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Maharashtra State Electricity Transmission Co. Ltd.
MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO. LTD.
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Office of The Chief Engineer
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Thane-Belapur Road, P.O. Airoli Navi
Mumbai Pin – 400 708.

RIGHT TO INFORMATION

Ref. No. CE/MSLDC/OP/OCC/ №02827 Date: 30 DEC 2025

To,

Members of the OCC as per mailing list.

Sub: Minutes of the 11th Operation Co-ordination Committee (OCC) meeting held on 17.11.2025 at 11:00 hrs. through physical & video conferencing mode at MSLDC Kalwa.

Ref.: 1. 10th OCC MoM Circulated vide No. CE/MSLDC/TECH/Op/OCC/2031 Dated. 26.09.2025
2. 11th OCC Agenda Circulated vide No. CE/MSLDC/Op/OCC/2473 dtd 13.11.2025

Dear Sir/Madam,

In reference to the above subject, the 11th Operation Co-ordination Committee (OCC) meeting was held on 17.11.2025 at 11:00 hrs. through physical & video conferencing mode at MSLDC Kalwa. The Minutes of the said meeting are attached herewith.

Yours sincerely,

Encl: As above.

(Girish Pantoji)
Superintending Engineer (Op), MSLDC
(Member Convener of OCC)

Copy s.w.rs. to:
The Director (Operations), MSETCL, Prakashganga, Mumbai.
The Executive Director & Chairman of OCC, MSLDC, Airoli, Navi Mumbai.

Sub: Minutes of the 11th Operation Co-ordination Committee (OCC) meeting held on 17.11.2025 at 11:00 hrs. at MSLDC Kalwa.

OCC members as per list shown below:

Sr. No.	Name of Organiza-tion	Name of Nominee	Designation	Committee constituent	Contact No.	E-mail ID
1	SLDC	Shri Shashank Jewalikar	ED, MSLDC	Chairperson	022-27301931	edsldc@mahasldc.in
2	MSETCL	Shri. Anil Bharsakle	CE, Tr O&M MSETCL	Member	9309291723 8554995004	ceom@mahatransco.in
3	SLDC	Shri Girish Pantoji	CE (I/c), MSLDC	Member	9822414154	cesldc@mahasldc.in
4	STU/ MSETCL	Shri. Peeyush Sharma	CE, STU	Member	9769213865	cestu@mahatransco.in
5	MSEDCL	Shri. Sandeep Patil	CE, PP	Member		cepp@mahadiscom.in
6	SLDC	Shri Girish Pantoji	SE(OP), MSLDC	Member-Convener	9822414154	seop@mahasldc.in
7	MSEDCL	Shri Pravin Annachatre	S.E (LM), MSEDCL	Member	9833980238	selmkalwa@gmail.com
8	MSPGCL	Shri. Anil Kathoye	CE, Generation (Works) MSPGCL	Member	022-6952200 69853535 Ext. 3519	cegw@mahagenco.in
9	TPCL	Shri Kiran Desale	Chief – Transmission TPCL	Member	9223553342	desalekv@tatapower.com
		Shri Milind Gole	Head (PSCC), TPCL	Member	9820868264	golemL@tatapower.com ddveer@tatapower.com
10	TPCL-Generation	Mr Hemant Karadkar	Head Operations – Trombay	Member	9223553195	karadkarhr@tatapower.com
11	AEML	Shri Mahesh Andhari	Head Operations (Distribution & Transmission)	Member	9323549996	mahesh.andhari@adani.com
12	AEML	Shri Ranjeet Sawardekar	Head ABT	Member	9324818009	ranjeet.sawardekar@adani.com
13	ATIL	Shri Saurabh Sharma	Manager-O&M	Member	8233552863	saurabh.sharma@adani.com
14	MEGPTCL	Shri Rakesh Bhalerao	Associate Manager-Business Development	Member	7045953823	rakesh.bhalerao@adani.com
15	JPTL	Shri Vaibhav D Sansare	Associate Manager-Transmission	Member	9552577122	Vaibhav.sansare@jsw.in
16	APTCL	Shri Rajiv Nimje	AGM, APTCL	Member	9422308883	Rajiv.nimje@rattanindia.com
17	KVTL	Shri Rakesh Bhalerao	Associate Manager-Business Development	Member	7045953823	rakesh.bhalerao@adani.com

18	VIPL	Shri Ashish Kumar Shukla	HOD-Electrical Maintenance	Member	6358853165	ashishkumar.shukla@adani.com
19	JSWEL	Mr. Prasanna Ghatge	AGM (Head-OSTS)	Member	9552577141	prasanna.ghatge@jsw.in
20	ADTPS	Shri Pinal Desai	Associate VP ADTPS	Member	9325119747	pinal.desai@adani.com
21	RIPL	Shri Amit Panchalwar	DGM, RIPL	Member	9503229333	amit.panchalwar@rattanindia.com
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23	SWPGPL Warora.	P Kalyan	AGM - Electrical	Member	8600400107	Kalyan.p@saiwardha.com
		Barath Muthusamy	Deputy Manager-BDG	Member	9154674864	bdg.operations@saiwardha.com
24	M/S. Bothe wind Park Development Pvt. Ltd.	Mr. Dhananjay Joshi	Manager	Member (Wind)	9971274700	dhanajay.joshi@continuumenergy.in vijay.karale@continuumenergy.in
25	TP Saurya Ltd.	Mr. Gunesh Kusurkar	Manager	Member (Solar)	9930867996	gunesh.kusurkar@tatapower.com
26	Jarandeshwar Sugar Mills pvt. Ltd.	Mr J T Gore Mr A V Patil	Co-gen in-charge Elect. Engineer	Member (Co-gen)	9922254115 9673889938	jsmlcogen@gmail.com
27	BEST	Shri S. S. Bansode	Chief Engineer (Regulatory)	Member	9869407196	cerc@bestundertaking.com
28	Dhariwal	Pundlik Mahadeorao Wanwe	General Manager	Member	9561112008	pundlik.wanwe@rpsg.in
29	IEPL	Mr. Sandip V. Kawale	Manager (Regulatory, Sales & Purchase-Dept)	Member	8799967053	sandip.iepl@gmail.com
30	JPL	Mr. Gaurav Grover	Manager	Member	9718306200	gaurav.grover@jindalpower.com
31	Vidharbh Mineral and Energy Pvt. Ltd.	Mr. V.N. Kulkarni	HOD Electrical	Member	9158555616	electrical@vidarbhamineral.com maintenance.gepl@gmail.com

Minutes of the 11th Operation Co-ordination Committee (OCC) meeting held on 17th Nov 2025 at 11:00 Hrs. through physical & video conferencing mode.

The 11th meeting of the OCC, was convened on 17.11.2025 at 11:00 hrs. through physical and video conferencing mode. The meeting was chaired by Executive Director, MSLDC.

The Executive Director (MSLDC) & the Chairman of the OCC, welcomed all the members.

The list of participants in the meeting is attached herewith as **ANNEXURE – A**.

The detailed Point-wise discussions held during the meeting are as follows:

Item No. 1: Confirmation of Minutes of Meeting of the 10th OCC Meeting held on 03.09.2025:

- Confirmation of the minutes of the 10th OCC held on 03.09.2025 through hybrid mode and circulated vide CE/MSLDC/TECH/Op/OCC/2031 Dated. 26.09.2025 to all the members and requested to offer any comments.

The OCC affirms the minutes of the 10th OCC meeting, since no comments were received.

Item No. 2: Presentation on Maharashtra system Grid performance from January to September 2025.

The Chief Engineer, MSLDC presented the Maharashtra System Grid performance from January to September 2025 (The presentation is attached as ***Annexure-2***.)

During the discussion on transmission constraint, Chief Engineer, MSLDC informed that,

1) Presently in MMR Region, four corridors are open. 220kV Ulwe - Waghivali ckt II is under forced shut down due to cable fault from 25.06.2024. Following the commissioning of the 400/220 kV Navi Mumbai PG substation, the loading issue on 220kV Ulwe – Waghivali ckt – 1 has increased. To control this loading, 220kV Waghivali-TATA-1 & 2 have been kept hand tripped from 30.12.2024.
   Till date, 8 trials have been taken to bring the line in service; however, the cable fault still persist. Non-availability of this circuit causes constraints in evacuating the full capacity of Uran generation, as remaining lines get overloaded.

2) Following the commissioning of the 400/220 kV Navi Mumbai PG substation, loading on lines 220kV Kalwa–Apta corridor has increased. Hence, to control overloading of existing old 0.35 ACSR corridor lines, 220 kV Kalwa- Panchanand and Print house- Navi Mumbai PG are kept Hand Tripped from 17.10.2024 and 05.12.2024 respectively to control the loading. The corridor is bunched and split in two separate corridors namely 220 kV Navi Mumbai PG- Taloja-Panchanand- Navi Mumbai (PG) & 220 kV Kalwa- GTPL-Print House-Kalwa.
   To resolve this issue, HTLS upgradation of the existing old 0.35 ACSR conductor in 220 kV Kalwa–Apta corridor is in progress.

3) In addition to above, the 220kV Padghe – Nalasopara-Vasai line is open for HTLS work from 20-07-2025 and 220kV Padghe – Jambhul-Pal line is also planned to be taken under shut down for HTLS works in Dec-25.

4) Strengthening of 220kV Interconnector by GIS with Isolator replacement at Kalwa has been completed, and there is no longer any issue of overloading on the 220 kV interconnector.

   Further, Chief Engineer, MSLDC requested to close the above-mentioned corridor before the summer season in order to maintain grid integrity in the Mumbai & MMR Region.

   The Chairman of OCC directed MSETCL that the above outages were planned activities and have already exceeded the stipulated time limit. Therefore, the works should be expedited corridors restored at the earliest. These extended outages are affecting reliability of the system.

5) Further, in the Pune corridor, the HTLS conversion of the 220kV Parvati – Phursungi line has been completed, enabling an additional load transfer capability of over 100 MW. Presently, HTLS conductoring of the 220kV Urse – Chichwad line is in progress. In case of constraints on the 400kV Chakan – Talegaon (PG) corridor, the Shikrapur corridor is expected to be charged by the end of December 2025 to facilitate load relief on the said line.

6) Chief Engineer, MSLDC further informed that, an operational study was carried out after the LILO of 220 kV lines at Shikrapur (PG) substation, and following observations were made:
   i) During the outage of one of the 400/220kV ICT at Shikrapur (PG), the remaining ICTs gets overloaded beyond 100% of their capacity, rendering the system non-compliant.
   ii) The 220 kV Shikrapur – Ranjangaon, 220 kV Shikrapur – Khed city & 220kV Khed city Lonikand double circuit lines are N-1 non-complaint.
   iii) The 220 kV Bhosari 1 – Bhosari 2 and 220 kV Chakan – Bhosari 1 lines are loaded upto their thermal limits during peak conditions.

   In view of above, the following system strengthening measures are required.

   1) Provision of additional 400/220kV 500 MVA ICT at 400kV Shikrapur (PG) substation
   2) Replacement of existing conductors with high-performance conductors in the following corridors:
      i) 220 kV Shikrapur – Ranjangaon
      ii) 220 kV Shikrapur – Khed city and 220 kV Khed city lonikand Double ckt
      iii) 220 kV Bhosari 1 – Bhosari 2 and 220 kV Chakan – Bhosari 1

The Chairman of OCC informed that, above measures have already been communicated to STU and works are in progress. Further, he directed that the above activities be expedited at the earliest. STU is also requested to look into the SLDC observations and initiate necessary actions to make these corridors N-1 compliant.

The Chairman of OCC recommended to all stakeholders that,

1) **To expedite the completion of outages of the above-mentioned corridors, considering that prolonged outages create a critical grid security and operational concern. The outages taken on these corridors do not appear to be completed within the stipulated time period and are being extended frequently.**
2) **The expected MVAr compensation is still not available in the system, and the MVAr addition projects also need to be expedited so that they are commissioned by the next season at the latest.**

With due deliberations, all OCC members took note of the same.

Item No. 3 MSLDC Agenda:

3.1 Review of Transition from RGMO to Free Governor Mode of Operation (FGMO)

Regulation 30(10)(d) of IEGC 2023 and corresponding provisions clause no. 30.3 (a) of MEGC 2020 mandate that all generating stations and their units equipped with governors shall operate under Free Governor Mode of Operation (FGMO). This requirement is critical for maintaining grid frequency stability.

As per the latest information collected, the list of generators yet to transition from RGMO to FGMO is enclosed at **Annexure 3.2**

In this regard, MSLDC has been taking continuous follow-up with the concerned generators during previous OCC meetings and also through correspondence vide letter No. CE/MSLDC/Airoli/00407 dated 07.03.2024 & through email (especially to MSPGCL) on dated 24.06.2024 respectively.

The generating stations with units still operating in RGMO are requested to:

1. Expedite the transition to FGMO.
2. Communicate the firm timelines for compliance to MSLDC.

Further, MSPGCL, VIPL and IEPL is specifically requested to submit a comprehensive transition plan for shifting its units from RGMO to FGMO.

Discussion in 11th OCC:

The MSLDC representative stated that MSLDC had already discussed this matter during the 15th State Outage Co-ordination Meeting (SOCM) held on 04.11.2025 through VC at MSLDC and requested all intra-state generators particularly MSPGCL, VIPL, and IEPL to submit a comprehensive transition plan for shifting their units from RGMO to FGMO.

The Chairman OCC, instructed that all generators those are not yet transitioned from RGMO to FGMO must submit a detailed operational plan for functioning their units under FGMO at the earliest.

With due deliberations, all OCC members took note of the same.

3.2 Planned Generation Outage Procedure by WRLDC

As deliberated in the 590th OCC Meeting held on 17th April 2025, WRLDC prepared a Draft Procedure for availing OCC-approved planned outages of generating units. The draft procedure was circulated to WR utilities on 18th June 2025 inviting comments.
The comments received from stakeholders were discussed in the 593rd OCC Meeting, following which a joint meeting was convened on 07th August 2025 with WR utilities, generators, and SLDCs for further deliberation.

Subsequently, the final procedure, incorporating the accepted comments, was presented by WRLDC in the 594th OCC Meeting held on 22nd August 2025, where it was approved by the WRPC OCC forum.

The approved procedure is enclosed at **Annexure 3.3,** and the same has already forwarded to all stakeholders vide office letter no. 02039 dated 26.09.2025.

It is to be noted that:

1. All intra-state generators are required to forward their planned generating unit outages along with the contracted Discom's NOC to WRPC and obtain approval in the OCC–WRPC forum.
2. All the intra state generators has to get code from SLDC/WRLDC before availing planned outages and before synchronization.
3. Any delay in availing outages, rescheduling, delay in synchronization should be communicated to SLDC and WRLDC time to time and as per the procedure approved.

The procedure is applicable to all intra-state generators. All generators shall ensure all the conditions mentioned above are to be strictly adhere to.

Discussion in 11th OCC:

The Chief Engineer, SLDC had already instructed during the 15th State Outage Co-ordination Meeting (SOCM) held on 04.11.2025 that all intra-state generators of Maharashtra must obtain prior SLDC codes while availing generator planned outages and also during re-synchronization, henceforth. Further, all the 3 points mentioned as above also needs to be followed scrupulously.

The Chairman of the OCC further instructed all generators to strictly adhere to the timelines and procedures approved by WRPC for availing planned unit outages.

With due deliberations, all OCC members took note of the same.

3.3 Submission of Periodic Testing Plan of Power System Elements for FY 2026-2027 by 31st Oct.2027

As per IEGC 2023, Clause 40.2, the provision of periodic testing of power system elements has been laid down. Key requirements include:

- Owners of power system elements shall be responsible for carrying out tests and submitting reports to NLDC, RLDCs, CEA, CTU for all elements, and to STUs and SLDCs for intra-State elements.
- All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October, to enable proper coordination. Any changes in the schedule shall also be intimated in advance.
- Tests are to be performed once every five (5) years, or earlier in case of major retrofitting, or if advised by SLDC/RLDC/NLDC/RPC due to adverse performance.
- Owners of elements shall implement recommendations suggested in the test reports in consultation with NLDC, RLDC, CEA, RPC, and CTU.

Further, NLDC, in consultation with stakeholders, has prepared Guidelines for Periodic Testing covering detailed testing procedures, data requirements, and report formats. These guidelines are available at NLDC website.

The matter of periodic testing has already been deliberated in the 579th, 584th, and 593rd OCC Meetings. Despite repeated follow-ups, submission of periodic testing plans for FY 2024-25 and FY 2025-26 was poor, with only a few generators completing the testing.

In view of the above, it is requested that all element owners submit their Periodic Testing Plan for FY 2026-27 to WRPC, WRLDC, and SLDC by 31st October 2025, to ensure compliance with IEGC.

In this regard, MSLDC has already sent a letter to all stakeholders vide office letter no. 02038 dated 26.09.2025.

Proposal:

i. Generators/HVDC/FACTS owners availing planned outages shall mandatorily complete periodic testing before/during availing the shutdown.

ii. Utilities shall attend to deficiencies found during testing during AOH and submit a rectification report.

Discussion in 11th OCC:

The Chairman of OCC directed all generators to submit the periodic testing plan as per timeline and to take progress review in upcoming OCC.

With due deliberations, all OCC members took note of the same.

3.4 Proposal for Conducting DC Demonstration for One Unit at a Time

As per MEGC-2020 (Annexure-3), the procedure for DC Demonstration of InSGS specifies that the request for demonstration shall be submitted to the SLDC Nodal Officer at least six-time blocks in advance, including the block in which ramp-up is to begin.

It has been observed that generator parameters may vary during a period exceeding two hours, necessitating DC revisions. Hence, it is proposed that DC demonstration requests be informed not earlier than six-time blocks before implementation.

During the DC demonstration conducted on 10.09.2025 for all MSPGCL generators (based on MSEDCL's request), the DC of all generators was required to remain fixed, disallowing any revisions as per the MEGC procedure. Consequently, the grid operator was unable to manage significant generation changes to control state periphery deviations, potentially impacting grid security.

Hence, it is proposed to conduct DC demonstration for one generating unit at a time to ensure grid security and operational flexibility.

Discussion in 11th OCC:

SE (Operation), SLDC informed that conducting DC demonstration for all generating units simultaneously is not recommended due to operational difficulties such as fixing the DC during the demonstration period and its impact on state periphery deviation. Hence, he requested that the DC demonstration be carried out for the units based on grid requirements within the proposed 12-time block DC demonstration period.

He further informed that SLDC may limit the number of units to be demonstrated at a time, considering real-time grid conditions.

Chairman OCC directs SLDC to monitor the DC of generators regularly and put up SLDC observations about the generator's behavior as per MEGC norms in OCC forum.

The Chairman, OCC, stated that OCC cannot instruct to conduct DC demonstration for only one generating unit at a time, as the regulation does not clearly specify this. However, it was

also highlighted that calling all generating units simultaneously for DC demonstration is not an operationally feasible practice. Hence, SLDC may limit the number of units to be demonstrated at a time, considering real-time grid conditions.

With due deliberations, OCC took a note of the same.

3.5 Analysis of Recent Grid Disturbances and Compliance on Corrective Actions

MSLDC has analyzed recent occurrences such as 400/220 kV Busbar and LBB protection operations at major grid substations, and multiple 400/220 kV line trippings during the period from June 2025 to September 2025. The events pertain to 400 kV Nagothane, GCR Chandrapur, Karad, Warora, and other 220 kV substations.

The list of such events is attached as **Annexure – 3.6**

In the occurrence reports, MSLDC has pointed out certain shortcomings in protection systems, equipment commissioning, and maintenance practices associated with these disturbances. The reports also include observations and remedial measures for protection and system improvement.

Utilities are requested to take necessary action on the above observations and submit compliance on the corrective measures implemented as suggested by MSLDC.

Discussion in 11th OCC:

The SLDC representative stated that analysis reports for major grid incidences are prepared by SLDC and circulated to the concerned stakeholders, along with suggestions and observations to prevent recurrence of such events in the future. These reports include recommendations related to Protection as well as O&M aspects. It is expected that the stakeholders submit their compliance reports on the corrective measures implemented as suggested by SLDC.

The Chairman of OCC recommended that these reports should be submitted to the Protection Co-ordination Committee (PCC) for discussion and for obtaining follow-up/feedback from stakeholders on protection-related suggestions made by MSLDC. The O&M-related issues or suggestions should be placed in the OCC meeting to obtain feedback on a quarterly basis. Further, he instructed the Chief Engineer (O&M), MSETCL to follow up on the O&M-related suggestions made by MSLDC and provide feedback to MSLDC at the earliest.

With due deliberations, all OCC members took note of the same.

3.6 Delay in response of Transmission licensees from remote operating substation.

On 22.10.2025, the 765/400 kV ICT at Akola s/s tripped at 16:52 hrs; however, the exact cause of tripping was not reported to MSLDC until 18:45 hrs. The WRLDC and NLDC control rooms were continuously following up regarding the cause of tripping. The email correspondence is attached herewith for reference.

It has been observed that during emergency events such as trippings and forced outages, restoration at remotely operated substations takes considerable time due to the need for coordination among multiple agencies, including utilities, SLDC, and WRLDC.

Discussion in 11th OCC:

The MSLDC representative informed that there have been several instances where the response from transmission licensees is delayed, particularly from remotely operated substations. On 22.10.2025, the reason behind the tripping of the 765/400 kV ICT at Akola–2 substation was not reported in time.

The 765/400 kV ICT at Akola s/s tripped at 16:52 hrs; however, the exact cause of tripping was not reported to MSLDC until 18:45 hrs.

The representative from M/s MEGPTCL stated that the exact reason for the tripping could not be communicated immediately due to issues in the communication system. Consequently, the DR could not be extracted instantly. The site team had to visit the substation to retrieve the DR manually, and adverse weather conditions further delayed the process. To avoid giving incorrect information to the SLDC/ALDC control room, MEGPTCL waited until the cause was confirmed. Upon inspection, it was identified that the root cause was a control cable failure in the yard. After approximately 1 hour and 53 minutes, the correct information regarding the tripping was communicated to the SLDC/ALDC control room. This resulted in the delay in intimation.

The representative from ALDC, Ambazari further informed that a similar incident occurred on 26.09.2025 at the 765 kV Koradi substation. A bus fault occurred at Koradi–3 at around 16:00 hours, leading to tripping of associated lines. Despite continuous follow-up by the ALDC control room with the ENOC team, the reason behind the tripping was not identified for nearly four hours. Likewise, during the multiple tripping event in the 765 kV corridor on 18.11.2024, the occurrence took place at 16:10 hours, but the final reporting was received only at 18:48 hours. Even though ALDC had instructed Akola–2 and Koradi–3 substations to share details at the earliest, no timely response was received. The manpower available at these substations was unable to provide any information and had to rely entirely on ENOC Centres, which in turn depended on field staff. This resulted in significant communication delays between ENOC and field substations.

A similar issue was observed at MSETCL's 400 kV Nagothane substation, where communication during the occurrence was initiated only after escalation to higher authorities.

After detailed deliberations, the Chairman of OCC stated that the 765 kV Tirora, 765 kV Koradi, and 765 kV Akola–2 substations are crucial for the evacuation of Tirora generation, and the 400 kV Vikhroli substation plays a vital role in catering to Mumbai load. Therefore, he directed that a separate meeting be convened with M/s APML, M/s MEGPTCL, M/s ATIL, M/s KVTL, M/s ENOC, and Mumbai utilities along with the M/s MSETCL team under the MTAMC project to define a streamlined process to avoid such instances in the future for remotely operated substations. The Superintending Engineer (Operations), MSLDC shall conduct this meeting and prepare procedure.

With due deliberations, all OCC members took note of the same.

3.7 Operation of Generation Trimming Scheme (GTS) at 132kV Tighra (Juniper) end on 132kV Khadka-Tigra (juniper) line on dtd. 31.10.2025 & 04.11.2025

A) <u>GTS Operation dated 31.10.2025</u>

1. On dated Dt.31.10.2025, 132kV Malkapur - Bodwad circuit was tripped on distance protection from 12:40 hrs to 13:22 Hrs.

2. During this period on Dt.31.10.2025 at 12:53 Hrs. GTS operated at 132kV Tighra (Juniper) end of 132kV Khadka-Tigra (juniper) line. On operation of GTS, the generation loss of approx. 18 MW (33kV cyclic solar) at 132kV Motala and 9 MW (33kV Kalpa power) at 132kV Malkapur substation occurred from 12:53 Hrs to 13:01 Hrs.

3. Kalpa power solar generation at 132kV Malkapur normalized at 13:40 Hrs and Cyclic solar at 132kV Motala generation normalized at 13:45 Hrs.

B) GTS Operation dated 04.11.2025

1. On dated 04.11.2025 the 132kV Bodwad- Malkapur line was under outage.
2. On Dtd. 04.11.2025, two occurrences happened wherein solar generation of approx. 18.75(cyclic solar) and 9 MW (Kalpa power) affected due to operation of GTS from 10:15 Hrs to 10:29 Hrs and 11:20 Hrs to 11:32 Hrs.
3. Even after operation of GTS the load was increasing continuously due to which 132kV Khadka-Tigra (juniper) circuit tripped on overcurrent operation twice from 10:26 hrs to 11:20 Hrs and 11:25 hrs to 13:30 Hrs.
4. After charging of 132kV Khadka-Tigra (juniper) circuit, again solar generation of approx. 18.75 MW of Cyclic solar affected from 13:30 hrs to 13:45 hrs due to operation of SPS.

From above two occurrences, it is observed that the generation loss occurred due to operation of GTS at 132kV Tighra (Juniper) end.

Hence, to avoid loss of Solar generation, it is necessary prioritize the work of strengthening of the transmission network proposed in this area. Also, any applications for Grid connectivity in process of already granted however, not yet obtained Final Grid Connectivity needs to be reviewed by STU.

Discussion in 11th OCC:

The MSLDC representative informed that due to GTS operation at 132kV Tighra (Juniper) end on 132kV Khadka-Tigra (juniper) line on dated 31-10-2025 and 04-11-2025, RE generation was curtailed. Further, to avoid such curtailment, existing 132 kV Khadka – Tighra (Juniper) – Malkapur line needs to be strengthened on priority. The conductor replacement of this line has been proposed in the scope of works of RE Developer which is yet to be commissioned.

In view of above, the Chairman of the OCC opined that STU should initiate the work of strengthening of transmission network in this area on priority. Also, STU should review the any applications for Grid connectivity which are under process or already approved but not yet obtained Final Grid Connectivity.

OCC members agreed to the suggestion of Chairman of OCC.

3.8 Installation of GTS at various transmission elements wherein RE generation is curtailed.

The real time visibility of the 400 kV & above transmission network is completely available at MSLDC. Also, the 220 kV transmission network visibility is substantial. However, the real time visibility of transmission network below 220 kV level is very less. Under such conditions, MSLDC is monitoring the transmission network at 220 kV level & above. It is standard practice that the transmission network below 220 kV level is managed by respective Transmission Licensees. All the loadings, remedial measures, contingency plans, planned & forced outages, etc are managed by respective transmission licensees.

As most of the Wind & Solar Generation is connected below 220 kV level, it is not possible for MSLDC to monitor this network for any overloading or constraints resulting in to curtailment of the Wind & Solar generation. To protect the network, MSETCL field offices have installed Generating Trimming Schemes (GTS) at various transmission elements which act as a defense mechanism under contingencies or network congestions and avoid cascade tripping of the network resulting in to complete loss of RE Generation.

Such incidences of operation of GTS resulted in to curtailment of RE generation are reported by respective MSETCL field offices to MSLDC as and when occurred and MSLDC is maintaining record of such incidences. Such incidences wherein RE generation is curtailed through GTS, are reported to OCC & GCC for ratification. MSLDC is submitting monthly curtailment report to Hon'ble MERC.

In view of above, various GTS installed by MSETCL field offices which result in to curtailment of RE Generation are attached as Annexure 3.8.

These schemes are put forth before the OCC for discussion & ratification.

Discussion in 11th OCC:

The MSLDC representative informed the status of availability of real time visibility of the transmission network at MSLDC at various levels viz. 765 kV, 400 kV, 220 kV & below 220 kV. Due to very less visibility of transmission network below 220 kV level, it is not possible for MSLDC to monitor real time loading of such transmission network. As per various regulations, it is the responsibility of the MSLDC to issue RE Curtailment instructions, however, due to the issue non-visibility, MSLDC needs to rely up on the decision taken by Field offices of the concerned transmission licensees about curtailment of RE generation. Further, all the planned and emergency outages of this network is managed by concerned transmission licensees.

He further informed that to protect the network, MSETCL field offices have installed Generation Trimming Schemes (GTS) at various transmission elements which act as a defense mechanism under contingencies or network congestions and avoid cascade tripping of the network resulting in to complete loss of RE Generation. Such incidences of operation of GTS resulted in to curtailment of RE generation are reported by respective MSETCL field offices to MSLDC as and when occurred and MSLDC is maintaining record of such incidences. The list of such GTS installed in the State are attached as Annexure -3.8.

The OCC noted the issue of low visibility of transmission network, difficulties faced by MSLDC in monitoring network below 220 kV level and methodology adopted by MSLDC & Transmission Licensees in this respect. Further, the Chairman of the OCC directed MSLDC to prepare a detailed process of monitoring & curtailment of RE Generation connected to 220 kV below network and update the same in the RE Curtailment Procedure and get comments/suggestions from various stake holders in the State in accordance with the provisions of the MEGC'2020.

With due deliberations, all OCC members took note of the same.

3.9 Agenda from SCADA department:

1) The average availability of RE plant real-time data is around 75%, whereas it should be 99.9% as per regulations. Improvement is required.
2) SCADA data availabilty of MSETCL substations is approximately 84%. Needs to be improved.
3) SCADA data of IPP/CPP/RE generations needs to be visible to both at generation plant as well as pooling end.
4) Request is being received from the field during FTC to charge the Substation/Elements without visibility of SCADA data.

Discussion in 11th OCC:

1) The average availability of RE plant real-time data is around 75%, whereas it should be 99.9% as per regulations. Improvement is required.

   Discussion:

   The MSLDC representative apprised the Committee of the current status of real-time data visibility for RE generators. The REMC–SCADA Section prepares a daily report on the real-time data visibility of all RE generators (Solar and Wind), based on 15-minute average data of the previous day, and circulates the report to individual generators on the next day for necessary improvement through email.

   As per the regulations, 99.9% real-time data visibility is required to be maintained by all generators/stakeholders to ensure accurate monitoring of real-time grid operations.

   Non-availability of real-time data affects total state demand calculations and impacts system operation.

2) SCADA data availabilty of MSETCL substations is approximately 84%. Needs to be improved.

   Discussion:

   The MSLDC representative apprised the Committee the SCADA data visibility status of MSETCL substations. The MSLDC–SCADA Section prepares daily 15-minute average visibility reports on a zone-wise basis for MSETCL-integrated substations and shares them with the respective PAC Divisions for corrective action.

   As per the regulations, 99.9% real-time data visibility is required to be maintained by all MSETCL substations to ensure accurate monitoring of real-time grid operations.

   Improvement in real-time SCADA data visibility from MSETCL substations is required on priority.

3) SCADA data of IPP/CPP/RE generations needs to be visible to both at generation plant as well as pooling end.

   Discussion:

   It was brought to notice that the SCADA data of RE plants is being made available by the RE generators. However, the data of newly connected feeders (bays) at MSETCL pooling stations is not being made visible at SLDC due to various reasons.

4) Request is being received from the field during FTC to charge the Substation/Elements without visibility of SCADA data.

Discussion:

The MSLDC representative apprised the Committee of such instances. MSETCL has been submitting requests for charging new bays without prior SCADA integration and has been furnishing undertakings/affidavits stating that visibility would be completed within an extended period (15 days, one month, etc.), along with requests for waiver for data visibility considering the undertaking period.

The Chairman, OCC, directed that a formal communication/letter be issued to the State Transmission Utility (STU) to initiate necessary steps for improving SCADA data visibility by coordinating with stakeholders, including IPP/CPP/RE generators, through the STU communication network, if necessary, on a chargeable basis, in accordance with the Amended MERC F & S Procedure, 2025.

All OCC members took note of the same

Item No. 4 AEML Agenda:

On 2nd August 2025, in view of multiple 400KV line tripping in MMR, MSLDC requested AEML to provide consent for availing outage on 220kV Borivali-Ghodbunder line to disconnect 220kV Ghodbunder Substation by removing jumpers at TL No. 241 & connecting through jumpers at same location to form a temporary 220kV Borivali-Kudus line-2 and to take ICTs at the Kudus end in service.

Considering the load flow study and criticality of the Grid, AEML gave consent for the disconnection of AEML Ghodbunder – Borivali (MSETCL) line and AEML Ghodbunder – Kudus (MSETCL) line under fault and taking the load on both ICTs at the Kudus under the proposed configuration (i.e., 220 kV MSETCL Kudus – MSETCL Borivali line)

However, AEML highlighted the following constraints if the load is taken on both ICTs at the Kudus end under the proposed configuration (i.e., 220 kV MSETCL Kudus – MSETCL Borivali line):

1. **Unavailability of both lines at Ghodbunder Substation:**
    - The Ghodbunder – MSETCL Kudus line is already under tripping.
    - The Ghodbunder – MSETCL Borivali line will be under proposed outage.
2. **High Loading on Aarey – MSETCL Borivali Lines:**
    - As per our load flow study, if ICTs at Kudus is taken in service, line loading on 220 kV MSETCL Borivali – Aarey feeders will be @ 255 MW each circuit. Presently, both 220 kV Aarey – MSETCL Borivali Feeders are having load @ 150 MW each.
    - Aarey – MSETCL Borivali circuit 1&2 are vulnerable due to weak cable joints.

Recently Load flow study of AEML Network carried out for Mumbai demand 4500MW (Projected Oct loading) considering base condition 220kV Ghodbunder Kudus line (Cable charged only) + 220kV Ghodbunder MSETCL Borivali line (Cable charged only)+ 220kV Gorai Bus-coupler open + 400/220kV Kudus ICT in service.

Following findings are observed in LFS:

1. **High Loading on Aarey – MSETCL Borivali Lines:**
    - As per our load flow study, if ICTs at Kudus are in service, line loading on 220 kV MSETCL Borivali – Aarey feeders will be @ 287 MW each circuit.
    - As Mumbai demand grows, loading on 220 kV MSETCL Borivali – Aarey feeders will grow further.
    - 220kV MSETCL Borivali circuit – Aarey line 1&2 are vulnerable due to weak cable joints.

In view of the above and as 400KV lines in MMR are normalized, AEML requests to kindly normalize the system as per old scenario [Kudus both ICT out and both AEML lines in service (AEML Ghodbunder – Borivali (MSETCL) line and AEML Ghodbunder – Kudus (MSETCL) line)].

Discussion in 11th OCC:

The MSLDC representative informed that, due to under rated capacity of cables at 220kV Ghodbunder s/s and to take the Kudus ICTs in service, 220kV Kudus – Borivali ckt-2 is formed. In view of high loading of 220kV Aarey – Borivali ckt 1 & 2 due to weak cable joints, he suggested to upgrade the cable. Also, he informed that, after the integration of +/- 320kV Kudus – Aarey HVDC pole, loading of 220kV Aarey – Borivali ckt 1 & 2 will be resolved. Further, he suggested to Tap a cable from either 220kV Ghodbunder – Borivali ckt or from 220kV Ghodbunder – Kudus ckt, so that in case of emergency by switching on breaker at Ghodbunder end, connected tap line can be taken in service.

After due deliberations, the Chairman of OCC directed M/s AEML and SLDC to study and work out the above two suggestions to resolve the issue.

With due deliberations, all OCC members took note of the same.

Item No. 5 MSEDCL Agenda:

1. It has been observed that the SLDC website is reflecting post-facto changes in the published Net Schedule data. A specific instance was noted on 27-08-2025, where substantial changes were observed after the fact in the following components:

- CENTRE
- INTRASTATE MTOA
- INTRASTATE LTA
- RTM_IEX
- INTRASTATE GENERATION
- REMC
- Target Injection Schedule (Ex-Bus)
- Demand Schedule (T), etc.

These post-facto changes were in the range of thousands of MW, which is not acceptable, especially considering that this data is used for operational planning, DSM accounting, and various commercial and regulatory purposes.

After the issue was brought to the attention of SLDC, the data was corrected. However, the occurrence of such significant discrepancies raises serious concerns regarding the data integrity and reliability of information available on the SLDC website.

Points for Discussion:

1. What were the reasons for the post-facto changes observed on 27-08-2025?
2. What measures have been taken by SLDC to avoid recurrence of such issues?
3. Has any automated check, validation mechanism, or approval process been implemented to prevent erroneous or unauthorized post-facto changes in schedule data?
4. Is there a version control or audit trail maintained for schedule data changes?
5. Can stakeholders be notified immediately in case of any corrections or updates in published schedules?

Requested Action:
We request SLDC to provide a detailed explanation regarding the cause of these post-facto changes and the corrective and preventive measures implemented to ensure the accuracy, transparency, and reliability of schedule data on the SLDC website.

Discussion in 11th OCC:

The SLDC representative explained that the issue occurred only for the past time blocks of 27.08.2025 and was immediately corrected for the subsequent time blocks. The load-generation balance (LGB) of MSEDCL remained unaffected.

He further elaborated on the analysis of the specific time block in which the issue occurred (Time Block-75). He informed that on 27.08.2025, at 18:41, the PWC team was working on the Centre utility–related data. At the same time, due to a processing issue, the differentiation between NVVN Coal (around 10 MW) and the MSEB beneficiary (around 1000 MW), both contracted with MSEDCL, was disrupted. As a result, only the NVVN Coal schedules were reflected under the Centre schedules of MSEDCL, leading to a reduction of approximately 1000 MW in the Centre schedule for MSEDCL.

The PWC team corrected the schedules immediately from the next time block. Since the load-generation balance for the past period had already been finalized and the LGB for the progressive block was accurate, there was no impact on the LGB of MSEDCL.

The incorrect Centre data for the past time blocks has been corrected post-facto by SLDC, based on the Centre data available in the WRLDC scheduling software.

SE(OP) informed that, PWC scheduling team should take utmost care to avoid such kind of issues in real time.

The Chairman of the Operation & Coordination Committee (OCC) directed SLDC to take up the issue with PwC (if PwC is handling the backend work) and get a detailed Root cause analysis (RCA) on the issue. Also define a process such that, when any critical activity is taken up by the backend PWC team; it shall be informed beforehand to MSLDC & once PwC completes the work, all stakeholders can review their schedules. The RCA shall be analyzed with the involvement of the IT representatives of the stakeholders under the IT sub-group for further discussion.

With due deliberations, OCC took a note of the same.

2. It has been observed that on 08/09/2025 and 09/09/2025, load shedding was implemented exclusively in MSEDCL's area, despite the fact that MSEDCL was not the sole beneficiary facing a shortfall during those periods.

SLDC did not appear to consider or address shortfalls from other beneficiaries such as:

- Railways
- AEML
- TATA Power
- Sellers under-injecting into the system

As a result, load curtailment was imposed disproportionately on MSEDCL, while other defaulters were not subjected to similar restrictions. This raises concerns regarding the fairness and transparency of the current methodology being followed by SLDC for monitoring real-time shortfalls and enforcing load shedding.

Suggestion for Discussion:
There is a need to formulate a fair and transparent methodology for monitoring real-time shortfalls and implementing load shedding measures. The proposed approach should identify shortfalls beneficiary-wise

- Account for under-injection by sellers
- Distribute load curtailment proportionally among defaulting entities
- Avoid placing an undue burden on MSEDCL alone

Requested Action:
We request SLDC to review its current process and implement a rational and equitable load shedding mechanism, ensuring that all defaulting beneficiaries are treated uniformly and MSEDCL is not unfairly penalized for the shortfall caused by others.

Discussion in 11th OCC:

With due deliberations, the Chairman of OCC directed SLDC to form the group from stakeholder to monitor the real time load generation balance of individual Discoms and to finalize the any load curtailment actions at resource shortfall scenarios in the state.

All OCC members took a note of the same.

3. Economical Operation of Ghatghar Pumped Storage Plant

MSEDCL expects the Ghatghar Pumped Storage Plant to be operated in pumping mode during economically favourable conditions, such as:

a) Periods of heavy under-drawal
b) High system frequency
c) Low market clearing prices (particularly in the RTM and DAM)

These conditions are ideal for utilizing surplus power economically and improving system efficiency. However, due to transmission constraints, MSEDCL is unable to capitalize on such opportunities for pumping operation of Ghatghar.

This results in a financial loss to MSEDCL, as the surplus power cannot be utilized for pumping and stored for later use during peak demand hours.

Requested Action:
We request the Transmission Utility / SLDC to urgently address and resolve the transmission constraints preventing the optimized operation of Ghatghar. Ensuring the availability of corridor capacity for pumping during off-peak, high-frequency, and low-market-price periods will enhance system economics and avoid financial losses to the DISCOM.

Discussion in 11th OCC:

SE(OP), informed that the issue of low voltages at Ghatghar end is resolved now as Ghatghar units can be taken in pumping mode at minimum 214kV and also commissioning of capacitor banks in Nashik area is in progress. and the unit can be taken on pumping mode in solar hrs only considering availability of all three thermal units at Nashik on bar and loading of 220KV Nashik-Baleshwar D/C under limit.

The Chairman of the OCC directed SLDC to explore the possibility to take the ghatghar pumping on bar in solar hours by monitoring the voltages and transmission constraints at 220kV Nashik – Babhaleshwar D/C.

With due deliberations, OCC took a note of the same.

4. Implementation of LPS Rules, 2022 and Manual Correspondence for Requisitioning

As per recent instructions, strict implementation of the Late Payment Surcharge (LPS) Rules, 2022 is to be enforced from 01-10-2025. These rules directly impact the financial settlement of market transactions, especially with respect to timely and accurate requisitioning of power.
Currently, power requisitions are being sent manually via email, which lacks standardization, traceability, and automation. Given the financial implications under the LPS framework, continuing with manual and informal correspondence could lead to misinterpretations, disputes, or financial penalties.

Points for Discussion:
What steps will be taken to minimize human error and avoid any disputes in energy accounting and LPS liability?

Requested Action:
We request that a standardized and automated mechanism for power requisitioning be implemented urgently. This will ensure compliance with LPS Rules, 2022, reduce the risk of disputes, and facilitate accurate financial settlement of market transactions. A discussion on this matter is essential to avoid escalation of issues and to ensure a smooth transition into the new compliance regime.

Discussion in 11th OCC:

The CE SLDC updated that SLDC has submitted chapter-wise comments on the Draft Maharashtra Electricity Grid Code (MEGC) 2025 on 15.09.2025 to Maharashtra Electricity Regulatory Commission (MERC). Further, extensive deliberations on the timelines proposed in the Draft MEGC were held in 10thOCC, 14thGCC forums and with stakeholders. As recommended by GCC, the final comments along with stakeholder suggestions were submitted to MERC on 14.10.2025.

The Chairman of the OCC stated that SLDC, GCC and stakeholders have already submitted their comments to the Hon'ble Commission.

With due deliberations, OCC took a note of the same.

4. Request for implementation of corrective measures, including RE curtailment, by MSLDC to control heavy under-drawl during solar hours.

Owing to the delayed monsoon, intermittent rainfall caused by low-pressure areas in the Bay of Bengal, and uncertain climatic variations, MSEDCL's power demand remained lower than the anticipated levels during October-2025 and is expected to continue similarly in November-2025.

In this context, it has been observed that heavy under-drawal is consistently occurring during solar hours over the past few months. To mitigate this, MSEDCL has taken several measures such as:

- Reducing the requisition from ISGS stations below the technical minimum of 55%,
- Issuing zero schedules/RSD to high –cost thermal power stations as per the MOD, and
- Curtailing short-term power procurement.

On several occasions, MSEDCL also attempted to sell surplus power during solar hours; however, market prices during these periods were extremely low making such sales economically unviable.

Since last few months during solar hours, MSEDCL frequently requisitioned ISGS power below the technical minimum level, with total quantum ranging between 1700-1800 MW below 55% technical minimum, solely to control under-drawl.

Further,it is pertinent to note that the CERC order dated 05.10.2025 in Suo-Motu Petition No. 9/SM/2024 stipulates that beneficiaries must provide at least Minimum Technical Limit (MTL) schedules to ISGS units during non-peak hours if power is availed during peak hours. Further, if such MTL Schedules are not ensured and SCUC/SCED MTL support is not extended by NLDC, generating stations may withdraw units under RSD. In such a scenario, managing evening peak demand becomes extremely difficult as market availability during peak hours is limited and often chances of bid clearances are also very low even at ceiling at ceiling price. Therefore, keeping ISGS units on bar is essential to ensure system reliability during evening peaks.

However, adhering to CERC's directive of maintaining MTL requisition in ISGS stations may results in surplus generation during solar hours, thereby increasing under-drawl and posing a risk to grid security.

The heavy under-drawl during solar hours has also led to financial loss to MSEDCL & ultimately to its end consumers, due to unutilized generation injected into the grid at zero cost beyond 209 MW and DSM penalties arising from under-drawl at high frequency.

During the month of October2025 (up to 19th October 2025), the state recorded under-drawl in 357 time blocks (58.71%) during solar hours, resulting in a total under-drawl of 33.60 Mus with a realization rate of Rs. 1.01 per unit. Similarly, MSEDCL experienced under-drawl in 288-time blocks (47.37%) during solar hours, amounting to 19.67 Mus with a realization of Rs. 1.73 per units. Furthermore, during this under-drawl period, it was observed that the system frequency remained beyond the IEGC band (i.e., above 50.05Hz) for 82-time blocks.

To manage such heavy under-drawl, it was expected that appropriate measures such as VSE down and RE curtailment needs to be implemented by SLDC. In this regard, the Shift In-charge, LM Cell, MSEDCL had repeatedly requested MSLDC via e-mails (copies enclosed) to initiate corrective actions, However, no instructions for RE curtailment were issued from MSLDC.

In this regard, as per the State RE curtailment procedure clause 4.2.8

4.2.8 However, in-spite of above corrective measures, if the system parameters viz. High Voltages, high frequency, ***heavy under-drawl from ISTS.*** *etc.* ***are not within the Permissible limits as specified*** *under ISGC & MEGC-2020 May lead to grid security Problems and as a last*

option, ***the RE Power shall be curtailed****. Such curtailment shall be Governed by the Registration No. 14 of the MERC (F, S & DSM for Solar & Wind Generation) Regulations, 2018.*

Furthermore, in accordance with Section 33 of the Electricity Act, 2003, ***MSLDC is empowered to issue directions and exercises supervision to ensure integrated grid operations, maintaining maximum economy and efficiency in State power system operations.***

In view of the above, it is earnestly requested that MSLDC shall take prompt and appropriate corrective measures including RE curtailment to control heavy under-drawl during solar hours, safeguard grid stability, and avoid additional financial burden on end consumers of Maharashtra.

Prompt and effective action in this regard is highly expected.

Discussion in 11th OCC:

After the due deliberation, the Chairman of the OCC informed that the revised RE-curtailment procedure is under preparation, and once ready it will be circulated to stakeholders for their comments. Any stakeholder wishing to include additional points can submit their suggestions during the comment period, which may then be incorporated into the final procedure.

With due deliberations, OCC took a note of the same*.*

5. Implementation of Directives under Vide suo moto Order 9-SM-2025 by Hon'ble CERC: Compliance with Grid Safety Measures

- **Discussion focus:**
- **Paragraph No. 63(j) (iv)** – "The generating stations shall not be permitted to declare Peak hours DC less than off-peak hours DC, other than in cases of forced outage or partial outage. Grid India shall strictly monitor the same. In case a generating station provides less DC during peak hours of the day than off-peak hours, the DC for such generating station for the purpose of fixed charges shall be taken as the lower of the two."
- **Objective:**
  To discuss the implementation of this directive in terms of grid safety and operational efficiency. The directive aims to ensure that generating stations maintain a consistent and reliable declared capacity (DC) during peak hours, thus contributing to grid stability without requiring additional investment.
- **Key Points for Discussion:**
  1. **Current Status of Compliance:** Review of current practices among generating stations and whether any action is already being taken in line with the directive.
  2. **Monitoring Mechanism:** Proposed methods for Grid India to effectively monitor and enforce compliance, and the role of system operators in ensuring adherence.
  3. **Impact on Fixed Charges:** Discussion on how fixed charges will be impacted for generating stations that fail to meet the required DC during peak hours, and any necessary adjustments or clarifications needed on this front.
  4. **Operational Challenges & Solutions:** Identify any challenges that may arise in ensuring the directive's implementation, particularly for generating stations with existing limitations or infrastructure constraints.

- **Expected Outcome:**
  Agreement on the practical steps for implementing the directive, timelines for monitoring, and any necessary modifications to existing practices or agreements to ensure grid stability and regulatory compliance.

Discussion in 11th OCC:

The representative of MSPGCL informed that they are declaring the maximum "DC" throughout the day. However, due to variation in coal quality and coal imports at some generating plants, it is sometimes not possible to maintain the maximum DC. MSPGCL has already started generation with selective bunkering, and with the recently-granted import permission now in effect, MSPGCL will endeavor to maintain the maximum DC throughout the day.

The Chairman of OCC directed the SLDC to regularly monitor the Declared Capacity (DC) of generators and to flag, in the OCC forum, if any generator fails to comply with DC declarations as per MEGC norms. He further instructed MSEDCL to present their specific observations, and mandated MSPGCL and SLDC to jointly review the data henceforth.

With due deliberations, OCC took a note of the same.

6. **Request to honor the technical minimum while computing the net demand scheduled when the scheduled demand is lower than the technical minimum:**

   At present, the DISCOM schedules its demand in the DSM software, and the Load Generation Balance is computed accordingly by the DSM system. The schedules are dispatched as per the Merit Order Dispatch (MOD) rate, taking into account factors such as merit/must-run stations, ramp rates of generating stations, and the technical minimum (TM) limits of generating units.

   SLDC is considering a net demand schedule for DSM computation, wherein if the scheduled demand exceeds the available generation sources, the system restricts the net demand schedule to the maximum available generation. Conversely, when the scheduled demand is lower than the technical minimum, the system does not honour the technical minimum while computing the net demand schedule, and a lower-than-TM demand is reflected in the net demand schedule. The computation in the targeted_injection_schedule column appropriately adjusts the maximum and technical minimum schedules, aligning with regulatory obligations concerning TM.
   Even when the DISCOM schedules a demand lower than the technical minimum (TM) of the generating units, the targeted_injection_schedule of contracted generators is restricted to the TM, and the DISCOM makes payment to generators based on the scheduled quantities as per this restriction.

   However, while preparing the DSM bill, SLDC presently considers the scheduled demand of the DISCOM without honouring the generator's technical minimum, whereas the DISCOM is making payments to the generators based on the targeted_injection_schedule. This creates an inconsistency between DSM accounting and actual payment obligations.

Therefore, to ensure consistency, transparency, and accuracy in energy accounting and DSM billing, it is requested that the DSM computation methodology be modified to consider the Targeted_Injection_Schedule for all relevant calculations.

Example	Projected Demand	Must_Run _RE	Thermal_ DC	Thermal _TM	Targeted Injection	Existing_ DSM_Bill_ Demand	Expected_ DSM_Bill_ Demand
1	18000	5000	15000	8250	18000	18000	18000
2	21000	5000	15000	8250	20000	20000	20000
3	12000	5000	15000	8250	13250	12000	13250

Discussion in 11th OCC:

After due deliberation, the Chairman of OCC instructed that a separate meeting will be convened to discuss this agenda.

With due deliberations, OCC took a note of the same.

Item No. 6 TPCL Agenda:

6.1 SCADA Visibility of KVTL Vikhroli, MSETCL Borivli and MSETCL Waghivli :

SLDC has provided MMR lines and 400KV input line real time data through ICCP. Additionally, similar real time data is required for all connected elements of KVTL Vikhroli (MW, MVAR, Breaker & Isolator status), MSETCL Borivli (MW) and MSETCL Waghivli (MW) for real time monitoring of Mumbai Power System.

Discussion in 11th OCC:

The representative of TPCL informed that there is only partial visibility of the KVTL substation in TPCL's SCADA system. He explained that following the events after 12 October — when several 400 kV lines were affected — SLDC provided many of the 400kV lines data to TPCL SCADA system, but he has not been receiving complete data regarding the KVTL (or feeder) lines. According to him, whenever an isolator's position changes (e.g., switching from one bus to another), the SCADA does not reflect the updated status. Consequently, TPCL is unable to reliably interpret the system condition or predict outcomes.

There are many parameters that are not available to TPCL SCADA , even reactor data. Some MW (active power) values are coming through, but reactive power data is missing. There is also no real-time inter-utility communication. M/s KVTL always request SLDC to intervene.

After due deliberation, the Chairman of OCC directed that a joint meeting be convened with the SLDC-SCADA, KVTL and TPCL-SCADA teams to resolve the issue mentioned above.

With due deliberations, OCC took a note of the same.

6.2 KVTL support is required for attending communication issues on priority, which affected differential protection of 220 KV KVTL Vikhroli – Salsette 1, 2 & 3 and ICCP data.

Discussion in 11th OCC:

The representative of TPCL informed that their differential protection for the lines has been affected due to communication issues (such as a communication-card failure or other communication failures at their end). During such periods, the differential protection remains out of service. He added that sometimes the problem persists for 2–3 days or even 4–5 days before resolution.

The representative of KVTL requested TPCL to share any available records with them, so that KVTL can examine the matter. He noted that from his side he is in touch with the site, but without the records he cannot confirm if the communication issue lies with the relay or elsewhere.

The TPCL representative agreed for the same.

The Chairman of OCC directed that the matter of inter-utility communication also be taken up in a MCCC / PCC forum.

With due deliberations, OCC took a note of the same.

6.3 Present Status of 220 KV MSETCL Ulwe – Waghivli cable repairs / replacement and action plan for taking 220KV MSETCL Waghivli – Tata Waghivli 1 & 2 tie lines in service.

Discussion in 11th OCC:

After a due deliberation, the Chairman of OCC directed MSETCL that the works on the 220 kV Ulwe–Waghivali cable need to be expedited at the earliest so that the 220 kV MSETCL Waghivali – Tata Power Waghivali-1 & Waghivali-2 tie lines can be brought into service.

All OCC members took a note of the same.

Item No. 7 MSPGCL Agenda:

Certification of Force Majeure Events and Grant of Deemed Generation for Chandrapur TPS during Sept-2025 & Oct-2025 Grid Disturbances.

Brief Explanation of Events

Grid Disturbance – October 2025 (GD-1 at 400 kV Chandrapur-II S/s) On 21.10.2025 at 20:03 hrs, a major grid disturbance occurred due to failure of the Y-phase IPS tube (bus isolator to CB) of the 400 kV Chandrapur-II–Chandrapur Switching Ckt-2, resulting in a Y-E fault. As the fault was not cleared by primary protection (600 ms delay), multiple 400 kV lines tripped from remote ends on Zone-2 DPR operation.

This resulted in tripping of the following units of Chandrapur TPS:

Unit-4 (210 MW) – Tripped on Master Fuel Trip due to simultaneous tripping of both FD Fans; outage from 21.10.2025 (20:09 hrs) to 22.10.2025 (01:03 hrs).

Unit-8 (500 MW) and Unit-9 (500 MW) – Tripped due to overvoltage and complete dead condition at 400 kV switching station.

Unit-3 (210 MW) – Experienced severe disturbances and auxiliary trippings due to incorrect phase sequence (generation dropped to 60 MW).

These outages were beyond the control of the generating station, caused additional oil & auxiliary consumption, and affected availability and DSM.

Hence, MSPGCL requests certification of the event as Force Majeure and approval of deemed generation (DC/SG post-facto correction) for the above units.

2) Multiple Grid-Related Outages – September 2025

a) Incidence-1: 400 kV Bus-II Dead – Tripping of Unit 5, 6, 7 (06.09.2025)

Due to failure of GCR HVDC Bay Y-phase CT, the 400 kV Bus-II went dead at 05:14 hrs, causing tripping of Unit-5, 6, 7 (500 MW each) on Busbar Differential protection.

Outage durations:

Unit-5: 05:14–10:51 hrs

Unit-6: 05:14–17:32 hrs

Unit-7: 05:14 hrs on 06.09.2025 to 17:32 hrs on 11.09.2025

This resulted in ~77.35 MU loss, additional oil consumption (for light-up/synchronisation) and fixed-cost loss.

b) Incidence-2: Unit-6 Synchronisation Delay (18–19 Sept 2025)

During synchronization after boiler tube leakage rectification, 400 kV GCB Pole Discrepancy relay operated repeatedly, preventing the unit from synchronizing.

The issue was attributable to the transmission-side GCB, not the generating unit.This caused availability loss of 0.84% and 0.842 MU generation loss.

c) Incidence-3: Emergency Outage for Hotspot on 89L Line Isolator (21.09.2025)

A severe hotspot (>230°C) was observed on R-phase 89L Isolator of 401 Bay (GT-9) at 400 kV Switching S/s.

An emergency outage was taken from 11:30 to 18:01 hrs, resulting in ~4.405 MU loss and additional cost implications.

Regulatory Provisions Supporting MSPGCL's Request

MERC MYT Regulations 2024 – Regulation 9.1: Events beyond reasonable control of the generator are classified as Uncontrollable/Force Majeure.

Such interruptions deprived Chandrapur TPS of rightful availability, while also causing additional oil & auxiliary consumption.

Maharashtra Electricity Grid Code 2020 – Regulation 30.12: SLDC shall certify periods of backing down / shutting down for computation of deemed generation.

MEGC Regulation 53.3.9: In case of evacuation bottlenecks or transmission constraints, SLDC must revise schedules and deem scheduled generation equal to actual generation for first three-time blocks.

All these incidences squarely fall under force majeure / uncontrollable transmission-side disturbances and therefore require SLDC certification.

Discussion in 11th OCC:

After due deliberation, the Chairman of OCC instructed that the availability shall be certified by MSLDC as per the provisions under Maharashtra Electricity Regulatory Commission (MERC) MYT regulations. SLDC team will take review of MSPGCL submission accordingly; till that time, the OCC cannot accept the MSPGCL request.

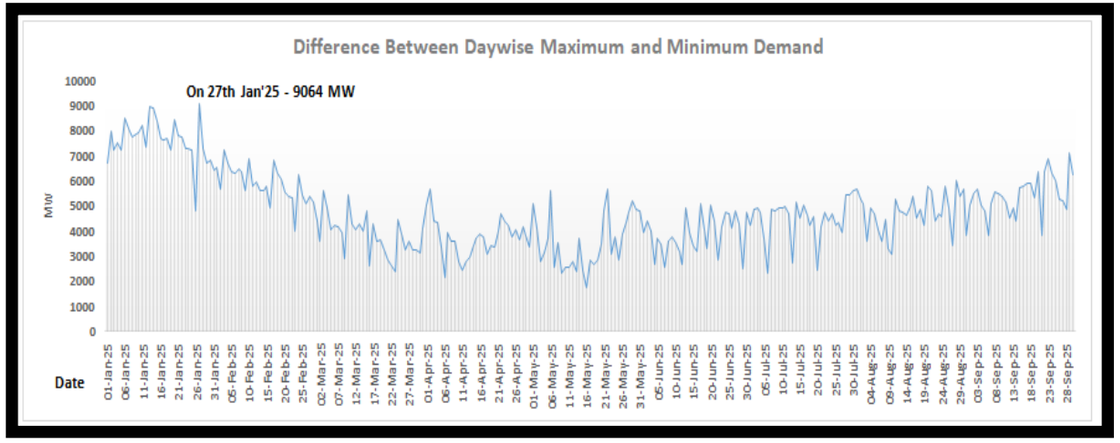
With due deliberations, OCC took a note of the same.

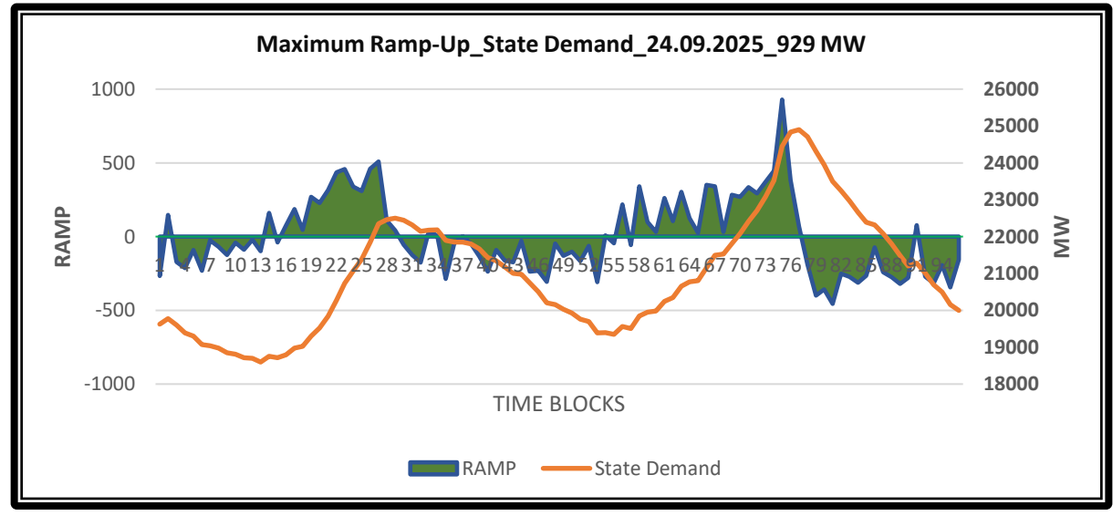
Maharashtra State Load Despatch Centre
“System Grid Performance for January – October 2025 ”
(January-September 2025)

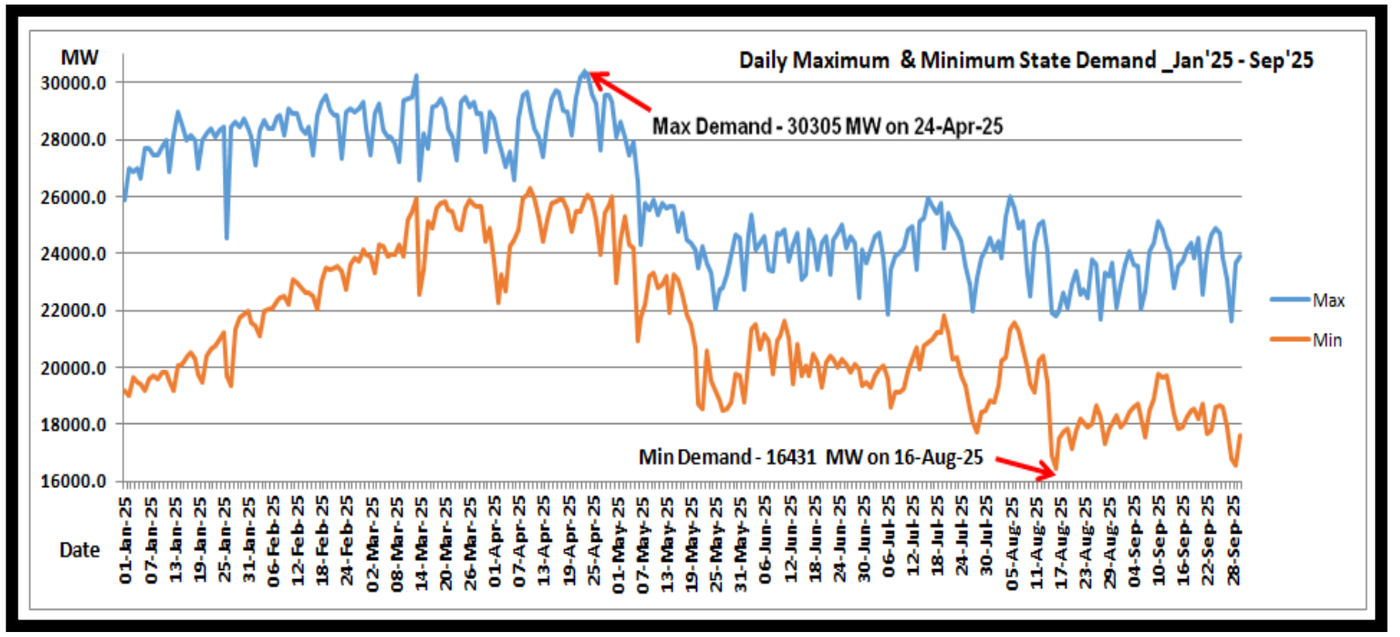
17-11-2025

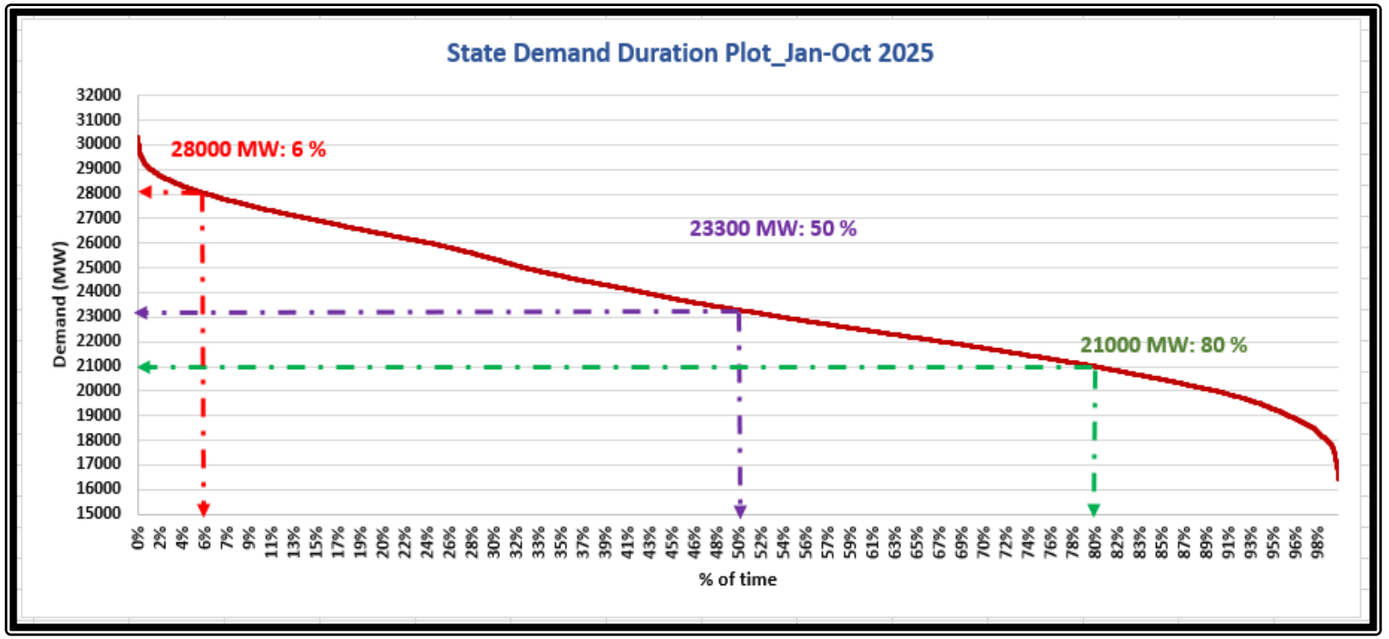
State Demand Profile from Jan'25 – Sep'25

- Maximum demand during Jan-Sep 2025 is 30308 MW at 15:30 hrs. on dt.24.04.2025
- Maximum daily variation: 9064 MW.
- 50 % of the period, demand was above 23300 MW.
- Demand was above 21000 MW for 80 % of the period.
- 6 % of the period, demand was above 28000 MW.

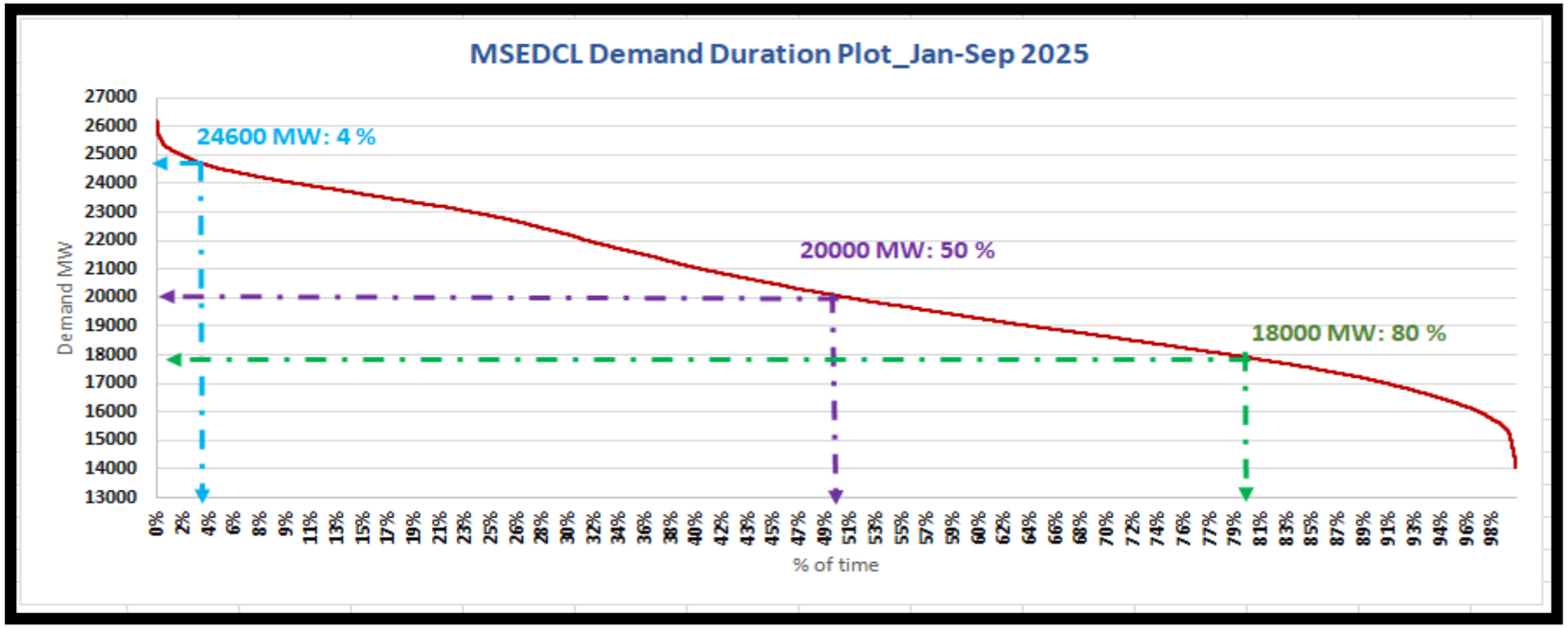


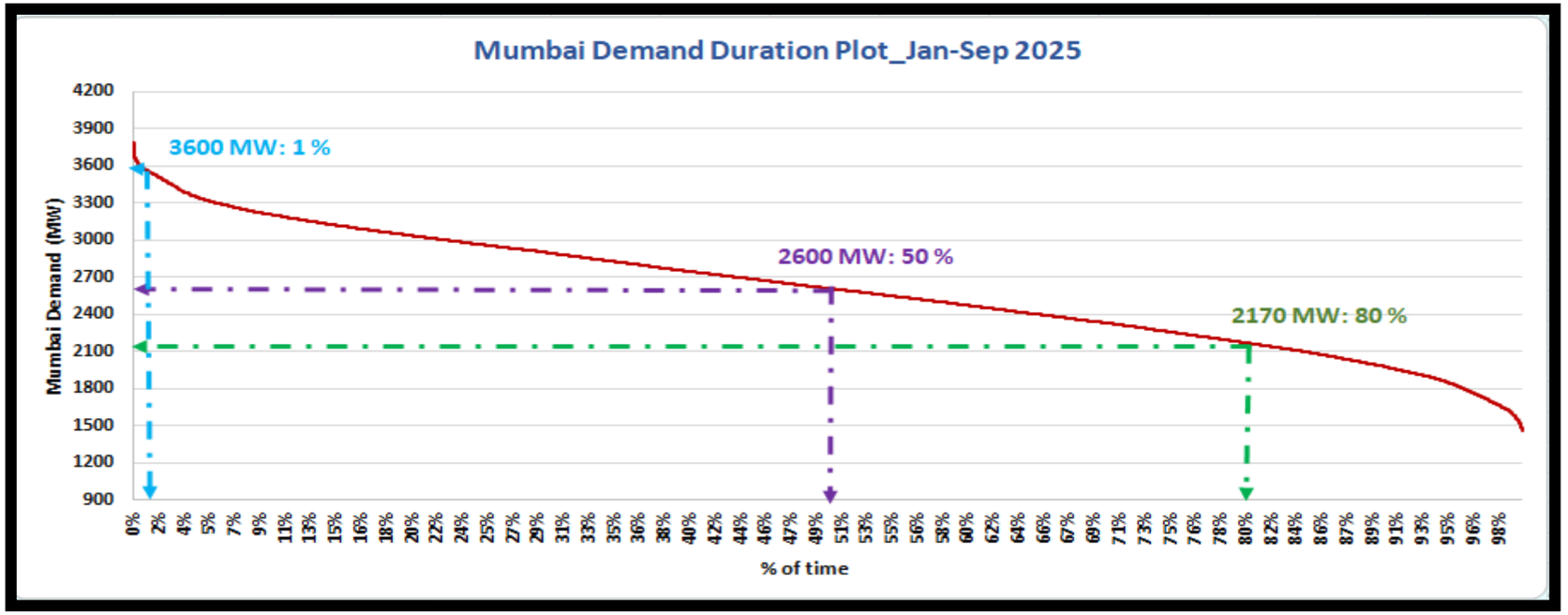




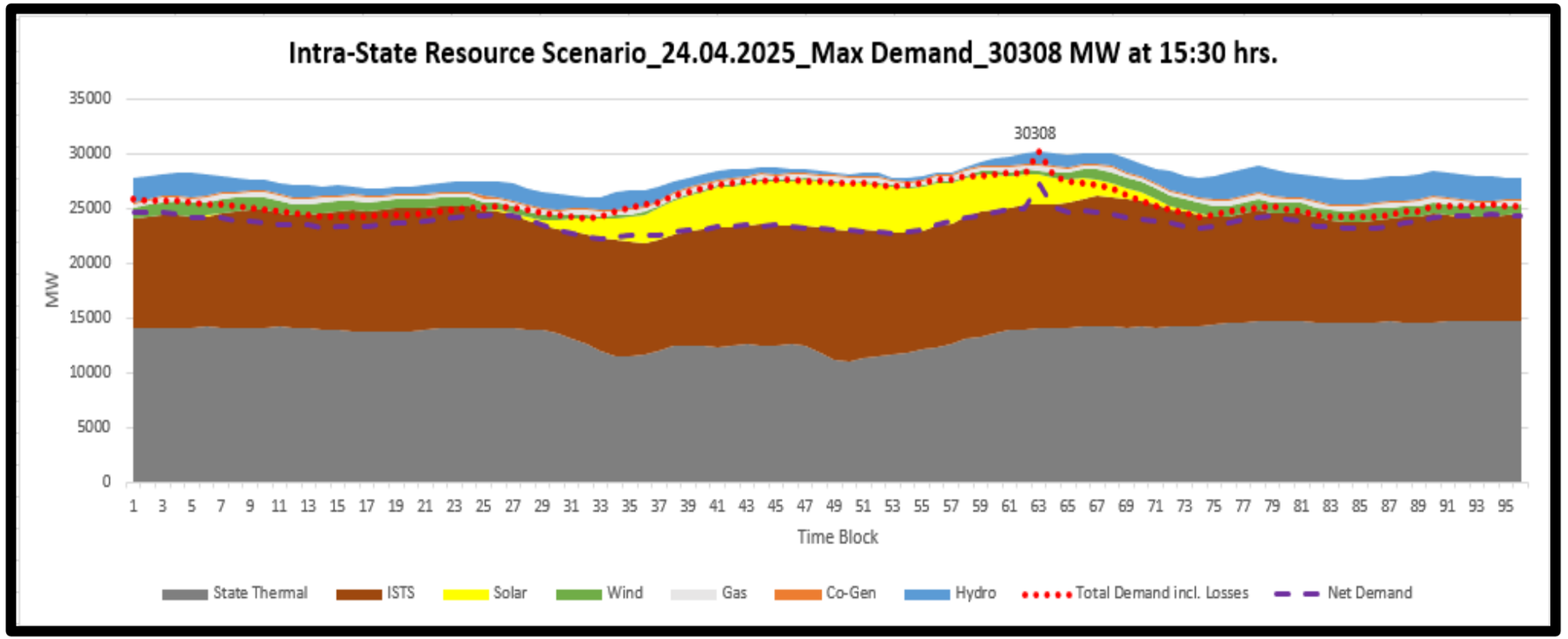


Demand Profile_MSEDCL & Mumbai from Jan'25 – Sep'25





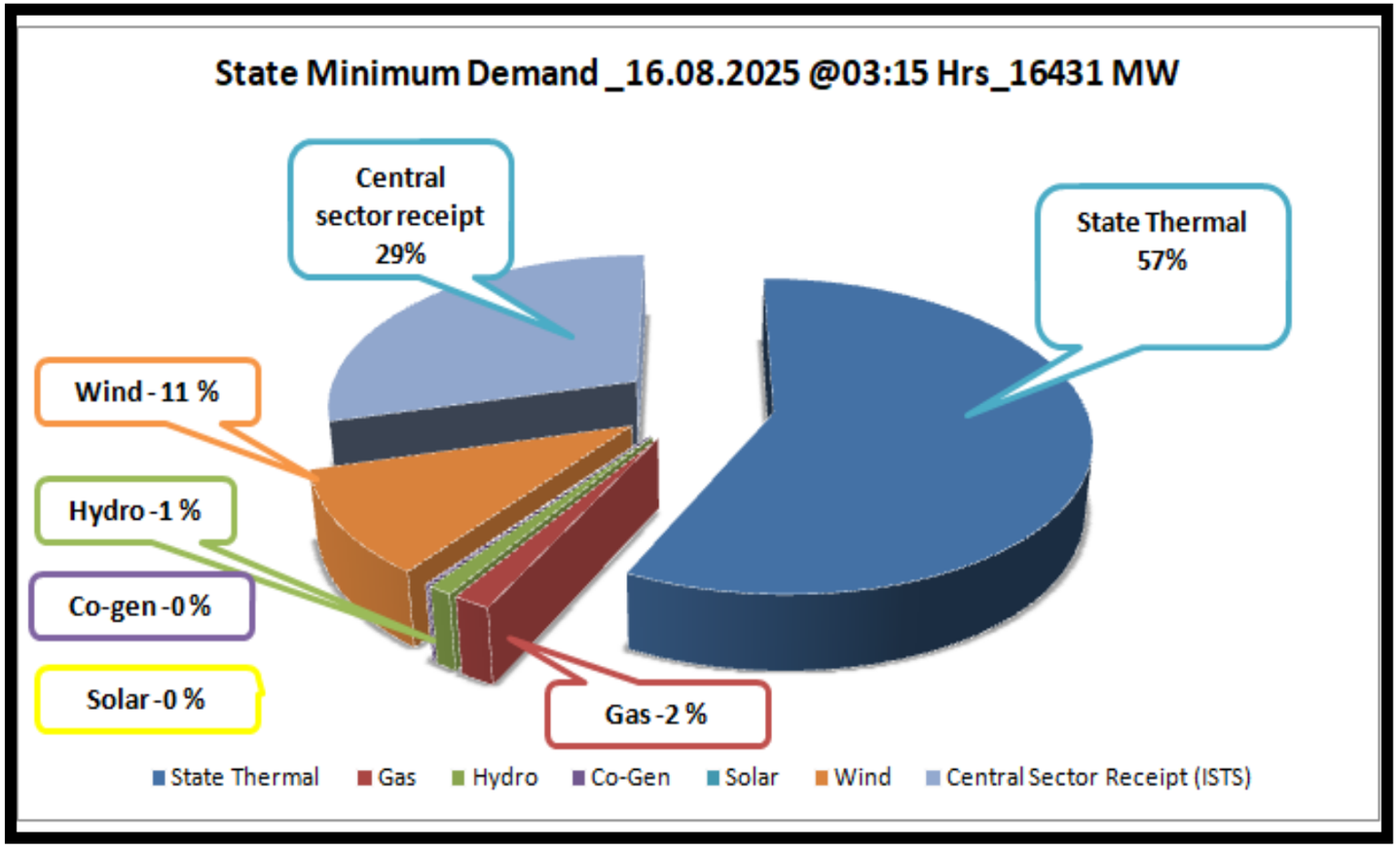
Resource Mix of the State_ Peak Demand



Source	Injection (MW)	Contribution (%)
State Thermal	14052	46%
Gas	374	1%
Hydro	1263	4%
Co-Gen	162	1%
Solar	2636	9%
Wind	425	1%
Central Sector Receipt (ISTS)	11396	38%

- The contribution of V_{RE} in mitigating State Peak Demand is only 10 %
- State is mainly relying on the thermal generation for meeting peak demand

State Minimum Demand Scenario



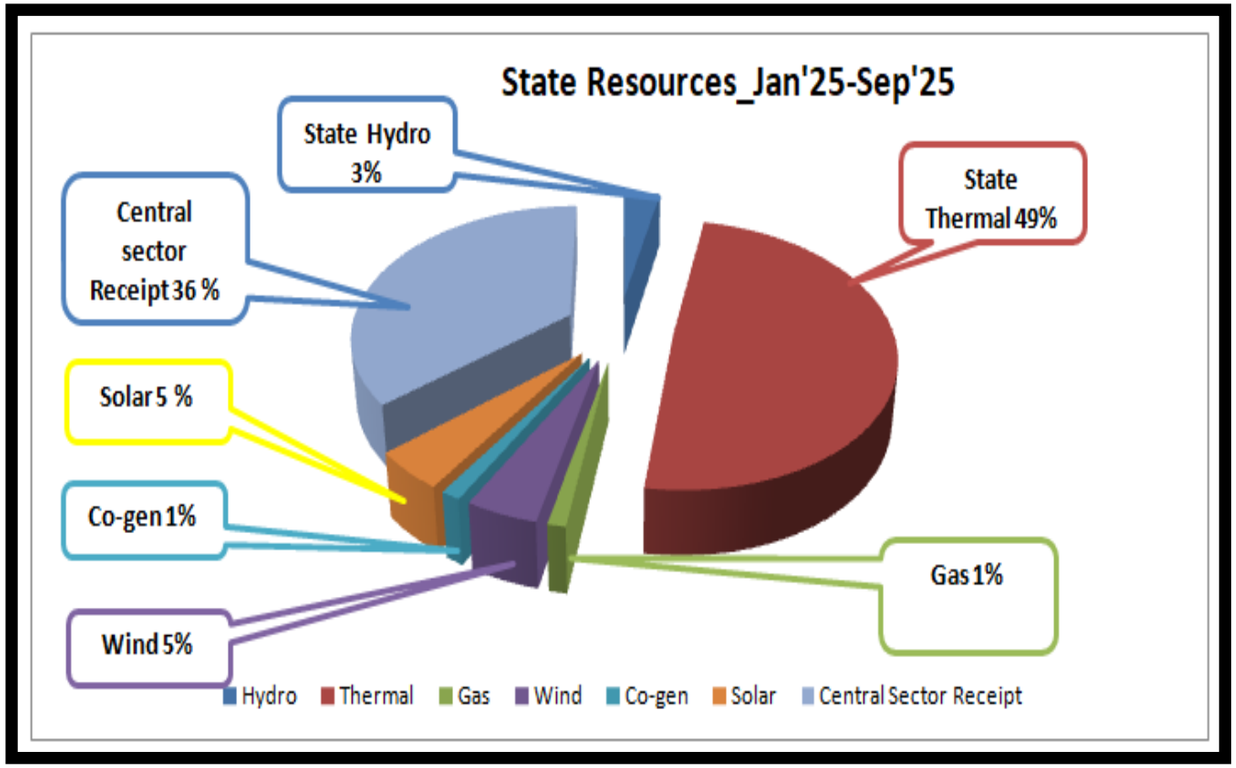
Source-wise contribution in meeting Minimum demand:

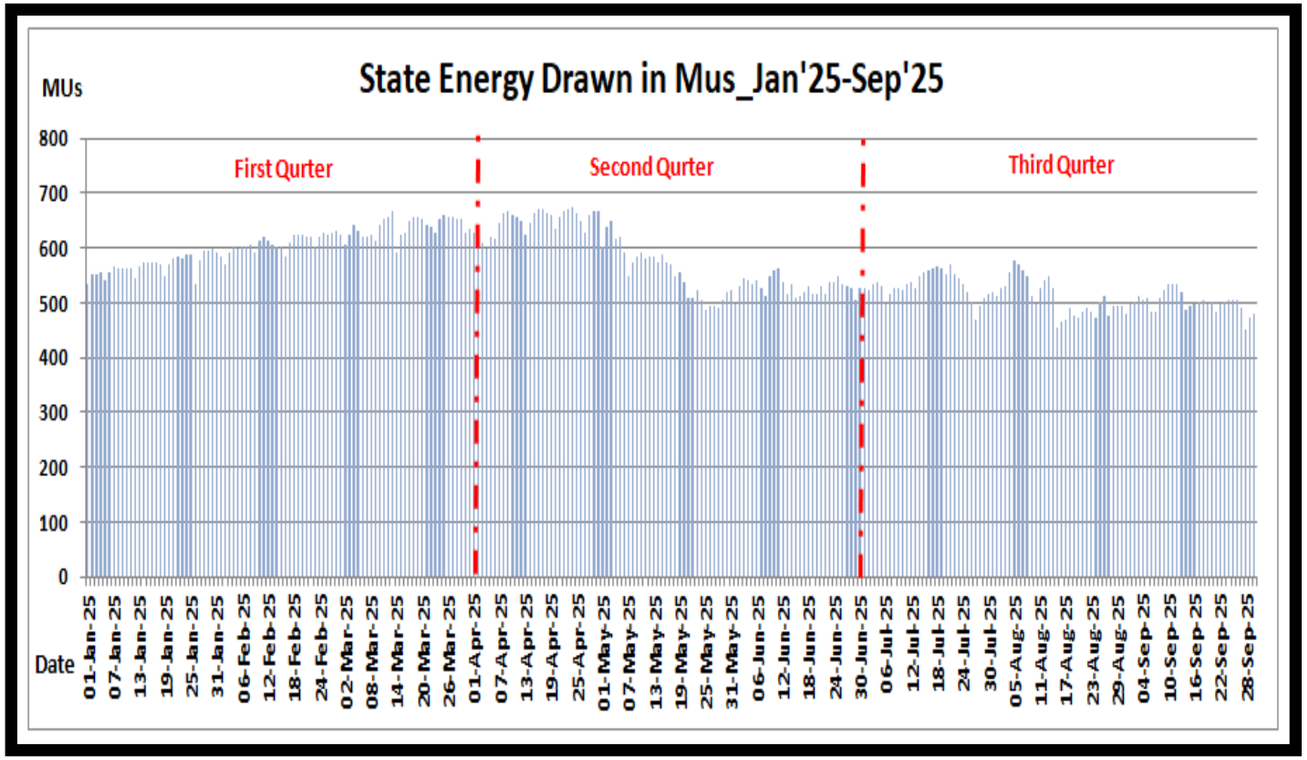
Source	Injection (MW)	Contribution (%)
State Thermal	9402	57%
Gas	273	2%
Hydro	175	1%
Co-Gen	21	0.1%
Solar	0	0%
Wind	1749	11%
Central Sector Receipt (ISTS)	4811	29%

The minimum Demand catered by the State was 16431 MW on 16.08.2025 at 03:15 hrs. This demand was met by various Intra as well as Inter-State resources.

Energy Profile of the State

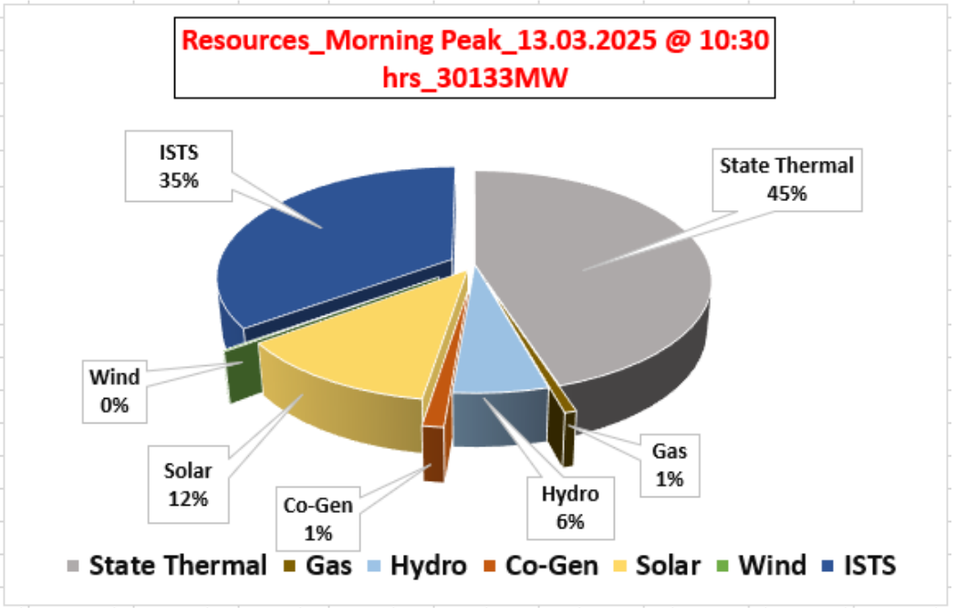
CY 2025	Source	Hydro	Thermal	Gas	Wind	Co-gen	Solar	Central Sector Receipt	Total
	MUs	4,894	75,944	1,743	6,838	1,901	7,111	55,834	1,54,266
	%	3%	49%	1%	4%	1%	5%	36%	100





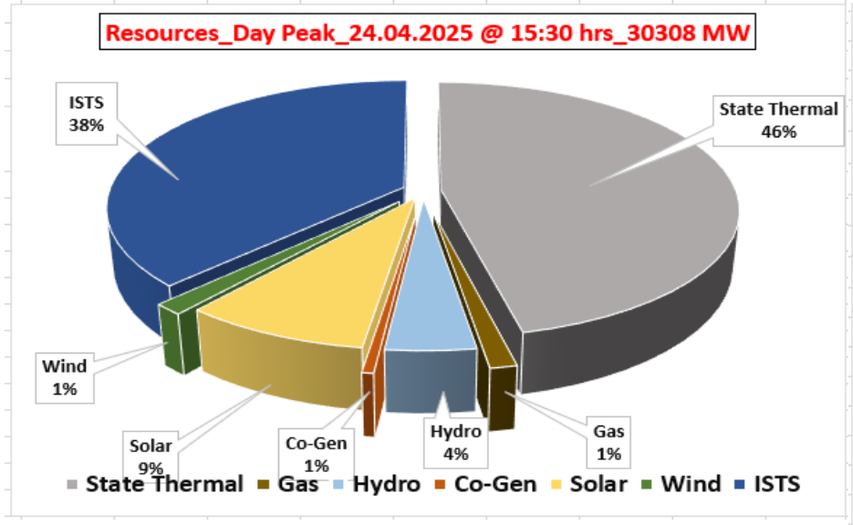
- Total contribution of Thermal generation is **49 %** which excludes the thermal energy used from ISGS resources
- The contribution of VRE i.e. Wind & Solar generation is only **9%**
- Energy of **54438 MUs** are catered in the 1st, **52600 MUs** in the 2nd & **47227 MUs** in 3rd quarter of the

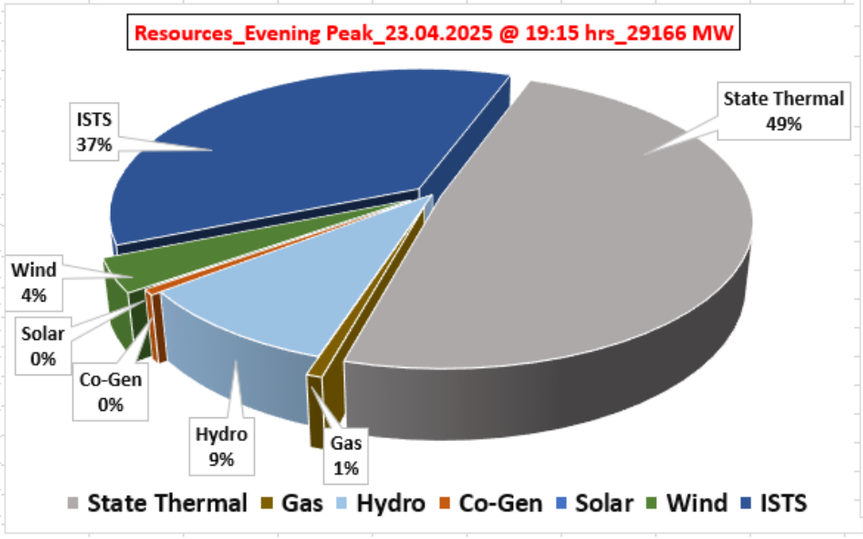
Resource Mix of the State_ 4 Cardinal Points

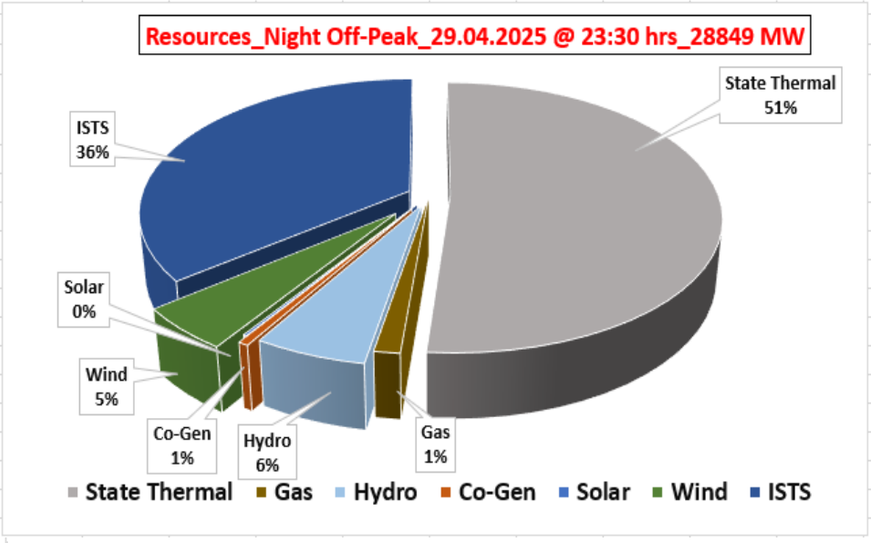


The timing for selection of 4 cardinal points is tabulated below:

Scenario/Time	From Hrs	To Hrs	From TB	To TB
Morning Peak	7:00	13:00	29	52
Day Peak	13:00	18:00	53	72
Evening Peak	18:00	22:00	73	88
Night Off-Peak	22:00	07:00	89	28

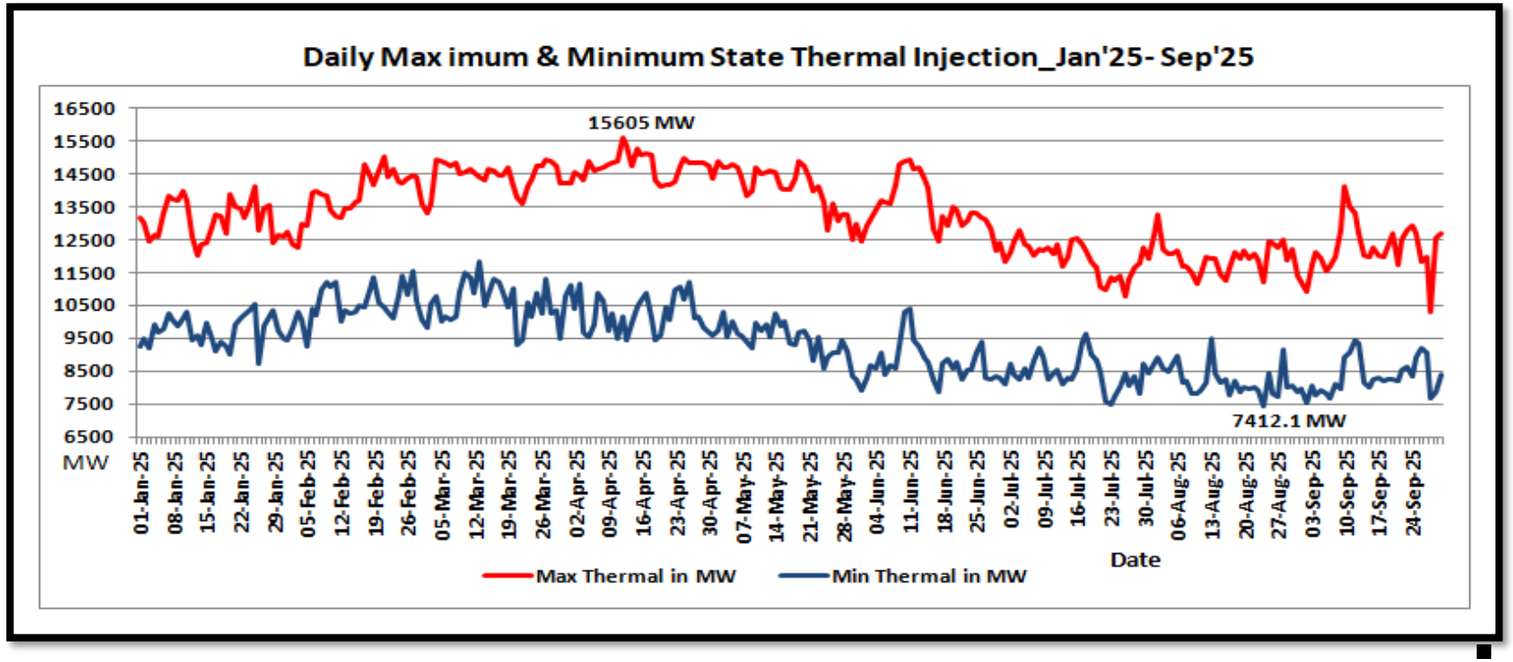


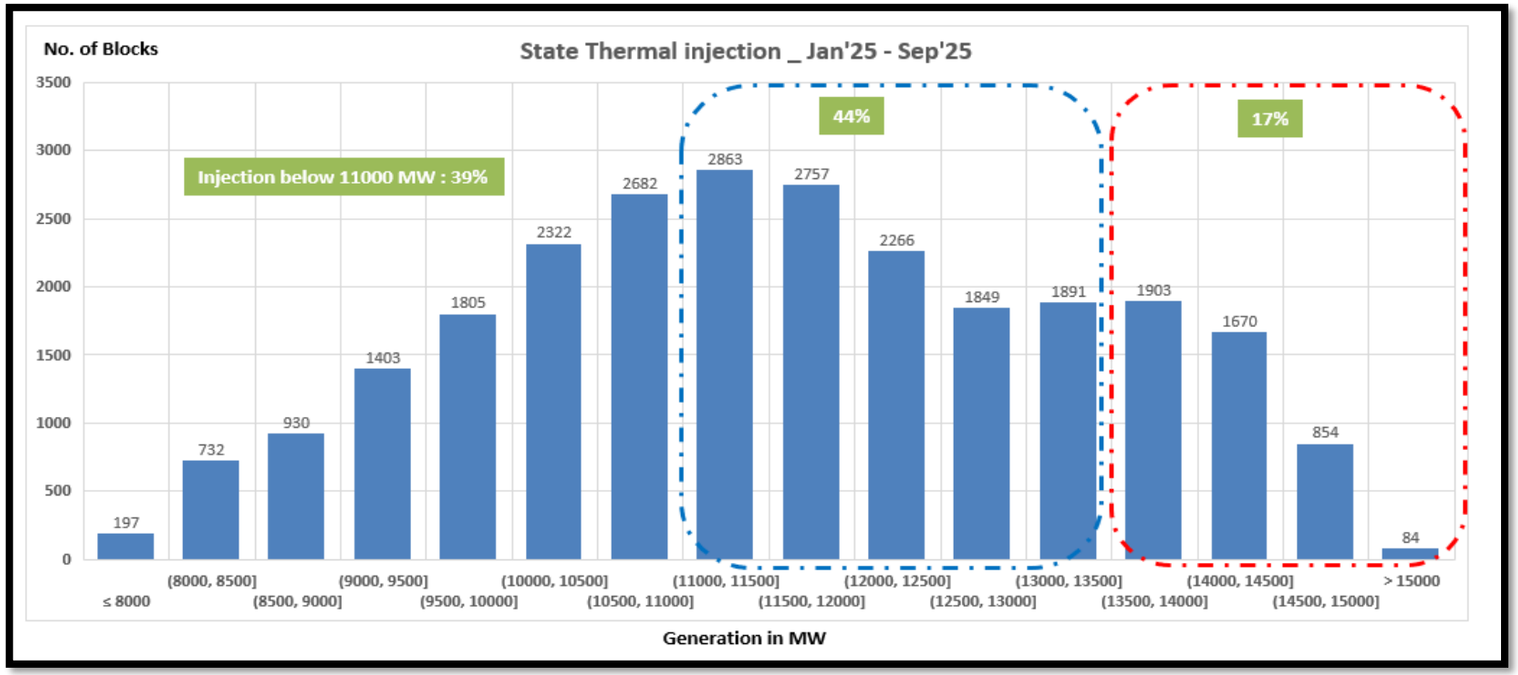




- With the increased penetration of Solar Generation, Day-time contribution reduces reliance on thermal generation
- To meet evening Peak & Night Off-peak demand, thermal contribution is high

Thermal Generation_ Injection Patterns





Installed Capacity:

- MSPGCL: 10200 MW
- IPP: 10090 MW

Total injection from Thermal units is ranging from 8251 MW to 15605 MW

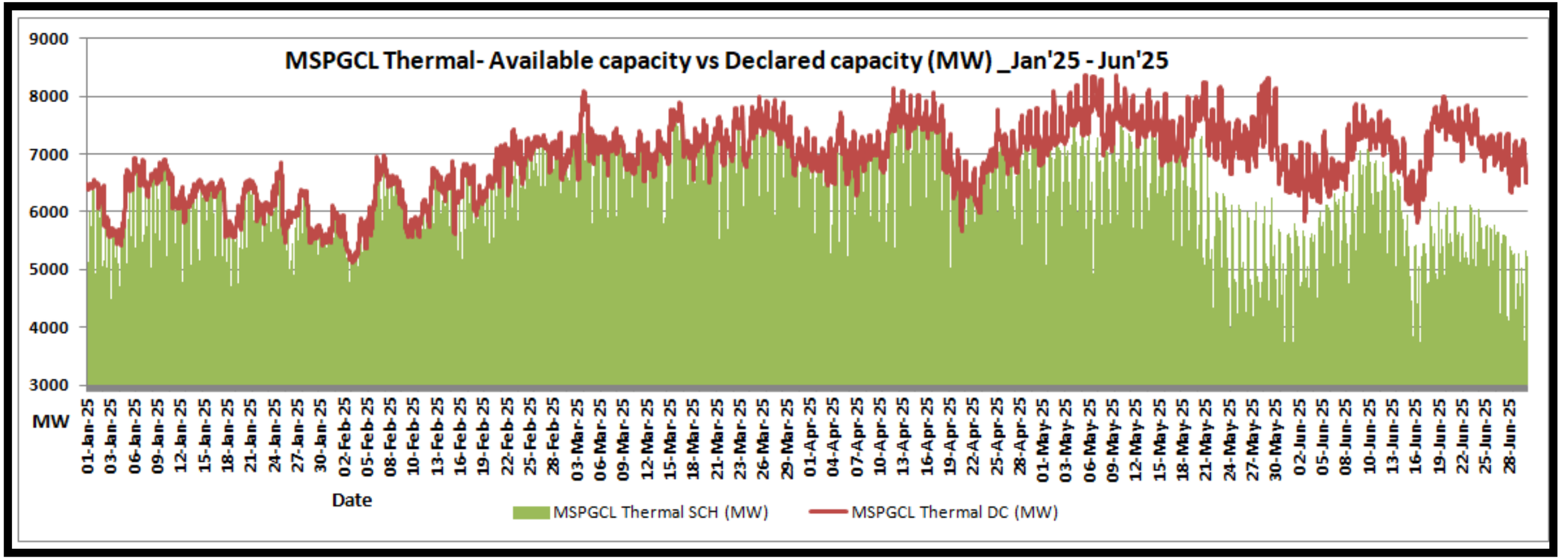
Maximum daily variation is 5922 MW.

For 39% of the period, injection from Thermal generation is below 11000 MW

Injection is above 13500 MW only for 17 % of the period

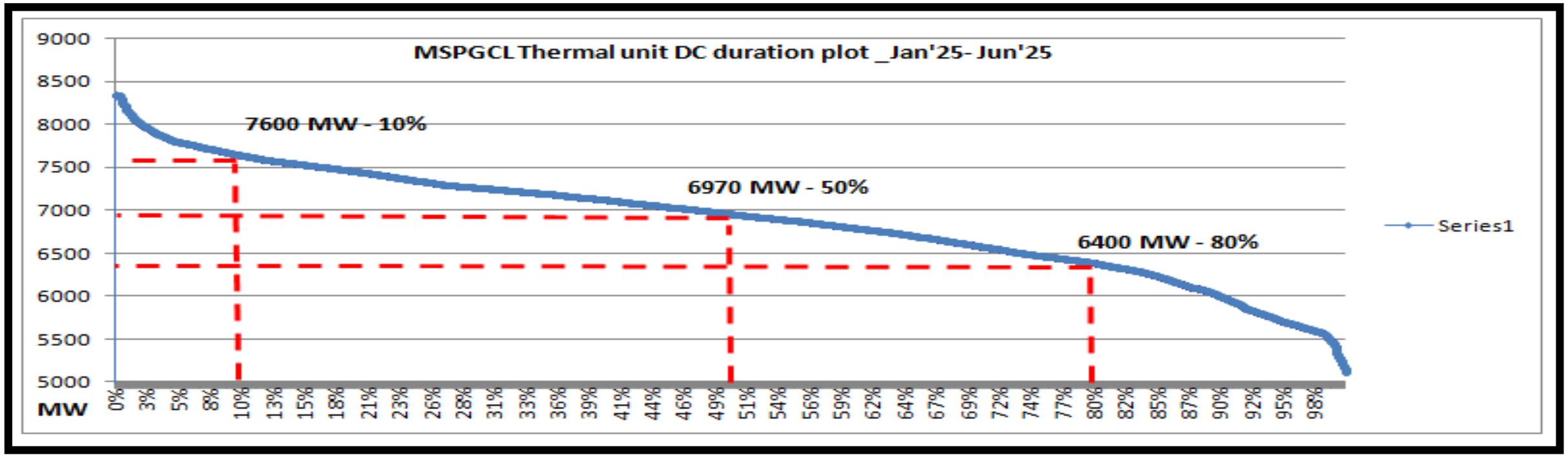
For remaining 44 % of the period, thermal injection is between 11000 MW to 13500 MW

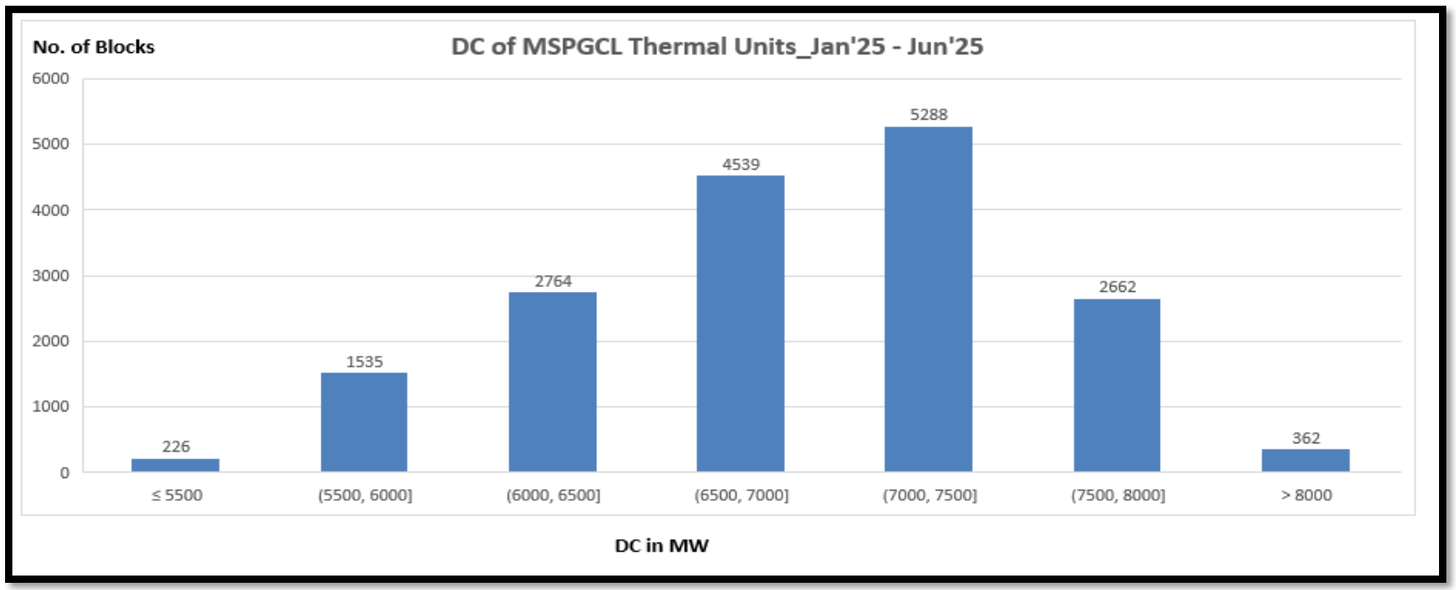
MSPGCL Thermal- Available capacity vs Declared capacity (MW)



- Maximum difference between Available Capacity and Declared Capacity is 3986 MW on 20.06.2025

DC Analysis of Thermal Generation_ MSPGCL





- For 50% of the period, DC is above 6970 MW
- For 10 % of the period, DC is above 7600 MW

Coal position at Thermal Generating Stations

Coal Stock less than 3 days	
Power Station	(Jan-Oct 2025)
	No. of Days
APML, TIRORA	65
Bhusawal Unit 4	15
Bhusawal Unit 5	15
Bhusawal Unit 6	4
Chandrapur Unit 3 to 7	77
Chandrapur Unit 8 and 9	77

Coal Stock less than 7 days	
Power Station	(Jan-Oct 2025)
	No. of Days
ADTPS	13
APML, TIRORA	100
Bhusawal Unit 4	116
Bhusawal Unit 5	116
Bhusawal Unit 6	112
Chandrapur Unit 3 to 7	72
Chandrapur Unit 8 and 9	72
Khaparkheda Unit 1 to 4	3
Khaparkheda Unit 5	1
Koradi Unit 6	1
Koradi Unit 8 to 10	42
Parli Unit 6 and 7	107

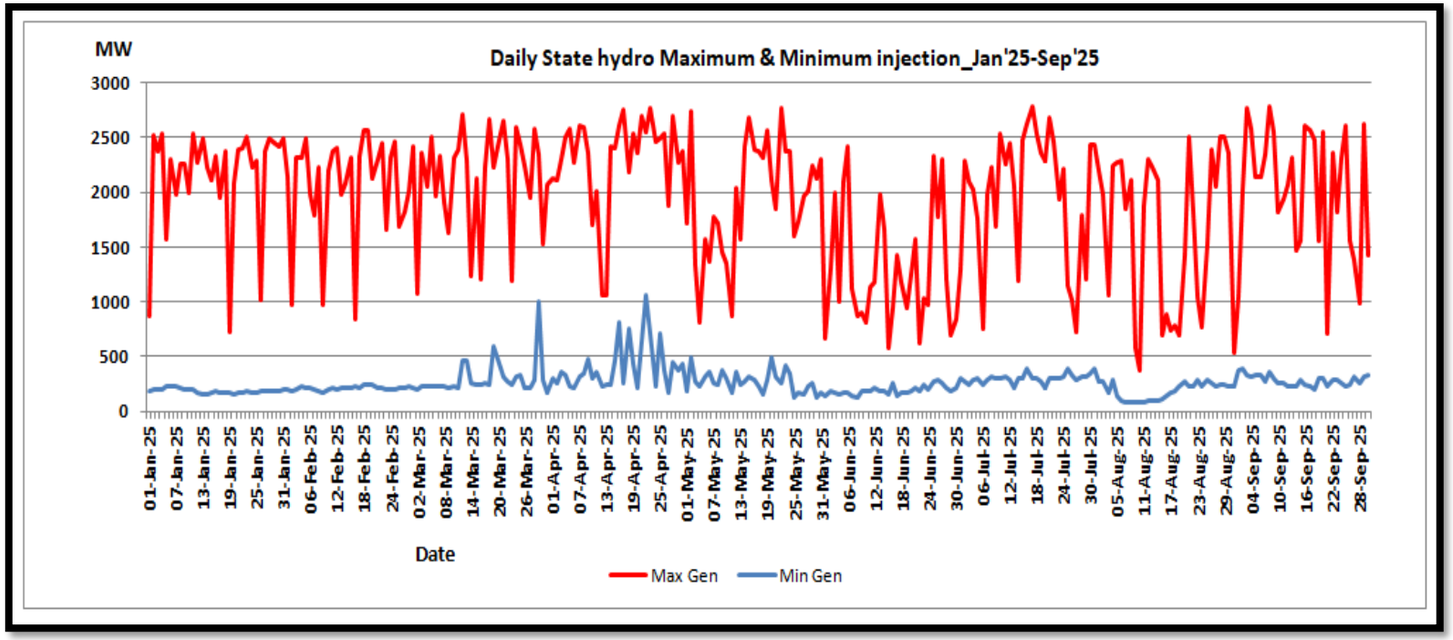
Coal Stock less than 15 days	
Power Station	(Jan-Oct 2025)
	No. of Days
ADTPS	106
APML, TIRORA	86
Bhusawal Unit 4	168
Bhusawal Unit 5	168
Bhusawal Unit 6	132
Chandrapur Unit 3 to 7	149
Chandrapur Unit 8 and 9	149
Khaparkheda Unit 1 to 4	241
Khaparkheda Unit 5	163
Koradi Unit 6	219
Koradi Unit 8 to 10	194
Nasik	57
Paras	190
Parli Unit 6 and 7	173
Parli Unit 8	96
RPL (AMT)	203
SWPGPL	24
TPCL	43

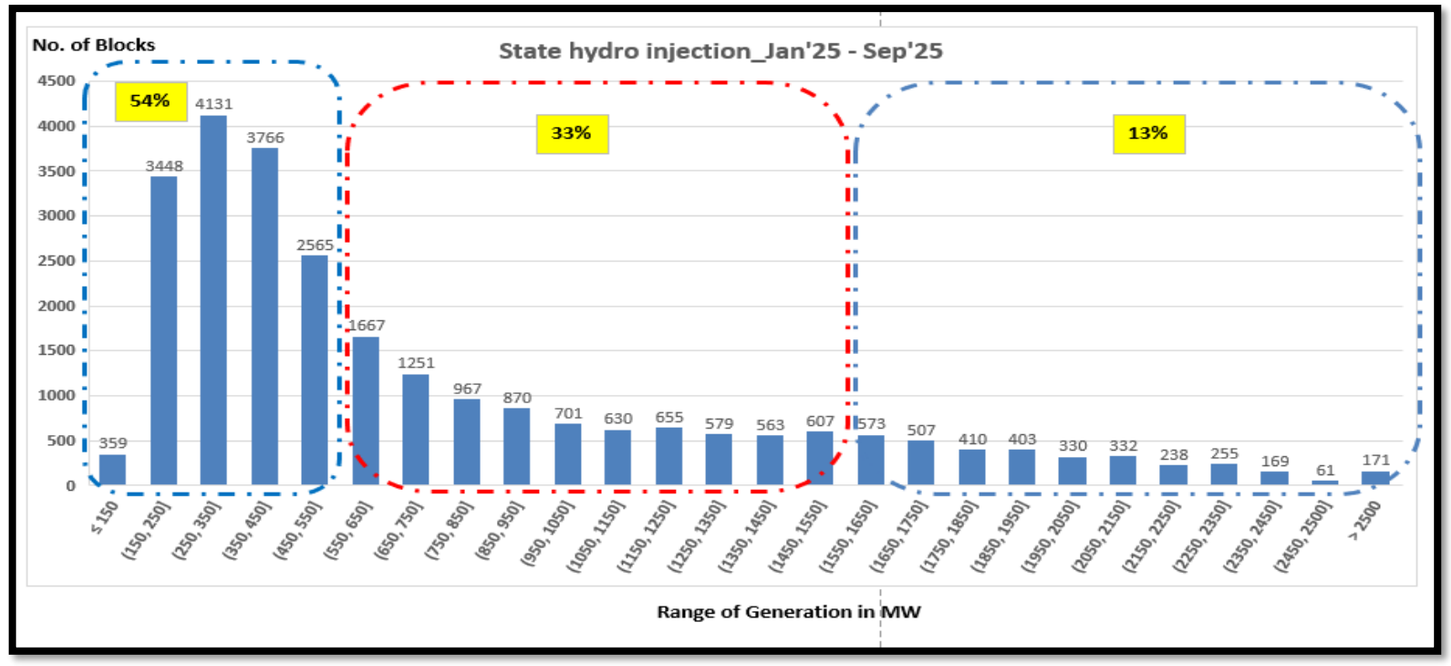
All InSGS thermal power stations in Maharashtra state to maintain coal stocks regularly as per CEA norms on coal stocks of thermal generators dtd. 06.12.2021 to ensure resource adequacy in the state. Accordingly, MSLDC is monitoring the Coal Positions maintained at every plants and in case of default, notices are issued to such generating companies. The details of month-wise coal position is tabulated above for the months from January 2025 to Oct 2025.

Notices for default in maintaining coal position issued by MSLDC are as below:

APML, Tirora– 44 Nos., MSPGCL – 77 Nos.

Hydro Generation scenario_Jan'25-Sep'25

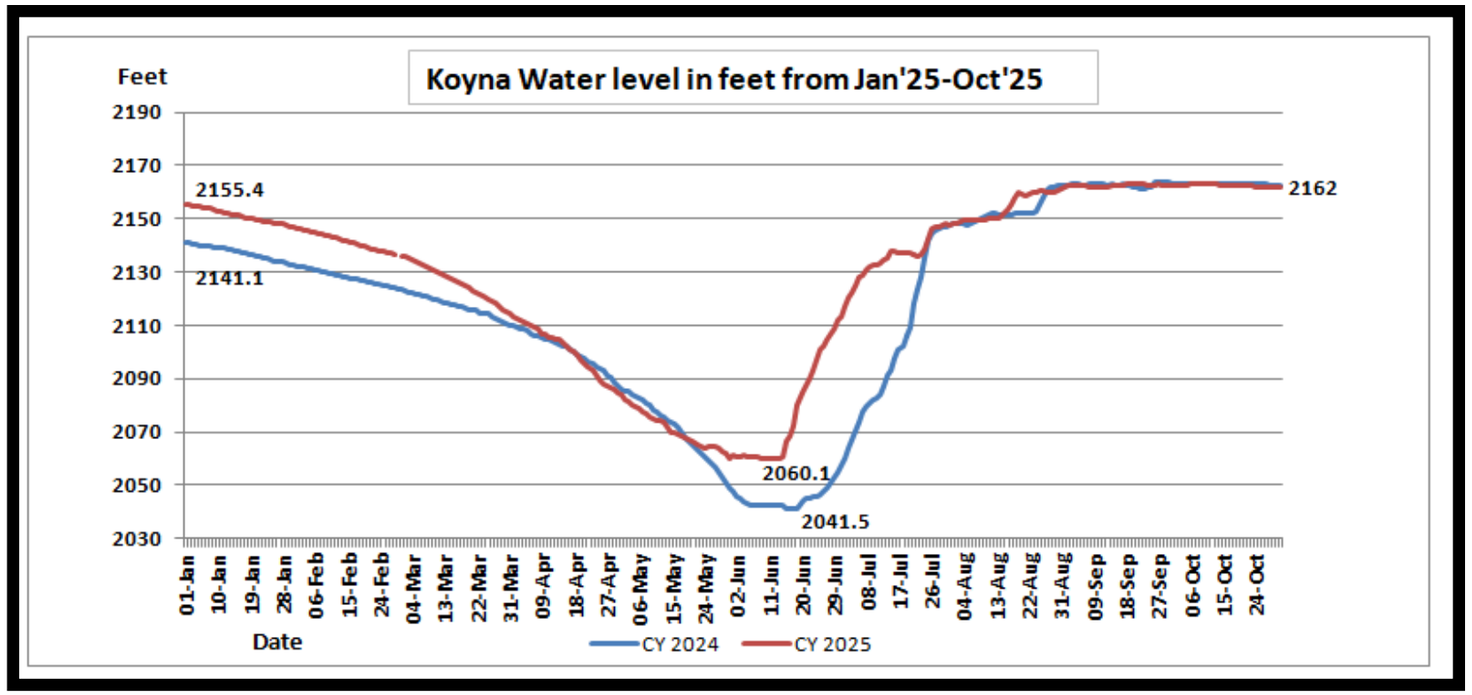


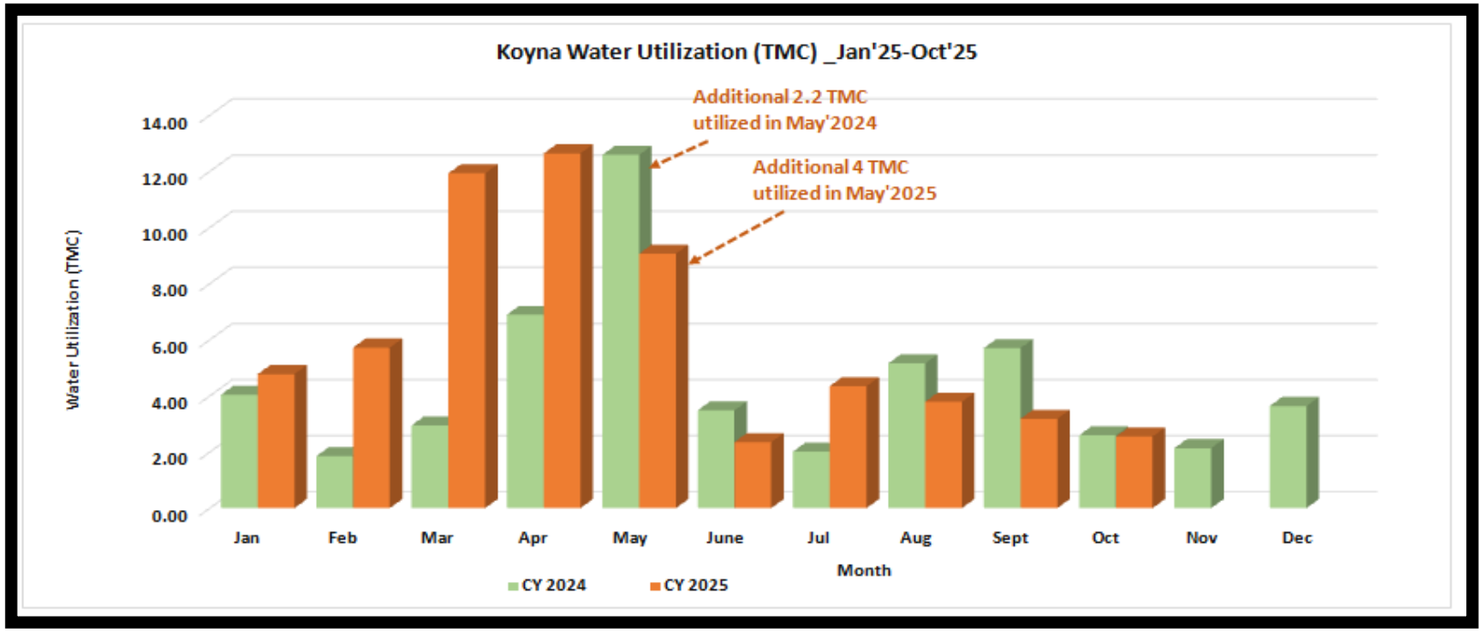


Owner	Station	Name of Unit	No. of Times under shut down	No. of Days not available
MSPGCL	Ghatghar HPS	Ghatghar Unit-1	11	11
		Ghatghar Unit-2	10	100
	Koyna HPS	Koyna STG-IV Unit-1	11	0
		Koyna STG-IV Unit-2	4	0
		Koyna STG-IV Unit-3	3	0
		Koyna STG-IV Unit-4	9	0
		Koyna Unit 1	1	1
		Koyna Unit 2	0	0
		Koyna Unit 3	1	35
		Koyna Unit 4	0	0
		Koyna Unit 5	2	28
		Koyna Unit 6	2	29
		Koyna Unit 7	1	0
		Koyna Unit 8	2	29
		Koyna Unit 9	7	31
		Koyna Unit 10	5	29
		Koyna Unit 11	4	0
		Koyna Unit 12	4	7

- For 54 % of the period, hydro generation was used for capacity between 0 to 550 MW.
- For 33% of the period, hydro capacity was used between 550 to 1550 MW
- For 13% of the period, hydro generation is used above 1550 MW capacity.

Koyna Lake Level



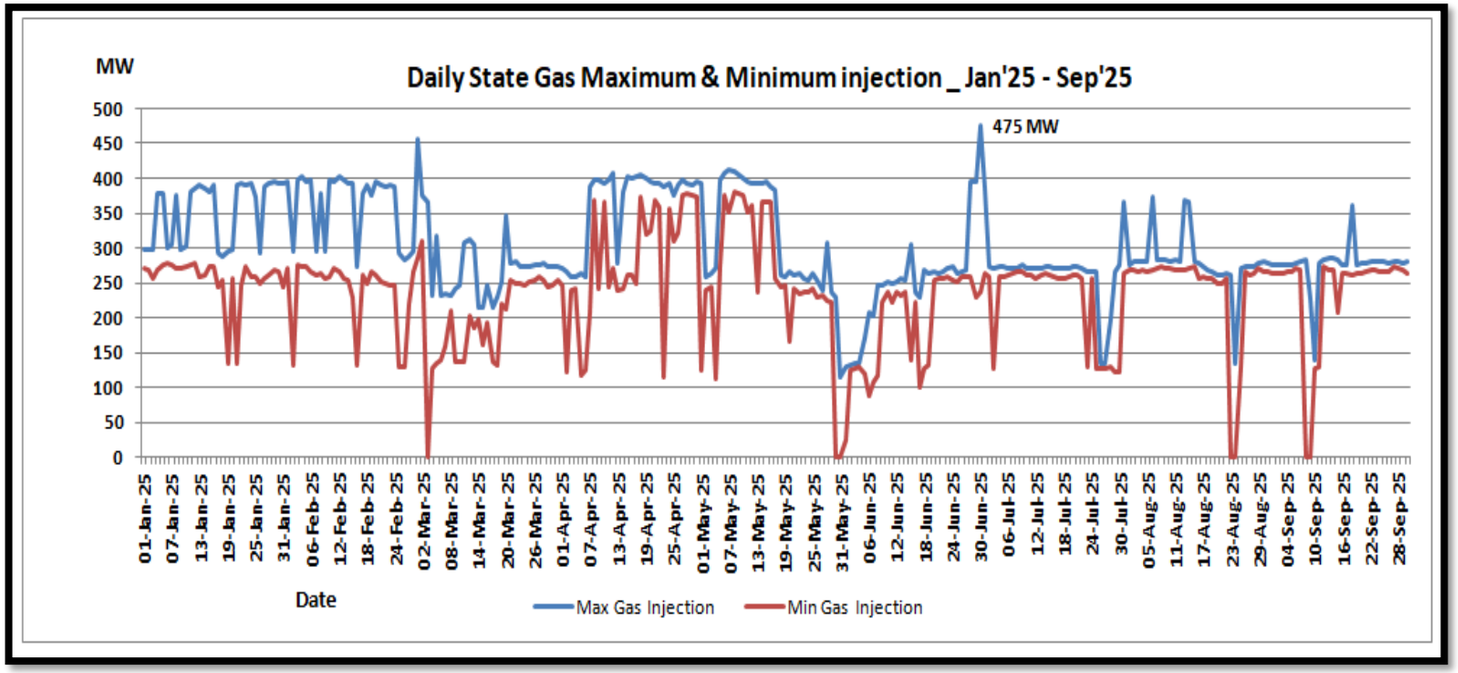


- The Water allocation for Maharashtra Koyna Generating Plant is 67.5 TMC for a Water year starting from June to May

- The water utilized by Koyna St-I & II and Stage-IV is utilized for generation at Koyna Stage-III. Hence, the water utilized at Koyna Stage-III is not considered in the TMC utilization quota.

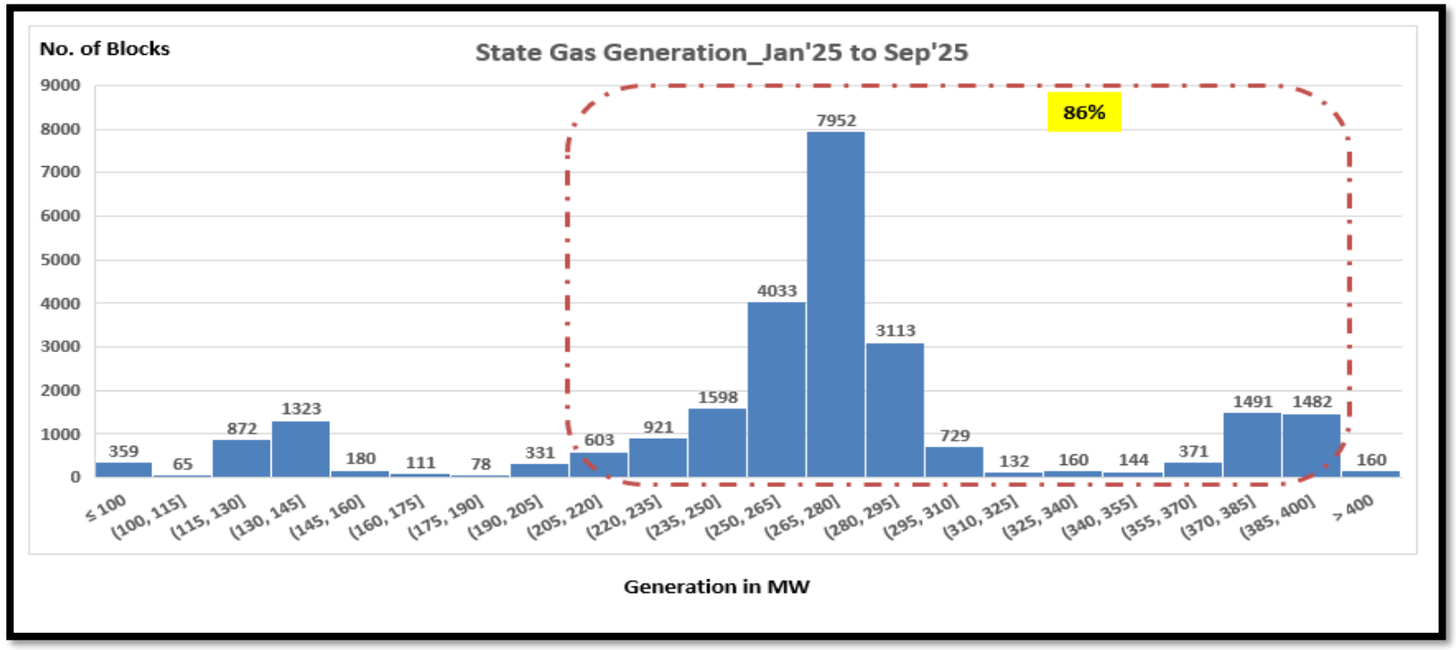
- Additional 4 TMC Allotted vide Letter No. KGSC/Tech/1417 from CE, MSPGCL Dated 22.05.2025 for Water Year 2024-25

Gas-based Generation



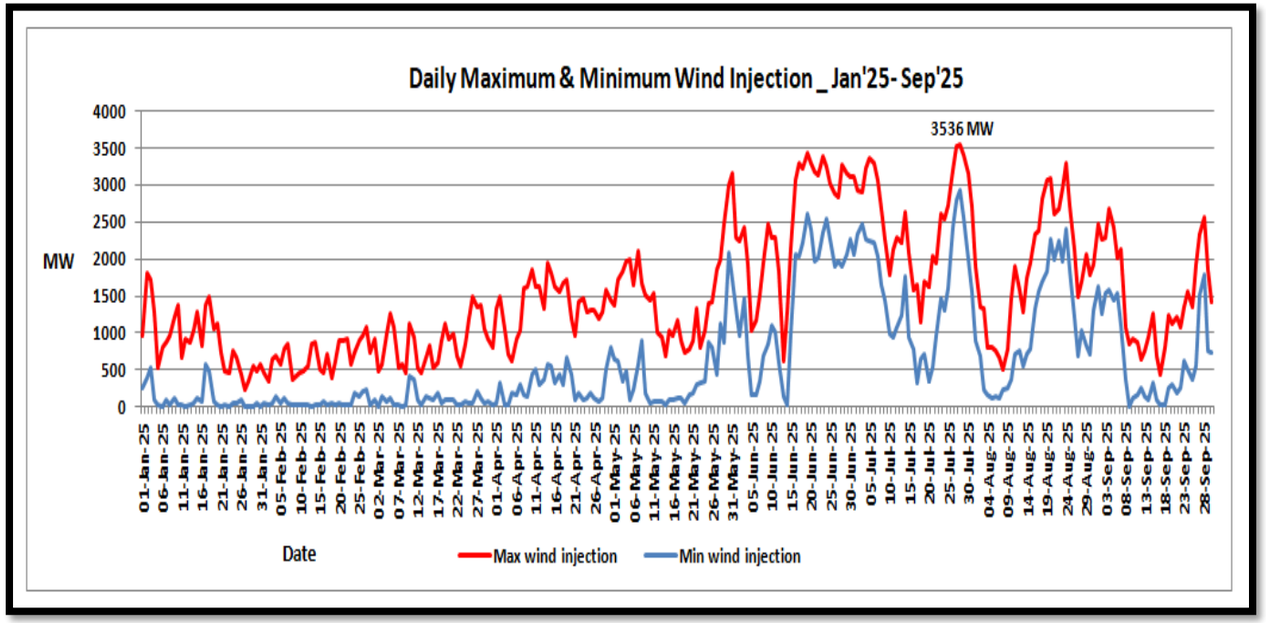
Owner	Station	Name of Unit	No. of Times under shut down	No. of Days not available	No. of Days under zero schedule
MSPGCL	Uran GTPS	Uran Unit 5	39	90	73
		Uran Unit 6	58	22	60
		Uran Unit 7	14	112	0
		Uran Unit 8	18	21	0
		Uran Unit A0	16	219	0
		Uran Unit B0	10	17	0

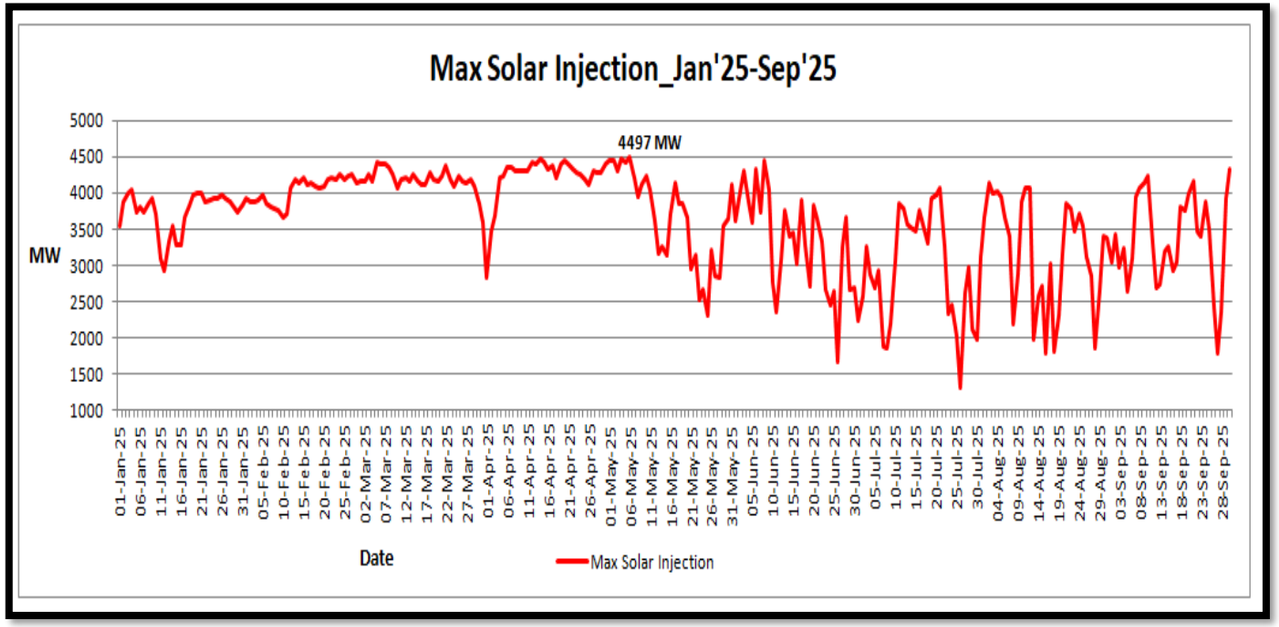
Unit A0 which was under long duration outage due to tripping of turbine on high vibrations from 07.09.2022 is restored on 09.03.2025

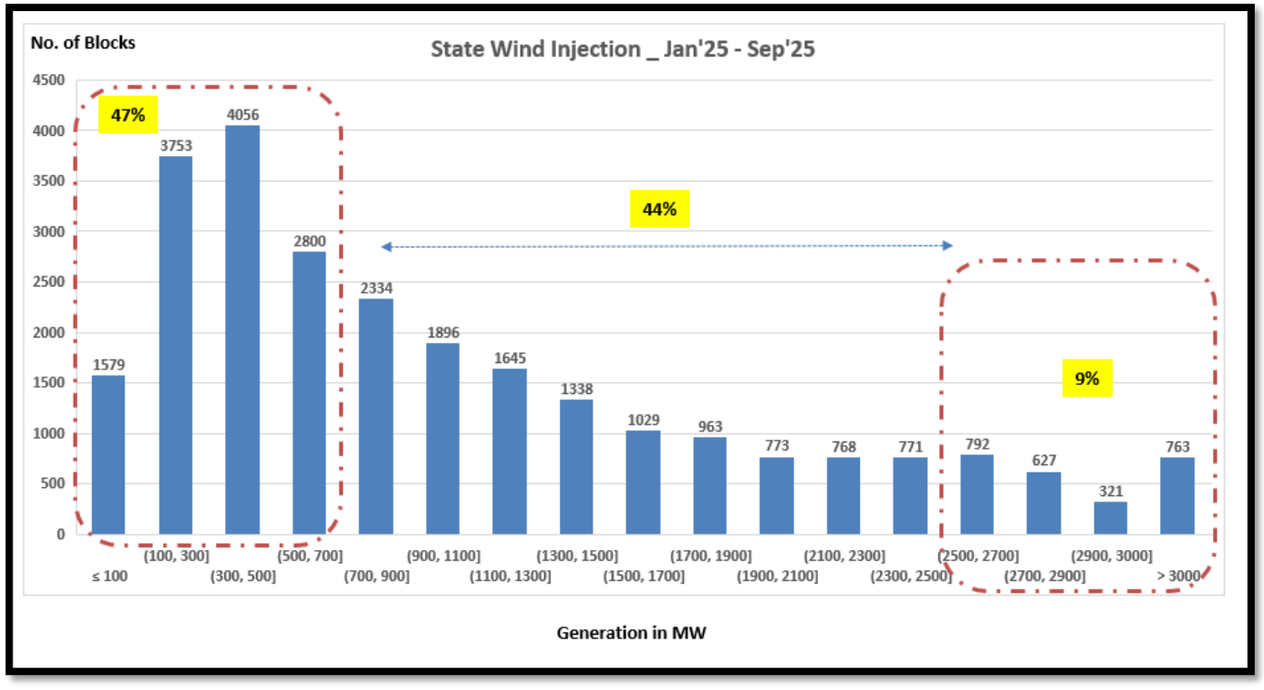


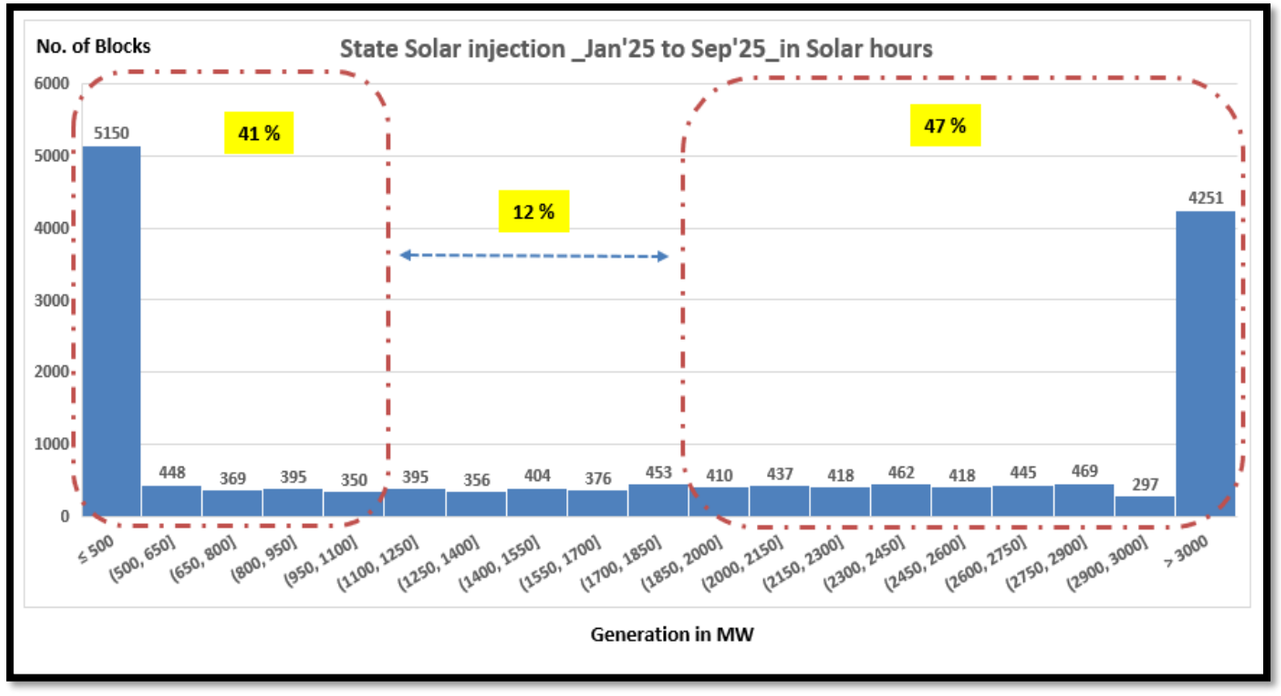
- The total installed capacity of 852 MW (Uran + TPC)
- The generation depends up on availability of APM gas. Hence, based on the gas availability, these units are despatched
- Some times TPCL Unit-7 is operated through RLNG gas to meet out contingencies under emergency situations
- For 86 % of the period, injection is only between 200 MW to 400 MW
- For less than 18 % of the period, generation is above 300 MW

Wind & Solar Generation

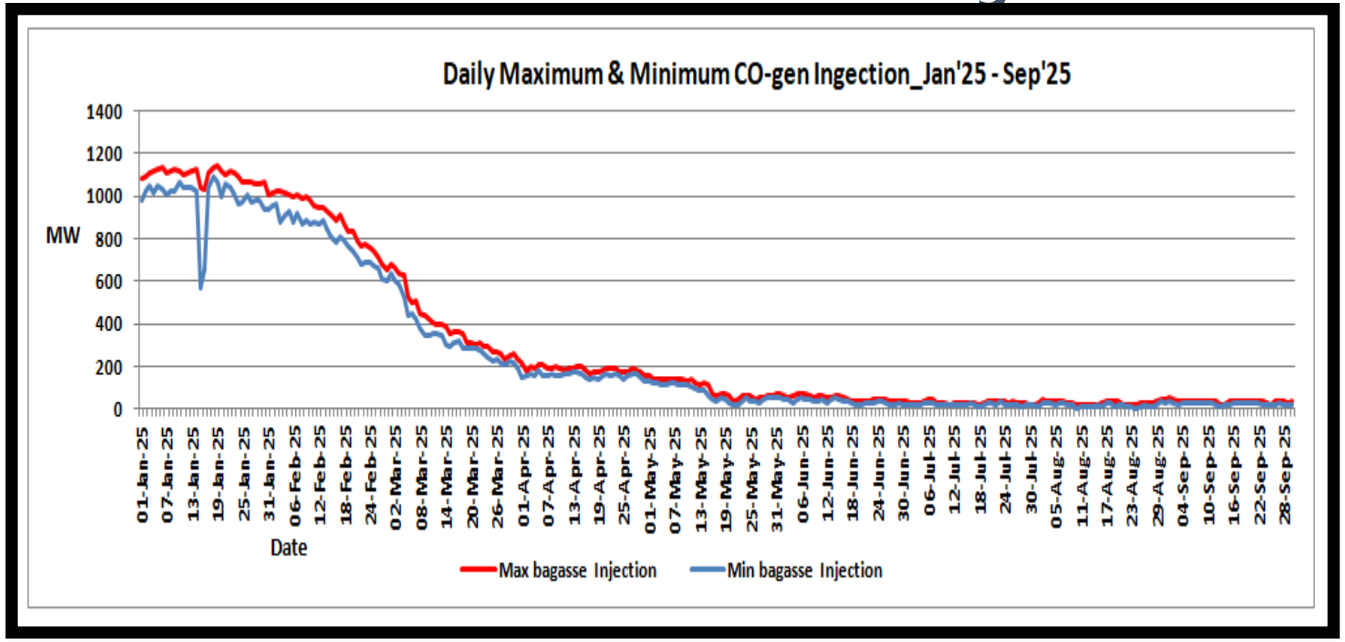




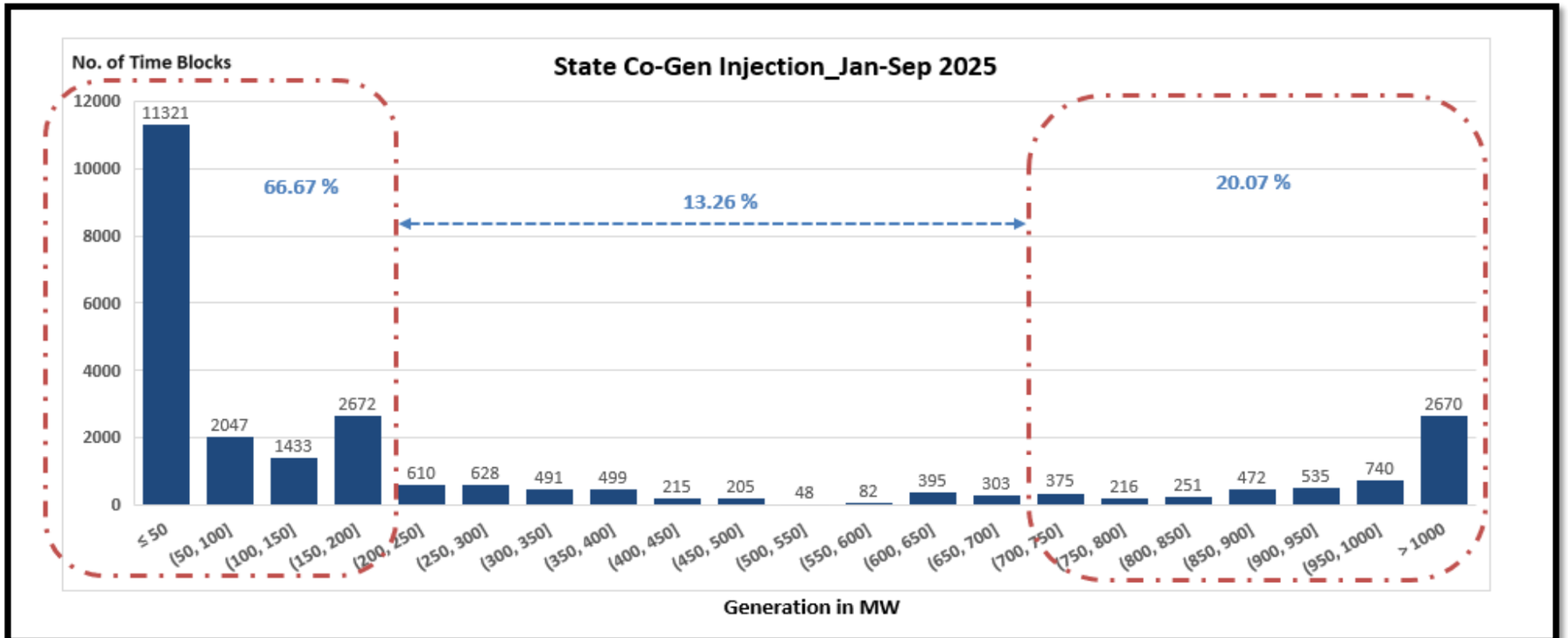




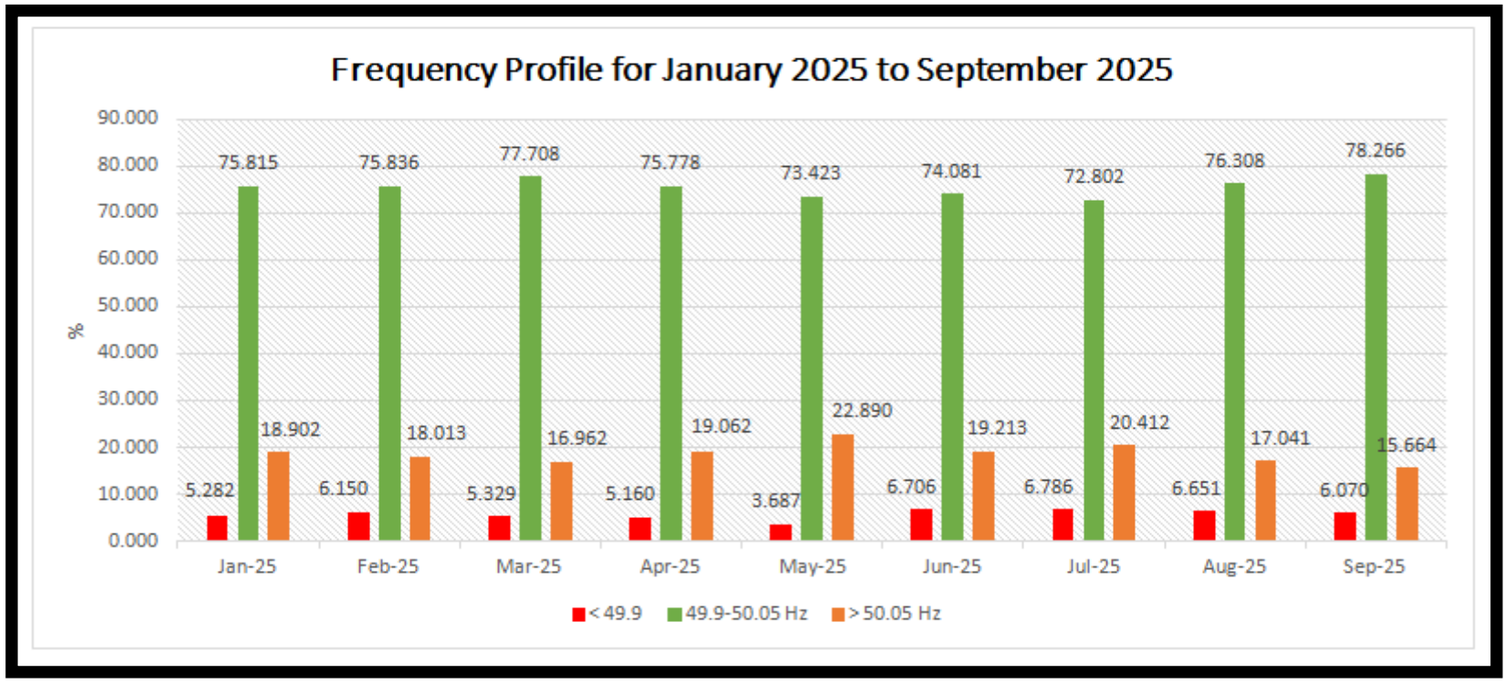
Bagasse based Generation



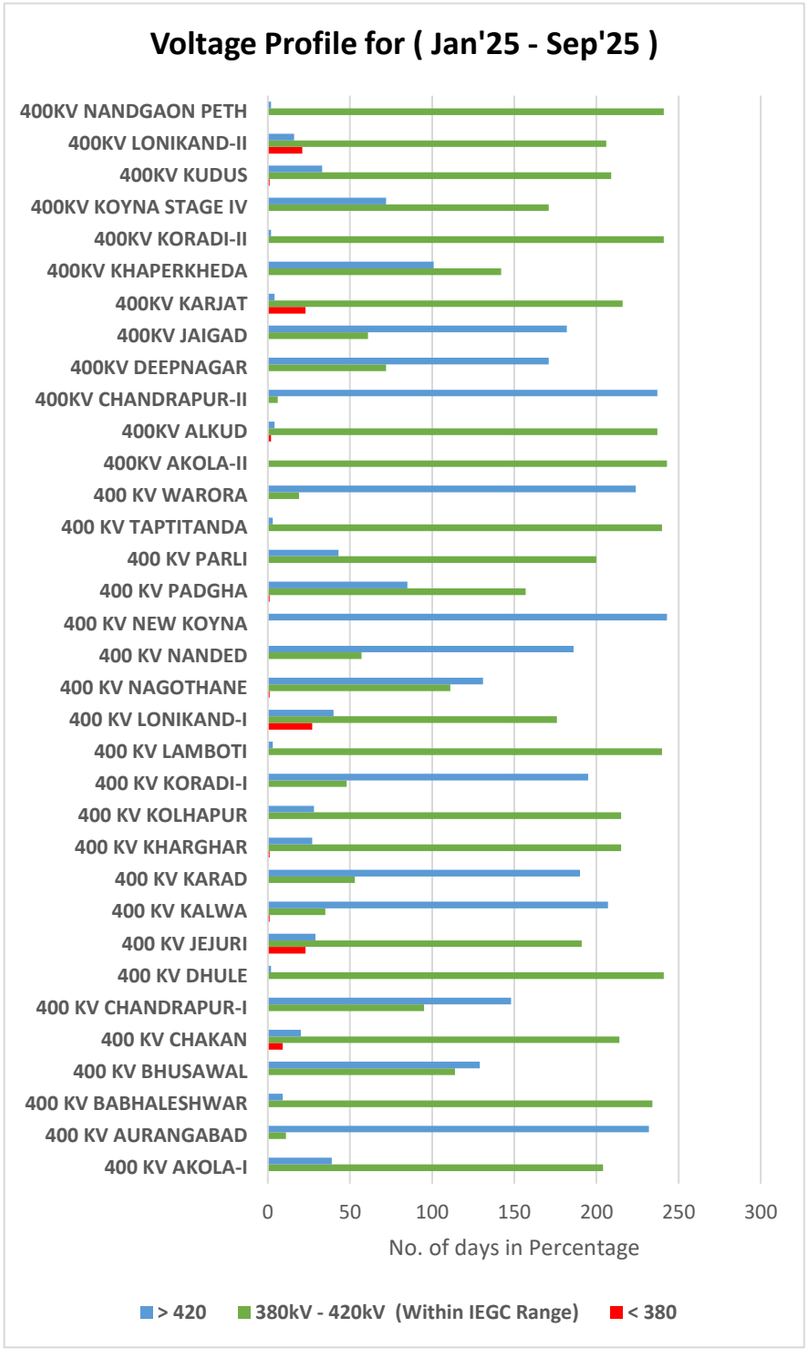
- Generation from Bagasse-based generation is seasonal & depends up on Sugarcane crushing which starts normally in September or October & is available till April/May.
- Against the total installed capacity of around 2700 MW, for 20.07 % of the period, injection is above 700 MW.
- For 66.67 % of the time, injection is below 200 MW.



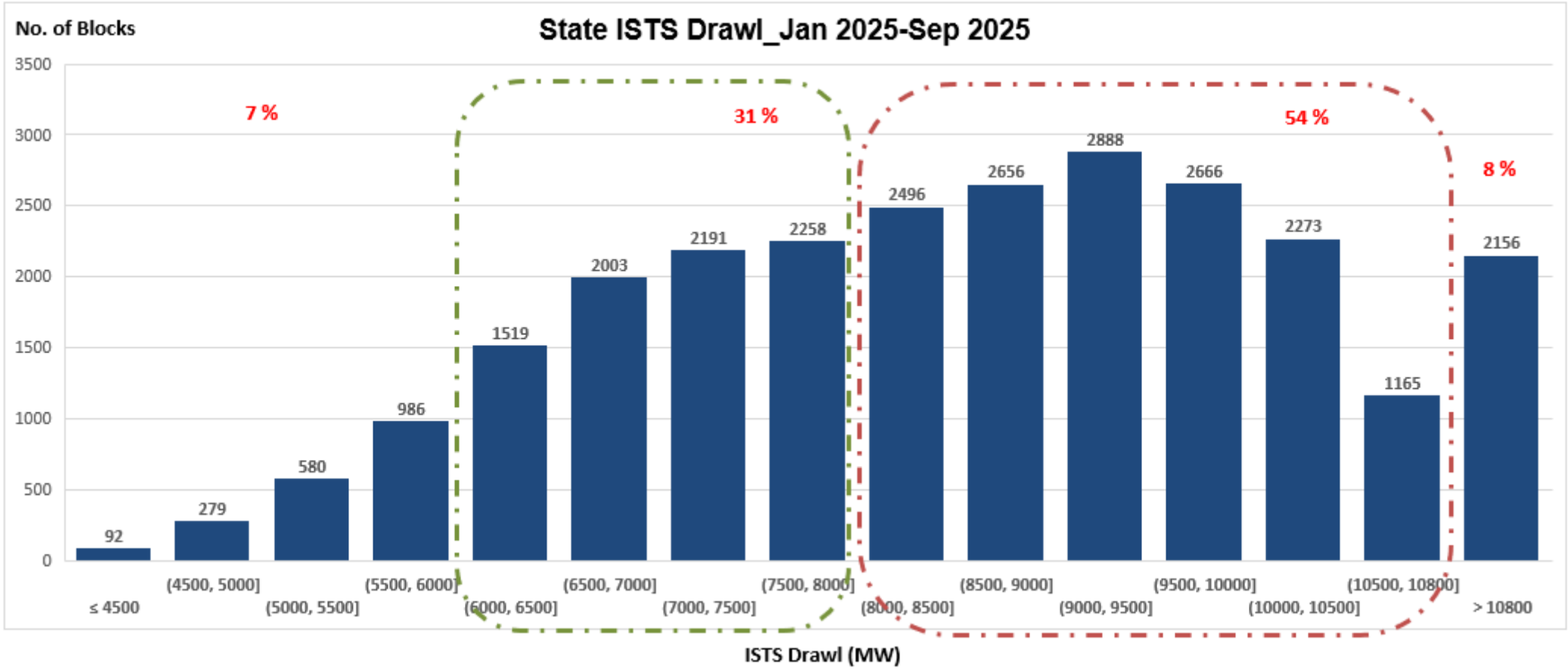
Frequency & Voltage Profile



- In accordance with the IEGC' 2023, the permissible band of Frequency is 49.90 Hz to 50.05 Hz.
- For 75.55% of the period, the System Frequency was within permissible band.
- The average frequency for this period was 50 Hz.
- The frequency was above 50.05 Hz for average 18.68 % of times whereas frequency was below 49.90 Hz for 5.75 % of times.
- UFR operation during this period.
- 1) A load relief of 17.03 MW was obtained under UFR operation on 08.09.2025 at 19:14 hrs at the frequency dropped to 49.427 Hz. 2) A load relief of 237.86 MW was obtained under UFR operation on 09.09.2025 at 18:57 hrs at the frequency dropped to 49.406 Hz.
- Maximum frequency of 50.47 Hz occurred on 06.04.2025 at 13:02 hrs. and 22.05.2025 at 7:56 hrs.
- Minimum frequency of 49.42 Hz occurred on 09.09.2025 at 18:55 hrs.



ISTS Drawl Violation



Inter State ATC/TTC Constraint:

- Presently, ATC / TTC for the Maharashtra State is as below:
- Total Transfer Capability (TTC): - 11400 MW
- Transmission reliability Margin (TRM): - 600 MW
- Available Transfer Capability (ATC): - 10800 MW
- The State is permitted to schedule & draw power from ISTS inter-connection points up to ATC limit.
- During the violation of ATC, to control the Over drawl, Load shedding is required to carried out.

- For 2156 No. of time blocks, i.e. for 8% of the time, State has crossed the ATC limit.
- For 54 % of the period, ISTS Drawl is between 8000 MW to 10800 MW.
- For 31 % of the period, ISTS drawl is between 6000 MW to 8000 MW.

First time charging of Power system elements

400kV Network addition (Jan-May 2025)			
Sr No	**Name of substation/ Line**	**Particulars**	**Date**
1	400 kV Warora	400/220/33kV 501 MVA ICT I charged at 00:17 hrs.	07.01.2025
2	400 kV Kalwa - Padghe ckt-1	400 kV Kalwa - Padghe Ckt-1 after completion of HTLS work charged at 22:45 hrs. (Both circuits HTLS completed)	14.01.2025
3	400 kV Bhusawal II	400/220 kV 105 MVA Spare ICT II charged at 21:48 hrs.	16.01.2025
4	400 kV Warora	400/220 kV 167 MVA Spare ICT charged at 17:10 hrs	18.01.2025
5	400 kV Taptitanda	125 MVAR Bus Reactor charged at 22:12 hrs.	21.02.2025
6	400 kV Babhleshwar	125 MVAR Bus Reactor charged at 18:42 hrs.	24.02.2025
7	400 kV Girawali	125 MVAR Bus Reactor charged at 00:06 hrs	29.03.2025
8	400 kV Kharghar	400/220/33 kV, 3x167 MVA ICT 4 charged at 09:26 Hrs.	31.03.2025
9	400 kV Padghe	3x167 MVA 400/220/33 kV, ICT 6 charged at 17:43 Hrs.	31.03.2025
10	400 kV Kalwa	220kV Kalwa Interconnector GIS modules charged at 12:40 hrs.	24.03.2025
11	400kV Lonikand	220/22 kV, 50 MVA , T/F-4 charged at 20:52 Hrs.	27.03.2025
12	400 kV Kudus	220 kV Borivali - Kudus line charged at 19:23 Hrs.	28.03.2025
13	400 kV Kudus	220 kV Tarapur - Kudus line charged at 21:51 Hrs.	29.03.2025
14	400 kV Kudus	220 kV Boisar - Kudus line charged at 21.51 Hrs.	30.03.2025
15		220 kV Kudus - Ghodbunder line charged at 12:41 Hrs.	
16	400kV Padghe	100/22kV 25 MVA TF 4 charged at 18:09 Hrs.	15.04.2024

Bhusawal U#6 - 660 MW synchronized on dt. 21.02.2025 - COD

First time charging of Power system elements

New Network Addition during month Jun'25 - Oct'25			
Sr.No	**Name of substation/ Line**	**Particulars**	**Date**
1	220kV Century Enka	220kV Microsoft Ckt-1 charged at 16:00Hrs.	16.06.2025
2	220kV Century Enka	220kV Microsoft Ckt-2 charged at 16:01Hrs.	16.06.2025
3	220kV Trombay (TATA)	125MVAR bus reactor charged at 19:49Hrs.	29.06.2025
4	220kV PDG and 220kV NTT Neon	220kV Datascape charged at 22:04 Hrs.	30.06.2025
5	220kV Hingoli	220kV TATA Power Solar End Bay charged at 02:23 Hrs.	01.07.2025
6	220kV Hingoli	220kV Hingoli - TATA Power Solar Ckt charged at 02:23 Hrs.	01.07.2025
7	220kV Kanhan	220kV Kanhan - Pachgaon Ckt charged at 17:39 Hrs.	04.07.2025
8	220kV Umred	220kV Umred - Pachgaon Ckt charged at 17:39 Hrs.	04.07.2025
9	220kV TATA Power Hingoli	220kV Bus Charged at newly comissioned 220kV TATA Power Hingoli at 01:01 Hrs.	05.07.2025
10	220kV TATA Power Hingoli	220/33kV 110MVA Power Transformer charged at 01:01 Hrs.	05.07.2025
11	220kV Shendra AIS	33kV Shendra AIS - MITL Ckt I End Bay charged at 18:20 Hrs.	18.07.2025
12	220kV Shendra AIS	33kV Shendra AIS - MITL Ckt II End Bay charged at 18:20 Hrs.	18.07.2025
13	220kV Kalwa	220kV Kalwa-GTPL charged at 19:50 Hrs.	18.07.2025
14	220kV Pachgaon	220kV Bus Charged at newly comissioned 220kV Pachgaon at 19:32 Hrs.	29.07.2025
15	220kV Pachgaon	220kV Kanhan End Bay charged at 19:32 Hrs.	29.07.2025
16	220kV Pachgaon	220kV Umred End Bay charged at 19:32 Hrs.	29.07.2025
17	220kV Pachgaon	220/33kV 25MVA TF I charged at 19:32 Hrs.	29.07.2025
18	220kV Pachgaon	220/33kV 25MVA TF II charged 19:32 Hrs.	29.07.2025
19	220kV Pachgaon	33kV Bus charged at 19:32 Hrs.	29.07.2025
20	132kV Narayangaon	30 MVAR capacitor bank charged at 11:28 Hrs.	31.07.2025
21	220kV Kathapur	132kV, 30MVAR capacitor bank charged at 18:36 hrs.	21.08.2025
22	400kV Lonikand-2	132kV, 2*15 MVAR capacitor bank charged at 14:42 hrs.	22.08.2025
23	132kV Mauda	Mauda - NTPC Mauda Ckt I charged at 13:00 Hrs.	12.09.2025
24	132kV Mauda	Mauda - NTPC Mauda Ckt II charged at 13:05 Hrs.	12.09.2025
25	400kV Deepnagar	125MVAr Bus Reactor charged 17:02 Hrs.	27.09.2025
26	220kV Theur	220kV 15 MVAr capacitor bank charged at 17:57 hrs	06.10.2025
27	220kV Lonikand	220kV 2x30 MVAr capacitor bank charged at 12:22 hrs	07.10.2025
28	220kV Mankoli	220kV Mankoli - Bapgaon & 220kV Mankoli - NTT estella Ckt charged at 20:53hrs & 20:05 hrs	31.10.2025

System Constraints_Generation Constraints

- **Low DC & Availability of Thermal Generators:**
  - DC declared by the Thermal Generators is always on lower side.
  - The % Availability of the MSPGCL thermal units is not up to the target set in the MERC MYT Regulations, 2019.
  - Due to low DC & availability, it is becoming difficult for MSLDC to manage Load-Generation on day ahead as well as in real time.
  - As complete InSGS is scheduled, no reserve capacity is available to mitigate any contingencies.
  - Many times, Koyna Generation is required to be picked-up to meet demand which is resulting in to additional usage of water.
- **Low availability of APM Gas:**
  - MSPGCL's Uran (672 MW) & TPCL's Trombay U-7 (180 MW) are gas-based generating plants.
  - APM gas provided is on lower side compared to it sanctioned allocated quota.
  - Considering location of these plants, any increase in the generation capacity of these plants will reduce the congestion in the 400 kV lines in MMR & Mumbai. Use of RLNG gas is very costly and hence, the power is to be scheduled under 'VSE' which is additional burden on the State DSM Pool.
  - Hence, efforts need to be made in increasing the supply of APM gas as per sanctioned allocations.
- **Generator responsible for transmission constraints:**
  - The installed capacity of Nashik Thermal units is 630 MW.
  - These units are not operated to its Ex-Bus capacity being old units & coal issues.
  - Due to low generation, the transmission network in Nashik Ring Main is severely stressed.
  - The loading on 220 kV Babhaleshwar-Nashik D/C lines is always on higher side and in case of overload, LTS is operated resulting in to load shedding in Nashik Ring Main.
  - Hence, it is necessary to operate Nashik units to its full capacity.

System Constraints_Generation Constraints

- **Non-contracted Generation Capacity:**

Name of Unit	Capacity (MW)	Date Trip	Time Trip	Date Sync	Time Sync	Reason
PGPL U2	262	07-02-2017	17.3	Continued.		No Schedule.(NO PPA)
PGPL U1	126	07-02-2017	17.3	Continued.		No Schedule (NO PPA)
Total Capacity	**388**					

Generation units under long outage:

Name of Unit	Date Trip	Time Trip	Date Sync	Time Sync	Reason
Tarapur 1	08-01-2020	10:37		Continued.	Refueling. While refueling preparation, some repair works identified which are being executed before refueling.
Tarapur 2	13-07-2020	04:38		Continued.	For cleaning of clogged basket strainer of cooling water system due to heavy ingress of debris from sea. The outage extended for repair and re-fueling.

Generation units under Zero schedule from Jan’25 – Oct’25:

Name of Unit	Date Trip	Time Trip	Date Sync	Time Sync	Reason
Bhusawal Unit 3	07-05-2025	21:11	16-05-2025	06:55	Zero Schedule Given BY MSEDCL.
Bhusawal Unit 3	20-05-2025	23:00	12-07-2025	14:00	Zero Schedule Given By MSEDCL.
Bhusawal Unit 3	22-08-2025	18:00	09-09-2025	14:56	Vide MSEDCL Mail Dtd.22.08.2025 at17:48 hrs Bhusawal Unit-3 consider under zero schedule from 18:00 hrs of 22.08.2025
Bhusawal Unit 3	01-10-2025	00:05		Continued.	Zero schedule given by MSEDCL.
Bhusawal Unit 4	20-06-2025	13:01	01-07-2025	08:20	zero schedule
Bhusawal Unit 4	20-10-2025	21:01		Continued.	Zero Schedule given by MSEDCL.
Bhusawal Unit 5	01-10-2025	22:00	09-10-2025	00:00	Zero schedule given by MSEDCL.
Bhusawal Unit 5	17-10-2025	10:30		Continued.	zero schedule as per LMCELL mail dt.17.10.25 at 10.03 Hrs
Chandrapur Unit 5	21-10-2025	05:15		Continued.	Zero schedule given by MSEDC.
Chandrapur Unit 7	21-10-2025	19:37	25-10-2025	23:59	Zero schedule given by MSEDCL.
Parli Unit 6	22-05-2025	11:29	04-06-2025	23:10	Zero Schedule Given By MSEDCL.
Parli Unit 6	16-06-2025	00:00	04-07-2025	16:45	Zero Schedule Given By MSEDCL.
Parli Unit 6	20-08-2025	15:15	09-09-2025	14:16	Zero schedule given by MSEDCL.
Parli Unit 6	01-10-2025	01:36	15-10-2025	23:47	Zero schedule given by MSEDCL.
Parli Unit 6	20-10-2025	21:45		Continued.	Zero schedule given by MSEDCL.
Parli Unit 7	26-05-2025	09:36	04-06-2025	15:18	Zero Schedule Given By MSEDCL.
Parli Unit 7	16-06-2025	08:45	04-07-2025	15:45	Zero Schedule Given By MSEDCL.
Parli Unit 7	05-09-2025	16:26	09-09-2025	12:12	Zero schedule given by MSEDCL
Parli Unit 7	01-10-2025	01:34	16-10-2025	05:56	Zero schedule given by MSEDCL.
Parli Unit 7	20-10-2025	21:46		Continued.	Zero schedule given by MSEDCL.
Parli Unit 8	21-05-2025	11:08	03-07-2025	17:08	Zero Schedule Given By MSEDCL.
Parli Unit 8	15-08-2025	14:00	09-09-2025	13:14	Zero schedule given by MSEDCL

Generating Capacity under Zero schedule _Present Status

MSPGCL								
MSPGCL	Bhusawal Unit 3	210	01/10/2025	00:05		Continued.	Zero schedule given by MSEDCL.	
MSPGCL	Bhusawal Unit 5	500	17/10/2025	10:30		Continued.	zero schedule as per LMCELL mail dt.17.10.25 at 10.03 Hrs	
MSPGCL	Bhusawal Unit 4	500	20/10/2025	21:01		Continued.	Zero Schedule given by MSEDCL.	
MSPGCL	Parli Unit 6	250	20/10/2025	21:45		Continued.	Zero schedule given by MSEDCL.	
MSPGCL	Parli Unit 7	250	20/10/2025	21:46		Continued.	Zero schedule given by MSEDCL.	
MSPGCL	Chandrapur Unit 5	500	21/10/2025	05:15		Continued.	Zero schedule given by MSEDC.	
MSPGCL	Chandrapur Unit 4	210	03/11/2025	22:59		Continued.	zero schedule as per LMCELL mail dt.03.11.25 at 21.29Hrs	
MSPGCL	Chandrapur Unit 3	210	07/11/2025	22:32		Continued.	Zero schedule issued by LM Cell MSEDCL	
MSPGCL	Chandrapur Unit 6	500	08/11/2025	11:05		Continued.	Zero Schedule given by MSEDCL.	
MSPGCL	Chandrapur Unit 7	500	09/11/2025	14:00		Continued.	Zero schedule by MSEDCL.(continued after completion of planned outage)	
MSPGCL	Parli Unit 8	250	10/11/2025	02:59		Continued.	Zero Schedule Given by MSEDCL.	
Total Capacity	**MSPGCL**	3880						
IPP								
IPP	JSW (J) U1	300	16/11/2025	06:39		Continued.	zero schedule given by MSEDCL	
Total Capacity	**IPP**	300						
Total Capacity	**UNIT UNDER ZERO SCHEDULE / RSD**	4180						

Generating units under Fuel shortage from Jan’25 – Oct’25:

Name of Unit	Date Trip	Time Trip	Date Sync	Time Sync	Reason
Adani U-2	13-09-2025	23:59	01-10-2025	12:31	Coal Stock Low. As per Email received from Adani Tiroda on dt. 13.09.2025 at 19:39 Hrs.
Adani U-5	27-09-2025	21:20	03-10-2025	16:01	Critical Coal Stock
Uran Unit 5	14-08-2025	21:00	09-09-2025	18:28	Gas shortage
Uran Unit 5	10-09-2025	00:01	18-09-2025	19:07	Gas Shortage
Uran Unit 5	18-09-2025	20:45	18-10-2025	17:50	Gas Shortage
Uran Unit 5	18-10-2025	20:00	28-10-2025	23:10	Fuel shortage
Uran Unit 6	01-07-2025	17:28	13-10-2025	18:40	Gas shortage
Uran Unit 6	13-10-2025	19:29	15-10-2025	18:00	Gas shortage
Uran Unit 6	15-10-2025	19:45	17-10-2025	17:50	Gas Shortage
Uran Unit 6	17-10-2025	19:57	11-11-2025	18:17	Gas Shortage
Uran Unit 7	08-09-2025	16:38	09-09-2025	06:03	Due to emergency at ONGC Gas Supply.
Uran Unit 8	08-09-2025	16:15	09-09-2025	03:16	Due to emergency at ONGC gas Supply.
Uran Unit A0	01-07-2025	17:28	29-10-2025	09:08	Gas shortage
Uran Unit B0	08-09-2025	16:38	09-09-2025	12:12	Due to emergency at ONGC gas supply.

System Constraints_Transmission Constraints

❑ Constraint in evacuation of Solar Generation:

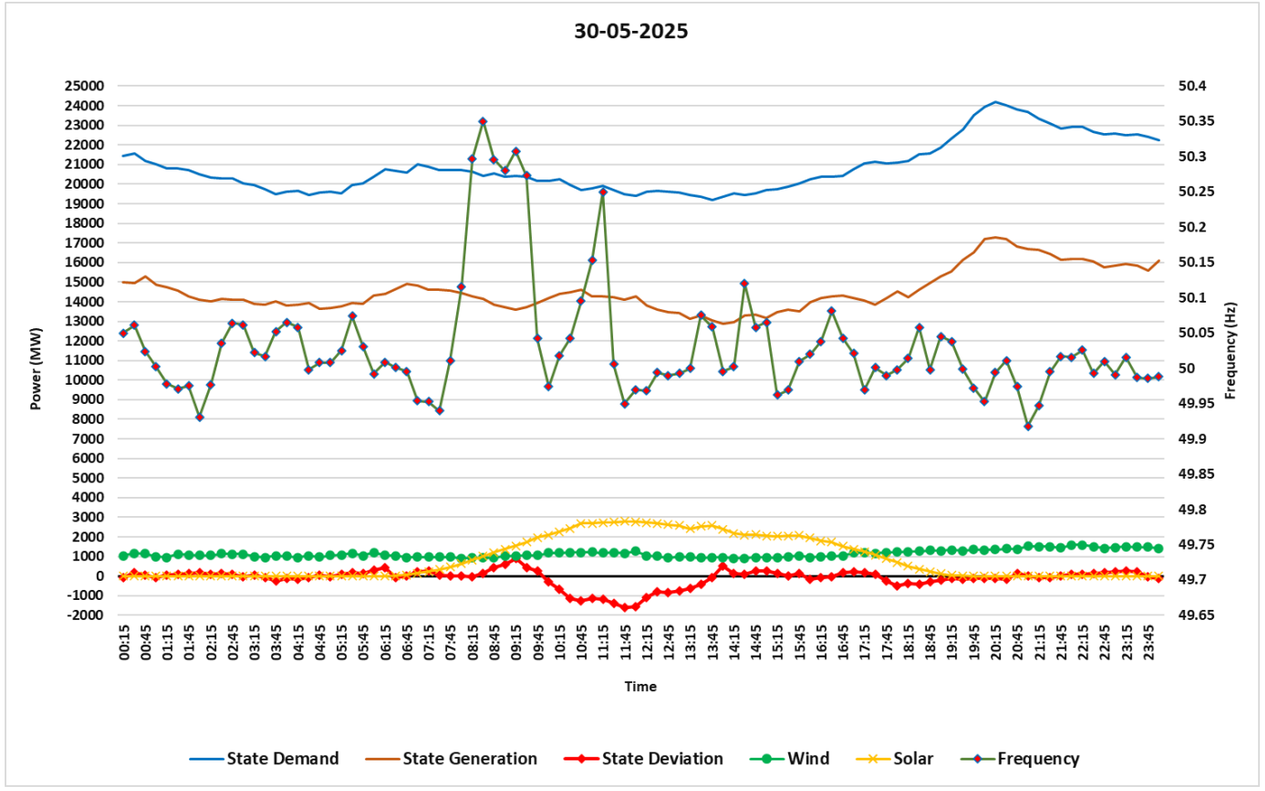
- A total 208 MW Solar Generation is connected to 132 kV Wagdari & Naldurg S/s, 149 MW & 59 MW Solar Generation respectively.
- The said generation is evacuated through 132 kV Ujani-Naldurg S/C, 132 kV Bale – Naldurg S/C & 132 kV Wagdari – Akkalkot S/C line. 132 kV Naldurg & 132 kV Wagdari S/s are interconnected through S/C line. Out of these three evacuating lines, 132 kV Ujani-Naldurg S/C & 132 kV Bale – Naldurg S/C lines are old more than 30 years.
- In case of tripping of any line, the solar generation required to backed down so as to avoid tripping of remaining lines on overload. The details of RE curtailment are as follows:

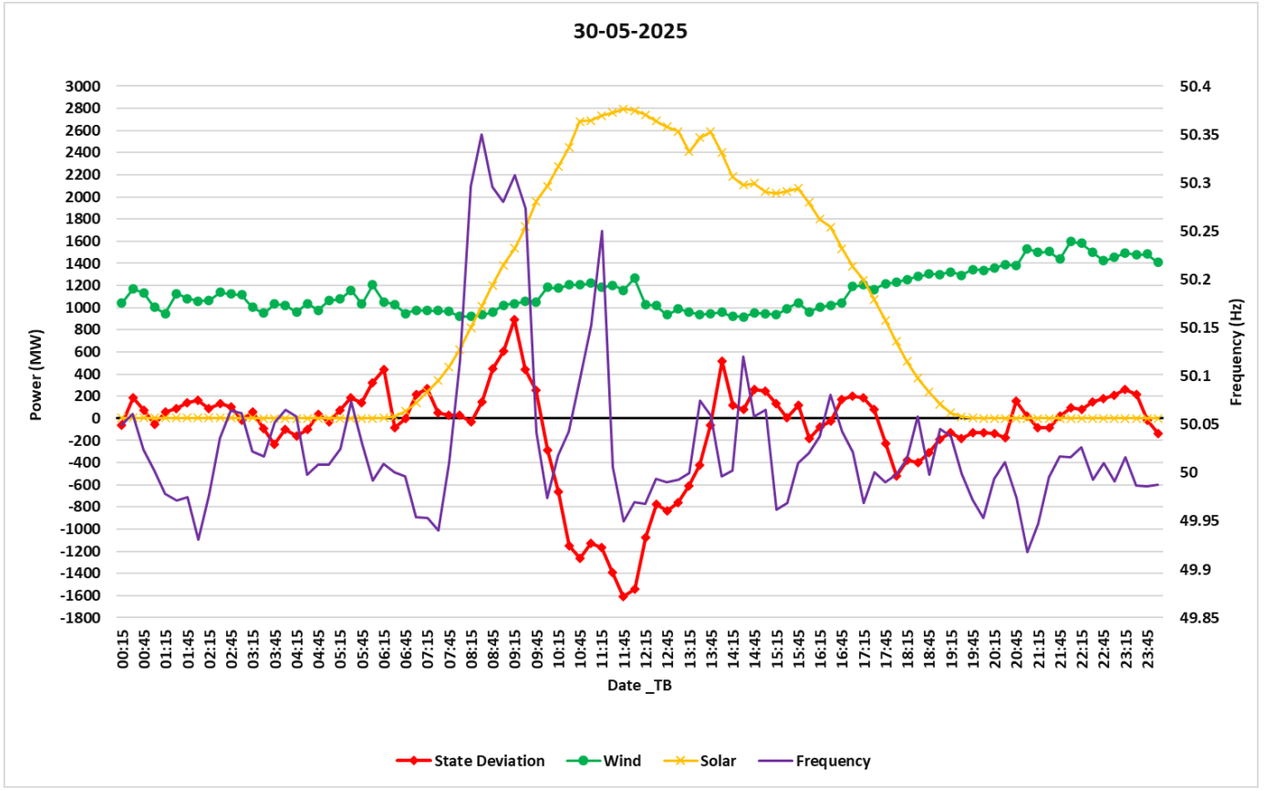
Date	Solar Curtailment		Reason for Curtailment
	Max MW	Energy(MU)	
02-02-25	8.83	0.01	Due to Tripping/Overloading of 132 kV Bale - South Solapur line, overloading of 132kV Naldurg-Bale line, overloading of 132 kV Wagdari-Naldurg line.
03-02-25	13.08	0.03	
04-02-25	15.23	0.02	
06-02-25	116.00	0.32	
08-02-25	28.70	0.16	
09-02-25	111.48	0.48	
10-02-25	113.97	0.47	
12-02-25	70.08	0.20	
13-02-25	67.02	0.17	
14-02-25	95.04	0.49	
15-02-25	42.76	0.14	
16-02-25	121.47	0.47	
17-02-25	68.44	0.39	
18-02-25	94.35	0.38	
19-02-25	80.44	0.34	
20-02-25	117.50	0.47	
11-02-25	127.20	0.704	Tripping of 132 kV Bale - South Solapur line on overload, Overloading of 132 kV Wagdari Naldurg line. Overloading of 132 kV Akkalkot Karajgi line.Increased loading on 132KV Wagdari Akkalkot ckt-1 and 132KV Wagdari Akkalkot ckt-2

Date	Solar Curtailment		Reason for Curtailment
	Max MW	Energy(MU)	
04-04-25	70.530	0.135	Due to GTS Operation at 132kV Wagadri and 132kV Hasapur due to increase in loading of Naldurg-Wagdari Line.
21-04-25	70.027	0.134	
07-05-25	20.325	0.020	
16-05-25	11.042	0.011	
17-05-25	13.690	0.014	
21-05-25	102.620	0.308	
22-05-25	11.000	0.030	
02-06-25	5.200	0.010	
04-06-25	6.620	0.010	
22-06-25	22.416	0.039	GTS Operated at 132kv Naldurg due to overloading Of 132kv Naldurg Solapur Line .

Curtailment of RE: 30-05-2025

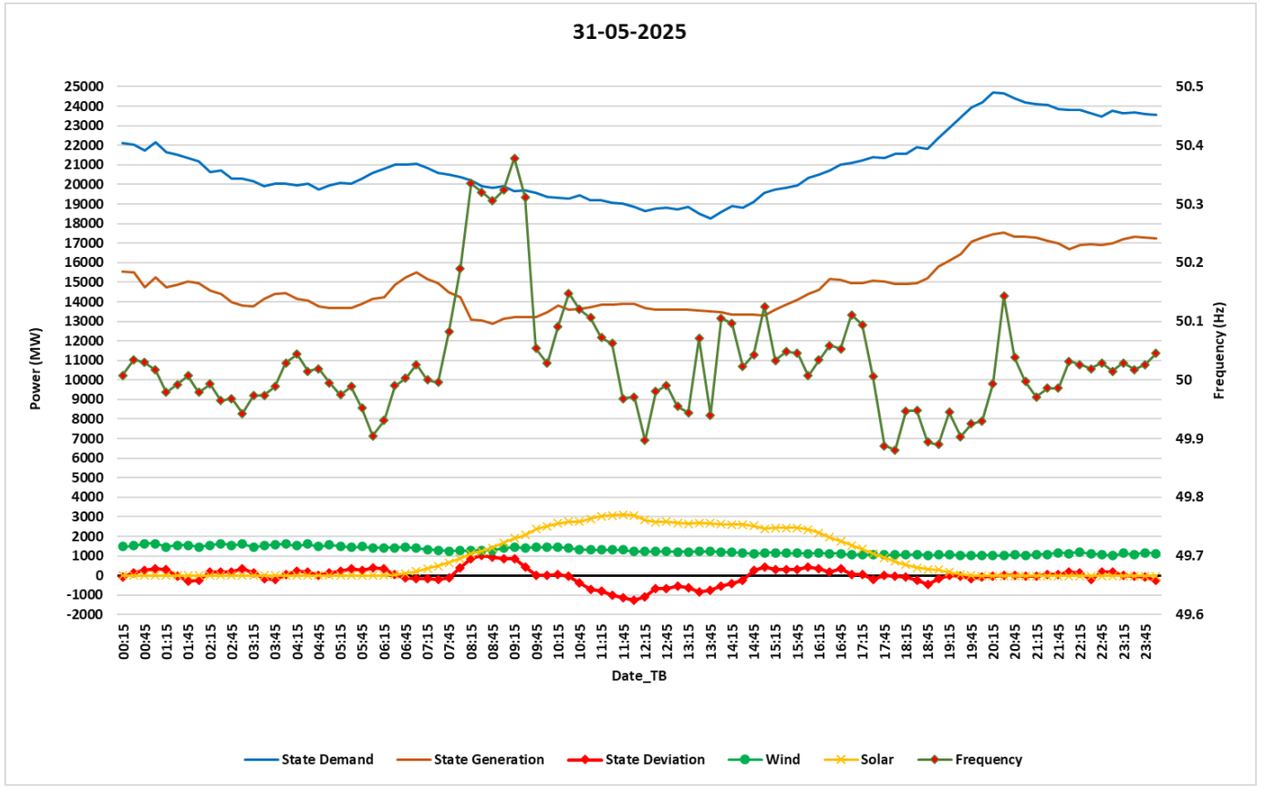
- State Demand started reducing from 07:30 hrs. and Grid frequency was above 50.0 Hz.
- Demand started reducing from 21024 MW and reached to 19475 MW at 11:45 hrs & State Under-Drawl reached to 1609 MW.
- The maximum grid frequency of 50.35 Hz at 08:30 hrs was recorded which is above permissible band of 49.90 to 50.05 Hz.

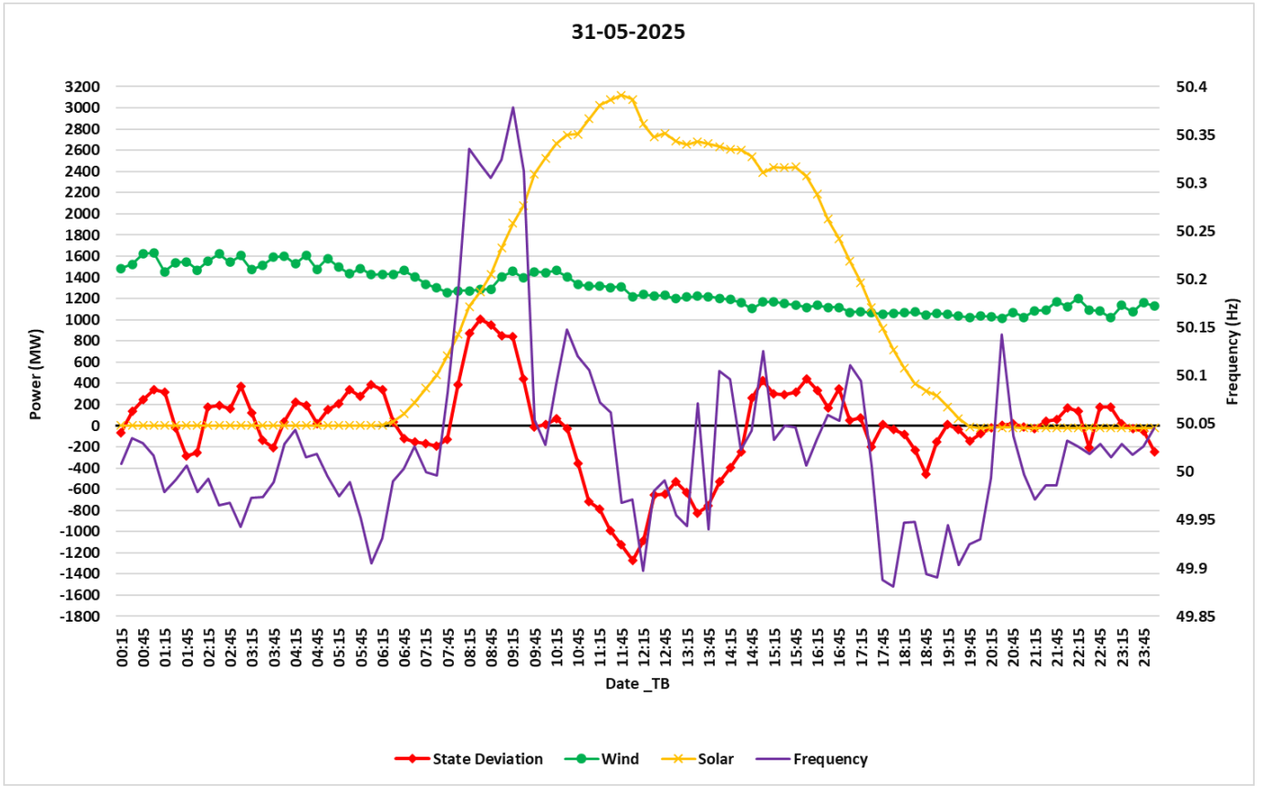




Curtailment of RE: 31-05-2025

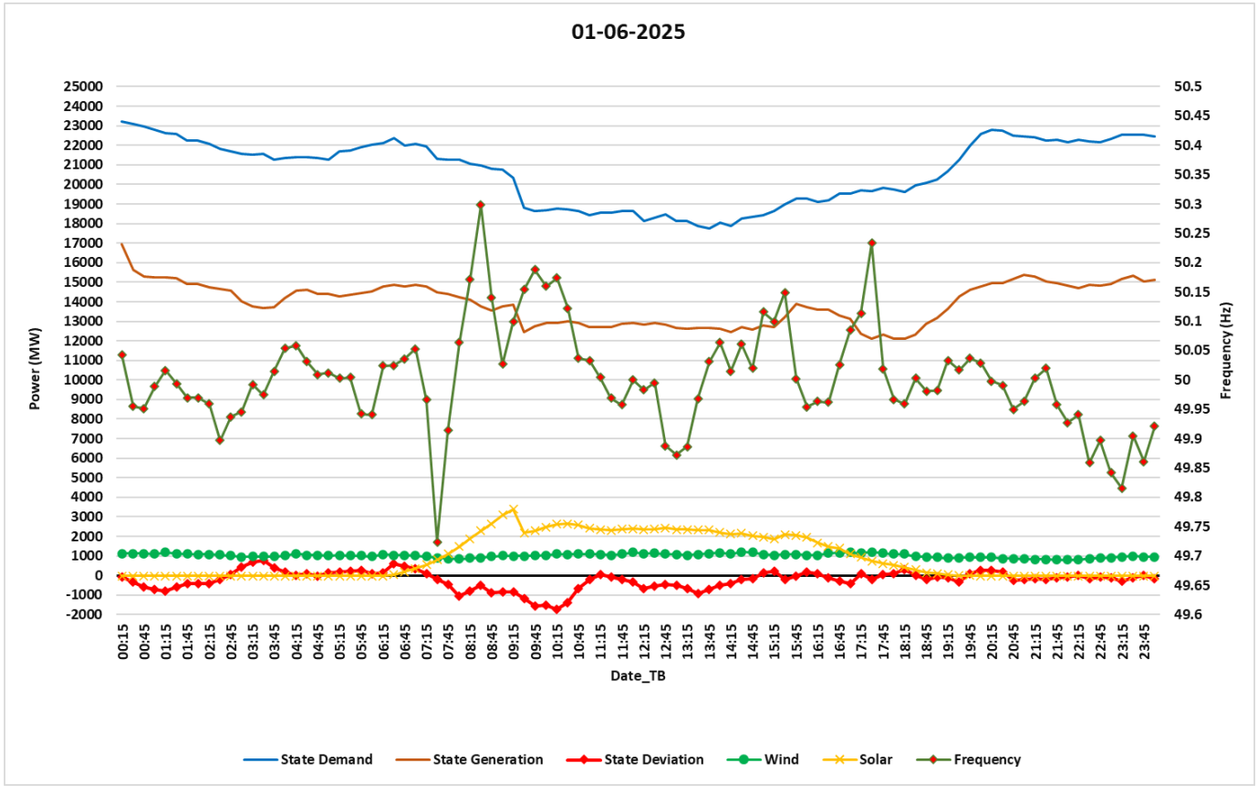
- State Demand started reducing from 07:00 hrs. and Grid frequency was above 50.0 Hz.
- Demand started reducing from 21055 MW and reached to 18275 MW at 13:45 hrs & State Under-Drawl reached to 1275 MW.
- The maximum grid frequency of 50.378 Hz at 09:00 hrs was recorded.

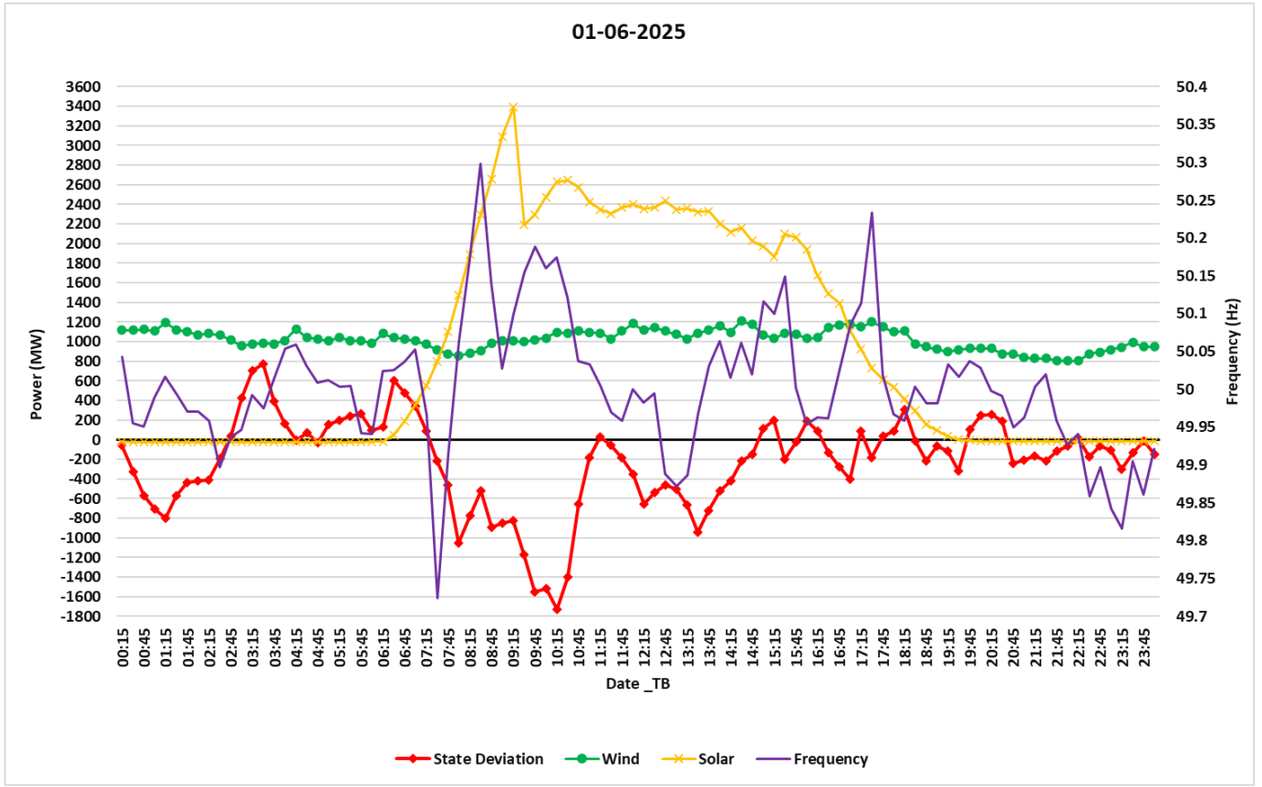




Curtailment of RE: 01-06-2025

- State Demand started reducing from 06:30 hrs. and Grid frequency was above 50.0 Hz.
- Demand started reducing from 22350 MW and reached to 17768 MW at 13:45 hrs & State Under-Drawl reached to 1726 MW at 10:15 hrs.
- The maximum grid frequency of 50.298 Hz at 08:15 hrs was recorded.





Actions of MSLDC:

- **Criticalness of the Event:**
  - As the Grid Frequency was very high & beyond permissible band of 49.90 – 50.05 Hz, grid was under alert state.
  - As the State demand was continuously decreasing, there was further chances of increase in frequency.
- **Actions taken by MSLDC:**
  - In order to control heavy under-drawl at high frequency, MSLDC has taken following actions:
  - Reduced generation from all the intra-state conventional generators at Technical Minimum level.
  - Instructed Distribution Licensees to stop purchasing power from Power Markets and reduce requisition from all Inter-State Thermal Generators.
  - Curtailment was issued to RE Generators in phased manner in co-ordination with NLDC & WRLDC.
- Parli Unit – 6, 7 & 8 and Bhusawal Unit-3 were on Zero Schedule. Total 840 MW capacity was under Zero Schedule.
- The Technical Minimum Capacity of on bar units on 30.05.2025 was 8125 – 8325 MW.
- The Technical Minimum Capacity of on bar units on 31.05.2025 & 01.06.2025 was 7850 - 8175 MW.
- **Curtailment Details:**

Date	Max. Curtailment Quantum (MW)	Curtailment Quantum (MU)
30.05.2025	554.80	1.35
31.05.2025	805.80	2.54
01.06.2025	775.35	3.44

❑ MMR Transmission Constraints:

- **220kV Ulwe - Waghivali ckt II** is under forced shut down due to cable fault from 25.06.2024. Following the commissioning of the 400/220 kV Navi Mumbai PG substation, the issue of loading of 220kV Ulwe – Waghivali ckt – 1 has increased. 220kV Waghivali-TATA-1 & 2 are kept hand tripped from 30.12.2024 to control the loading of 220kV Ulwe Waghivali ckt I.

- Following the commissioning of the 400/220 kV Navi Mumbai PG substation, loading on 220kV Kalwa–Apta and Kalwa–Taloja lines has increased. Therefore, 220kV Kalwa- Panchanand and Print house- Navi Mumbai are kept Hand Tripped from 17.10.2024 and 05.12.2024 respectively to control the loading. To resolve this issue **HTLS of 220kV Kalwa Apta and 220kV Kalwa Taloja line** is to be completed at the earliest.

❑ 400kV Chakan – Talegaon (PG) Transmission Constraints:

The loading on the 400 kV Chakan–Talegaon (PG) circuit has been consistently exceeding 800 MW. In the event of any contingency, activation of the Load Trimming Scheme (LTS) and Distress Load Shedding (DLS) in the Pune region becomes necessary.

Furthermore, voltage levels at key substations in Pune—namely Chakan, Lonikand-1, Lonikand-2, and Jejuri—have been observed to around 380 kV during solar generation hours. At times, voltages at Lonikand have dropped to 376 kV. Grid alert reports are being issued periodically due to the high loading on the 400 kV Talegaon (PG)–Chakan line, under-voltage conditions, and the use of Koyna water to manage line loading.

MSEDCL has raised concerns regarding the continuous usage of Koyna Stage IV generation to mitigate the transmission constraints, particularly for controlling the loading on the 400 kV Talegaon (PG)–Chakan line. Additionally, Koyna Stage I and II generations are being utilized to improve regional voltage levels during this period.

❑ Constraints affecting Nashik & Ghatghar generation:-

To reduce high loadings of 220kV Nashik – Babhaleshwar D/C lines, three generators of Nashik TPS are required for grid security. Accordingly, Nashik TPS has increased the declared capacity in accordance with Case IV Phase IV Flexibilization (Tolling of Coal). This has helped the Nashik Gid, therby reducing Distress Load shedding due to Transmission constraint.

EHV voltages around Ghatghar HPS are generally low (below 215kV) in day time period. Hence, Ghatghar Units are not available for pumping mode, in Solar hours.

Transmission System Constraints in Maharashtra Grid (Jan'25 – May'25)

- **Transmission constraints causing load curtailment due to:**
  - Overloading of 400kV Chakan – Talegaon (PG)
  - Overloading of 220kV Nashik Babhaleshwar D/C
  - Overloading of 132kV Rahuri Babhaleshwar Ckt.
  - Overloading of 132kV Nagar MIDC Sonewadi

- **Transmission constraints causing load curtailment due to under voltage at following Substations:**
  - 400kV Chakan
  - 400kV Jejuri
  - 400kV Lonikand 1
  - 400kV Lonikand 2
  - 400kV Karjat
  - 400kV Kharghar
  - 400kV Padghe

- **Inter State ATC/TTC Constraint:**
  - Presently, ATC / TTC for the Maharashtra State is as below:
  - Total Transfer Capability (TTC): - 11400 MW
  - Transmission reliability Margin (TRM): - 600 MW
  - Available Transfer Capability (ATC): - 10800 MW
  - During the violation of ATC, to control the Over drawl, Load shedding is required to carried out.

System Constraints_Transmission Constraints

- **Line Hand tripped due to overloading:**

To control Overloading of	Name of Line required to hand tripped
220kV Nashik – Babhaleshwar D/C	220kV Eklahare (GCR) – Airoli Knowledge Park
	220kV Eklahare (OCR) – Navsari ckt – 2
	220kV Eklahare (OCR) – Padghe
	220kV Ghatghar - Jindal
220kV Alephata - Babhaleshwar	220kV Alephata - Kathapur
220kV Urse - Chinchwad	220kV Chinchwad - Hinjewadi
400 kV Chakan – Talegaon (PG)	Any one or Both circuits of 400 kV Aurangabad (PG) – Pune GIS (PG) D/C are handtripped.

System Constraints_Transmission Constraints affecting Generation

- **Nashik TPS Generation constraints:**
  - The grid voltages in Nashik area drops below 205 KV mainly due to high reactive power requirement.
  - To meet out the high MVAr requirement in Nashik area & maintain voltages within limits, Nashik Units are continuously sharing high MVAR.
  - MSPGCL has informed that such high injection of reactive power is resulting in to increase of generator winding temperature. The rotor temperature increases up to 115^0C. Also, an Excitation current has reached its maximum limit of 2600 Amperes resulting in huge stress on the insulation of Generator.
  - To maintain the winding temperature at safe limits, generation is restricted which is causing loss in generation.
  - Sudden drop in Grid Voltage results in generation reduction of around 40-50 MW for the running unit causing commercial loss MSPGCL.
  - Reduction in generation (active power sacrificed due to MVAR requirement) results in reduction of availability of the units to be maintained as per Hon'ble MERC Regulations. Further, as per the present regulations, there is no provision of compensation for such reduction in availability due to MVAR requirements.
  - The issue was discussed in OCC & GCC meetings. STU, MSLDC & Nashik field office has carried out detailed studies for providing adequate reactive power compensation in Nashik area. **Thus, 160 MVAr reactive power compensation has been planned and the same is being implemented.**

System Constraints_Transmission Constraints affecting Generation

- **Backing Down of APML (Tiroda) & Koradi-II Generation:**
  - The generation of APML (Tiroda) & MSPGCL's Koradi-II is evacuated through 765 kV network through 765/400 kV Ektuni S/s.
  - The transformation capacity at 765/400 kV Ektuni S/s is 2 x 1500 MVA both the ICTs are loaded to more than 60 % of tis installed capacity. In case of tripping or outage on any one ICT, the remaining ICT is either loaded to full rated capacity or above permissible capacity.
  - Hence to maintain the loading within permissible limits, the generation at Tiroda & Koradi-II is required to be backed down.
  - Hence, it is necessary to provide additional 1 x 1500 MVA 765/400 kV ICT at Ektuni S/s.

- **Koyna water utilization:**
  - Koyna Generation is utilized by MSLDC as per the schedule issued by MSEDCL. Further, the dispatch is dependent up on the availability of other resources arranged by MSEDCL for meeting its demand. Hence, majority of water is utilized for meeting MSEDCL Demand.
  - However, Koyna generation is utilized by the MSLDC under some contingent conditions : To support the Grid frequency when frequency-profile is at lower side, mainly below 49.85 Hz and to control overloading of 400 KV lines viz., Talegaon (PG) –Chakan ckt which normally loaded above 750 MW.
  - To support the grid during system emergencies such as tripping of any generating unit and evacuating grid lines, HVDC pole, multiple tripping of important grid elements, to operate grid securely & reliably.
  - During the power shortfall conditions, till actual effect of load shedding is visible.
  - As there are restrictions in water utilization, it is important to utilize Koyna Generation judiciously.

System Constraints_Transmission Constraints affecting Generation

- **Reactive Power Requirement in Boisar area:**
  - It has been informed by ADTPS in the OCC & GCC meeting that the reactive power sharing through the 220 kV Dahanu – Viraj line is on higher side.
  - In peak hours the sharing of reactive power by Dahanu generators increases.
  - Due to this high MVAr injection, the active power needs to be reduced.
  - ADTPS units have been commissioned in 1995 and are old.
  - Due to mechanical vibration issue in the Turbines, it is not possible to provide Reactive power support without reducing active power even within Capability curve.
  - Hence, adequate reactive power compensation needs to be planned & implemented in Boisar area.

MSLDC system operation issues:

List of elements were out for long duration and their respective current status as follows:

Sr No.	Name of Line	Outage/ Tripped Date	Outage /Tripped Time	Reason of Outage/Tripping and Current status
1	220KV WAGHIVALI (MSETCL) - ULWE GIS CKT - 2	25-06-2024	08:05	Tripped on differential protection. 8 times unsuccessful Trial has been taken till date.
2	220KV KALWA - PANCHANAND	17-10-2024	12:10	For replacement of of existing conductor with HTLS conductor on 220kV Kalwa-Apta Corridor . Work Completeion Status: 1. 220kV Panchanand-Kalwa line : 10.351 Ckm /14.816 Ckm. 2. 220kV Taloja-Panchanand line : 0.000 Ckm /6.365 Ckm.
3	220 kV PRINT HOUSE - NAVI MUMBAI (PG)	05-12-2024	23:09	For replacement of of existing conductor with HTLS conductor on 220kV Kalwa-Apta Corridor . Work Completeion Status: 1. 220kV Print House-Kalwa line: 2.956 Ckm /3.097 Ckm. 2. 220kV Print House-Navi Mumbai line: 10.351 Ckm /15.083 Ckm.

List of elements were out for long duration and their respective current status as follows:

Sr No.	Name of Line	Outage/ Tripped Date	Outage /Tripped Time	Reason of Outage/Tripping and Current status
4	220KV PADGHE - NALASOPARA - VASAI (T)	20-07-2025	10:32	For replacement of of existing conductor with HTLS conductor of 220 kV Padghe- Nalasopara -Vasai Tap. Work Completeion Status: 1. Under Panvel circle - 16.757 / 31.017 km. Time required for balance work completion - 1 to 1.5 months depending on ROW problems and Outage availability of upper 220KV line on same M/C tower. 1. Under Boisar division work status- - 220 kV Boisar - Nalasopara line : 50.561 / 50.561 km. - 220 kV Padgha nalasopara line : 14.579 km / 24.579 km - 220 kV Boisar (PG) -Vasai line : 60.132 km / 62.934 km - 220 kV Kamba vasai line : 6.905 km / 19.139 km
5	220KV BORIVALI - BOISAR II LINE		11:13	
6	220KV KUDUS-GHODBUNDER		12:46	

List of elements were out for long duration and their respective current status as follows:

Sr No.	Name of Line	Outage/ Tripped Date	Outage /Tripped Time	Reason of Outage/Tripping and Current status
7	220KV APTA - NAVI MUMBAI (PG) CKT - 1	17-08-2025	09:00	Replacement of existing 0.35 ACSR sheep conductor by High performance conductor (HPC) under LES scheme from 584 to 625 Sequence of Events: 1. 220 kV Apta -PG 1 Outage Taken and availed from 17.08.2025 . Work : R phase conductor stringing work completed of 2.03 KM. 2. On Dated 31.08.2025 during stringing Y Phase conductor, Tower L.N 619,Damaged and work Stop. Both Line trip same Day 220 kv Apta PG 2 line charges by connecting jumpers and stay to existing Tower 3. Tower Replacement work satrted with delay due to ROW issue and Jsk agency (16.09.2025) 4. During this period some Locations Stringing work completed of 2.19 km / Out of 39 KM 5. Now 220 Kv Apta PG 1 line is Under Breakdown due to Tower Damaged and work of foundation and Erection of Tower 2 section completed 6. Outage 7 Days required on Both line 220 kV Apta PG 1 & 220 kv Apta PG 2 line for remaining HTLS Work.

List of elements were out for long duration and their respective current status as follows:

Sr No.	Name of Line	Outage/ Tripped Date	Outage /Tripped Time	Reason of Outage/Tripping and Current status
8	220KV KALWA - GIS DCHI	01-11-2025	14:17	for replacement of existing conductor with HTLS conductor. Work Completeion Status: 1. 220 kV Kalwa-Colourchem line : 0.211 Ckm /13.323 Ckm. 2. 220 kV Kalwa-Temghar line : 0.00 Ckm /15.090 Ckm. 3. 220 kV Colourchem-Temghar line : 0.00 Ckm /15.067 Ckm.

Moreover, 220 kV Padghe -Pal line is on ERS from 19 July 2025 due to cable fault on the said line.

Thank You.

Annexure 3.2

Generating Station	Unit Capacity (MW)	Governor Status (FGMO/RGMO)	Whether Primar Frequency Response (PFR) Test Done/Not Done
IPP AND PRIVATE GENERATORS			
APML, Tirora	5x660	FGMO	Test done as per MEGC 2020/IEGC 2017 (5th amendment)
Tata Power Trombay	U5 (1x500)	FGMO	
	U7 (1x120)		
	U8 (1x250)		
Tata Power Bhira	U1 to U6 (6x25)	FGMO	
	BPSU (1x150)		
JSW, Ratnagiri	4x300	FGMO	Test done as per MEGC 2020/IEGC 2023
JPL, Dhule	2x150	FGMO	
Dahanu, AEML	2x250	FGMO	
RattanIndia, Amravati	5x270	FGMO	
SWPGPL	4x135		
VIPL	2x300	RGMO	PFR test not done
IEPL	1x270	RGMO	
MSPGCL GENERATORS			
BHUSAWAL U3	1x210	RGMO	PFR test not done in any of the units of MSPGCL till date.
BHUSAWAL U4, U5	2x500	RGMO	
CHANDRAPUR U3, U4	2x210	RGMO	
CHANDRAPUR U5 TO U9	5x500	RGMO	
KORADI U6	1x228	RGMO	
KORADI U8 TO U10	3x660	RGMO	
KHAPERKHEDA U1 TO U4	4x210	RGMO	
KHAPERKHEDA U5	1x500	RGMO	
NASIK U3 to 5	1x210	RGMO	
PARALI U6 TO U7	2x250	RGMO	
PARALI U8	1x250	RGMO	
PARAS U3, U4	2x250	RGMO	
URAN	4x108	FGMO	
URAN	2x120	FGMO	
KOYNA STAGE-1 U1 TO 4	4x70	FGMO	Recently PFR test done but the report not received to SLDC till date.
KOYNA STAGE-2 U5 TO 8	4x80	FGMO	
KOYNA STAGE-3 U1 TO 4	4x80	FGMO	
KOYNA STAGE-4 U1 TO 4	4x250	RGMO	
GHATGHAR U1, U2	2x125	Not Available	PO for implementation of RGMO/FGMO is already placed.
VAITARNA	1x60	Not Available	Upgradation is proposed under DPR in FY 2024-25
TILLARI	1x60	Not Available	Procurement for replacement of Governor is in process through DPR. After replacement of new governing scheme, unit operation may be in FGMO/RGMO mode.
BHIRA (TR)	2x40	Not Available	Procurement for replacement of Governor is in process through DPR

Annexure 3.3

Procedure for availing planned generation outages

1. Outage approval

1.1 Generating unit outages will be discussed and finalized in the OCCM.

1.2 Planned outages of generating units at ISGS and Regional IPPs which have been approved in the OCCM would be considered for the outage code by RLDC. The approved planned outages of intra-state generating units and InSTS IPPs would be considered for the outage code by respective SLDC(s).

1.3 As any deviation in the outage from the planned schedule can affect other planned outages as well as affect reliability and electricity markets, indenting entities must strictly adhere to the shutdown duration.

1.4 Generating stations may avail the planned outage as per the approved outage duration in accordance with this SOP.

1.5 Generating units which are already under forced outage or reserve shutdown (RSD) and want to avail approved planned outage shall also follow this procedure.

2. Availing Outages in real time

2.1 Generators may avail outage code in between 'D-1' to 'D+3' day ('D' being the start date of outage approved in OCC). Separate approval of WRPC is not required for outages for the window of 'D-1' to 'D+3' day. Generator shall request WRLDC/SLDC for outage of the unit after coordination with beneficiaries as per the existing practice of advance communication so that beneficiaries are aware about the generator withdrawal. The code will be issued for the approved outages if the request is received for unit outage in the period 'D-1' to 'D+3'. The duration 'D-1' to 'D+3' may be reviewed in the future after gaining experience.

2.2 For outage code requests outside this window, indenting entity shall take approval of WRPC on mail for the revised outage duration. The WRPC approval received on mail will required to be submitted to WRLDC/SLDC control room for availing of outage.

2.3 On the day of outage, the outage availing entity shall seek the code for availing outage from WRLDC/SLDC. The code shall be requested before de-synchronization. In case, due to any contingency, the outage could not be availed within 1 hour, a fresh code needs to be obtained by the generating station.

3. Normalization of Outages

3.1 All effort shall be made by the generators to normalise the outage within the approved duration so that the generation availability is ensured as per the planning.

3.2 On completion of the outage work, the outage availing entity shall seek the code for normalisation from WRLDC/SLDC(s). The code shall be requested before synchronization.

3.3 The generator shall also submit the FGMO status (In service/Out of service) along with the request for synchronization code. If the unit is being synchronized with FGMO in 'OFF' condition, a separate code shall be requested from WRLDC/SLDC control room to keep the unit in 'OFF' condition. After unit stabilization, generator shall again request code for putting FGMO in 'ON' condition. It may be noted, that FGMO shall not be switched ON/OFF without WRLDC/SLDC code. If code is not availed for putting FGMO in 'ON' or 'OFF' condition, it will be considered in 'OFF' or 'ON' respectively.

3.4 The generators shall strive to complete the transition from RGMO to FGMO during the AOH/COH activities.

3.5 The entities shall endeavour to normalise the outage within 1 hour of receipt of the code but not later than 2 hours. In case, due to any contingency, the normalisation could not be done within 2 hours, a fresh code needs to be obtained by the entity stating the reason thereof.

3.6 In case the outage is required to be extended beyond one day, then entity shall intimate the reasons of extension, and expected normalisation date & time to the WRPC, RLDC and SLDC at least one day before the scheduled normalisation date.

3.7 RLDC/SLDC would issue synchronization code after receipt of intimation of reasons for delay up to D+4 day.

3.8 In case of an outage extension beyond 4 days ('D+5' onwards), entity shall approach WRPC for consent/approval with proper reason and justification of delay with a copy to RLDC/SLDC. Under such circumstances, WRPC shall review the impact of such delay on the outage already approved and would review other outages. Synchronization code would be issued by RLDC/SLDC control room after receipt of approval from WRPC.

3.9 The status of generating units planned vs. availed by the indenting entities would be prepared by RLDC (for ISGS) and SLDCs (for intra-SGS) and same would be discussed in ensuing OCC for better planning and coordination.

Annexure 3.6

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
1	Jun-25	400 kV Warora ss	Nagpur	MSETCL, IEML, APML	10.06.2025, 00:25 Hrs	multiple line trippings	Gen @ 600 MW	1) For 400kV Warora-IEPL ckr Rph LA got dislocated causing Rph-Yph fault. 2) For 400kV Warora-Adani ckt -2 line CVT jumper got dislocated causing Yph-Bph fault.

MSLDC Suggestions:

1) Protection related: -
   i) Relays unblocking logic & settings in Case VT fuse fail needs to be verified.
   Ii) Non operation of carrier aided trip at IEPL to be reviewed.
   iii) The zone 2-time delays at 400 kV Warora end and remote ends needs to be reviewed in accordance with the protection guidelines.
   iv) The Time coordination of ICT 1 & 2`s HV, IV OC/EF relays need to be reviewed in accordance with the bus fault levels and protection guidelines.
   v) Reverse zone time delays of all 400 kV feeders at 400 kV Warora end needs to be complying to protection manual. deviations if any needs to be justified.
   vi)Protection Audit of 400 kV Warora substation to be carried out at earliest

2) Planning related: -
   vii) During Such events when Transmission constraints arise for generation evacuation at 400 kV APML end, Hence an Additional 765/400 kV ICT needs to be provided.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
2	Jun-25	400 kV Karad	Karad	MSETCL	29.06.2025, 05:26 Hrs	Tripping of 400 kV ICTs And 220 kV Lines.	Nil	220 kV Oglewadi line bay conductor snapped in SS

MSLDC Suggestions:

Protection related: -

i. The Time co-ordination between ICT-1, ICT-2 and ICT-3 HV high-set and bus-coupler protections need to be verified for such cases and modifications in protection settings needs to be carried out accordingly.
ii. The Time coordination settings of ICT-1 ,2 and 3`s HV, IV OC/EF relays for High set & Normal inverse functions need to be reviewed in accordance with the bus fault levels and protection guidelines.
iii. At 400 kV Karad ss, settings for reverse zone function of all distance relays needs to be verified in context of non-operation/ non-pickup. The reverse zone function to be tested for same fault.
iv. For 220kV Karad- Kadegaon line non operation of distance relay at 220 kV Kadegaon end need to be analyzed.
v. Old RADSS busbar needs to be replaced with new numerical busbar.
vi. During Busbar testing the Aux CTs knee point testing & primary resistance measurement needs to be carried out.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
3	Jun-25	400 kV Nagothane	Vashi	MSETCL	16.07.2025 15:32 Hrs	Multiple line trippings (04 nos. 220 kV Wadkhal-1,	Load loss of 546 MW for @10 min	During the 220 kV Bay shifting from Bus A to Bus B through TBC, while switching of bus

						Wadkhal-2, POSCO, ACCIL		coupler CB, 220 kV Wadkhal-1, 220 kV Wadkhal-2, POSCO, ACCIL lines are tripping on distance protection. PT selection scheme issue.

MSLDC Suggestions:

Protection related: -

i. Considering that the existing PT selection scheme is of an old age & design, and the PT selection relays are having repeated operational issues. It is recommended to replace the existing PT selection scheme relays with new, reliable relays, and to install isolator selector switches for all bays. This upgrade is essential to ensure the proper functioning of the PT selection scheme and to enhance the overall reliability of the protection system at the substation. Also, Immediate attention is required to resolve the PT secondary mixing issue.

ii. The PT selection scheme the trip-blocking logic and related settings of distance relays needs to be thoroughly reviewed. Any necessary modifications should be implemented to prevent such unwanted tripping in the future.

iii. The Auto Reclose operation & Backup O/C and E/F operation indications of the 220 kV Nagothane–ACCIL line needs to be investigated, and any necessary modifications should be implemented.

iv. All Disturbance Records (DRs) are required to be properly GPS time-synchronized to ensure accurate event analysis and correlation as per MEGC 2020, Clause No. 25.1.

v. A third-party protection audit needs to be carried out for 400/220 kV Nagothane ss, at the earliest.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
4	July & Aug-25	100kV Padgha ss	Vashi	MSETCL	29.07.2025 03:45 hrs, & 13.08.2025 03:09 hrs	LBB operation of 100kV Bus section 1	1) Load loss of 168.5 MW on 29.07.2025 2) Load loss of 57.78 MW on 13.08.2025	CB of 100kV Padgha-Bhiwandi line 1 and Line 2 failed to interrupt the fault.

MSLDC Suggestions:

O&M related:-

1. Since both the source lines for above mentioned substations/ring mains are on same bus, in the event of LBB/Busbar operation complete blackout of respective substation/ring main will occur. Hence the source lines need to be distributed / reoriented across Bus section 1 & Bus section 2 at the earliest to avoid complete blackout of respective substation.
2. The 100 kV transmission lines originating from the 100 kV Padgha bus are critical feeders supplying essential MMR electrical loads. To ensure continued reliability and avoid unexpected outages, comprehensive diagnostic testing of line insulators such as PID, TFR measurement is required. The line insulators at various crossing such as highways, railways, rivers, Dense Urban Zones / Industrial belts need utmost attention. The abnormality if any should be attended on priority.
3. The SF6 gas analysis of all EHV circuit breakers such as SF6 purity testing, Gas pressure & leakage checks need to be carried out at Padgha s/s.
4. Diagnostic testing for all CBs needs to be carried out and reports shall be verified by PAC circle.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
5	Aug-25	220kV Bhosari-1 ss	Pune	MSETCL	18.06.2025 , 20:04 Hrs	220kV Busbar operation	Load loss of 55MW	Busbar operation occurred during first time charging of 220kV GIS Microsoft bay.

MSLDC Suggestions:

Protection related:-

1. The Protection information was not provided to SLDC in FTC proposal under format-3 (Protection Healthiness).
2. The existing bus bar scheme of 10 nos, bays is to be up graded to new busbar scheme at the earliest.
3. The occurrence needs to be discussed in SPC meeting, for eliminating such incidences in future.3. The SF6 gas analysis of all EHV circuit breakers such as SF6 purity testing, Gas pressure & leakage checks need to be carried out at Padgha s/s.
4. Diagnostic testing for all CBs needs to be carried out and reports shall be verified by PAC circle.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
6	Sep-25	220kV VIPL ss	Nagpur	MSETCL, VIPL	15.08.2025, 19:00 Hrs	220 kV LBB operation for Bus-1	Generation loss of 239MW at VIPL	For Yph-Bph fault on 220kV VIPL- Butibori - 1 ckt 4 CB fail to operate at VIPL end.

MSLDC Suggestions:

Protection related:-

1. The line differential protection for VIPL–Butibori-1 Ckts 3 & 4 needs to be reliable and always available. M/s VIPL is requested to attend the issues related to Fibre optic links on top priority. On failure of Fibre optic links immediate reporting to ALDC & PAC Circle needs to be done and restoration process should be initiated. Redundant communication channel like PLCC links needs to be made available for these lines.
2. The Line protection relays should be such that both differential and distance protection features are available in it. In case the line differential protection is out of service, then distance protection feature along with carrier aided scheme will be enabled to ensure dependable primary protection.
3. The tripping of 220 kV Butibori-1 – VIPL Ckt-3 (connected to 220 kV Main Bus-2) from the Butibori-1 end during the fault on the 220 kV VIPL – Butibori-1 Ckt-4 (connected to 220 kV Main Bus-1 is undesirable. A review of the overcurrent protection coordination is required to ensure selective and reliable fault clearance.
4. The OC/EF relay settings at 220 kV Purti substation end for the 220 kV Butibori-3 line needs to be revised as per protection guidelines. A review of the distance and overcurrent protection coordination is required to ensure selective and reliable fault clearance. The Bus Coupler OC/EF relay settings at 220 kV VIPL, 220 kV Butibori-1, and 220 kV Butibori-3 substations need to be reviewed in line with protection guidelines and prevailing fault levels.
5. On analyzing the submitted DRs regarding incident, it is observed that, Separate digital channels for Busbar trip, LBB trip, and LBB initiation, Communication link failure need to be assigned in the DR of the protection relay. The Protection relays need to be GPS time synchronized. The PCC and ACIP guideline Regarding DR triggering are to be followed. The DR assignments are to be verified in annual protection audit.
6. A Third-party protection audit and Protection co-ordination as per PCM, PCC WRPC guidelines of all substations involved in the occurrence needs to be carried out within 06 months, so as to avoid any repeat of such occurrence in future
7. The SPS scheme provided for overloading of ICTs at 220 kV Butibori-1, 220 kV Abhijit Line, and 220 kV Wardha Line is presently operating in manual mode. The scheme is designed to back down 60 MW of generation at VIPL in two stages manually. However, for timely and reliable operation, this SPS scheme needs to be automated.

O&M related: -

8. As the 220 kV VIPL ss was not in service long time in past & in view of stuck CBs, it is suggested to carry out CB overhauling and regular maintenance activities of all CBs as per OEM recommendations. The CB diagnostic test reports after overhauling are to be verified by ACIP and PAC circle.
9. Voice communication system between all 03 Substations involved in the occurrence i.e. (220kV Butibori-1, 220kV Butibori-3, and 220kV VIPL) with MSLDC and ALDC (VOIP, hotline PLCC, dialup PLCC) are required to be established.
10. The 220 kV Koradi-II (400 kV) – Butibori-3 Circuit-I & II and 220 kV Butibori-1 – Butibori-3 lines have been kept hand-tripped to control the overloading of 220/132 kV, 2 × 100 MVA ICT-I & II at 220 kV Butibori-1 Substation. In this regard, the capacity enhancement or addition of ICTs needs to be expediated to ensure reliable system operations. (Included in STU plan 2025-26).
11. Backup UPS supply to all SCADA equipment (HMI, Nework switches, routers etc) at all 03 Substations involved i.e. (220kV Butibori-1, 220kV Butibori-3, and 220kV VIPL) is required for continuous SCADA visibility as the same was affected during the incident.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
7	Sep-25	400kV GCR Chandrapur	Nagpur	MSETCL	06.09.2025, 05:14 Hrs	Operation of Busbar protection of 400kV main Bus-2	Generation loss of 762 MW	failure of Yph CT of 400kV HVDC ckt-2bay

O&M related: -

1) It is observed that the failed CT was commissioned in 1998 and has completed 27 years of service. Ageing CTs, CVTs, PTs, and breakers may suffer from insulation degradation, leading to catastrophic failures without prior warning. Even if periodic diagnostic tests (Tan Delta, Capacitance, IR, etc.) appear normal, hidden deterioration can cause insulation breakdowns. Ageing oil-filled equipment poses higher risks of fire, oil leakage, or explosion in case of failure. Such aged EHV equipment are to be identified and replaced on top priority. It is learnt that LE scheme proposal of aged EHV equipment is in process which has to be expedited
2) Regular thermography of EHV switchyard equipment such as CTs, CVTs, LAs, bushings, transformers, and bus conductors is essential for detecting hotspots caused by loose joints, contact resistance, or insulation deterioration. It is useful for ageing equipment where hidden defects may not appear in routine tests. Thermography enables early failure prediction.

3) Regular checks for oil leakages and oil levels in oil-filled EHV equipment are essential, and any leakages must be attended promptly to ensure reliability and prevent equipment failure.

Protection related: -

4) In current busbar configuration, Bus 1 is connected with 11 bays and Bus 2 with 10 bays, any bus fault protection operation such as a Local Breaker Backup (LBB) or a busbar protection trip can result in the simultaneous outage of a large number of critical bays. This poses a significant risk to system reliability and operational continuity. To mitigate the impact of such contingencies and enhance overall system resilience, it is suggested to explore the feasibility of subdividing the existing busbars into multiple sections. By introducing bus-sectionalizers and bus-couplers, faults or planned outages can be confined to smaller segments, thereby limiting the number of affected bays, reducing the disturbance area, and improving fault isolation and system flexibility.
5) The tripping of GTR-5 (296 MW) and GTR -7 (213 MW) which were connected to Bus-1 needs detailed investigation and steps needs to be taken to avoid such tripping in future. The auxiliary supply changeover scheme is to be reviewed. The non availability of 400 kV STN TF -3 from 01.03.2025 is to be revived at the earliest, for reliability of auxiliary supply to generating units.

Sr No.	Month	Substation Name	Control area	Utilitiy involved	Occurance Date & time	Occurance	Load/Generation loss	Reason
8	Sep-25	400 kV Nagothane	Vashi	MSETCL	10.09.2025, 22:31 Hrs	400kV Main Bus-1 Busbar operation	Nil	During charging of 400kV extended bus, a failure & decapping of the extended B-ph bus insulator string occurred.

O&M related:-

1. It is observed that the failed insulator string is a part of extended 400 kV Bus and put in service first time. Random testing, healthiness Check of such insulators needs to be confirmed prior to charging. Thorough inspection and testing of all insulator strings and associated bus hardware before energizing any new or extended bus section.
2. Individual disc and whole String IR values are to be taken before first time use. It can be used as further reference for diagnostic checks of disc insulators
3. PID testing, Thermo-vision tests of these insulator strings needs to be carried out for existing and newly extended bus to avoid such occurrences in future.

4. Due to the failure of the extended bus disc insulators, the ongoing O&M activity for charging the extended bus for the new 400 kV bus coupler has been suspended. The subsequent course of action in this regard needs to be communicated to MSLDC.

Design related:-

5. The Quality Control Department i.e. Design Section, C.O. Mumbai, need to analyze the quality of the disc insulators of M/s IEC make and investigate any similar failures under MSETCL and to take suitable measures so as to prevent such occurrences in the future.

Protection related:-

6. Vide its letter regarding occurrence report no. 1775 dtd.14.08.2025, MSLDC has suggested for Protection audit and GPS time synchronization of Disturbance Recorders at substation. The compliance regarding the same needs to be submitted, at the earliest.

Annexure 3.8

Transmission constraints in generation evacuation (connected GTS details)					
Sr No	**Name of Zone**	**Name of substation**	**Name of element**	**Generator trimming scheme for**	**purpose**
1	Nashik	132KV Erondol S/s (SPS)	132KV Erondol - BAmbhori Ckt	33KV 20MW Sunsure Solar Park Generation Feeder	To avoid line overloading
			132/33 KV 25 MVA PTF-1		To avoid PTF-1 overloading
			132/33 KV 25 MVA PTF-2		To avoid PTF-2 overloading
2		220KV Shivajinagar S/s	220KV Shivajinagar Malegaon Ckt	SPS FOR AMPYR SOLAR GENERATION	To avoid line overloading
			200KV Shivajinagar- Gangapur Ckt		To avoid line overloading
			220/132KV 100MVA ICT-1		To avoid ICT-1 overloading
			220/132KV 100MVA ICT-2		To avoid ICT-2 overloading
3		220KV Shivajinagar S/s	220/132KV 100MVA ICT-1	SPS FOR HUOBON SOLAR GENERATION	To avoid ICT-1 overloading
			220/132KV 100MVA ICT-2		To avoid ICT-2 overloading
4		220kV Shuvajinagar s/s	220KV Shivajinagar Malegaon Ckt	SPS FOR Godrej 33kV Feeder no 331& 332 generation	To avoid line overloading
			200KV Shivajinagar- Gangapur Ckt		To avoid line overloading
			220/33/33KV PTF-1		To avod PTF overloading
5		132KV Huoban S/s	132KV Huoban-SAKRI Ckt	SPS FOR HUOBON SOLAR GENERATION	To avoid line overloading
6		220KV Gangapur S/s	220KV Gangapur- Valve Ckt	SPS FOR 220 KV SHIVAJINAGAR SS AMPYR SOLAR GENERATION	To avoid line overloading
			220KV Gangapur- Satana Ckt		To avoid line overloading
7		132KV Sakri S/s	132KV Sakri-Dhule Ckt	SPS FOR 220 KV SHIVAJINAGAR SS AMPYR SOLAR GENERATION	To avoid line overloading
8		220KV SHIVAJINAGAR S/s	220 KV SHIVAJINAGAR-MALEGAON CKT	SPS FOR 220 KV GANGAPUR SS NEW 33 KV SUZLON 20 MW GENERATION	To avoid line overloading
9		220KV Gangapur S/s	220KV Gangapur- Valve Ckt	NEW 33 KV SUZLON 20 MW GENERATION	To avoid line overloading
			220KV Gangapur- Satana Ckt		To avoid line overloading
			220KV Gangapur- Shivajinagar Ckt		To avoid line overloading
10		220KV Jamde S/s	220KV Jamde-Dondaicha Ckt-1	SPS for NEW 33 KV SUZLON 20 MW GENERATION AT 220 KV GANGAPUR S/S	To avoid line overloading
			220KV Jamde-Dondaicha Ckt-2		To avoid line overloading
11		132KV Deepnagar GCR s/s	132KV Deepnagar-Muktainagar Ckt	27 MW Kalpak solar 33KV x2 feeder at 132KV Malkapur s/s	To avoid line overloading
12	Amravati	132kV Motala s/s	132 kV Juniper Solar- Varangian Tap-Khadka line	132 kV Cyclic Solar Park 100MW	To avoid line overloading
13		132kV Naldurga s/s	132kV Naldurga- Bale	1) 132kV Waghdari incomer 2) 33kV FDIPL 1 3) 33kV FDIPL 2 4) 33kV ESSL 1 5) 33kV ESSL 2 6) 33kV Parampujya Solar Total- 45 MW	To avoid line overloading
			132kV Naldurga- Tuljapur		

Sr No	Name of Zone	Name of substation	Name of element	Generator trimming scheme for	purpose
14	CSN	220kV Narangwadi	132kV killari	Stage1-To Trim 20MW Generation. of M/s Maruti Wind SS at Remote Stage2-To Trim 30MW additional Generation. of M/s Maruti Wind SS at Remote Stage3-To Trim total generation (100MW) by tripping 132KV Maruti Wind Power Project Generation bay at 220KV Narangwadi SS.	To avoid line overloading
			132kV Nilanga		
			220/132KV 100MVA ICT-1 LV		To avoid ICT overloading
			220/132KV 100MVA ICT-2 LV		
15		132kV JSW	132KV Tuljapur	Stage 1-To Trim 20MW Generation of M/s JSW Stage 2-To Trim additional 30MW Generation of M/s JSW Stage 3-To Trim total generation (100MW) by tripping 132KV Generation (Metering) bay.	To Avoid line overloading
			132KV Ujani		
		132kV Umari SS-40MW Enrich Solar power park	33kV feeder I &II	Stage 1- 25MW to trim generation of Enrich Solar power park	To avoid TF overloading
16	Pune	220kV South solapur s/s	132kV south solapur- Bale	132kV Bale line	To avoid line overloading (out of service)
17		132kV Waghdari s/s	132kv Waghdari- Naldurga	1) stage 1- 33kV solar feeder at chetak s/s(26.5 MW) 2) stage 2 - 132kV Tata power 2(58MW) 3) 33kV swami samarth 2 (15MW) 4) stage 2 33kV solar feeder at chetak s/s(23.5MW) 5) stage 2 - 33kV LREHL-2(25MW)	To avoid line overloading
18		132kV Waghdari s/s	132kV Akkalkot ckt 1	1) 132kV Tata power 1(62MW) 2) 33kV LREHL-1(25MW)	To avoid line overloading
19		132kV Waghdari s/s	132kV Akkalkot ckt 2	1) 132kV Tata power 1(62MW) 2) 33kV LREHL-1(25MW)	To avoid line overloading
20		132kV Waghdari s/s	132kv Akkalkot ckt 1& 2	1) 132kV Tata power 1(62MW) 2) 33kV LREHL-1 (25MW)	To avoid line overloading
21		132kV Waghdari s/s	132/33kV 25MVA TF1	33kv swami samarth 1&2 30MW	To avoid line overloading
22		132kv Karajgi s/s	132kv Mandrup line	1) stage 1- 33kV Enrich feeder1 (25MW) 2) stage 2 - 33KV Enrich feeder 2(25MW) 3) stage 2 132kV Gokul mauli (15MW) 4) 132kv Jayhind (30MW)	To avoid line overloading
23		132kV Mandrup s/s	132kV Soregaon line	1) stage1 132kV at mandrup 2) 33kV Enrich solar 1 3) 33kV Enrich solar 2 Total- 50MW	To avoid line overloading
24		132kV Chetak s/s	132kV Gokul sugar	1) solar feeder 1& 2 at 132kV chetak s/s(50MW) 2) at 132kV Waghdari s/s (62MW) 3) LREHL 1(25MW)	To avoid line overloading
25		132kV Gokul sugar	132kV south solapur- Bale	1) solar feeder 1& 2 at 132kV chetak s/s(50MW) 2) at 132kV Waghdari s/s (62MW) 3) LREHL 1(25MW)	To avoid line overloading
26		132kV Akkalkot	132kV Karajgi line	1) 132kV Tata power 1(62MW) 2) 33kV LREHL 1(25 MW)	To avoid line overloading
27		132kV Sangola	132kV Pandharpur line	Maruti wind (30MW)	To avoid line overloading
28		132kV Sangola	132kV Digachi line	Maruti wind (30MW)	To avoid line overloading
29	Nagpur	220KV Butibori-1	220/132 kV 100 MVA ICT-1	Generation backdown at stage-1 : 60MW Stage-2 :60MW at M/S VIPL	To avoid ICT overloading
30			220 kV Butibori 1 – Abhijeet circuit	Generation backdown 30MW at M/S VIPL	To avoid line overloading
31		220KV Butibori-3	220 kV Buttibori 3 – Wardha circuit	Generation backdown 30MW at M/S VIPL	To avoid line overloading
32		220KV Karanja SS	220/33 kV 25 MVA TF1	33KV Swami Samarth Solar Feeder 01 backdown of 6.98MW	To avoid TF overloading
33			220/33 kV 25 MVA TF2	33KV Swami Samarth Solar Feeder 02 backdown of 6.98MW	To avoid TF overloading
34			132kV Ambazari – Karanja CKT I & II	33kV Avaada Solar Feeder at 132kV Talegaon Substation backdown of 25 MW	To avoid line overloading
35		400/220KV Koradi II	400 kV Koradi-wardha PGCIL	presently on alrming , mode only	To avoid line overloading

Sr No	Name of Zone	Name of substation	Name of element	Generator trimming scheme for	purpose
36		220kV Wardha (MS)	220kV Wardha Yeotmal Ckt	SPS Implemented for overloading of 400kV outgoing lines from 400kV Koradi-II s/stn: - 1) stage-I:- loading of any one outgoing line more than or equal to 926MW for more than 3 Se	To avoid line overloading