tripped due to falling of kite string	400(MW)	_ _	NA

Delhi SLDC representative inquired that whether a single line trip within their control area is suitable case for preparation of Preliminary report or not?

NRLDC representative replied that trippings involving load or generation loss (not only outage of complete substation) is suitable case for preparation of Preliminary report. Further Delhi SLDC representative agreed to submit preliminary report for future such trippings along with above mentioned trippings.

***

Follow up issues from previous OCC meetings

Annexure-A.I

<table>
<tr><td>1</td><td>Down Stream network by State utilities from ISTS Station</td><td>Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.</td><td>List of downstream networks is enclosed in Annexure-A.I.I.</td></tr>
<tr><td>2</td><td>Progress of installing new capacitors and repair of defective capacitors</td><td>Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Sep-2019
◎ DELHI — Jun-2022
◎ HARYANA — May-2022
◎ HP — Jan-2022
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Aug-2021
◎ RAJASTHAN — May-2022
◎ UP — Jun-2022
◎ UTTARAKHAND — Jun-2022
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td>3</td><td>Healthiness of defence mechanism: Self-certification</td><td>Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional”.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Not Available
◎ DELHI — Mar-2022
◎ HARYANA — Jun-2022
◎ HP — Jun-2022
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Mar-2022
◎ RAJASTHAN — Mar-2022
◎ UP — Jun-2022
◎ UTTARAKHAND — Jun-2022
◎ BBMB — Jun-2022
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></td><td></td><td>In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.</td><td>Status:
◎ CHANDIGARH — Not Available
◎ DELHI — Increased
◎ HARYANA — Increased
◎ HP — Increased
◎ J&K and LADAKH — Not increased
◎ PUNJAB — Increased
◎ RAJASTHAN — Increased
◎ UP — Increased</td></tr>
</table>

			◎	UTTARAKHAND	Increased
			◎	BBMB	Increased
			BBMB was requested to submit the updated self certification report indicating increase of 0.2 Hz in AUFR settings, within one week. J&K and LADAKH were requested to update status for increasing settings of UFRs.		
4	Status of FGD installation vis-à-vis installation plan at identified TPS	List of FGDs to be installed in NR was finalized in the 36th TCC (special) meeting dt. 14.09.2017. All SLDCs were regularly requested since 144th OCC meeting to take up with the concerned generators where FGD was required to be installed. Further, progress of FGD installation work on monthly basis is monitored in OCC meetings.	Status of the information submission (month) from states / utilities is as under:		
			◎	HARYANA	Mar-2022
			◎	PUNJAB	Jun-2022
			◎	RAJASTHAN	Jun-2022
			◎	UP	Jun-2022
			◎	NTPC	Feb-2022
			FGD status details are enclosed as **Annexure-A.I.II.** All States/utilities are requested to update status of FGD installation progress on monthly basis.		
5	Information about variable charges of all generating units in the Region	The variable charges detail for different generating units are available on the MERIT Order Portal.	All states/UTs are requested to submit daily data on MERIT Order Portal timely.		

6	Reactive compensation at 220 kV/ 400 kV level at 15 substations			
	State / Utility	Substation	Reactor	Status
i	POWERGRID	Kurukshetra	500 MVAr TCR	Anticipated commissioning: July 2022 (90% supplies received from GE and rest is expected by Feb'22)
ii	DTL	Peeragarhi	1x50 MVAr at 220 kV	PO awarded to M/s Kanohar Electricals Ltd. Drawings approved and under stage inspection (delay due to pending supply of reactor bushings). GIS Bay is already available.
iii	DTL	Harsh Vihar	2x50 MVAr at 220 kV	PO awarded to M/s Kanohar Electricals Ltd. Drawings approved and under stage inspection (delay due to pending supply of rector bushings). GIS Bay is already available.
iv	DTL	Mundka	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	Bay work awarded to M/s. Ethos. Bay work is expected to be completed by Dec.21. Reactor part tender is dropped and at present same is under revision.
v	DTL	Bamnauli	2x25 MVAr at 220 kV	Bay work awarded to M/s. Ethos. Bay work is expected to be completed by Dec.21. Reactor part tender is dropped and at present same is under revision.
vi	DTL	Indraprastha	2x25 MVAr at 220 kV	Bay work awarded to M/s. Ethos. Bay work is expected to be completed by Dec.21. Reactor part tender is dropped and at present same is under revision.
vii	DTL	Electric Lane	1x50 MVAr at 220 kV	Under Re-tendering due to Single Bid
viii	PUNJAB	Dhuri	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	400kV Reactors - LOA issued on dated. 17.08.2021 and date of completion of project is 18 months from the date of LOA. 220kV Reactors - LOA issued on dated 19.07.2021 and date of completion of project is 18 months from the date of LOA.
ix	PUNJAB	Nakodar	1x25 MVAr at 220 kV	220kV Reactors - LOA issued on dated 19.07.2021 and date of completion of project is 18 months from the date of LOA.
x	PTCUL	Kashipur	1x125 MVAR at 400 kV	Price bid has been opened and is under evaluation

xi	RAJASTHAN	Akal	1x25 MVAr	LOA placed on dt. 4.1.2021. Agreement signed on dt. 8.02.2021. 2nd instalment has been received on dt. 30.07.2021. The erection work of 3 Reactors is under progress and shall be commissioned by 31.08.2022
xii	RAJASTHAN	Bikaner	1x25 MVAr	LOA placed on dt. 4.1.2021. Agreement signed on dt. 8.02.2021. 2nd instalment has been received on dt. 30.07.2021. The erection work of 3 Reactors is under progress and shall be commissioned by 31.08.2022
xiii	RAJASTHAN	Suratgarh	1x25 MVAr	LOA placed on dt. 4.1.2021. Agreement signed on dt. 8.02.2021. 2nd instalment has been received on dt. 30.07.2021. The erection work of 3 Reactors is under progress and shall be commissioned by 31.08.2022
xiv	RAJASTHAN	Barmer & others	13x25 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Instalment received on dt.19.02.21 &work order placed on dt. 7.04.2022 to M/s Kanohar Electricals Ltd.
xv	RAJASTHAN	Jodhpur	1x125 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Instalment received on dt.19.02.21 &work order placed on dt. 7.04.2022 to M/s Kanohar Electricals Ltd.

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.	-	PDD, J&K to update the status.
2	400/220kV, 2x315 MVA New Wanpoh	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV New Wanpoh - Alusteng D/c Line	-	PDD, J&K to update the status.
				• 220 kV New Wanpoh - Mattan D/c Line	-	PDD, J&K to update the status.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 6 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	-	PDD, J&K to update the status.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	-	HVPNL to update the status.
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 Total: 7	Utilized: 5 Unutilized: 1 (1 bays to be utilized shortly) Approved/Under Implementation:1	• 220 kV D/C Shahajahanpur (PG) - Gola line	Oct'22	Updated in 196th OCC by UPPTCL
				• 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 (2 bays to be utilized shortly)	• 220 kV Hamirpur-Dehan D/c line	Mar'22	Updated in 192nd 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: 4 Unutilized: 4	• 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: 0 Unutilized: 6	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	Dec'22	Updated in 197th OCC by HVPNL
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	Dec'22	Issue related to ROW as intimated in 192nd OCC.HVPNL to update the status.
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Apr'24	Issue related to ROW as intimated in 192nd OCC.HVPNL to update the status.
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0 Approved:4	• 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	May'24	Updated in 197th OCC by HVPNL
11	400/220kV Tughlakabad GIS	Commissioned: 6 Under Implementation: 4 Total: 10	Utilized: 6 Unutilized: 0 Under Implementation:4	• RK Puram – Tughlakabad (UG Cable) 220kV D/c line – March 2023.	-	DTL to update the status.
				• Masjid Mor – Tughlakabad 220kV D/c line.	-	DTL to update the status.
12	400/220kV Kala Amb GIS (TBCB)	Commissioned: 6 Total: 6	Utilized: 0 Unutilized: 6	• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s	Jan'23	Updated in 192nd OCC by HPPTCL
				• Network to be planned for 4 bays	-	HPPTCL to update the status.
13	400/220kV Kadarpur	Commissioned: 8	Utilized: 0	• LILO of both circuits of 220 KV Pali - Sector 56 D/C line at Kadarpur along with augmentation of existing conductor from 220 KV Sector-56 to LILO point with 0.4 sq inch AL-59 conductor.	Mar'23	Updated in 197th OCC by HVPNL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
13	Sub-station	Total: 8	Unutilized: 8	• LILO of both circuits of 220KV Sector 65 - Pali D/C line at Kadarpur along with augmentation of balance 0.4 sq. inch ACSR conductor of 220 kV Kadarpur - Sector 65 D/C line with 0.4sq inch AL-59 conductor	May'23	Updated in 197th OCC by HVPNL
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• LILO of both circuits of 220kV D/c Sector-69 - Roj Ka Meo line at 400kV Sohna Road	Jun'23	Updated in 197th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	Jun'23	Updated in 197th OCC by HVPNL
15	400/220kV Prithla Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	-	HVPNL to update the status.
				• 220kV D/C for Sector78, Faridabad	-	HVPNL to update the status.
16	400/220kV Sonepat Sub-station	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 2 Unutilized: 2 Under Implementation:2	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat		HVPNL to update the status.
				• Sonepat - HSIISC Rai 220kV D/c line	Nov'22	Updated in 196th OCC by HVPNL
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)	Oct'22	In Tendering stage as updated in 192nd OCC by RVPNL.
18	400/220kV Kotputli Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Kotputli - Pathreda 220kV D/c line	-	Bid documents under approval as updated in 195th OCC by RVPNL.
19	400/220kV Jallandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• Network to be planned for 2 bays	-	PSTCL to update the status.
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 comiisioned 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 4 bays	Oct'22	• Lucknow -Kaurasa (Sitapur), 220 kV D/C line expected energization date Oct'22 updated by UPPTCL in 196th OCC _____ • No planning for 2 no. of bays upated by UPPTCL in 196th OCC
22	400/220kV Gorakhpur Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	Dec'22	• Gorakhpur(PG)- Maharajganj, 220 kV D/C line expected energization date Dec'22 updated by UPPCL in 196th 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 4 bays	-	• UPPTCL intimated that 02 no. of bays under finalization stage _____ • No planning for 2 no. of bays updated by UPPTCL in 196th OCC
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	Aug'22	Updated in 196th OCC by HVPNL
25	400/220kV Pachkula Sub-station	Commissioned: 8 Under tender:2 Total: 10 Out of these 10 nos. 220kV Line Bays, 2 bays would be used by the lines being constructed by POWERGRID (Chandigarh-2) and balance 8 nos. bays would be used by HVPNL	Utilized: 2 Unutilized: 4 Under Implementation:2	• Panchkula – Pinjore 220kV D/c line	31.12.2022	Updated in 194th OCC by HVPNL
				• Panchkula – Sector-32 220kV D/c line	31.12.2022	Updated in 194th OCC by HVPNL
				• Panchkula – Raiwali 220kV D/c line	Commissioned	Updated in 194th OCC by HVPNL
				• Panchkula – Sadhaura 220kV D/c line: Sep'23	Sept'23	Updated in 194th OCC by HVPNL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
26	400/220kV Amritsar S/s	Commissioned:7 Approved in 50th NRPC- 1 no. Total: 8	Utilized: 6 Unutilized: 1 Approved in 50th NRPC- 1 no.	• Amritsar – Patti 220kV S/c line	-	PSTCL to update the status.
				• 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)	-	PSTCL to update the status.
27	400/220kV Bagpat S/s	Commissioned: 8 Total: 8	Utilized:6 Unutilized: 2	·• Bagpat - Modipuram 220kV D/c line	Aug'22	Updated in 196th OCC by UPPTCL
28	400/220kV Bahardurgarh S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• Network to be planned for 2 bays.		HVPNL to update the status.
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• Network to be planned for 2 bays.	-	LILO case of 220 kV Dausa – Sawai Madhopur line at 400 kV GSS Jaipur South (PG) is under WTD approval as updated by RVPNL in 195th 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	• Network to be planned for 2 bays	-	RVPNL to update the status
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 4 bays	-	HVPNL to update the status
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	Sept'22	Saharanpur(PG)-Devband D/c line expected energization date Sept'22 updated by UPPTCL in 196th 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	-	PSTCL to update the status
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	-	HPPTCL to update the status
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
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays	-	PSTCL to update the status

2. Establishment of new 400/220kV substations in Northern Region:

Sl. No.	Name of Substation	MVA Capacity	Expected Schedule		Downstream connectivity by States

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
1	400/220kV Dwarka-I GIS (8 nos. of 220kV bays)		4x 500	Mar'22		DTL to update the status
2	220/66kV Chandigarh GIS (8 nos. of 66kV bays)		2x 160	Apr'22		Chandigarh to update the status.
3	400/220kV Jauljivi GIS Out of these 8 nos. 220kV Line Bays, 4 nos. (Pithoragath-2, & Dhauliganga-2) would be used by the lines being constructed by POWERGRID and balance 4 nos. bays would be used by the lines being constructed by PTCUL.		2x315	Feb'22		• 220kV Almora-Jauljibi line • 220kV Brammah-Jauljibi line PTCUL to update the status of lines.

FGD Status

Updated status of FGD related data submission

NTPC (25.02.2022)
MEJA Stage-I (Updated by UP on 18.06.2022)
RIHAND STPS
SINGRAULI STPS
TANDA Stage-I
TANDA Stage-II
UNCHAHAR TPS
UPRVUNL (18.06.2022)
ANPARA TPS
HARDUAGANJ TPS
OBRA TPS
PARICHHA TPS

PSPCL (21.07.2022)
GGSSTP, Ropar
GH TPS (LEH.MOH.)
RRVUNL (10.06.2022)
CHHABRA SCPP
CHHABRA TPP
KALISINDH TPS
KOTA TPS
SURATGARH SCTPS
SURATGARH TPS

Updated status of FGD related data submission

Lalitpur Power Gen. Co. Ltd. (18.06.2022)
Lalitpur TPS
Lanco Anpara Power Ltd. (18.06.2022)
ANPARA-C TPS

HGPCL (21.03.2022)
PANIPAT TPS
RAJIV GANDHI TPS
YAMUNA NAGAR TPS

Adani Power Ltd. (18.02.2022)
KAWAI TPS

Rosa Power Supply Company (18.06.2022)
Rosa TPP Phase-I
Prayagraj Power Generation Company Ltd. (18.06.2022)
Prayagraj TPP
APCPL (25.02.2022)
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#1 (Target: 30-09-2022), INDIRA GANDHI STPP U#2 (Target: 30-09-2022), INDIRA GANDHI STPP U#3 (Target: 30-09-2022)
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: 30-04-2021), PANIPAT TPS U#7 (Target: 28-02-2021), PANIPAT TPS U#8 (Target: 31-12-2020), RAJIV GANDHI TPS U#1 (Target: 30-04-2022), RAJIV GANDHI TPS U#2 (Target: 28-02-2022), YAMUNA NAGAR TPS U#1 (Target: 31-12-2021), YAMUNA NAGAR TPS U#2 (Target: 31-10-2021)

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: 30-06-2022), RIHAND STPS U#1 (Target: 30-06-2024), RIHAND STPS U#2 (Target: 30-06-2024), RIHAND STPS U#3 (Target: 31-12-2023), RIHAND STPS U#4 (Target: 31-12-2023), RIHAND STPS U#5 (Target: 30-06-2023), RIHAND STPS U#6 (Target: 30-06-2023), SINGRAULI STPS U#1 (Target: 30-06-2024), SINGRAULI STPS U#2 (Target: 30-06-2024), SINGRAULI STPS U#3 (Target: 30-06-2024), SINGRAULI STPS U#4 (Target: 30-06-2024), SINGRAULI STPS U#5 (Target: 30-06-2024), SINGRAULI STPS U#6 (Target: 31-03-2023), SINGRAULI STPS U#7 (Target: 31-03-2023), UNCHAHAR TPS U#1 (Target: 31-12-2023), UNCHAHAR TPS U#2 (Target: 31-12-2023), UNCHAHAR TPS U#3 (Target: 30-06-2024), UNCHAHAR TPS U#4 (Target: 30-06-2024), UNCHAHAR TPS U#5 (Target: 30-06-2024), UNCHAHAR TPS U#6 (Target: 30-06-2022), MEJA Stage-I U#1 (Target: 31-12-2022), MEJA Stage-I U#2 (Target: 31-03-2023), TANDA Stage-I U#3 (Target:), TANDA Stage-I U#4 (Target:), TANDA Stage-II U#3 (Target: 31-12-2022), TANDA Stage-II U#4 (Target: 31-12-2022)

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: 31-12-2024), LALITPUR TPS U#2 (Target: 30-09-2024), LALITPUR TPS U#3 (Target: 30-06-2024)
Lanco Anpara Power Ltd.	ANPARA C TPS U#1 (Target: 31-12-2023), ANPARA C TPS U#2 (Target: 31-12-2023)
Prayagraj Power Generation Company Ltd.	PRAYAGRAJ TPP U#1 (Target: 31-12-2024), PRAYAGRAJ TPP U#2 (Target: 31-12-2024), PRAYAGRAJ TPP U#3 (Target: 31-12-2024)
PSPCL	GH TPS (LEH.MOH.) U#1 (Target: 31-12-2024), GH TPS (LEH.MOH.) U#2 (Target: 31-12-2024), GH TPS (LEH.MOH.) U#3 (Target: 31-12-2024), GH TPS (LEH.MOH.) U#4 (Target: 31-12-2024), GGSSTP, Ropar U#3 (Target: 31-03-2022), GGSSTP, Ropar U#4 (Target: 31-05-2022), GGSSTP, Ropar U#5 (Target: 31-07-2022), GGSSTP, Ropar U#6 (Target: 30-09-2022)

Rosa Power Supply Company	ROSA TPP Ph-I U#1 (Target: 31-12-2024), ROSA TPP Ph-I U#2 (Target: 31-12-2024), ROSA TPP Ph-I U#3 (Target: 31-12-2024), ROSA TPP Ph-I U#4 (Target: 31-12-2024)
RRVUNL	KOTA TPS U#5 (Target: 31-08-2024), KOTA TPS U#6 (Target: 31-08-2024), KOTA TPS U#7 (Target: 31-08-2024), SURATGARH TPS U#1 (Target: 31-12-2024), SURATGARH TPS U#2 (Target: 31-12-2024), SURATGARH TPS U#3 (Target: 31-12-2024), SURATGARH TPS U#4 (Target: 31-12-2024), SURATGARH TPS U#5 (Target: 31-12-2024), SURATGARH TPS U#6 (Target: 31-12-2024), SURATGARH SCTPS U#7 (Target: 31-12-2024), SURATGARH SCTPS U#8 (Target: 31-12-2024), CHHABRA TPP U#1 (Target: 31-12-2024), CHHABRA TPP U#2 (Target: 31-12-2024), CHHABRA TPP U#3 (Target: 31-12-2024), CHHABRA TPP U#4 (Target: 31-12-2024), CHHABRA SCPP U#5 (Target: 31-12-2024), CHHABRA SCPP U#6 (Target: 31-12-2024), KALISINDH TPS U#1 (Target: 31-12-2024), KALISINDH TPS U#2 (Target: 31-12-2024)
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: 31-12-2023), ANPARA TPS U#2 (Target: 31-12-2023), ANPARA TPS U#3 (Target: 31-12-2023), ANPARA TPS U#4 (Target: 31-12-2023), ANPARA TPS U#5 (Target: 31-12-2023), ANPARA TPS U#6 (Target: 31-12-2023), ANPARA TPS U#7 (Target: 31-12-2023), HARDUAGANJ TPS U#8 (Target: 31-12-2024), HARDUAGANJ TPS U#9 (Target: 31-12-2024), OBRA TPS U#9 (Target: 31-12-2024), OBRA TPS U#10 (Target: 31-12-2024), OBRA TPS U#11 (Target: 31-12-2024), OBRA TPS U#12 (Target: 31-12-2024), OBRA TPS U#13 (Target: 31-12-2024), PARICHHA TPS U#3 (Target: 30-04-2022), PARICHHA TPS U#4 (Target: 31-12-2024), PARICHHA TPS U#5 (Target: 31-12-2024), PARICHHA TPS U#6 (Target: 31-12-2024)

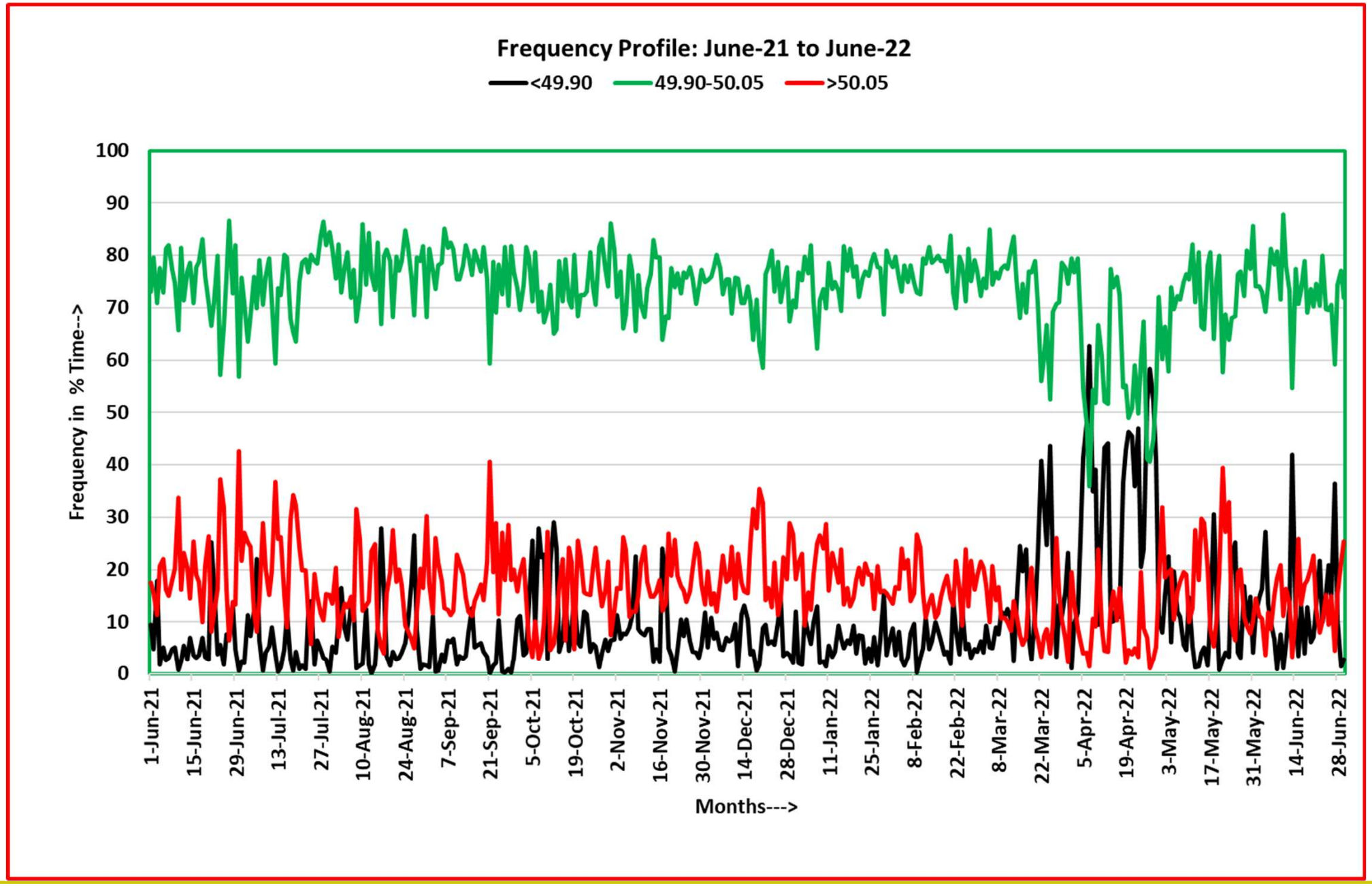
Annexure-B.I

प्रचालन समन्वय उपसमिति की बैठक
जून - 2022

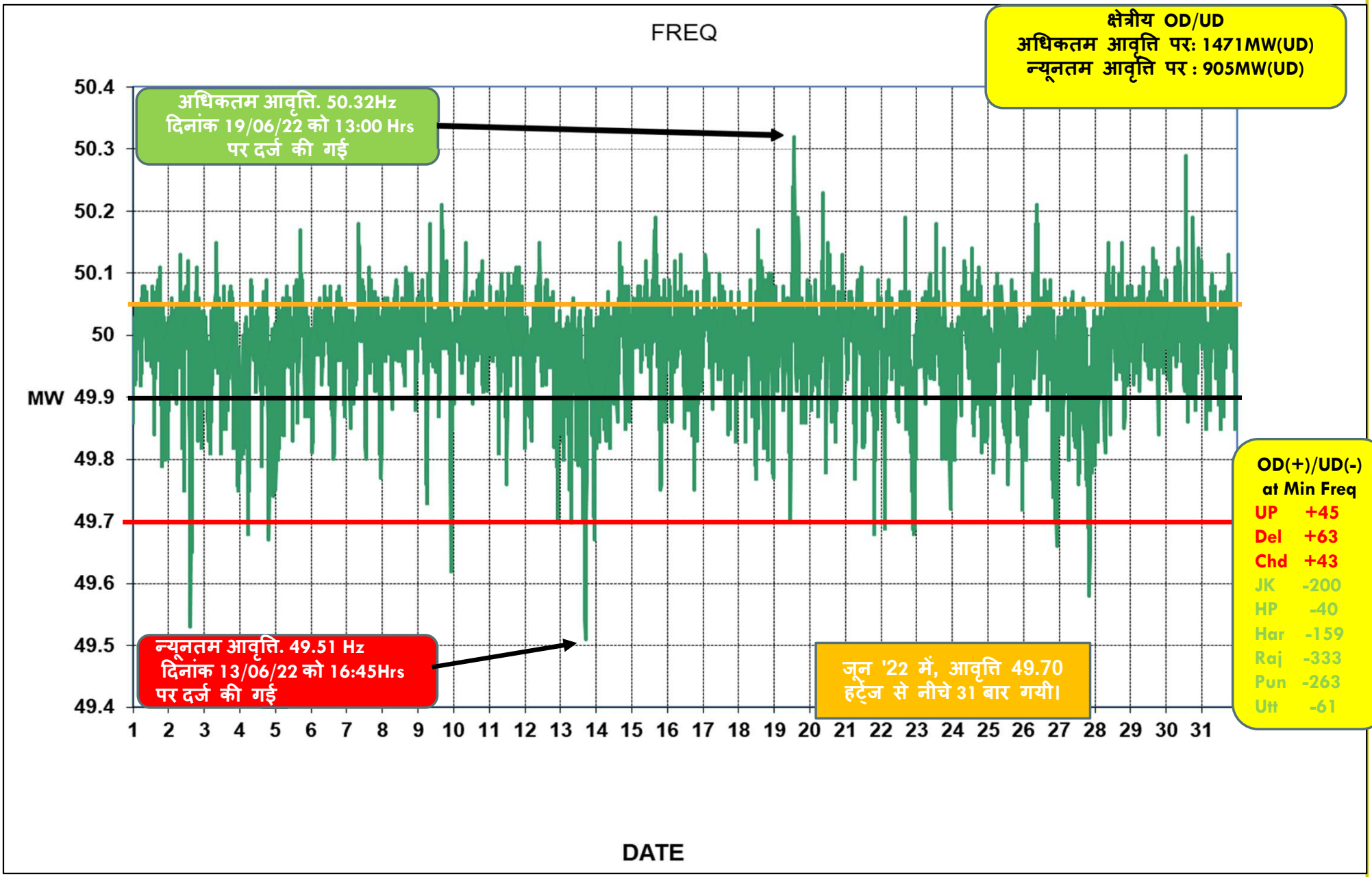
पिछले एक साल मे आवृत्ति की स्थिति

आवृत्ति बैंड	जून 2021	जुलाई 2021	अगस्त 2021	सितम्बर 2021	अक्टूबर 2021	नवम्बर 2021	दिसम्बर 2021	जनवरी 2022	फ़रवरी 2022	मार्च 2022	अप्रैल 2022	मई 2022	जून 2022
< 49.7 Hz(%)	0.07	0.04	0.17	0.21	0.31	0.09	0.03	0.02	0.08	0.46	4.94	0.27	0.42
<49.8 Hz(%)	1.06	0.67	1.3	0.69	2.43	1.17	0.71	0.53	0.55	2.92	13.60	1.94	2.41
<49.9 Hz(%)	6.12	5.35	7.67	4.18	11.10	8.02	6.92	5.84	5.99	14.50	31.98	9.83	12.45
49.90-50.05 Hz(%)	**74.81**	**75.06**	**76.93**	**77.01**	**74.38**	**74.10**	**73.14**	**75.66**	**77.06**	**73.42**	**59.30**	**72.23**	**73.38**
50.05-50.10 Hz(%)	14.74	16.71	14.14	15.83	12.70	14.77	15.09	15.17	14.36	10.28	7.35	12.95	11.46
>50.10 Hz(%)	3.18	2.78	1.25	2.26	1.81	3.05	3.89	3.21	2.51	1.72	1.35	4.11	2.43
>50.20 Hz(%)	0.09	0.10	0.01	0.03	0.06	0.07	0.25	0.11	0.08	0.08	0.08	0.88	0.28
औसत आवृत्ति	50.00	50.01	50.00	50.00	49.99	50.00	50.00	50.00	50.00	49.98	49.93	50.00	49.99

आवृत्ति की स्थिति: जून -2021 से 2022



जून-2022 के दौरान आवृत्ति की स्थिति
(As per 5 Minute SCADA data)

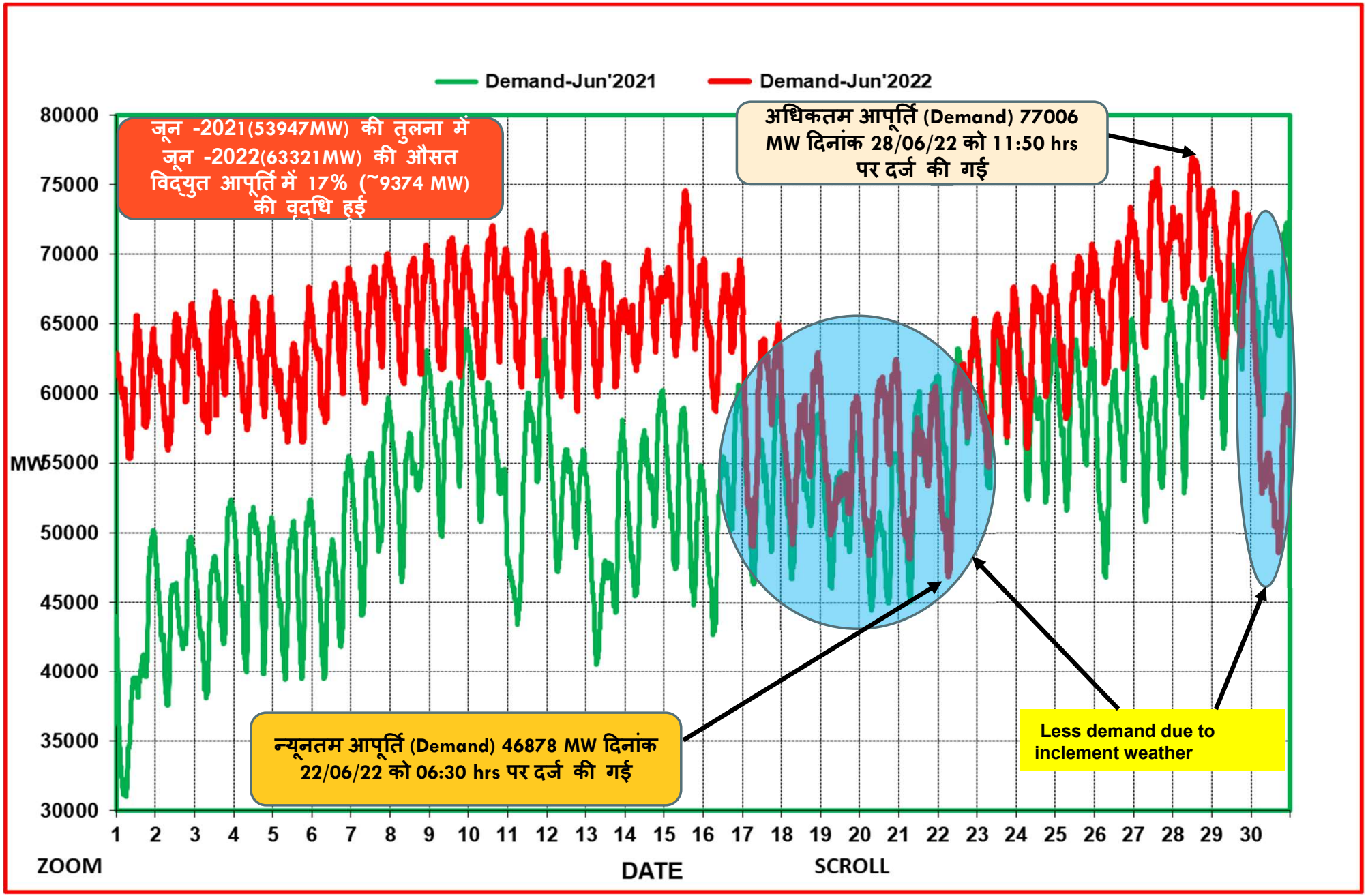


जून -2022 के दौरान अधिकतम मांग (Demand Met), अधिकतम ऊर्जा खपत (Energy consumption) और अब तक का कीर्तिमान (राज्यों द्वारा जमा आंकड़ों के अनुसार)

राज्य	अधिकतम मांग (MW) (in June'22)	दिनांक / समय	रिकॉर्ड अधिकतम मांग (in MW) (upto May'22)	दिनांक / समय	अधिकतम ऊर्जा खपत (MU) (in June'22)	दिनांक	रिकॉर्ड अधिकतम ऊर्जा खपत (MU) (Upto May'22)	दिनांक
पंजाब	14189	29.06.22 at 13:00	13633	01.07.19 को 12:00 बजे	334.45	29.06.22	306.09	01.07.21
हरियाणा	12540	28.06.22 at 12:00	12120	07.07.21 को 14:45 बजे	264.080	28.06.22	266.15	07.07.21
राजस्थान	15850	28.06.22 at 14:00	15898	19.05.22 को 12:30 बजे	323.84	09.06.22	311.080	20.05.22
दिल्ली	7770	29.06.22 at 16:00	7409	02.07.19 को 15:35 बजे	153.52	28.06.22	147.10	02.07.19
उत्तर प्रदेश	25755	07.06.22 at 21:00	25046	15.05.22 को 22:00 बजे	536.97	09.06.22	514.49	07.07.21
उत्तराखंड	2594	14.06.22 at 21:00	2468	24.01.22 को 09:00 बजे	54.27	15.06.22	50.370	31.05.22
हिमाचल प्रदेश	1739	14.06.22 at 13:00	2030	07.01.22 को 10:00 बजे	36.91	28.06.22	36.90	29.12.20
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	2723	27.06.22 at 14:00	2826	03.02.22 को 19:00 बजे	56.794	27.06.22	59.95	17.01.22
चंडीगढ़	407	15.06.22 at 16:00	426	08.07.21 को 15:00 बजे	8.070	28.06.22	8.41	08.07.21
उत्तरी क्षेत्र #	77006	28.06.22 at 11:50	73191	18.08.21 को 13:00 बजे	1737.09	28.06.22	1650.07	07.07.21

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

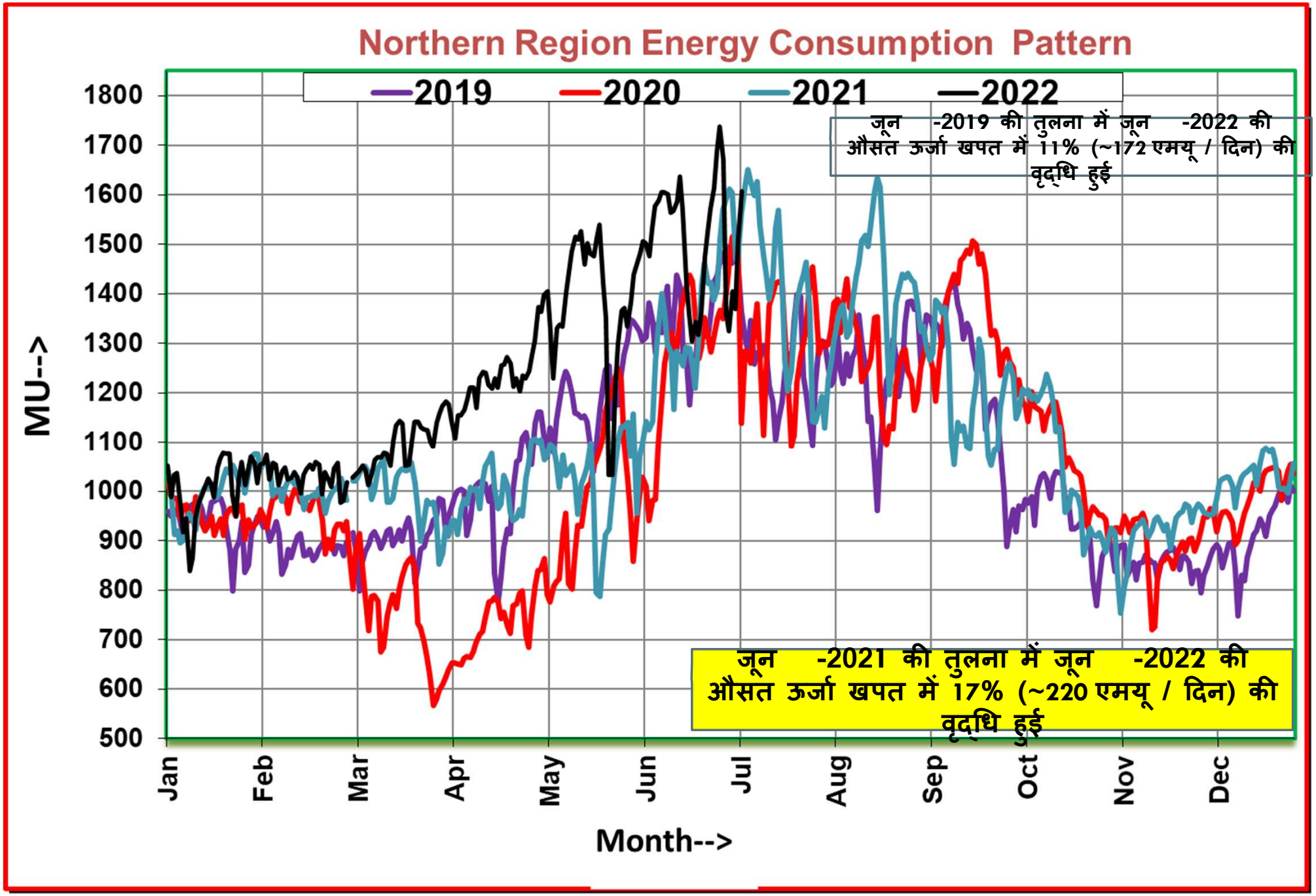
क्षेत्रीय विद्युत आपूर्ति (Demand) जून 2021 बनाम जून 2022 (As per 5 Minute SCADA data)



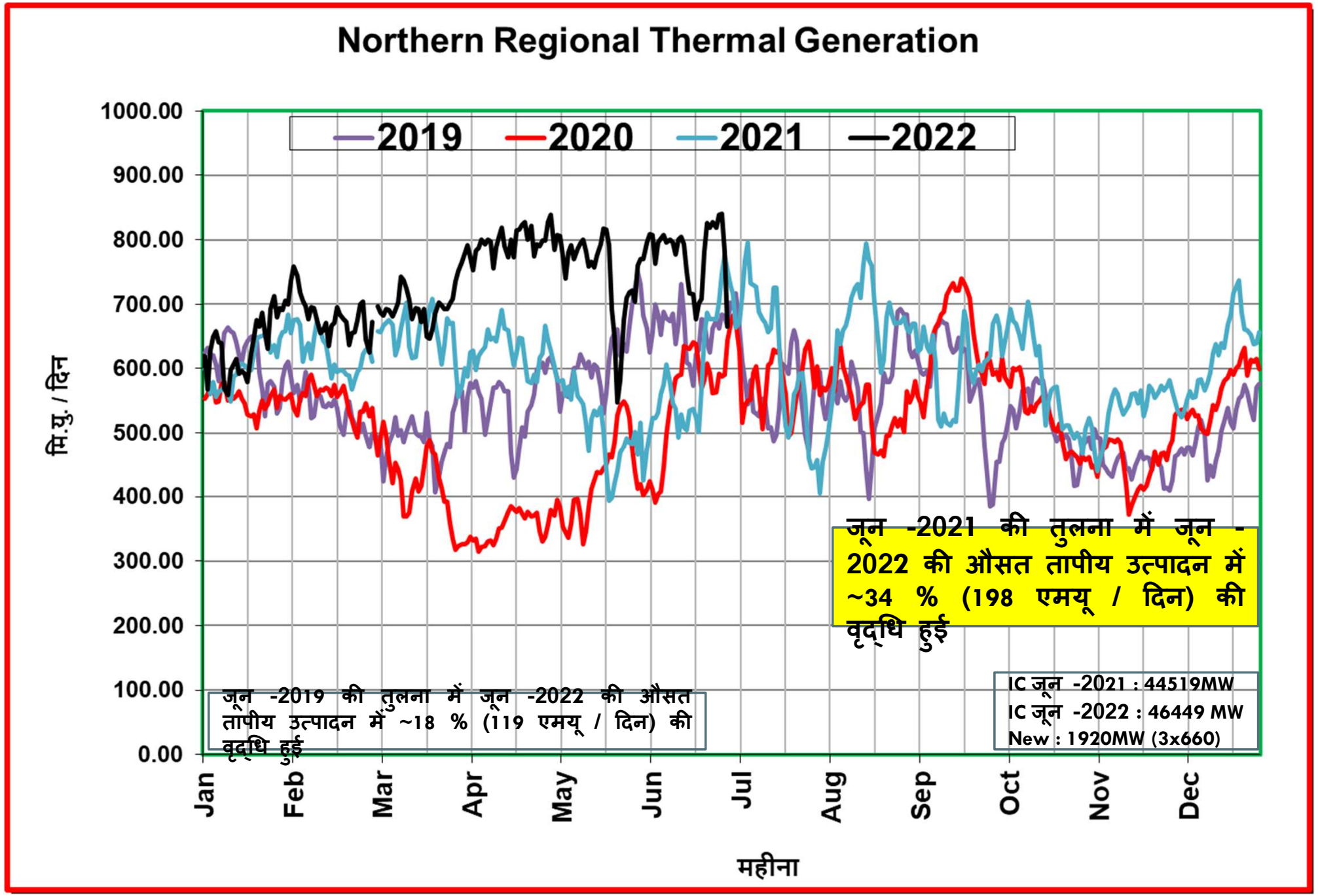
उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) जून -2022/ जून -2021 / जून -2020

राज्य	जून -2020	जून -2021	जून -2022	% वृद्धि (जून -2021 vs जून -2020)	% वृद्धि (जून -2022 vs जून -2021)
पंजाब	224.83	234.38	251.09	4.25%	7.13%
हरियाणा	172.24	187.63	211.70	8.94%	12.83%
राजस्थान	239.50	243.32	290.78	1.59%	19.51%
दिल्ली	102.32	108.75	130.10	6.29%	19.63%
उत्तर प्रदेश	392.28	399.89	495.23	1.94%	23.84%
उत्तराखंड	38.37	40.78	49.29	6.27%	20.87%
चंडीगढ़	5.44	5.57	6.59	2.41%	18.29%
हिमाचल प्रदेश	26.50	30.02	34.47	13.28%	14.81%
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	42.10	50.01	50.85	18.79%	1.68%
उत्तरी क्षेत्र	1243.58	1300.35	1520.09	4.56%	16.90%

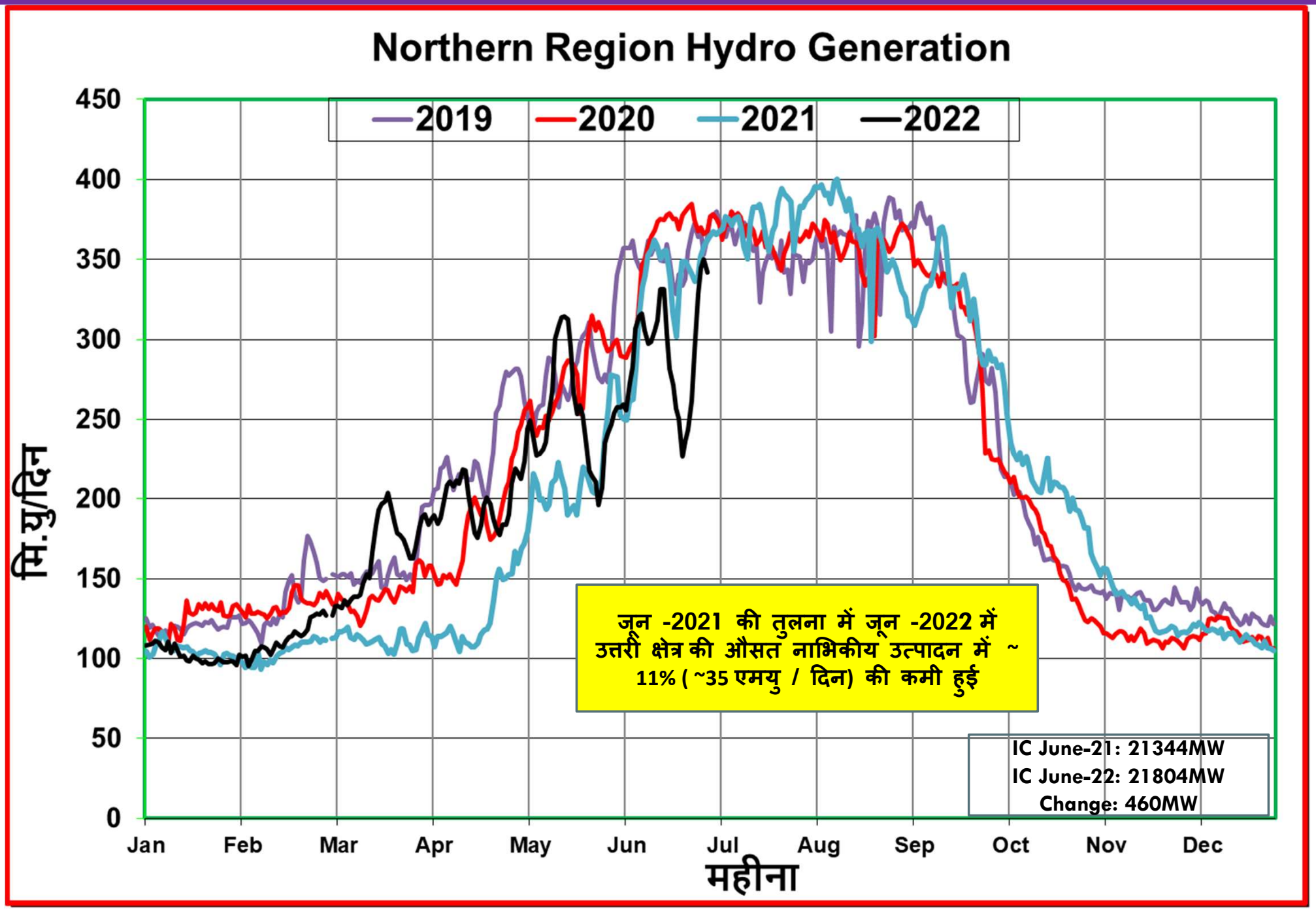
उत्तरी क्षेत्र की ऊर्जा खपत(MUs)



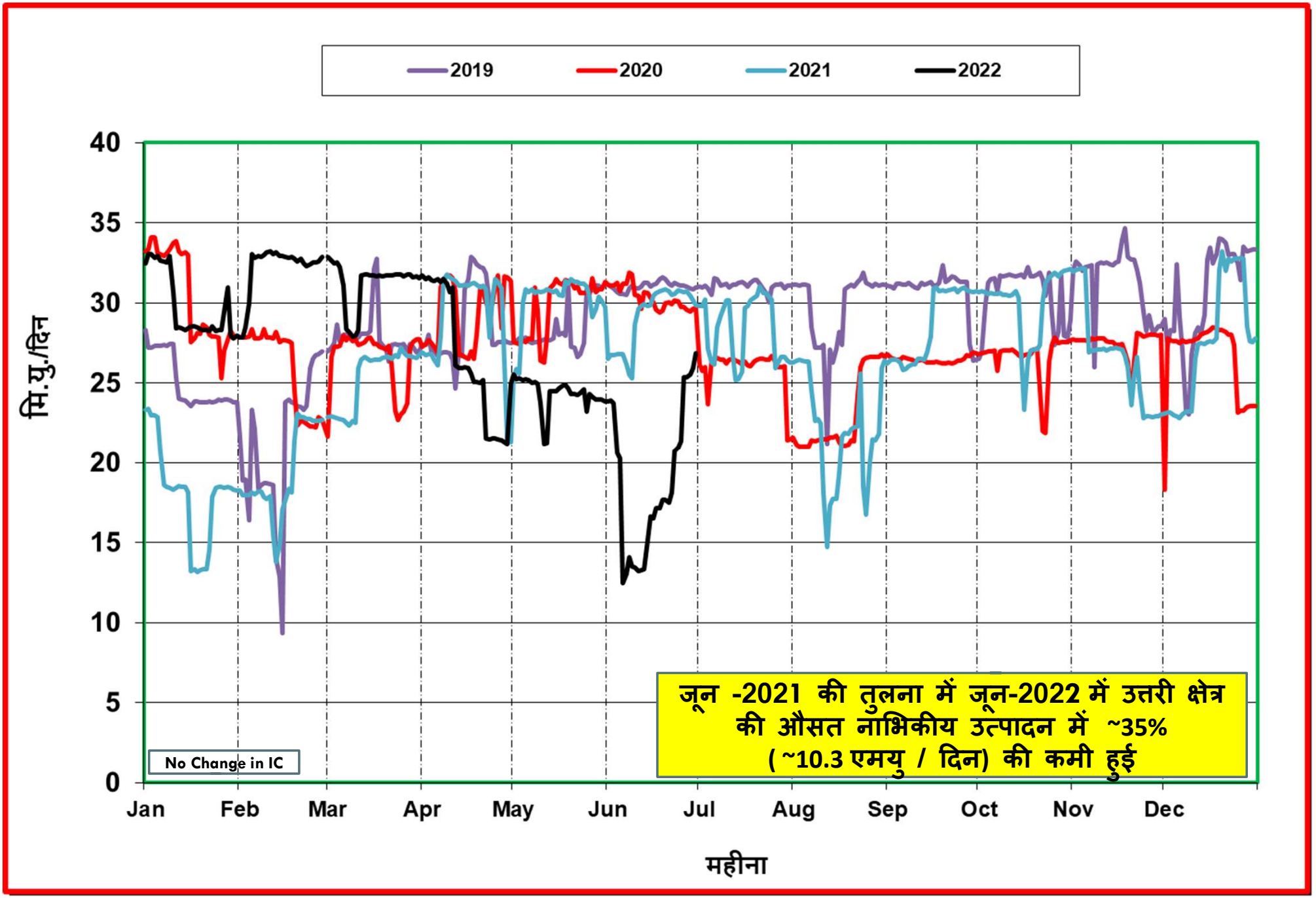
उत्तरी क्षेत्र की तापीय (Thermal) उत्पादन की स्थिति(Mus/Day)



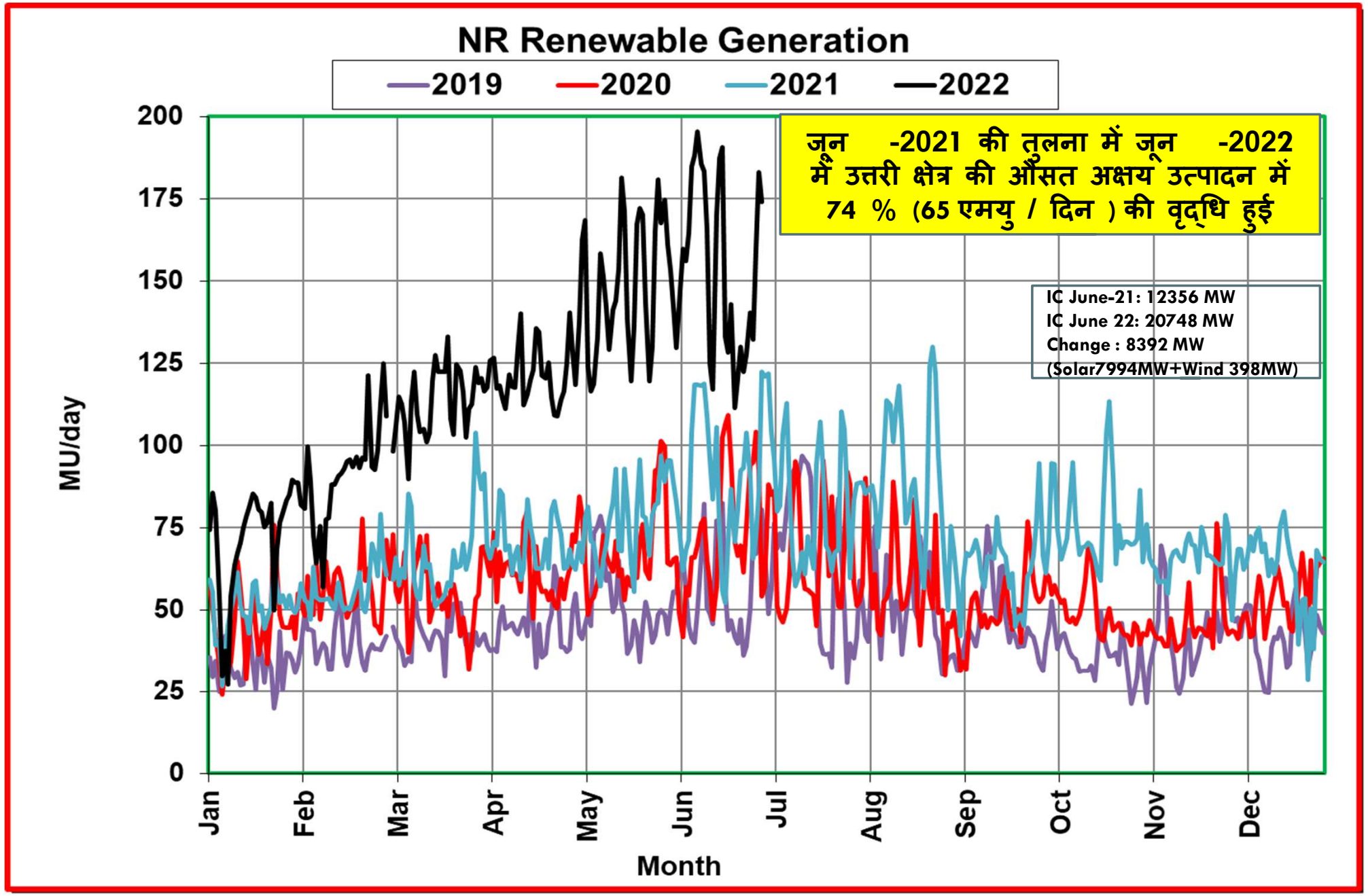
उत्तरी क्षेत्र की जलीय (हाइड्रो) उत्पादन की स्थिति(Mus/Day)



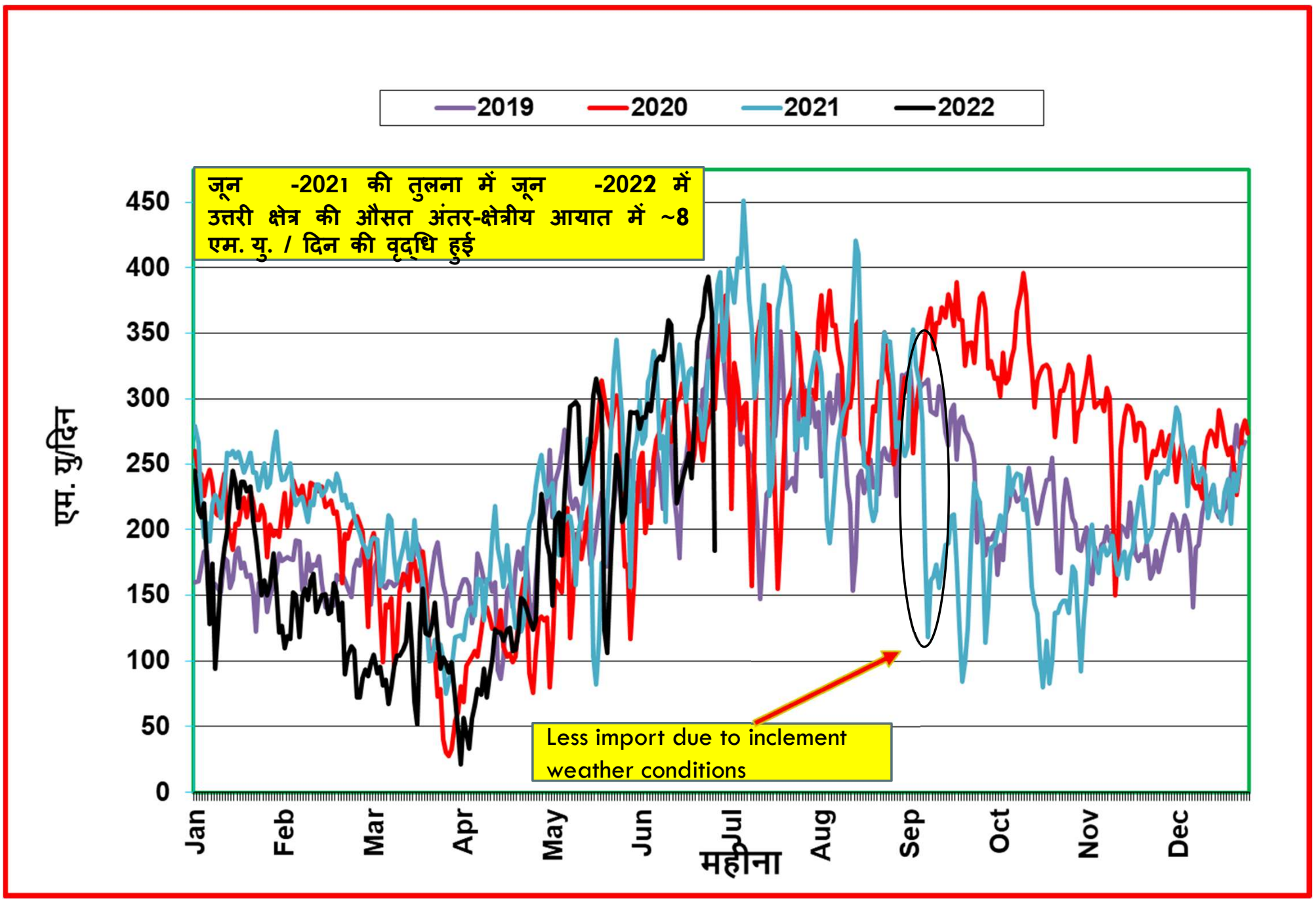
उत्तरी क्षेत्र की नाभिकीय उत्पादन की स्थिति (Mus/Day)



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



अंतर-क्षेत्रीय आयात(Mus/Day) की स्थिति



RE Penetration

	Maximum Daily MU Penetration			
	June '2022		Record upto May'2022	
	Max % Penetration	Date	Max % Penetration	Date
Punjab	3.57	05-06-2022	12.28	01-04-2020
Rajasthan	31.40	17-06-2022	36.47	22-10-2021
UP	2.30	24-06-2022	4.07	30-10-2021
NR	13.39	17-06-2022	13.91	21-05-2022

	Maximum Instantaneous Penetration in MW			
	June '2022		Record upto May'2022	
	Max % Penetration	Date	Max % Penetration	Date
Punjab	5.73	01-06-2022	26.87	22-04-2020
Rajasthan	45.20	30-06-2022	68.38	31-03-2020
UP	8.27	19-06-2022	15.13	01-04-2021
NR	12.33	30-06-2022	32.84	22-02-2022

वास्तविक सारांश -
जून -2021 बनाम जून -2022

	जून -2021 (मि.यु. /दिन)	जून -2022 (मि.यु. /दिन)	जून माह में वृद्धि (मि.यु./दिन)
तापीय (Thermal) उत्पादन	580.78	779.33	198.56
जलीय (Hydro) उत्पादन	324.35	289.84	-34.51
नाभिकीय (Nuclear) उत्पादन	29.14	18.82	-10.31
अंतर-क्षेत्रीय (Inter-Regional) कुल आयात	294.30	302.46	8.15
अक्षय (Renewable) उत्पादन	87.919	153.131	65.21
कुल उपलब्धता	**1441.41**	**1538.05**	**96.64**

B.20

Outage Summary For June 2022									
CONSTITUENTS	PLANNED (A)	FORCED OUTAGES (B=C+D)	EMERGENCY SHUTDOWNS (C)	TRIPPING (D)	% PLANNED SHUTDOWNS (A/(A+C))	% EMERGENCY SHUTDOWNS(C/(A+C))	% ESD SHUTDOWNS(C/B)	% TRIPPING (D/B)	TOTAL OUTAGES (A+B)
POWERGRID	266	279	168	111	61.3%	38.7%	60.2%	39.8%	545
UPPTCL	86	149	69	80	55.5%	44.5%	46.3%	53.7%	235
RRVPNL	78	84	20	64	79.6%	20.4%	23.8%	76.2%	162
HVPNL	32	33	18	15	64.0%	36.0%	54.5%	45.5%	65
PSTCL	28	23	9	14	75.7%	24.3%	39.1%	60.9%	51
BBMB	7	42	16	26	30.4%	69.6%	38.1%	61.9%	49
DTL	9	22	11	11	45.0%	55.0%	50.0%	50.0%	31
PDD JK	4	23	2	21	66.7%	33.3%	8.7%	91.3%	27
Azure	21	4	2	2	91.3%	8.7%	50.0%	50.0%	25
Adani (Renewables)	8	14	11	3	42.1%	57.9%	78.6%	21.4%	22
MAHINDRA	15	5	2	3	88.2%	11.8%	40.0%	60.0%	20
PTCUL	4	13	3	10	57.1%	42.9%	23.1%	76.9%	17
BKTL	8	8	6	2	57.1%	42.9%	75.0%	25.0%	16
NTPC	4	10	6	4	40.0%	60.0%	60.0%	40.0%	14
RENEW	3	8	4	4	42.9%	57.1%	50.0%	50.0%	11
GPTL	7	3	2	1	77.8%	22.2%	66.7%	33.3%	10
HPPTCL	7	3	2	1	77.8%	22.2%	66.7%	33.3%	10
PKTCL	4	5	1	4	80.0%	20.0%	20.0%	80.0%	9
ABC RJ01	7	1	0	1	100.0%	0.0%	0.0%	100.0%	8
JSW/SJVNL	2	6	3	3	40.0%	60.0%	50.0%	50.0%	8
AEPL	6	0	0	0	100.0%	0.0%	0.0%	0.0%	6
POWERLINK	5	1	0	1	100.0%	0.0%	0.0%	100.0%	6
SBSRPC-11	4	2	0	2	100.0%	0.0%	0.0%	100.0%	6
ACME	4	1	1	0	80.0%	20.0%	100.0%	0.0%	5
PFTL	4	1	0	1	100.0%	0.0%	0.0%	100.0%	5
ESUCRL	1	3	1	2	50.0%	50.0%	33.3%	66.7%	4
THAR SURYA1	3	1	0	1	100.0%	0.0%	0.0%	100.0%	4
PKTSL	0	4	3	1	0.0%	100.0%	75.0%	25.0%	4
ADHPL	0	4	0	4	0.0%	0.0%	0.0%	100.0%	4
FBTL	1	2	0	2	100.0%	0.0%	0.0%	100.0%	3
PAPTL	3	0	0	0	100.0%	0.0%	0.0%	0.0%	3
NRSS XXIX	0	3	0	3	0.0%	0.0%	0.0%	100.0%	3
APCPL	1	1	0	1	100.0%	0.0%	0.0%	100.0%	2
Ayana	2	0	0	0	100.0%	0.0%	0.0%	0.0%	2
NPCIL	2	0	0	0	100.0%	0.0%	0.0%	0.0%	2
TATA POWER	0	2	2	0	0.0%	100.0%	100.0%	0.0%	2
NHPC	0	2	0	2	0.0%	0.0%	0.0%	100.0%	2
GREENKO BUDHIL	0	2	0	2	0.0%	0.0%	0.0%	100.0%	2
Avaada_RJHN	1	0	0	0	100.0%	0.0%	0.0%	0.0%	1
NRSS36	1	0	0	0	100.0%	0.0%	0.0%	0.0%	1
RAILWAYS	1	0	0	0	100.0%	0.0%	0.0%	0.0%	1
RTCL	1	0	0	0	100.0%	0.0%	0.0%	0.0%	1
PATRAN	0	1	1	0	0.0%	100.0%	100.0%	0.0%	1
CLEAN SOLAR	0	1	0	1	0.0%	0.0%	0.0%	100.0%	1
TOTAL	640	766	363	403	63.8%	36.2%	47.4%	52.6%	1406

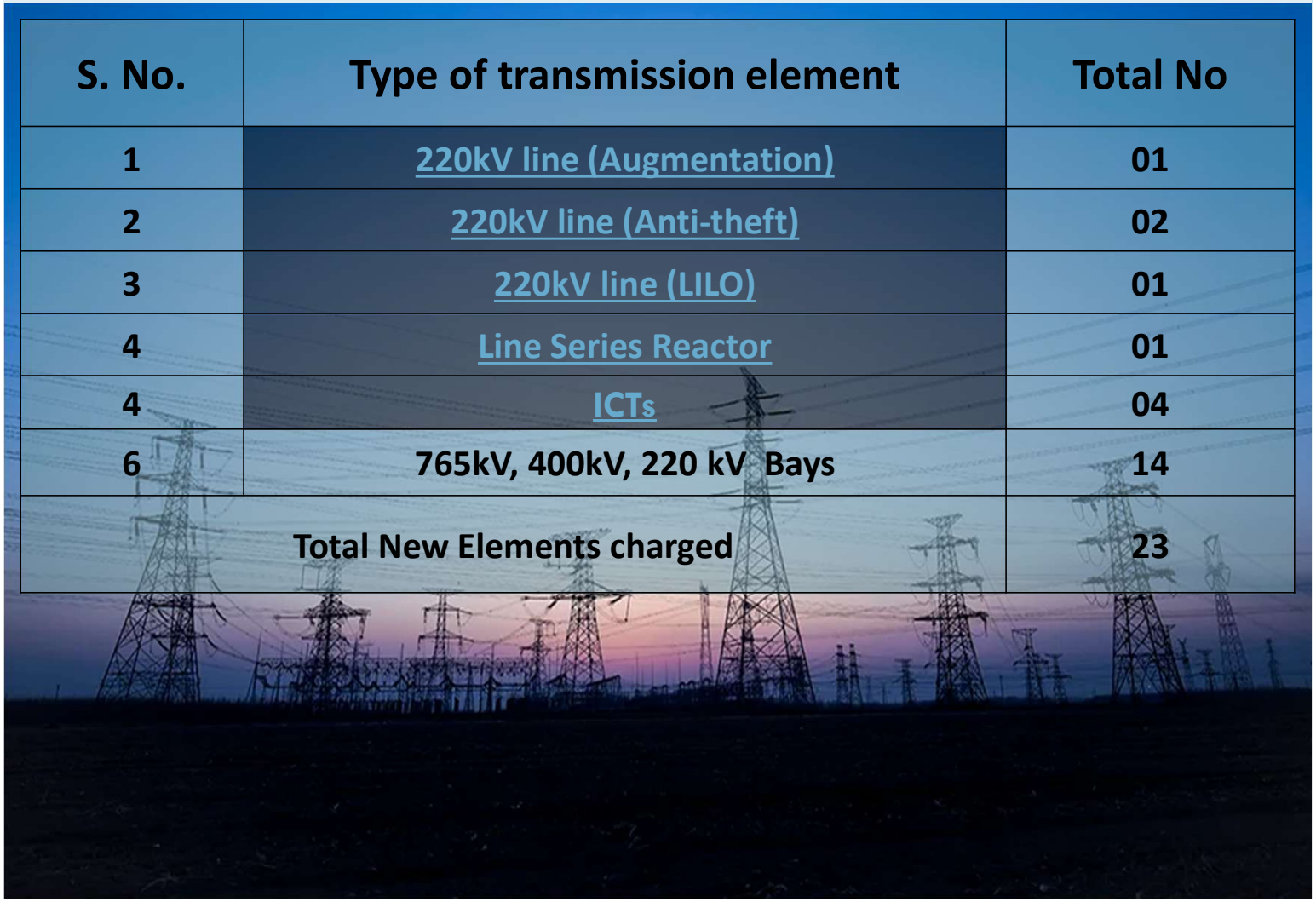
B.20

OUTAGE SUMMARY OF LAST THREE MONTHS							
MONTH	PLANNED	FORCED OUTAGES	EMERGENCY SHUTDOWNS	TRIPPING	% PLANNED as of TOTAL S/D	% EMERGENCY SHUTDOWNS	TOTAL OUTAGES (A+B)
	(A)	(B=C+D)	(C)	(D)	(A/(A+C))	(C/(A+C))	
Mar-22	893	472	202	270	81.6%	18.4%	1365
Apr-22	705	649	244	405	74.3%	25.7%	1354
May-22	666	1060	366	694	64.5%	35.5%	1726
June-22	**640**	**766**	**363**	**403**	**63.8%**	**36.2%**	**1406**

B.20

New Elements First Time Charged During June 2022

S. No.	Type of transmission element	Total No
1	220kV line (Augmentation)	01
2	220kV line (Anti-theft)	02
3	220kV line (LILO)	01
4	Line Series Reactor	01
4	ICTs	04
6	765kV, 400kV, 220 kV Bays	14
Total New Elements charged		23

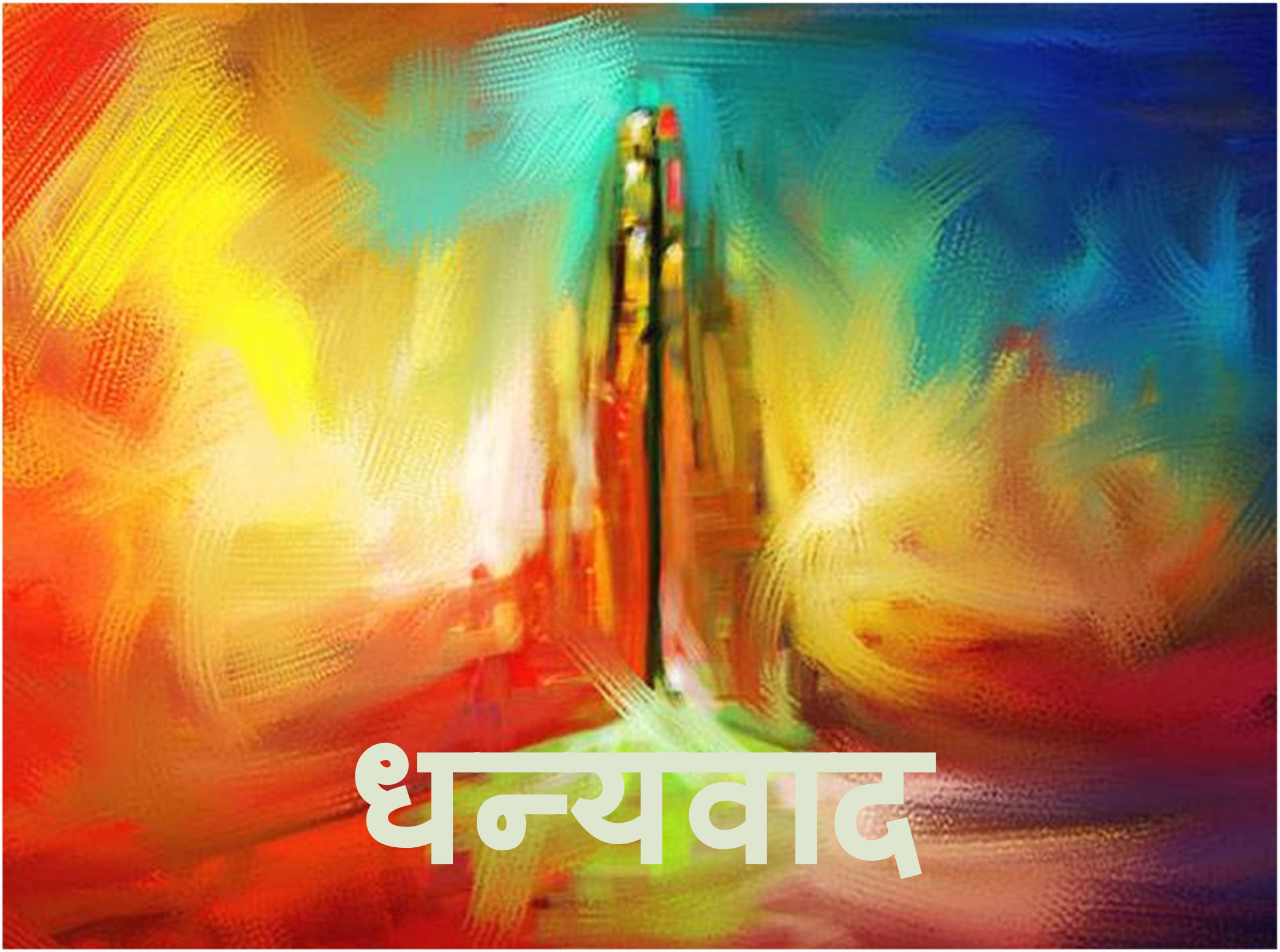


B.20

TRANSMISSION LINES						
S.NO.	**Agency/Owner**	**LINE NAME**	**Length (KM)**	**Conductor Type**	**DATE**	**Remarks**
1	HPPTCL	Antitheft charging of 220kV Hamirpur(PG)-Dehan (HP) Ckt-1 from Hamirpur(PG) Upto Gantry at 220/ 132/ 33kV Dehan Substation (Kangra)	57.939	Twin Moose	09-Jun-2022	
2	HPPTCL	Antitheft charging of 220kV Hamirpur(PG)-Dehan (HP) Ckt-2 from Hamirpur(PG) Upto Gantry at 220/ 132/ 33kV Dehan Substation (Kangra)	57.939	Twin Moose	09-Jun-2022	
3	PSTCL	220kV Kartarpur(PS)-Jalandhar(PG)-1	5.82	HTLS	22-Jun-2022	Replacement of ACSR conductor with HTLS conductor in existing line.
LILO/RE-ARRANGEMENT OF TRANSMISSION LINES						
S.NO.	**Agency/Owner**	**Line Name/LILO at**	**Length (KM)**	**Conductor Type**	**DATE**	**Remarks**
1	HPPTCL	220kV Baddi(HP)-Pinjore (HV)-2	24.5	ZEBRA	23-Jun-2022	After LILO of 220kV kunihar-Pinjore 2nd Circuit at 220kV Baddi Substation
BUS/LINE SERIES REACTORS						
S.NO.	**Agency/Owner**	**Element Name**	**Voltage Level (kV)**	**Rating (MVAr)**	**DATE**	**Remarks**
1	POWERGRID	12 Ohm, 324 MVAr Series Line Reactor in 400 kV Kanpur- 765kV Kanpur GIS Line 1 at Kanpur(PG)	400	324	05-Jun-22	

B.20

GENERATING UNITS							
SL. NO.	**Location**	**OWNER/UNIT NAME**	**Unit No/Source**	**Capacity added (MW)**	**Total/Installed Capacity (MW)**	**DATE**	**Remarks**
1	Rajasthan	SBSR Power Cleantech Eleven_Bikaner (PG)	Solar	62.5	300	18.06.2022	
2	Rajasthan	Thar Surya1_Bikaner (PG)	Solar	54	300	22.06.2022	
3	Rajasthan	Mega Suryaurja_Bhadla II (PG)	Solar	75	250	16.06.2022	
4	Rajasthan	AHEJ4L PSS3(Adani)_Fatehgarh I(Adani)	Wind	12.8	250	18.06.2022	
5	Rajasthan	AHEJ4L PSS4(Adani)_Fatehgarh I(Adani)	Wind	32.4	260	28.06.2022	
6	Rajasthan	AHEJ4L PSS2(Adani)_Fatehgarh I(Adani)	Solar	25.6	350	03.06.2022	
7	Rajasthan	NTPC_NIDAN_Fatehgarh I(Adani)	Solar	46.24	296	03.06.2022	
ICTs/ GTs / STs							
S.NO.	**Agency/Owner**	**SUB-STATION**	**ICT NO**	**Voltage Level (kV)**	**CAPACITY (MVA)**	**DATE**	**Remarks**
1	RRVPNL	400/220/33kV, 500 MVA, 3-Phase, SIEMENS, ICT - 1 at Bhilwara(RS)	1	400/220/33kV	500 MVA	06-Jun-2022	Replacement in place of existing 315 MVA ICT
2	THAR SURYA1	220/33kV, 160 MVA, 3-Phase, TBEA, Power Transformer - 1 at Thar Surya1 SL_BKN_PG (TS1PL)	1	220/33 kV	160 MVA	10-Jun-2022	New
3	UPPTCL_PRSTL	400/220/33kV, 500 MVA, 3-Phase, BHEL, ICT - 1 at Sambhal_PRSTL (UP)	1	400/220/33kV	500 MVA	15-Jun-2022	New
4	POWERGRID	400/220/33kV, 500 MVA MVA, 3-Phase, T & R, ICT - 1 at Bhadla_2 (PG)	1	400/220/33kV	500 MVA	24-Jun-2022	New


धन्यवाद

Annexure-B.II

A. Details of Long Duration Transmission elements Outage :-

S.No	Element Name	Type	Owner	Outage			Reason / Remarks	Status updated during last OCC
1	80 MVAR Bus Reactor No 1 at 400KV Nathpa Jhakri(SJ)	BR	SJVNL	17-10-2019	12:58	1001	Flashover/Fault in 80MVAR Bus Reactor cleared by Bus Bar Protection.	30.07.2022
2	400/220 kV 315 MVA ICT 1 at Muradnagar_1(UP)	ICT	UPPTCL	13-03-2020	02:46	854	Buccholz relay alarm and Local Breaker Backup protection operated. Tripped along with Hapur-Muradnagar line. Flags are not reset because of cable flashover.	TWC approved on 09.12.2021 for replacement with 500MVA new ICT . 30 Dec 2022
3	400/220 kV 500 MVA ICT 2 at Noida Sec 148(UP)	ICT	UPPTCL	19-08-2020	08:12	695	ICT tripped on REF protection. Transformer caught fire and got damaged.	30 Aug 2022
4	50 MVAR Non-Switchable LR on Agra-Unnao (UP) Ckt-1 @Agra(UP)	LR	UPPTCL	28-10-2021	22:27	259	R and Y phase bushing damaged at Agra(UP).	Testing done by OEM, Report awaited.
5	220 KV AGRA(PG)-FEROZABAD(UP) (UP) CKT-1	Line	UPPTCL	27-11-2021	09:55	230	Jumpering work for making Lilo point of 220 kv Firozabad(400)-Agra(765) PG line at 220 kv Tundla	Jumpering work for making Lilo point of 220 kv Firozabad(400)- Agra(765) PG line at 220 kv Tundla. FTC process completed but yet to be charged due to PLCC issue at Tundla end.
6	400KV Bus 1 at Vishnuprayag(JP)	BUS	JPVL	02-12-2021	14:42	188	Bus bar protection operated at Vishnuprayag. Sparking in Bus Coupler CB.	30.09.2022
7	50 MVAR Bus Reactor No 1 at 400KV Moradabad(UP)	BR	UPPTCL	03-12-2021	22:22	223	R-phase bushing damaged.	30.12.2022
8	400/220 kV 240 MVA ICT 3 at Moradabad(UP)	ICT	UPPTCL	13-12-2021	22:38	213	Due to high DGA values, Hydrogen gas is above permissible limit.	30 Dec 2022. It has been informed that 315MVA ICT has been aproved
9	50 MVAR BUS REACTOR NO 1 AT 400KV PANKI(UP)	BR	UPPTCL	29-01-2022	08:56	167	Replacement of 50 MVAR Bus reactor by new 125 MVAR Bus Reactor.	30.07.2022
10	765 KV ANPARA_D-UNNAO (UP) CKT-1	Line	UPPCL	08-02-2022	10:06	157	Shifting of Line Reactor from Anpara-D to Obra-C S/S (OCC 190)	LILO of the line at Obra C under processing. Annexure-B documents awaited.
11	220 KV Kishenpur(PG)-Mir Bazar(PDD) (PDD) Ckt-1	Line	PDD JK	19-02-2022	21:45	145	Tower no. 170 collapsed.	
12	400 KV Parbati_3(NH)-Sainj(HP) (PKTCL) Ckt-1	Line	PKTCL	11-03-2022	03:21	126	Phase to earth fault R-N , Zone-1 from Parbati_3(NH). R-phase XLPE cable has been punctured between GIS and Pothead yard of Parbati-III PS.	
13	400/21 kV 776 MVA GT 7 at Suratgarh SCTPS(RVUN)	ICT	RRVPNL	15-03-2022	01:32	122	Due to failure of R-phase bushing of GT-7A.	15.09.2022
14	220 KV Gazipur(DTL)-Shahibabad(UP) (UP) Ckt-2	Line	UPPTCL	30-04-2022	19:30	75	Line remains charge at No load from UP end. Manually open at 19:30 on 30/04/22 due bending of tower no. 4	Line healty , normally open fron one end
15	220 KV Gazipur(DTL)-Noida Sec62(UP) (UP) Ckt-1	Line	UPPTCL	30-04-2022	22:55	75	Tower tilted on one side at tower no 10 from Gazipur (DTL) end.	Line healty , normally open fron one end
16	50 MVAR Bus Reactor No 1 at 400KV Bikaner(RS)	BR	RRVPNL	02-06-2022	19:11	42	Reactor Back-up Impedance protection operated.	
17	401A MAIN BAY - 400/66 KV 250 MVA ICT 1 AT HMEL (PS) (PSTCL) AND 400 KV HMEL (PS) - BUS 1 AT 400 KV HMEL (PS) (PSTCL)	BAY	PSTCL	12-05-2022	14:05	63	Transformer Differential protection operated.	
18	400/66 kV 250 MVA ICT 1 at HMEL (PS)	ICT	PSTCL	12-05-2022	14:05	63	Differential relay operated.	
19	408 TIE BAY - 400KV MOGA-HISSAR (PG) CKT-1 AND 400/220KV 315 MVA ICT 4 AT MOGA(PG)	BAY	POWERGRID	17-05-2022	10:32	59	For retrofitting (overhauling) work	
20	70152T TIE BAY - 765KV PHAGI(RS)-BHIWANI(PG) (PG) CKT-2 AND 765/400KV 1500 MVA ICT 1 AT PHAGI(RS)	BAY	RRVPNL	20-05-2022	18:06	55	Due to damaged of 701-89BC-R isolator mechanism i.e Tie bay 701-52T. Both side isolator have been opened,Hence 701-52 A & 701-52B Circuit Breaker is operational condition & Tie bay of 701-Dia is under R&M work	
21	220 KV BHIWANI-CHARKHI DADRI (BB) CKT-1	Line	BBMB	28-06-2022	07:54	17	for Sub-station Automation Work.	15.07.2022
22	201 MAIN BAY - 220KV BUS 1 AT PATRAN(PATR) (STERLITE) AND FUTURE AT 220 KV PATRAN(PATR) (STERLITE)	BAY	Sterlite	10-06-2022	20:01	34	201 main Bay Y-ph hydraulic pump Is running continuously and the Spring is not getting charged, which may lead to CB Lockout.	
23	201 TRANSFER BUS BAY - 220 KV BIKANER(PG) - BUS 3 (POWERGRID) AT 220 KV BIKANER(PG)	BAY	POWERGRID	26-06-2022	21:02	18	For completing the stringing work of TPGEL Circuit on the shared Multi Circuit Towers.	
24	FSC of 400 KV Koteshwar-Meerut (PG) Ckt-1 at Meerut(PG)	FSC	POWERGRID	20.02.2020	10:02		FSC out for upgradation work at 765kV. Upgraded to 765kV. Expected revival status awaited from PG-NR1.Waiting for CEA clearance.	
25	FSC of 400 KV Koteshwar-Meerut (PG) Ckt-2 at Meerut(PG)	FSC	POWERGRID	15.05.2020	17:45		FSC out for upgradation work at 765kV. Upgraded to 765kV. Expected revival status awaited from PG-NR1.Waiting for CEA clearance.	
26	FSC of 400 KV Fatehpur-Mainpuri (PG) Ckt-1 at Mainpuri(PG)	FSC	POWERGRID	24.10.2021	21:07		BHEL breaker hydraulic pressure could not be developed in B phase and (loss of N2 pressure) doesn't allow the FSC-1 taken into service as reported by CPCC3.	
27	FSC of 400 KV Fatehpur-Mainpuri (PG) Ckt-2 at Mainpuri(PG)	FSC	POWERGRID	29.10.2021	08:25		VME protection system was blocking the FSC back in service as reported by CPCC3.	
28	FSC(40%) of 400 KV Kanpur-Ballabhgarh (PG) Ckt-3 at Ballabhgarh(PG)	FSC	POWERGRID	10.06.2022	23:07		FSC-3 at Ballabgarh SS bypassed on MOV over temperature	

B. Details of Long Duration Generating Units Outage :-

S.No	Element Name	Type	Owner	Outage			Reason / Remarks	Status updated during last OCC
1	250 MW Chhabra TPS - UNIT 4		RRVPNL	09-09-2021	00:47	309	Due to Electrostatic precipitators (ESP) structure damage	
2	100 MW Koteshwar HPS - UNIT 1		THDC	04-11-2021	22:58	252	Due to fault in GT	
3	108 MW Bhakra HPS - UNIT 1		BBMB	15-12-2021	12:05	211	Renovation Modernization and upgradation of capacity to 126MW	
4	200 MW Obra TPS - UNIT 13		UPPTCL	08-01-2022	06:36	188	High bearing vibration in turbine	
5	660 MW Meja TPS - UNIT 2		UPPTCL,NTPC	07-02-2022	18:59	157	Boiler tube leakage Boiler water wall under major repairs in progress.	01.08.2022
6	34 MW Delhi Gas Turbines - UNIT 9		DTL	12-02-2022	20:00	152	STG Governor oil leakage	
7	30 MW Delhi Gas Turbines - UNIT 5		DTL	12-02-2022	21:04	152	Due to tripping of associated STG at 20:00 hrs	
8	660 MW Suratgarh SCTPS - UNIT 7		RRVPNL	15-03-2022	01:32	122	FAILURE OF R PHASE BUSHING OF GT-7A.	15.09.2022
9	210 MW Guru Hargobind Singh TPS (Lehra Mohabbat) - UNIT 2		PSPCL	13-05-2022	21:36	62	ESP breakdown. Rectification works under progress as confirmed by SLDC-PS.	
10	210 MW Kota TPS - UNIT 3		RRVPNL	28-05-2022	16:30	47	SEAL OIL LEAKAGE	
11	253 MW Bawana GPS - UNIT 5		DTL/Pragati CCGT	03-06-2022	22:04	41	C&I problem	

12	Ramgarh GPS - UNIT 2		RRVPNL	04-06-2022	01:17	41	Due to fire accident in GT - 2	
13	220 MW RAPS-B - UNIT 2		NPCIL	06-06-2022	00:10	39	For biennial preventive maintenance & surveillance to fulfil mandatory regulatory requirements of AERB (GOI).	
14	250 MW Suratgarh TPS - UNIT 4		RRVPNL	10-06-2022	12:25	34	Rotor earth fault	

Annexure-B.III

JUXTAPOSE OF UTTARAKHAND DRAWAL

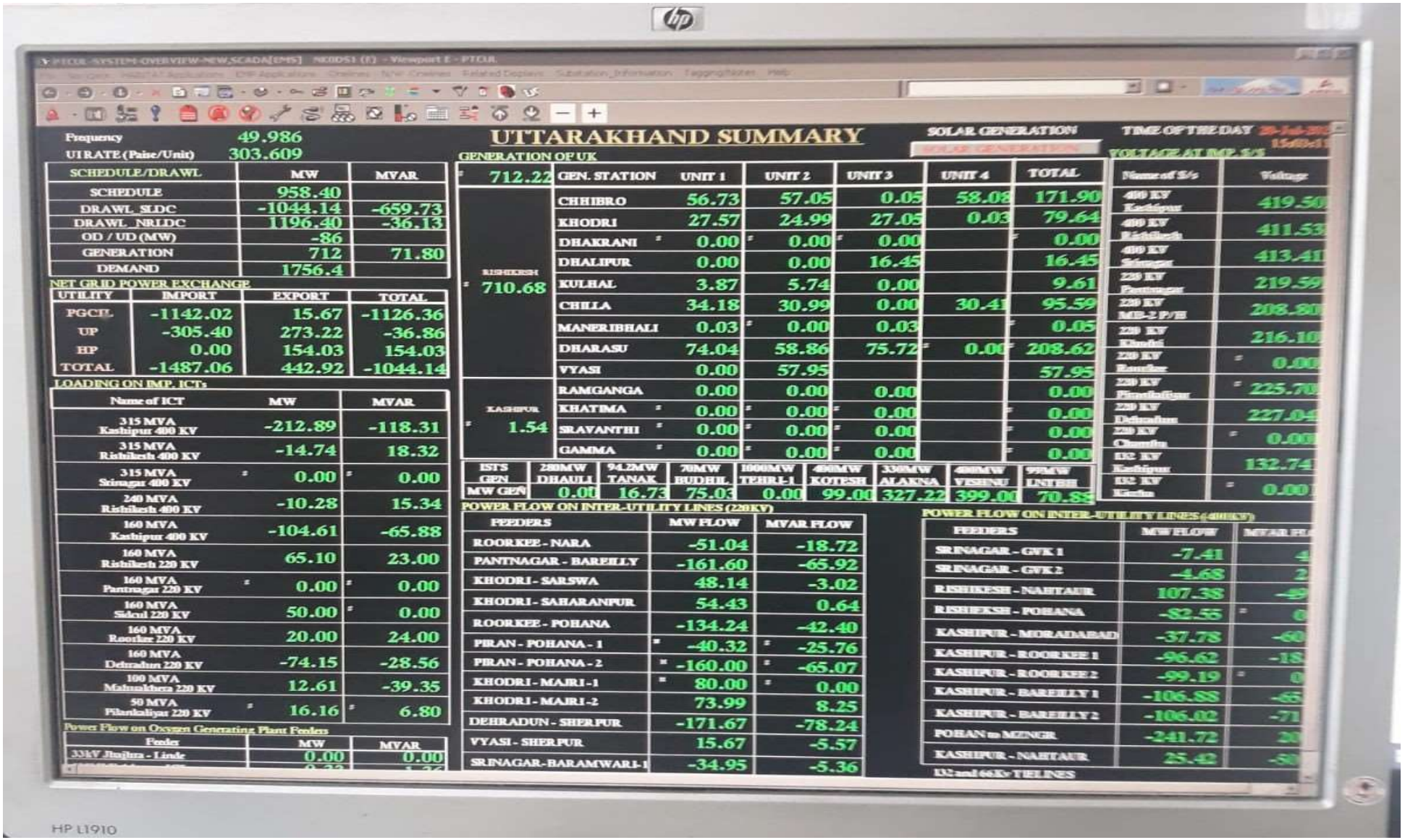
SOLAR GENERATION

132 and 66Kv TIELINES

20-Jul-2022
15:03:06

UTTARAKHAND SUMMARY

Name of The Inter-Utility Feeders	MW FLOW - PTCUL	MW FLOW - NRLDC	Name of The Inter-Utility Feeders	MW FLOW - PTCUL	MW FLOW - NRLDC
400KV KASHIPUR - ROORKEE - I(PG)	-96.62	102.83	132KV SITARGANJ - PILIBHIT	36.48	37.09
400KV KASHIPUR - ROORKEE - II(PG)	-99.19	104.53	132KV SITARGANJ - SITARPG1(PG)	-15.94	50.56
400KV KASHIPUR - BAREILLY - I(PG)	-107.73	106.02	132KV SITARGANJ - SITARPG2(PG)	-8.88	9.09
400KV KASHIPUR - BAREILLY - II(PG)	-105.17	106.02	132KV PLDCO - SITPG (PG)	-47.73	53.88
400KV KASHIPUR - NAHTAUR	26.73	-26.73	132KV KHATIMA - PILIBHIT	-20.37	37.44
400KV KASHIPUR - MORADABAD	-37.48	37.48	132KV RAMGANGA - SERKOT	-15.74	1.50
400KV RISHIEKSH - NAHTAUR	107.38	-108.74	132KV RAMGANGA - AFJALGARH	-11.75	15.90
400KV RISHIKPSH - ROORKEE (PG)	-83.83	84.79	132KV KICHA - RICHA	0.06	0.00
400KV SRINAGAR - ALAKNANDA - I	-7.41	4.98	132KV PITHORAGH - CHANDK (PG)	-12.56	16.54
400KV SRINAGAR - ALAKNANADA - II	-4.68	5.04	132KV ALMORA - CHANDK (PG)	-59.42	58.08
220KV JHAJHRA - DEHRADUN - (PG)	-171.67	171.09	132KV MAHUAKHEGL-THAKURDWR	-0.04	0.00
220KV VYASI - DEHRADUN - (PG)	15.67	-14.98	220KV SRINAGAR - LNTBH - 1	-34.95	35.17
220KV KHODARI - SARSWA	47.31	-47.31	220KV SRINAGAR - LNTBH - 2	0.00	35.15
220KV KHODRI - SHARANPUR	53.45	0.00	132KV LAKSR - CHANDAK	0.00	
220KV KHODRI - MAJRI - 1	80.00	-77.47	132KV KULHL - GIRABATA	0.04	0.00
220KV PANTNAGAR - BAREILLY	-161.92	164.37	220KV KHODRI - MAJRI - 2	73.60	-78.22
220KV PIRANKALIYAR - ROORKEE - I	-40.32	32.31	220KV PIRANKALIYAR - ROORKEE - II	-160.00	87.58
220KV ROORKEE - NARA	-51.04	51.69	66KV ROORKEE - SHAHARANPUR	0.00	
220KV ROORKEE - ROORKEE (PG)	-136.64	137.73	NET DRAWAL	-1050.39	1193.43


UTTARAKHAND SUMMARY
Frequency 49.986
UI RATE (Paise/Unit) 303.609
SOLAR GENERATION
TIME OF THE DAY
SCHEDULE/DRAWL | MW | MVAR
SCHEDULE 958.40
DRAWL_SLDC -1044.14 -659.73
DRAWL_NRLDC 1196.40 -36.13
OD / UD (MW) -86
GENERATION 712 71.80
DEMAND 1756.4
NET GRID POWER EXCHANGE
UTILITY | IMPORT | EXPORT | TOTAL
PGCIL -1142.02 15.67 -1126.36
UP -305.40 273.22 -36.86
HP 0.00 154.03 154.03
TOTAL -1487.06 442.92 -1044.14
LOADING ON IMP. ICTs
Name of ICT | MW | MVAR
315 MVA Kashipur 400 KV -212.89 -118.31
315 MVA Rishikesh 400 KV -14.74 18.32
315 MVA Srinagar 400 KV 0.00 0.00
240 MVA Rishikesh 400 KV -10.28 15.34
160 MVA Kashipur 400 KV -104.61 -65.88
160 MVA Rishikesh 220 KV 65.10 23.00
160 MVA Pantnagar 220 KV 0.00 0.00
160 MVA Sidcul 220 KV 50.00 0.00
160 MVA Roorkee 220 KV 20.00 24.00
160 MVA Dehradun 220 KV -74.15 -28.56
100 MVA Mahuakheda 220 KV 12.61 -39.35
50 MVA Pilankaliyar 220 KV 16.16 6.80
Power Flow on Oxygen Generating Plant Feeders
Feeder | MW | MVAR
33kV Jhajhra - Linde 0.00 0.00
GENERATION OF UK
712.22
RISHIKESH 710.68
KASHIPUR 1.54
GEN. STATION | UNIT 1 | UNIT 2 | UNIT 3 | UNIT 4 | TOTAL
CHHIBRO 56.73 57.05 0.05 58.08 171.90
KHODRI 27.57 24.99 27.05 0.03 79.64
DHAKRANI 0.00 0.00 0.00 0.00
DHALIPUR 0.00 0.00 16.45 16.45
KULHAL 3.87 5.74 0.00 9.61
CHILLA 34.18 30.99 0.00 30.41 95.59
MANERIBHALI 0.03 0.00 0.03 0.05
DHARASU 74.04 58.86 75.72 0.00 208.62
VYASI 0.00 57.95 57.95
RAMGANGA 0.00 0.00 0.00 0.00
KHATIMA 0.00 0.00 0.00 0.00
SRAVANTHI 0.00 0.00 0.00 0.00
GAMMA 0.00 0.00 0.00 0.00
ISTS GEN | 280MW DHAULI | 94.2MW TANAK | 70MW BUDHIL | 1000MW TEHRI-1 | 400MW KOTESH | 330MW ALAKNA | 400MW VISHNU | 99MW UNIDR
MW GEN 0.00 16.73 75.03 0.00 99.00 327.22 399.00 70.88
POWER FLOW ON INTER-UTILITY LINES (220KV)
FEEDERS | MW FLOW | MVAR FLOW
ROORKEE - NARA -51.04 -18.72
PANTNAGAR - BAREILLY -161.60 -65.92
KHODRI - SARSWA 48.14 -3.02
KHODRI - SAHARANPUR 54.43 0.64
ROORKEE - POHANA -134.24 -42.40
PIRAN - POHANA - 1 -40.32 -25.76
PIRAN - POHANA - 2 -160.00 -65.07
KHODRI - MAJRI -1 80.00 0.00
KHODRI - MAJRI -2 73.99 8.25
DEHRADUN - SHERPUR -171.67 -78.24
VYASI - SHERPUR 15.67 -5.57
SRINAGAR-BARAMWARI-1 -34.95 -5.36
VOLTAGE AT IMP. S/S
Name of S/s | Voltage
400 KV Tehri 419.50
400 KV Rishikesh 411.53
400 KV Srinagar 413.41
220 KV Pantnagar 219.59
220 KV MB-2 P/H 208.80
220 KV Kashipur 216.10
220 KV Roorkee 0.00
220 KV Pirankaliyar 225.70
220 KV Dehradun 227.04
220 KV Chamba 0.00
132 KV Kashipur 132.74
132 KV Kashipur 0.00
POWER FLOW ON INTER-UTILITY LINES (400KV)
FEEDERS | MW FLOW | MVAR FLO
SRINAGAR - GVK 1 -7.41
SRINAGAR - GVK 2 -4.68
RISHIKESH - NAHTAUR 107.38
RISHIKESH - POHANA -82.55
KASHIPUR - MORADABAD -37.78
KASHIPUR - ROORKEE 1 -96.62
KASHIPUR - ROORKEE 2 -99.19
KASHIPUR - BAREILLY 1 -106.88
KASHIPUR - BAREILLY 2 -106.02
POHAN to MEERUT -241.72
KASHIPUR - NAHTAUR 25.42
132 and 66KV TIELINES