Minutes

of

168th OCC Meeting

Date:17.06.2020

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes for 168th OCC Meeting held on 17th June 2020

List of participants is enclosed at **Annexure-A**.

PART A

Item No. A.1: Confirmation of minutes of 167thOCC meeting of ERPC held on 16.03.2020

The minutes of 167th OCC meeting were uploaded in ERPC website and circulated vide letter dated 30.03.2020 to all the constituents.

Members may confirm the minutes of 167th OCC meeting.

Deliberation in the meeting

Members confirmed the minutes of 167th OCC meeting

PART B: ITEMS FOR DISCUSSION

Item No.B.1: Single User-credential for submission of schedule data for InterMembers confirmed the minutes of 166th OCC meeting-regional (IR) LTA/MTOAtransactions---ERLDC

Real time market (RTM) is going to be implemented on all-India basis from 1st April, 2020 onwards. For RTM, available Inter Regional (IR) margin for each RTM delivery period needs to be calculated on real time basis and transactions need to in sync for all the timeblocks.

Inter-Regional schedule prepared by the RLDC consists of ISGS, URS, LTA, MTOA, STOA and PX transctions. Presently Inter Regional (IR) schedule is prepared by each RLDC separately as per the data submitted by the utilities in RLDC WBES (Web Based Energy Scheduling) application. Since the computations are to be carried out on real time basis, mismatch between two separate entries by seller / buyer, if any, for various transactions need to be avoided.

It may kindly be noted that Regulation 6.4.14 of the Grid Code provides for mutually agreed schedules submission for all ISGS/ LTA/MTOA transctions. In view of above, it has been decided to streamline the scheduling process asbelow:

1. IR LTA/MTOA schedule data entry shall be done by one authorised entity at one RLDCWBESapplication.

2. Authorised entity for data submission shall be the “Applicant” of the LTA/MTOA transaction among buyer/ seller / applicant of that transaction. In case of no applicant for the LTA/MTOA, then Data submission right is issued to the buyer of thetransaction.

3. The designated utility for data submission (“Applicant” of the LTA/MTOA) shall submit the schedule quantum which is mutually agreed quantum between Buyer and Seller utility at the RLDC in which applicant isregistered.

4. Log in credential to the “Applicant” shall be issued by the RLDC in which “Applicant” is geographicallylocated.

The modified Web Based Scheduling to accommodate above mentioned procedure is under development and shall be operationalised by 01st April, 2020.

Procedure of selection of authorized entity for LTA/MTOA transctions and Location of RLDC WBES in which schedule data to be submitted:

Transaction type	Punching Rights given to	Cases	Location of entry
Inter-Regional	Applicant	If Applicant is Seller	Seller Region WBES
		If Applicant is Buyer	Buyer Region WBES
Intra-Regional	Applicant	-	Region where transaction is taken place

In 167thOCC , The house was informed that revised DSM mechanism-sign change criterion, Real time market, ramp rate and segregation of peak & off peak would be implemented from 01st April 2020.

OCC advised all the constituents to authorize one entity for IR LTA/MTOA schedule data entry as per the regulation to avoid the errors in dataentry.

ERLDC informed that trial operation of Real time market (RTM) would start one week earlier to 01st April 2020.

Members may discuss.

Deliberation in the meeting

ERLDC informed that REMC is operational in WR, SR and NR. Schedule of Renewable energy sources to be punched at respective REMCs.

OCC once again advised all the constituents to authorize one entity for Inter Regional LTA/MTOA schedule data entry as per the regulation to avoid the errors in the data entry.

ERLDC informed that Real Time Market had been implemented from 01st June 2020. Further ERLDC informed that peak hour for the month of April , May and June was 19:00-23:00 hrs.

Item No.B.2: Implementation of Automatic Demand Management Scheme (ADMS)- ERLDC

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementationlogic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	

3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	They would place the order to Chemtrol for implementation.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	In service from 21st August 2019.	Condition 1: Block I feeders will be selected for loadshedding Condition 2: Block I & II feeders will be selected for loadshedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40MW)	10 Months Sent for PSDF approval. It was informed that tender for the work has beenfloated.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			Sikkim informed that they have submitted a proposal to PSDF Committeefor installation of OPGW cables whichis under approval stage. Sikkim added that ADMS scheme would beimplemented after installation of OPGW

In 42nd TCC, Bihar informed that the testing of ADMS would be done by end of December 2019.

Odisha informed that ADMS would be implemented by May 2020.

Sikkim informed that installation of OPGW is in progress, ADMS would be implemented after the installation of OPGW & renovation of sub-station tentatively by 2020.

TCC advised Odisha and Sikkim to implement ADMS at the earliest.

After detailed deliberation, TCC opined that uniform logic and settings are to be implemented for all the states. TCC advised to discuss the issue in next OCC Meeting to formulate uniform logic and setting ofADMS.

In 165th OCC, Bihar informed that ADMS had been tested on 10th January 2020 but it was not successful.

ERLDC gave a presentation on the uniform logic. The proposed logic for ADMS operation is given below:

If frequency is less than 49.9 Hz for 3 minutes
and
Overdrwal/Under injection > 150 MW or 12 %

OCC advised all the states to go through the presentation and submit their comments to ERPC and ERLDC for finalization of ADMS logic.

In 166th OCC, OCC agreed to the ERLDC proposed logic.

OCC advised all the states to implement above logic in ADMS. It was also decided that the performance of the ADMS would be analyzed in monthly OCC Meetings if necessary, the logic would be reviewed.

Members may update.

Deliberation in the meeting

SLDC DVC informed that revised settings of ADMS had been successfully implemented and detailed report had been mailed to ERPC and ERLDC.

ERLDC requested DVC to share the details of quantum of power that would be disconnected on operation of ADMS.

SLDC Jharkhand informed that revised ADMS settings could not be implemented due to lockdown and they are planning to implement the revised settings by end of June 2020.

SLDC Bihar informed that testing of ADMS got delayed due to lockdown and Chemtrol is planning to test the ADMS during third week of June 2020.

SLDC Odisha informed that ADMS would be implemented by July 2021.

SLDC Sikkim informed that installation of OPGW is in progress . It would take 18 months for completion ADMS scheme would be implemented after installation of OPGW .

Item No.B.3: Implementation of Automatic Generation Control in Eastern Region

In compliance to CERC's direction in order dated 06/12/2017 in petition no 79/RC/2017, AGC was commissioned in NTPC Barh on 01st August 2019 and operationalized since 23rd August, 2019.

Vide order dated 28th August 2019, CERC in Petition No.: 319/RC/2018 directed that all the ISGS stations whose tariff is determined or adopted by CERC shall be AGC-enabled and the ancillary services including secondary control through AGC be implemented as per the following direction:

I. All thermal ISGS stations with installed capacity of 200 MW and above and all hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by CERC are directed to install equipment at the unit control rooms for transferring the required data for AGC as per the requirement to be notified by NLDC. NLDC shall notify the said requirements within one month of thisorder.
II. All such ISGS stations whose tariff is determined or adopted by CERC shall have communication from the nearest wide band node to the RTU in the unit controlroom.
III. The Central Transmission Utility (CTU) is directed to have communication availability from NLDC/ RLDCs to the nearest wide band node/ switchyard for the generating stations in a redundant and alternate path ensuring route diversity and dualcommunication.
IV. The NLDC is also directed to commission the required communicationinfrastructure.
V. The expenditure as a result of compliance of the above directions may be claimed as per relevant regulations or provisions of thePPA.
VI. The NLDC is directed to monitor implementation of the above directions so that all the ISGS stations whose tariff is determined or adopted by CERC are AGC-enabled within six months of thisorder.
VII. The framework regarding compensation for AGC support and deviation charges as stipulated in the Commission's Order in Petition no. 79/RC/2017 dated 06.12.2017 shall apply to the five pilot projects as also to other ISGS as and when they are AGC enabled. This arrangement shall remain in place till the relevant regulations inter alia on compensation for AGC services are framed by theCommission.
VIII. NLDC/RLDCs are allowed to operate the AGC system for enabling the signals to the power plants at theearliest.

IX. All new thermal ISGS stations with installed capacity of 200 MW and above and hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by

CERC shall mandatorily have the capability to provide AGCsupport.

All concerned plants may please ensure taking necessary action for arranging the communication (through redundant and alternate paths) from the existing nearest wideband communication node to their unit control rooms through two fiber optic cables, in coordination with CTU. It may please be noted that all the ISGS stations whose tariff is determined by or adopted by CERC should be AGC-enabled before 28th February 2020, as per order ofCERC.

A. Status of implementation of AGC for ISGSstations

Status of implementation as updated in 166th OCC Meeting and 5thTeST Meeting as follows:

Sl No	Station	Status of Communication link from plant substation to PGCIL node	Status of communication system integration from unit to plantsubstation	Target date for implementation of AGC at plant
1	Farakka STPS - I & II	Both links established	Pending	June 2020
2	Kahalgaon STPS - II	Both links established	Pending	June 2020
3	Barh STPS	Both links established	Installed	Running since August2019
4	NPGC, Nabinagar	Links from Gaya and Patna has beenestablished.	NPGC, Nabinagar informed that OPGW is available but end equipment need to be procured and installed to establish communication link from their station to NLDC. NTPC further informed that they have placed orderfor providing the endequipment.	June 2020
5	Maithon Power Limited	One link established. Other link, Ranchi-Maithon(RB) would complete by March, 2020.	In progress	July 2020
6	Talcher STPS - I	Both links established.		June 2020
7	Kahalgaon STPS - I	Both links established.	NTPC informed that they are approaching CERC for exemption.	
8	Nabinagar Thermal Power Project - BRBCL	Only one link Sasaram-Nabinagar OPGW installation is pending. It would take two years for completion.		June 2020
9	Darlipalli STPS	Communication established.	Integration is in progress	June 2020
10	Teesta – V	One link established		June 2020
11	FarakkaSTPS - III	Link established		June 2020

12	MTPS Stage – II (Kanti)	Link established		June 2020
13	Rangit HPS	One link established		June 2020

Note: OPGW from Barh to Gorakhpur is redundant path for ER to NR which would be completed by March, 2020.

Deliberation in the meeting

NTPC ER-II informed that implementation of AGC got delayed due to lockdown and it would take around 6 months to implement AGC.

MPL informed that they have received all the materials and the AGC implementation work is expected to be completed by July 2020.

BRBCL informed that they would implement AGC after installation of OPGW link in 400kV Sasaram-Nabinagar line.

Powergrid informed that OPGW installation would take around one and half year.

B. Status of implementation of AGC as a pilot project instates

In 42nd TCC, DVC intimated that AGC shall be implemented in unit 7 and 8 of Mejia as per the given schedule by 31st July 2020.

Odisha informed that SLDC and OPGC will sit together and finalise the scheme.

WBPDCL informed that they have already collected offer from Siemens for implementation of AGC and they are awaiting the concurrence from SLDC.

SLDC, WB informed that they are not in a position to implement AGC unless a clear direction is given by WBERC. Further, implementation of intra state DSM is a prerequisite for implementation of AGC in thestate.

It was decided to request CERC to include this as an issue in the Agenda for discussion in the meeting of Forum of Regulators.

Summary of status of implementation:

State	Station/Unit	Action plan
DVC	Mejia unit#7 &8	• NIT has beenfloated. • Orderplacement 30th March2020 • Commissioningof AGC 31st July2020
West Bengal	Unit-5 of Bakreswar TPP	SLDC, WB to establish the required hardware for generating AGC signal at SLDC.
Odisha	Unit#3 of OPGC	Joint meeting between SLDC, Odisha and OPGC was held wherein, it was decided to visit Barh, NTPCandNLDCtogetacquaintedwiththeAGC implementation and formulate a plan.

Members may update.

Deliberation in the meeting

DVC informed that AGC would be implemented by October 2020. Further DVC added that the work was delayed due to lockdown.

WBPDCL informed that they are not getting any feedback from SLDC West Bengal.

OCC advised Odisha to prepare a plan of AGC implementation and share it with ERPC and ERLDC.

Item No.B.4: Outage of important transmission lines

1. 400 kV Kishenganj-Patna D/Clines:

In 162nd OCC, Powergrid informed that one circuit of 400 kV Kishenganj-Patna D/C line would be restored through ERS by December 2019. Powergrid added that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by March 2020.

MS, ERPC submitted that Powergrid had repeatedly changed their schedule of restoration of the line. He advisedPowergrid to give a report on restorationschedule committed till date in chronological order along with the reason for changing the scheduled dates.

He added that a Committee would visit the site once again in 2nd week of November 2019 to assess the situation.

In 163rd OCC, Powergrid informed that both circuits of 400 kV Kishenganj-Patna D/C line would be restored through ERS by December 2019. Powergrid added that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by March2020.

Thereafter, Powergrid vide letter dated 3rd January 2020 informed that the temporary restoration of the line using ERS could not be completed due to pathetic condition of approach road, unprecedented cold weather condition and continued heavy water current in the Ganga river.

Powergrid added that restoration work is under progress in war footing basis and it is expected to be restored temporarily by 3rd/4th week of January 2020 however permanent restoration is expected to be completed by end of March 2020.

In 24th January 2020 meeting held at Patna, Powergrid informed that both circuits of 400 kV Kishenganj-Patna D/C line was restored through ERS on 22nd January 2020.

In 166th OCC, Powergrid informed that that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by April 2020.

In 167thOCC ,Powergrid informed that that permanent restoration of both the circuits of 400 kV Kishenganj- Patna D/C lines would be completed by April 2020.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that both the circuits of 400 kV Kishenganj-Patna D/C line would be restored by July 2020 but they required shutdown of both the lines for 20 days.

ERLDC informed that NLDC is not permitting shutdown of both the lines simultaneously and advised to take the shutdown of one circuit at a time.

Powergrid informed that shutdown of one circuit at a time is not possible.

OCC advised Powergrid to share the relevant details with ERLDC to take up with NLDC.

2. 400 kV Barh-Motihari D/C and 400 kV Barh-Gorahkpur D/Clines

Eastern Region Power Committee (ERPC) letter dated 21.11.2019, a six month restoration time starting from the zero date of 15.12.2019 was granted to DMTCL to restore the 400 kV D/C Barh-Motihari-Gorakhpur Lines by re-erecting 6 towers on pile foundations following the washing away of four towers on account of heavy water discharge and change in course of Gandak river last monsoon season.

DMTCL vide its letter dated 21st May 2020 informed that due to the severe impact of COVID 19 Pandemic as well as other Force Majeure events such as unseasonal heavy rains which ultimately affected the pace of DMTCL transmission line restoration work progress and requested for a suitable extension in terms of timelines for completion of restoration work.

To appraise DMTCL challenges, issues, work progress and current position related to restoration work, a consolidated presentation is submitted at Annexure B4.

Members may update.

Deliberation in the meeting

DMTCL informed that due to the severe impact of COVID 19 Pandemic as well as other Force Majeure events such as unseasonal heavy rains, the progress of DMTCL transmission line restoration work got affected. DMTCL shared a detailed presentation on the work progress. The presentation is enclosed at ***Annexure-B4****.*

DMTCL added that if weather conditions would be favorable then the work would be completed by 15th July 2020.

OCC advised DMTCL to complete the restoration work at the earliest and advised DMTCL to share the details of work progress on weekly basis to ERPC.

Item No. B.5: Consolidated First Time Charging procedure--ERLDC

In line with the IEGC and CERC (Terms and Condition of Tariff) 2019-24, a consolidated procedure has been formulated to enable NLDC/RLDCs to facilitate integration of a new or modified power system element. This consolidated First time Charging(FTC) procedure is applicable to all the generating station those are regional entities (as defined in IEGC) as well as all the Power system elements belongs to 400kV level and above irrespective of ownership, 220 kV lines emanating from ISGS /ISTS substations, Inter Regional/ Inter- state/Transnational transmission lines irrespective of voltage level/ownership, HVDC links/poles irrespective of ownership, FACTS devices (TCSC/FSC/STATCOM/SVC), Station Transformers (STs) connected at generating station those are regional entities.

Consolidated Procedure for First Time Charging (FTC) is available at following link:
https://erldc.in/documents-first-time-charging-documents/first-time-charging-documents/
All concerned are requested to follow this procedure for the smooth operation of the all India electricity grid.

Members may note and follow the procedure.

Deliberation in the meeting

OCC advised all the constituents to go through thedocument for consolidated procedure of first time charging shared by ERLDC and follow the procedure.

Item No. B.6: Operationalizing Bus splitting at Biharsariff--ERLDC

Bus split arrangement at Biharsariff was already commissioned, however it was not put in service as split bus arrangement was causing uneven loading in 400/220 kV ICTs at Biharsariff. Thus earlier it was decided that the same will be put in service after commssiong of 4th ICT at Biharsariff. After commissioning of 4th ICT simulation studies are carried out at ERLDC and same is also shared with Bihar SLDC. From the study it is observed that Bus-split at Biharshariff has no significant effect on loading of 400 KV lines but 400/220 KV ICT flows is getting significantlyskewed.

- N-1 contingency of 500 MVA ICT-IV leads to 265 MW loading on ICT –II (315 MVA rating) where in base case without bus-split, total ICT loading at Biharshariff was 560 MWand Bihar demand 4650MW.
- If we consider summer peak case having 6000 MW Bihar demand with 660 MW Biharshariff ICTs loading, N-1 contingency of 500 MVA ICT-IV leads to 301 MW loading on ICT –II (315 MVArating).

In 166th OCC, ERLDC informed that no network constraint had been observed during the simulation study.

OCC advised Bihar to check the demand considered for the simulation study and send their comments to ERLDC within a week, if any.

In 167thOCC ,OCC advised Bihar to send the updated demand details to be considered for the simulation study to ERLDC.

BSPTCL via their letter dated 12th March 2020, informed that in simulation Bihar load is considered as 5300 MW they have already met 5891 MW in last summer. Further they pointed considering the stability in power supply in view of upcoming election period in Bihar, bus split arrangement shall not be prudent.

Members may discuss.

Deliberation in the meeting

BSPTCL informed that in simulation study Bihar load has been considered as 5300 MW whereas they have already met a load of 6450 MW.BSPTCL informed that they are doing simulation study on this issue where it was found that 315MVA ICT loading is increasing up to 300 MW during the outage of one 500 MVA ICT.

OCC advised Bihar to send the updated demand details to be considered for simulation study to ERPC and ERLDC. OCC further advised Bihar to make short term plan and long term plan to resolve the issue and submit the details to ERPC and ERLDC.

Item No. B.7: Review of implementation of PSDF approved projects of Eastern Region.

NLDC (POSOCO) being the Nodal Agency for PSDF schemes, is carrying out PSDF Secretariat function under directions of MoP. Recently NLDC is directed by MoP to disburse the PSDF sanctioned funds as early as possible as its non-utilization is being viewed seriously by MoP on variousfora.

In view of the above, status review of the projects being executed under PSDF funding in Eastern Region, is required to be carried out on regular basis for expediting theprojects.

All the constituents are requested to furnish/update the status of their respective project in every

OCC and also requested to submit requisition for disbursement to NLDC at the earliest by 1st February 2020, so that amount may be released by 31st March 2020.

Member Secretary, ERPC informed that there is no progress in some projects which are already granted fund from PSDF. Such projects would be scraped and the fund would be diverted to other projects. Therefore, he advised all the state utilities to accelerate the work.

Members may update.

Deliberation in the meeting

OCC advised all the constituents to send the updated status to ERPC.

Item No. B.8: Commissioning of 2 X 240MVAR LR of Mednipur Line at New Ranchi SS as Bus Reactor: Powergrid

2 nos of 765 kV Line bays along-with 240 MVAR switchable line reactors at New Ranchi SS for 765kV Ranchi-Medinipur line (Line under TBCB) under ERSS XVIII will be ready for charging by March, 2020. The schedule commissioning of the said Reactor is 01/08/2020. The 765kV New ranchiMednipur D/C Line is anticipated to be ready for charging by June, 2020.

As per the voltage profile of 765kV Bus at New Ranchi SS for the month of February , 2020 (trend enclosed) the voltage of 765kV bus remains in the range of 780-790 KV. After taking the both 240 MVAR Line Reactors in service the voltage condition of 765KV Bus at New Ranchi will improve.

The said agenda was discussed in 42nd TCC/ERPC meeting and it it was opined that further discussion may be carried out in lower forum of ERPC before approval of the same. Ahead of schedule commissioning of the above assets may kindly be agreed considering the requirement of grid.

In 167th OCC,Powergrid informed that 240 MVAR switchable line reactors of 765kV Ranchi-Medinipur line (only the line under TBCB project) at New Ranchi SS is ready for commissioning. Powergrid requested to consider the charging of the line reactors as bus reactor at New Ranchi S/s in end of March 2020 instead of scheduled commissioning date of 1st Aug2020.

After detailed deliberation, OCC allowed for charging of 240 MVAR switchable line reactors of 765kV Ranchi-Medinipur line as bus reactors at New Ranchi.

OCC advised Powergrid to place the detailed explanation on contribution of the reactors in controlling the voltage profile in next OCC Meeting.

Powergrid may explain.

Deliberation in the meeting

Powergrid informed that both 240 MVAR switchable line reactors at New Ranchi SS are ready for charging but CEA inspection is yet to be done.

Item No. B.9: Testing and Calibration of Special Energy Meter: Powergrid

As per decision of 42nd TCC/ERPC and 41st CCM meeting, the testing and calibration of SEM to be carried out which are old and highly time drifted and accordingly the list of 314 SEM's have been also received fromERLDC.

Matter regarding testing & calibration and time drifting has been taken up with concerned vendors involved in testing and calibration. Vendors are ready for doing the testing however they are not ready to set right the time drifting as it is only possible through OEM i.e. L&T. The matter has also been taken up with OEM (M/s L&T), who have confirmed that the heavily time drifted meter shall required to be sent to factory for time correction.

In view of the above it is proposed that time drifting issue may be excluded from the scope of testing and calibration of SEMs. Bulk time drifting issue may be taken up separately.

In 167th OCC ,Powergrid informed that 140 Time Drifted SEMs were already replaced.

OCC opined that in order to take the appropriate decision, the cost involvement in calibration, Testing and time correction to be compared with cost of new meters.

OCC advised Powergrid to take the cost estimation for correction of time drift, testing & calibration and send the details to ERPC andERLDC.

Powergrid may explain.

Deliberation in the meeting

Powergrid informed that time correction of old meters is not possible.

Powergrid further added that testing and calibration of old SEMs would cost around Rs 9000 / unit whereas cost of new SEM would be around Rs 12000/ unit.

OCC opined that since time correction is not possible it would be better to buy new SEMs instead of going for calibration and testing. OCC advised ERLDC to place the requirement of SEMs in next OCC meeting.

Item No. B.10: Proposal for procurement of SEM on account of Bhutan--Powergrid

In 166th OCC, DCD (data downloading device) used to download the energy meter data from SEM energy meter of 400kV Siliguri and 220kV Binaguri feeder has gone faulty because of which Malbase substation is not able to send the meter data to the concerned authority since 06.01.2020.

Powergrid informed that no spare DCDs are available.

After detailed discussion, it was decided that some DCDs are to be procured and kept as spares.

OCC advised Powergrid to prepare an estimate and send the details to ERPC Secretariat.

Thereafter, Powergrid informed that at present there are multiple connectivity exists between Bhutan & India (Jigmeling, Malbase, Tala&Chukha) from Eastern Region. At Bhutan side also, SEM installed as per POWERGRID TS & installed on behalf of PTC. During normal maintenance activity it is observed that due to different snag in the SEM or associated data collecting devices, the SEM data could not be received at ERLDC/NLDC.

The matter already discussed in 166th OCC Meeting held on 20 Feb 2020. In 166th OCC, it was recommended for procurement of few DCD's & SEM on account of different S/S of Bhutan, where SEMs are already installed on behalf ofPTC.

The technology up-gradation had already taken place in SEM, therefore, it is better to migrate from old SEM where DCD is still required to new type SEM where data can be fetched by Laptop.

Based upon requirement of the SEM the said items will be handed over to Bhutan by POWERGRID on behalf of PTC. However, Installation & maintenance of all SEM & associated devices installed at Bhutan will be sole responsibility of concerned transmission licensee of Bhutan only. At present GENUS make is SEM is already available with Eastern Region and the same make is considered for Bhutan also and approximate cost of procurement of 20 nos SEMs shall be Rs. 3,19,166/- including GST.

Above SEM will be kept in stock at nearby POWERGRID S/S (Alipurduar/Binaguri) &based upon requirement generated at Bhutan it will be handed over on receipt of request through PTC. Necessary installation & maintenance to be taken care by Bhutan only. Cost to be recovered from PTC on one timereimbursementbasis.

In 167th OCC ,Powergrid informed that based on the requirement of the SEMs, the said items will be handed over to Bhutan by Powergrid on behalf of PTC. However, Installation & maintenance of all SEMs & associated devices installed at Bhutan will be sole responsibility of concerned utility of Bhutan only.

OCC advised Powergrid to coordinate with Bhutan for completion of the work.

OCC decided that the entire cost for completion of above work would be recovered from PTC.

Powergrid may explain.

Deliberation in the meeting

Powegrid informed that order of 300 SEMs has been placed.

Powergrid added that they would handover 20 SEMs to Bhutan as soon as they would receive first installment of the order.

Item No. B.11: Auxiliary Power consumption by Powergrid-- GRIDCO

GRIDCO informed that in 163rd OCC Meeting, OCC advised Powergrid to file a petition before OERC for exemption of Security Deposit, Maximum charges, Meter rent etc.

GRIDCO added that Powergrid not yet approached OERC.

In 166th OCC, Powergrid informed that they are in process of filing the petition before OERC. The petition would be filed by end of February 2020.

In 167th OCC Powergrid informed that petition would be filed in March 2020.

ERPC has received letter from GRIDCO which is enclosed at **Annexure B11**.

Powergrid may explain.

Deliberation in the meeting

Powergrid informed that relevant documents are ready for filling the petition before OERC but due to ongoing lockdown they are not able to do it. They would file the petition after 3rd

July 2020 as and when OERC starts accepting the petition.

GRIDCO requested Powergrid to become a customer of Discoms in the meanwhile and liquidate the outstanding charges. GRIDCO representative ensured that the directions of OERC shall be duly complied with and GRIDCO shall return the recovered charges, if necessary based on the directions of OERC.

Powergrid informed that they are ready to pay the energy charges as per their energy consumption.

OCC advised Powergrid and GRIDCO to discuss the issues bilaterally and make an interim arrangement until the OERC decision.

Item No. B.12: Shutdown of 400kV Nabinagar-Sasaram D/C line and 400kV Sasaram-Daltonganj D/C line -- Powergrid

The shut down of 400KV Nabinagar - Pusauli Line is allowed from 20th June 2020 for the rectification of bent tower.

BRBCL is requested to take necessary action to carry out the unit overhauling from 20th June 2020 and requested to intimate all the beneficiaries of Nabinagar STPS.

Powergrid is requested to submit the revised shutdown plan to ERLDC.

Members may note.

Deliberation in the meeting

BRBCL explaned that they are not in a position to avail the unit overhauling from 20.6.2020 due to non availability of BHEL engineers because of the prevailing circumstances of COVID-19.

Powergrid informed that they urgently need the shutdown of 400kV Nabinagar-Sasaram line to rectify the bent tower, which is already in a precarious condition, otherwise the tower might collapse at any time during this monsoon.

Powergrid further added that they have already mobilised the gang to begin the rectification work. Moreover, during the monsoon season it is very difficult to maintain the ERS which has been erected since March 2020 *to evacuate Nabinagar generation with an interim arrangement using 400 kV Sasaram-Daltanganj line.*

Powergrid intimated that 500 MW power can be evacuated through the interim arrangement during the shutdown of 400kV Sasaram-Nabinagar lines and further committed that they would put all the efforts to complete the tower rectification work by 30.06.2020.

OCC observed that power requisition by the beneficiaries was within 500 MW during first two weeks of June2020 *which can be evacuated through the interim arrangement.*

OCC felt that in case of tower collapse there would not be any evacuation path for Nabinagar generation. In that eventuality, BRBCL would be entitled to recover full fixed cost from its beneficiaries by declaring full DC under force majeure condition. This may result in huge financial implication on the beneficiaries of BRBCL.

After detailed deliberation, OCC decided to allow the shutdown from 20.06.2020. OCC advised BRBCL to approach it's beneficiaries and get the consent so that BRBCL generation would be within 500 MW during the shutdown period. OCC advised Powergrid to complete the tower rectification work by 30.06.2020.

Item No. B.13: Data communication from Teesta III to ERLDC---TUL agenda

Teesta-III data is not getting communicated to ERLDC control room since 15-05-20 due to problem in 400KV Kishanganj-Teesta-III PLCC panel at Kishanganj substation. Every time the following alarms were noticed at 400KV Kishanganj -Teesta-III PLCC panel at Kishanganj end.

1. RF hybrid Tx Alarm
2. SURV card Tx Alarm

Once the panel has been re-set at 400KV Kishanganj -Teesta-III PLCC panel at Kishanganj end, Teesta-III data gets communicated for a while and then again the same problem repeats.

Recently it was observed that the Teesta-III speech to ERLDC control room is also getting disturbed and repeated false rings are going to ERLDC control room. Due to this problem, speech port was disabled at kishanganj end.

An alternative route for the Teesta-III data communicating to ERLDC control room, via Dikchu HEP PLCC-Rangpo S/S PLCC to ERLDC control room For establishing this route, the following arrangements has to be done:

a. Wiring modification at Teesta-III-Dikchu PLCC
b. Wiring modification at Dikchu HEP PLCC
c. Wiring modification at Rangpo S/S PLCC
d. Laying of OPGW cable from Rangpo S/S PLCC to control room (if required)
e. Modem installation at Teesta-III(PHY)
f. Modem installation at Rangpo S/S control room
g. Configuration to be done by ABB in all locations
h. Frequency band will be arranged by TUL

Members may discuss.

Deliberation in the meeting

Powergrid informed that defective card has to be replaced to rectify the PLCC system .Powergrid further informed that PLCC system would be rectified by end of June 2020.

OCC referred the proposal of alternate route of PLCC communication to TeST meeting for detailed discussion.

Item No. B.14: Implementation of differential protection at 400kV Teesta III- kishanganj lines—TUL

TUL vide mail informed that OPGW fiber linking is being carried out for Teesta III- Kishanganj line with termination at TEESTA-III &Kishanganj s/s ends, by POWERGRID. It is proposed that POWERGRID may be entrusted the responsibility ,as part of ongoing central sector OPGW project, to extend end-to-end OPGW dark Fiber links for Teesta III- Dikchu - Rangpo Line.

In view of the above ,it is proposed that in addition to 400 kV Teesta III – Kishanganj S/C line , differential protection be provided 400 kV Teesta III – Dikchu – Rangpo section also, since these are very short lines(less than 30 Km).

Members may discuss.

Deliberation in the meeting

OCC opined that since it is communication related issue, OCC refered this agenda to next Test Meeting.

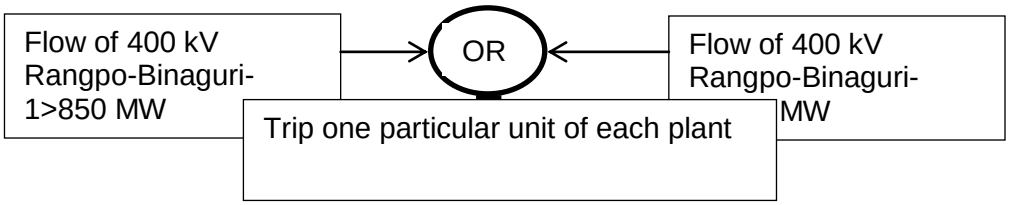
Item No. B.15: SPS for taking care of N-2 Contingency of 400 kV outgoing lines form Sikkim Complex--ERLDC

As per the decision taken in 161 OCC meeting no SPS is required when all the four 400 kV evacuating lines are in service. However, based on the study following proposal are made for the consideration of the forum:

1. When all 4 lines are in service only N-1 contingency of 400 kV Rangpo-Dikchu is critical due to cable portion of Teesta III- Kishanganj section. That part is taken care of by Teesta III local SPS.
2. When all 4 lines in service, following N-2 contingencies are critical
   a. 400 kV Rangpo-Kishanganj& 400 kV Teesta-III-Kishanganj
   b. 400 kV Rangpo-Kishanganj& 400 kV Rangpo-Binaguri one ckt
   c. 400 kVTeesta-III-Kishanganj& 400 kV Rangpo-Binaguri one ckt

From the past experience and due to sharing some common corridor N-2 contingency of 400 kV Rangpo-Kishanganj& 400 kV Teesta-III-Kishanganj is a credible contingency. Following SPS logic may be implemented for ensuring reliability during the above mentioned three critical N-2 contingency:

SPS:



Members may discuss.

Deliberation in the meeting

ERLDC informed that the SPS is required till completion of reconductoring work of 400kV Rangpo-Binaguri D/C lines for safe evacuation of hydro generation in Sikkim during any contingency.

Powergrid informed that they would communicate the proposal to their corporate office for their views.

Item No. B.16: Sharing of Day Ahead Load Forecast --ERLDC

IEGC-2010 [5.3 (c)], mandates

Quote
Each SLDC shall develop methodologies/mechanisms for daily/weekly/monthly/yearly demand estimation (MW, MVAr and MWh) for operational purposes. Based on this demand estimate and the estimated availability from different sources, SLDC shall plan demand management measures like load shedding, power cuts, etc. and shall ensure that the same is implemented by the SEB/distribution licensees.
Unquote

Further as per approved, Detailed Procedure For Ancillary Services Operations (attached) “each SLDC shall prepare the block-wise daily forecast of demand (Format AS4) on day-ahead basis by 1500 hrs of current day for next day taking into account various factors such as historical data, weather forecast data, outage plan of units/transmission elements, etc.”

In fulfilment of above Jharkhand, Odisha and West Bengal SLDCs are already submitting their day ahead forecast in AS4 format

Bihar, DVC and Sikkim are requested to share the same in AS4 format.

Deliberation in the meeting

OCC advised all the concerned utilities to share day ahead load forecast data in AS4 format to ERLDC.

Item No. B.17: Non Submission of Node wise data for POC calculation--ERLDC

As per prevailing POC regulation, every quarter each DIC needs to submit node wise injection/withdrawal data for all 132 kV and above nodes for calculation of POC charges.

However, from last may quarter only GRIDCO is submitting the requisite data all other DICs are requested to submit the same whenever asked by Implementing Agency.

Members may note and submit the relevant information**.**

Deliberation in the meeting

ERLDC told that DICs are not submitting requisite data on quarterly basis for calculation of POC Charges. ERLDC added that there is a plan to compute the POC charges on monthly basis. In that case the node wise data is to be submitted on monthly basis instead of quarterly basis.

OCC advised all the DICs to submit the node wise injection/withdrawal data for all 132 kV and above nodes for accurate calculation of POC charges.

Additional Agenda –

Item No. B.18 : Preparedness for upcoming Solar Eclipse on 21st June 2020

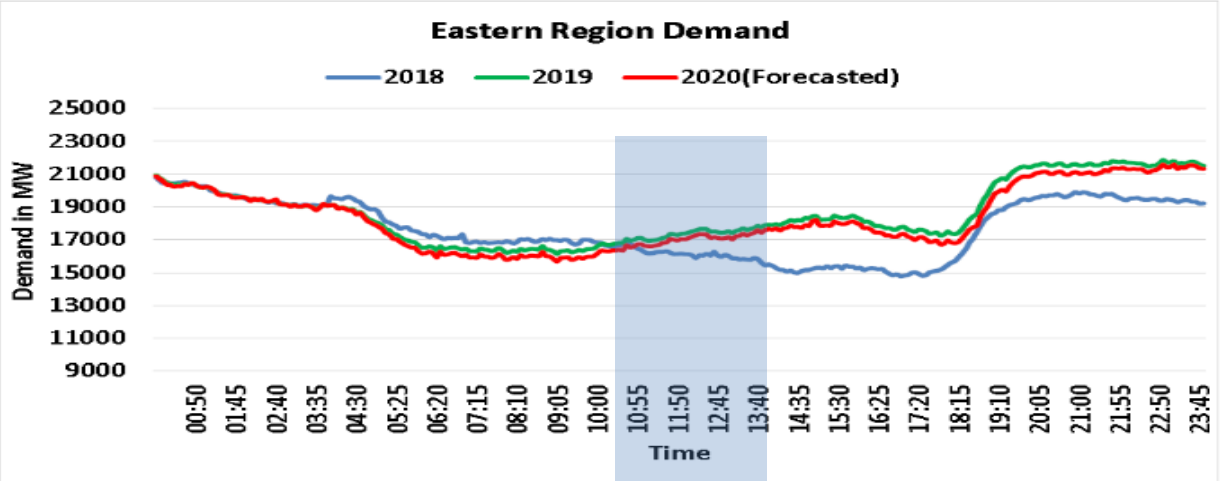
India will be experiencing annular solar eclipse on 21st June 2020. Annularity will be visible in the states of Rajasthan, Punjab, Haryana, Himachal Pradesh, Uttarakhand with maximum obscuration of around 99% and other parts of country will experience partial solar eclipse. The annular solar eclipse will begin at 09:56 AM IST at Dwarka, Gujarat and will end at 14:29 PM IST at Dibrugarh, Assam.
Timing of Solar eclipse in the state capital is as follows

Sl No	Place	Begins:	Maximum	Ends	Duration:
1	Patna	10:37	12:25	14:09	3 hours, 32 minutes
2	Ranchi	10:36	12:25	14:09	3 hours, 33 minutes
3	Bhubaneshwar	10:38	12:26	14:09	3 hours, 32 minutes
4	Kolkata	10:46	12:35	14:17	3 hours, 31 minutes
5	Gangtok	10:48	12:36	14:17	3 hours, 29 minutes

POSOCO has published a detailed report “Indian Power System likely impacts and preparedness - A report” which is available on POSOCO website and can be accessed from following link:-
https://posoco.in/wp-content/uploads/2020/06/Solar-Eclipse-dated-210620_likely-impacts-and-preparedness-A-report.pdf

From previous eclipse day demand pattern, it is observed that electricity demand during the eclipse period will be less compared to normal day due to suspension of some of the activities during

this period. After end of the eclipse there may be sudden rise in demand due to resumption of human activities. 21st June 2020 being a Sunday demand would be 3-4 % lower on all India basis compared to a working day. Demand for eclipse day is forecasted based on previous eclipse experience and conditions prevailing in the grid during June.



Solar eclipse 21st June 2020 at a glance:

Parameters	Values
Type of eclipse/date	Annular /21st June 2020
Solar eclipse start time (For India)	09:56 AM (Dwarka)
Maximum eclipse time	11:50 AM
Solar eclipse end time (For India)	14:29 PM (Dibrugarh, Assam)
Visibility of annularity	Northern part of India
Maximum % of Obscuration	98.66% (Chamoli, Uttarakhand)
All India estimated solar generation reduction at the time of maximum solar eclipse w.r.t. normal day (assuming clear sky conditions)	11943 MW at 11:50 AM
Northern Region estimated solar generation reduction at the time of maximum solar eclipse w.r.t. normal day (assuming clear sky conditions)	4514 MW at 11:47 AM
Western Region estimated solar generation reduction at the time of maximum solar eclipse w.r.t. normal day (assuming clear sky conditions)	2720 MW at 11:50 AM
Southern Region estimated solar generation reduction at the time of maximum solar eclipse w.r.t. normal day (assuming clear sky conditions)	4721 MW at 11:50 AM
All India average solar generation ramp down rate	102 MW/Minute
All India average solar generation ramp up rate	104 MW/Minute

In view of above following are advised

- SLDCs shall closely monitor the demand and drawal pattern and take adequate measures to back down intrastate generation/surrender or make adequate requisition from ISGS to ensure that actual exchange is close to schedule and deviation is minimized.
- All power stations shall keep their units on FGMO / RGMO with droop setting between 3-5%.
- Hydro power plants which are not overflowing are required to keep margin in running units so it can take care of load variation.
- Intrastate and Interstate Generating units on bar shall absorb reactive power within its capability curve.

Deliberation in the meeting

Members noted.

PART C: ITEMS FOR UPDATE

Item No. C.1 : ER Grid performance during March to May, 2020

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the monthMarch to May – 2020 were as follows:

Month	Average Consumption (mu)	Maximum Consumption(mu)/ Date	Maximum Demand(MW) Date/Time	Minimum Demand(MW) Date/Time	Schedule Export (Mu)	Actual Export (Mu)
March, 2020	357	401.6; 18/03/20	19399 MW on 18-03-2020; at 19:09 hrs	11232 MW on 29-03-2020; at 14:33 hrs	3108	3051
April, 2020	331	388.6; 14/04/20	17424 MW on 14-04-2020; at 23:20 hrs	9373 MW on 21-04-2020; at 16:10 hrs	2482	2428
May, 2020	363	431.6; 18/05/20	20596 MW on 18-05-2020;at 23:34hrs	8947 MW on 01-05-2020; at 16:26hrs	3154	3144

ERLDC will present Highlight/ Performance of Eastern Regional Grid during OCC meeting.

ERLDC may present the performance of Eastern Regional Grid.

Deliberation in the meeting

ERLDC presented the ER Grid performance during March to May 2020 through a presentation which is enclosed at ***Annexure C1.***
Members noted.

Item No. C.2: Governor response for the month of May 2020

Frequency response characteristics (FRC) has been analyzed pan India for two events of sudden frequency change occurred during the month of May 2020. The details of these events and the overall response of Eastern region have been summarized in the Table given below.

Event	Frequency Change	ER FRC
Event: On 28th May 2020, at 17:26:50.760 hrs, 5346 MW generation loss at Sasan, Vindhyachal and Rihand STPP in WR.	**50.021 Hz to 49.549 Hz**. Frequency reduced to **49.649 Hz at Nadir point**.	**20%**

Despite of repeated reminders to generating stations, **generation output data are yet to be received from NTPC Talcher STPP, NTPC Barh, BRBCL, NPGC, NTPC Darlipalli, JITPL, Adhunik. FRC data are yet to be received from SLDC Jharkhand, SLDC DVC and SLDC GRIDCO**. Based on data received from generating stations and SCADA data archived at ERLDC, performance of regional generating stations and state control areas has been analyzed for both the events and summarized in table below.

Category	Name of generating stations and state control area
Satisfactory response	MPL, Teesta III, Teesta V, Dikchu
Response has been observed but tuning required	Kahalgaon Stage 1 and 2, GMR; WB SLDC FRC
Non-Satisfactory response	Farakka Stage 2 and 3,
Unit not available	Darlipalli

Among state generating units, **satisfactory response** has been observed for **Budge Budge unit 1 and 2**. Tuning of governors are required for Budge Budge unit 3, Koderma unit 1 and 2 and RTPS unit 1. Details can be found in table below.

Name of Plant	Remarks
Kahalgaon Stage 1	Response did not last for more than 30 seconds. For unit 1, generation reduced after initial response. Initial response from all units were satisfactory.
Kahalgaon Stage 2	Initial response was oscillatory. Response of unit 6 did not last for more than 1 min. Final response from all units were satisfactory
GMR	Only unit 1 was in service. Initial response did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Budge Budge	Response from unit 1 and 2 were satisfactory. Initial response from unit 3 did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Koderma	Final response was satisfactory. Governor may be tuned for both units to reduce time (around 90 seconds) taken to reach final response. Initial response did not last for more than 10 seconds.
RTPS unit 1	Response was not satisfactory and initial response did not last more than 10 seconds

All the generating units and SLDCs are advised to share the reason for non-satisfactory response (whichever applicable) along with remedial action taken. All the regional genearing stations and SLDCs are requested to nominate one nodal person for sharing FRC related informations.

Deliberation in the meeting

*ERLDC presented the governor response for month of May 2020 through a presentation which is enclosed at **Annexure C2**. ERLDC requested all the generating units and SLDCs to share the reason for non-satisfactory response (whichever applicable) along with remedial action taken. All the regional generating stations and SLDCs are requested to nominate one nodal person for sharing FRC related informations.*

OCC decided to conduct a separate meeting with all the generating units and SLDCs for detailed discussion.

Item No. C.3: Status of UFRs healthiness installed in Eastern Region

In 161st OCC, Bihar was advised to review the UFR feeders as per the revised system configuration and suggested to shift the UFRs to unimportant radial loads.

In 42nd TCC, BSPTCL informed that they had already replaced the defective UFR. BSPTCL added that they are in process of reviewing the UFR list.

In 167 th OCC Meeting BSPTCL informed that they are in process of reviewing the UFR list.

Members may submit UFRs healthiness certificate to ERPC .

Bihar may update.

Deliberation in the meeting

BSPTCL informed that they are in process of reviewing the UFR feeders.

OCC advised concerned utilities to submit UFRs healthiness certificate to ERPC

Item No. C.4: Status of Islanding Schemes healthiness installed in Eastern Region

At present, the following islanding schemes are in service:

1. CESC as a whole Islanding Scheme,CESC
2. BkTPS Islanding Scheme,WBPDCL
3. Tata Power Islanding Scheme,Haldia
4. Chandrapura TPS Islanding Scheme,DVC
5. Farakka Islanding Scheme,NTPC
6. Bandel Islanding Scheme,WBPDCL

In 108th OCC meeting, respective constituents agreed to certify that the islanding schemes under their control area are in service on monthly basis.

In 163rdOCC,DVC informed that since all units of CTPS-A would be retired shortly, instead of Chandrapura TPS islanding scheme, they are planning to implement an islanding scheme with units 5 & 6 of Mejia TPS (old).

OCC advised DVC to submit the detailed draft plan of the islanding scheme to ERPC and ERLDC.

In 167thOCC ,DVC informed that units 5 & 6 of Mejia TPS were old and not in service. They are planning to implement the islanding scheme with unit 7 and unit 8 of Mejia TPS.

OCC advised DVC to share the plan of their new islanding scheme to ERPC. OCC also advised CESC to send the updated details of their islanding scheme to ERPC.

Members may submit healthiness certificate to ERPC.

DVC may update.

Deliberation in the meeting

DVC informed that during the preliminary study they identified that the implementation of islanding scheme with Mejia units 7 and 8 was not possible therefore now they had considered Chandrapura unit 7&8 for the implementation of islanding scheme.

ERLDC advised DVC to submit atleast a preliminary draft plan to ERPC and ERLDC.

A. Status of Islanding Scheme of IBTPS

Islanding schem of IBTPS was discussed and finalized in earlier OCC and PCC meeting, OPGC ensured that the islanding scheme will be in place within 6 months post finalization of scheme.

In 167th OCC ,OCC advised OPGC to share the status of islanding scheme to ERPC.

OPGC may update.

Deliberation in the meeting

OPGC was not available in the meeting.

B. Status of Islanding Scheme of KBUNL

As the islanding Scheme discussion is not progressing , it is desired that one Meeting at ERPC or KBUNL may be called where the scheme finalization may becompleted.

In 167th OCC ,KBUNL informed that they are ready to implement the islanding scheme but they need confirmation from Bihar on availability of radial load at Gopalganj.

OCC advised BSPTCL to go through the islanding scheme finalised in earlier OCC Meetings and advised to take necessary action to provide the radial load for the islanding scheme.

Members may discuss.

Deliberation in the meeting

After detailed deliberation, OCC decided to conduct a separate meeting with KBUNL and BSPTCL to discuss the islanding scheme of KBUNL within this week.

Item No. C.5: Transfer capability determination by the states

Latest status of State ATC/TTC declared by states for the month of July-2020

SlNo	State/Utility	TTC (MW)		RM(MW)		ATC Import(MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	5687	--	100	--	5587	--	Jul-20
2	JUSNL	1146	--	34	--	1112	--	Jul-20
3	DVC	1628	2742	66	52	1562	2690	Jun-20
4	OPTCL	2130	1041	84	64	2046	977	Jul-20
5	WBSETCL	4625	--	400	--	4153	--	Jun-20
6	Sikkim	295	--	2.5	--	292.5	--	Dec-19

Members may update**.**

Deliberation in the meeting

ERLDC informed that Sikkim, West Bengal and DVC are not sharing the details of ATC , TTC for few months.

DVC told that due to lockdown the studies were not conducted for upcoming months and agreed to share the details at the earliest.

OCC advised all the concerned utilities to share the details to ERPC and ERLDC at the earliest.

Item No. C.6: Mock Black start exercises in Eastern Region – ERLDC

Mock black start date for financial year 2019-20 is as follows:

Sl no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2019	Done on 19th July 2019	Last Week of January 2020	28 March 2020
2	Maithon	1st week of June 2019	Taken up only after replacing the governing systems of the units	1st Week of February 2020	After June 2020
3	Rengali	2nd week of June 2019	Done on 27th June 2019	Last week of November 2020	Done on 17th January 2020
4	U. Indarvati	3rd week ofJune 2019	Done on 7th November 2019	2nd week of February 2020	March 2020
5	Subarnarekha	1st week of October 2019	Done 20th August 2019	1st week of January 2020	After Aug 2020
6	Balimela	3rd week of October 2019	Done on 17th July 2019	1st week of March 2020	*Done on 12th Feb 2020*
7	Teesta-V	2nd week of May 2019	Done on 28th Nov 2019	Last week of February 2020	
8	Chuzachen	Last Week of Dec 2019	Done on 5th December 2019	Last week of March 2020	
9	Burla	Last Week of June 2019	Done on 20th July 2019	Last week of February 2020	Done on 11th Feb 2020
10	TLDP-III	1st Week of June 2019	November-19	2nd Week of January 2020	
11	TLDP-IV	Last Week of June 2019	December-19	1st Week of February 2020	
12	Teesta-III	Last Week of Oct 2019		First Week of March 2020	
13	Jorthang	First Week of May 2019		First Week of Feb 2020	
14	Tasheding	2nd Week of May 2019		2nd Week of Feb 2020	
15	Dikchu	Sep 2019		3rd Week of Feb 2020	Attempted on 19th Feb 2020 but not successful

Members may update.

Deliberation in the meeting

Odisha informed that they are planning to conduct the black start exercise for Burla and Rengali HEP

during June 2020.

Item No. C.7: Summary of Status Update on Previous agenda items in OCC

OCC	Agenda	Decision	Status Update
155	**C.22: Collection of modeling data from**	OCC advised all the constituents to submit the details of	*ERLDC informed that report had been received from Odisha. Bihar told that report would be sent by next week.* *OCC advised west Bengal to submit report to ERLDC*.
		renewable power plants of 5 MW and above. 157th OCC advised all the SLDCs to submit the details to ERPC and ERLDC. Format along with an explanation for collection of Wind and Solar Data has been shared by ERLDC to all SLDC. *OCC advised Bihar, West Bengal and Orissa to submit the relevant details to ERLDC.*	
156	**Low frequency Oscillation at MTDC BNC-ALP-Agra**	OCC Advised ERTS-2 to submit the analysis report to ERLDC/ERPC 159th OCC Powergrid informed that the issue was referred to ABB, Sweden. *The report is yet to be received from ABB*	*Powergrid explained that they had not been received any report from ABB.* *OCC advised powergrid to enquire details from ABB and send detailed report to ERPC and ERLDC*
156	**Item No. B.12: Status of Auto-Reclosure on Lines from Tala and Chukha Hydro Power Plant (Bhutan)**	DGPC informed that an Expert Committee was constituted to enable the autorecloser for transmission lines connected to Tala and Chuka hydro stations. The Committee had recommended for implementation of the autorecloser at Tala andChuka.	

		DGPC added that they are planning to implement the autorecloser scheme for the transmission lines connected at Chuka by May 2019. Based on the experience gained, they would implement the autorecloser scheme for the transmission lines connected at Tala. DGPC informed that they are implementing autorecloser at Tala also. The A/R isimplemented at Binaguri end and there have been various cases where successful A/R has occurred at Binaguri but due to no A/R attempt Tala has a blackout in June 2019. In addition, in month of Aug also many times 400 kV lines successfully reclosedfrom Binaguri end. The experience on 220 kVChukha-Birpara in the form of successful A/R has been observed on 25th June 2019. DGPC has informed that after the deliberation in their group, they would be implementing the A/R at Tala by the end on August 2019. *DGPC informed that by Feb2020 end, they will implement the A/R atTala.*	

Bhutan vide mail informed the following:

1. 220kV Chhukha – Birpara Feeder 1 & 2 have been enable on June 21, 2019 at CHP end
   (As of now, we have experienced a successful closing of AR on both the lines during the line fault)
2. 400kV Tala-New Siliguri Feeder 1, 2 & 4 have been enable on May 29, 2020 at THP end.
3. 400kV Malbase-New Siliguri Feeder was enable since 2017 (AR has been successfully working)
4. 400kV Tala-Malbase& 220kV Malbase-Birpara feeder is not enable due to the issue with PLCC at Malbase end.

Members may update.

Deliberation in the meeting

OCC advised all the concerned utilities to submit the relevant details to ERPC and ERLDC at the earliest.

Item No.C.8: Monitoring of Next Six-Month New Element Integration in OCC and Its Update on Monthly Basis--ERLDC

It has been observed that many elements are getting interconnected into the system and beforehand details are not available with the system operator resulting in difficulty in carrying our operational planning activity. In view of this, as a regular agenda all ISTS and ISGS/IPP to update the OCC regarding any new elements at 220 kV and above which will be integrated in next six month with the grid. For State Grid, SLDC will be submitting the details on behalf of its intrastate Generation and transmission system. The format is given below:

Transmission Elements	Agency/ Owner	Scheme (ERSS/ TBCB/ Standing Committee/State	Schedule Completion	Projected Month for Completion	Issue Being Faced

In previous several OCC, Transmission licensees and SLDCs are requested to submit RLDC/RPC following details on monthly basis

- List of transmission element /generators of State and ISTS licensees synchronised in the lastmonth.
- List of transmission element /generators expected to be synchronised during next month or in nearfuture

Some SLDCs are submitting the list of intrastate and interstate line on regular basis, however transmission element /generators expected to be synchronised during next month or in near future is not submitted by any SLSC/Transmission licensee to RLDC/RPC.

In 162nd OCC, OCC advised all the constituents, SLDCs and ISTS licensees to submit the detailsthe list of transmission elements / generators already synchronized / charged in the previous month as well as those expected to be commissioned in the near future (as per the format specified) to ERLDC

In 163rd OCC, OCC advised all the constituents, SLDCs and ISTS licensees to submit the details to erldcprotection@posoco.inas per the format.

List of upcoming Transmission Element is received from Bihar and Jharkhand.

In 166 th OCC Meeting ERLDC informed that relevant details had been received from Powergrid ER-II.

OCC advised other concerned transmission licensees to submit the details to ERLDC at the earliest.

List of upcoming TranmssionElement isreceived from Bihar and Jharkhand.

DVC, OPTCL , WBSETCL and Sikkim to send the Details immediately.

DVC, OPTCL , WBSETCL and Sikkim may update.

Deliberation in the meeting

OCC advised concerned transmission licensees to submit the details to ERLDC at the earliest.

Item No. C.9: Reconductoring work of 400 kV Rangpo-Binaguri D/Clines

In 166th OCC, Powergrid updated that reconductoring of 19 km of both the circuits out of 110 km line had been completed.

In 167th OCC ,Powergrid updated that reconductoring of 38 km of both the circuits out of 110 km line had been completed.

Powergrid may update

Deliberation in the meeting

Powergrid updated that reconductoring work of 38 km of both the circuits out of 110 km line had been completed and the line is in service.

Item No. C.10: Verification of transmission line parameter during shutdown--ERLDC

During the charging of any new transmission line, its owner provides corresponding line length, using that and standard per KM parameters as available CEA transmission planning criteria manual, R X & B parameter of the lines are determined and same is used in simulation studies. However such modeling may not be 100 % accurate representation of the line. Further for old lines the paramet may differ slightly due to increasing sag over time. Thus to take of same it is

proposed that the transmission utility may carry out offline measurement of the line parameter during a planned shutdown of line. The measured value may be shared with ERLDC/ERPC.

In 167th OCC ,OCC advised concerned utilities to communicate details to ERLDC.

Members may submit the details.

Deliberation in the meeting

Powergrid informed that at present they do not have the testing kits for measurement.

After detailed deliberation, OCC requested ERLDC to place the details in particular where they are facing the problem.

Item No. C.11: Sharing of test report after major annual overhauling of Powerplants--ERLDC

During major annual overhauling of Powerplants, many tests are conducted at the site level to accesses the healthiness of the unit and determine its characteristics. Some of these test reports are helpful in verifying and tunnnig of the offline simulation model of the generating unit. Thus it is proposed to submit some of the test reports like OCC, SCC, excitation step test, V-curve, etc. after such major overhauling toERPC/ERLDC.

In 167th OCC ,OCC advised concerned utilities to send the details to ERLDC.

Members may submit the details**.**

Deliberation in the meeting

OCC advised to discuss this agenda in a separate meeting on RGMO.

Item No.C.12: Sharing of information/data after major retrofitting work of Powerplants--ERLDC

Some of the powerplants go through major retrofitting work, like change in excitation system, governor module etc. however, information of the same is not shared on regular basis. Thus it is proposed to submit details of such retrofication work along with relevant data to model the same in simulation software (as per already circulated format) whenever such retrofitting work is taken up.

In 167thOCC ,OCC advised concerned utilities to send the details to ERLDC.

Members may submit the details.

Deliberation in the meeting

OCC advised to discuss this agenda in a separate meeting on RGMO.

Item No.C.13: Submission of Thermal Loading of Transmission line and associated terminal equipment by ISTSlicensee

Thermal Loading of Transmission line and associated terminal equipment is one of the most vital data which is utilized for Operation Purpose, calculation of ATC/TTC and various other studies. This information has to be submitted by the transmission utilities. However even after regular follow-up in past several OCC meetings, significant delay has been observed in submission. Status of submission of data upto first week of December 2019 is as follows:

Name of Utility	**Whether End Equipment Rating Submitted or Not?**
PGCIL ERTS-1 and ERTS-2	*Received from Powergrid ER-II.*
DMTCL	NA
POWERLINKS	NA
Sterlite (ENICL, OGPTL, PKTCL)	NA
TVPTL	NA
Alipurduar Transmission Limited	NA
Powerlink	NA
CBPTCL	NA
OPTCL	Submitted (Revised list given to OPTCL for submission)
WBSETCL	Submitted
BSPTCL	Submitted
DVC	Submitted
JUSNL	NA

In 167thOCC ,OCC advised concerned utilities to send the details to ERLDC.

Members may update**.**

Deliberation in the meeting

OCC advised the concerned utilities to send details to ERPC and ERLDC.

Item No. C.14: Difficulty in verifying ISTS outage / availability and submission of the verified file to ERPC for the previous month by 20th of the next month --ERLDC

As per para 6 of Appendix-II (Procedure for Calculation of Transmission System Availability Factor for a Month) of CERC terms and conditions of tariff regulations 2019-2024 , ERLDC is required to submit the verified availability files of all ISTS licensees of Eastern Region to ERPC by 20th of every month. As a part of the verification process, ERLDC seeks clarifications / evidences from POWERGRID / other ISTS licensees (proofs of natural calamity, DR/EL etc) along with relevant observations within a week after receipt of the outage file from licensees; with the request to provide the details within 3 days. While on a few occasions POWERGRID has furnished the requisite clarifications / evidences in time, in general the details are received after more than 3 days. This causes difficulty in submission of the verified availability file to ERPC by 20th of each month.

Members please note.

Deliberation in the meeting

OCC advised concerned utilities to send the relevant details to ERLDC within stipulated time.

Item No. C.15: Furnishing availability of hot spare units by PGCIL on monthly basis--ERLDC

Vide letter no: ERLDC/SO/2019/142/3734 dtd. 30/12/2019 , POWERGRID was requested to provide the availability and transactions of hot spare units (transformers and reactors) in Eastern region owned by them along with the monthly list of transmission outages sent to ERLDC for availability verification. However, the details pertaining to hot spare units are not sent on monthly basis.

Members please note.

Deliberation in the meeting

OCC advised concerned utilities to send details to ERPC and ERLDC.

Item No. C.16: Furnishing of transmission system Reliability Indices by PGCIL on monthly basis--ERLDC

As per CERC *Standards of Performance* Regulations, 2012, all ISTS licensees of Eastern Region are supposed to send the Reliability Indices in respect of their own transmission elements on monthly basis along with the outage file. However, it is noted that POWERGRID and TPTL is not sending the mentioned details for last few months.

Powergrid and TPTL may please note.

Deliberation in the meeting

OCC advised concerned utilities to send details to ERPC and ERLDC .

Item No. C17: Phase Sequence issue at Lower voltage level observed in Bihar System during charging of 400 kV Barh-Motihari 2. --ERLDC

On 17th March 2020, ERLDC in coordination with Bihar SLDC, NTPC barh and DMTCL were attempting for taking 400 kV Barh-Motihari 2 circuit (ERS arrangement) in service and feeding radial loads of Motihari (200 MW Max).

It was agreed between utilities that 400 kV Motihari Bus will be back charged through 132 kV Motihari (DMTCL)-Motihari (BSPTCL) ckts which were getting in-feed from 220 kV Darbhanga (DMTCL)-Motipur (BSPTCL). After this the 400 kV Barh-Motihari circuit 2 will be charged from Motihari end till NTPC Barh so that Barh end could check the phase sequence at their end before synchronizing the line. The extension of this back charging to charge 400 kV Barh-Motihari circuit 2 from Motihari end did not succeed due to issue of dynamic overvoltage as voltage was quite high and line tripped on over voltage stage 1 protection in 5 seconds. However, this charging ensured healthiness of the transmission line but phase sequence could not be checked at Barh end.

Next attempt was taken to charge the 400 kV Barh-Motiharickt 2 from Barh end till line CVT at Motihari DMTCL end and Back charging of 400 kV Motihari from 132 kV system and check phase sequence between Line CVT and Bus CVT at 400 kV level. During this, it was found that phase sequence of R and B phase at Motihari Bus (132 kV system of BSPTCL) is not matching the Line CVT (ISTS system) which came as a surprise to ERLDC and Barh NTPC Operator and immediately the activity was stopped.

After, Deliberation with SLDC and BSPTCL it was known that there is a phase sequence issue at lower kV in the 132 kV Motihari and 220/132 kV Motipur section w.r.t. ISTS system. The R and B phase of ISTS system do not match with R and B phase of lower kV system in this pocket of Bihar and thus it can be synchronized only in radial mode with one point of ISTS and cannot be run parallel with any other ISTS interconnection.

In view of the above, with such a complex network, it would be essential for the ERLDC System Operator to have information about:

1. Other nodes in any of the eastern region states where the phase configuration adopted differs with the ISTS system.
2. Standard Operating procedure to operate such kind of system without impacting the loads (3 Phase loads/generation will be impacted due to change in phase sequence)
3. What action can be taken with growing 400 kV and 220 kV systems to ensure such limitation can be avoided for ensuring better reliability of supply by connection from multiple ISTS system by resolving such phase sequence issue.

BSPTCL may explain.

Deliberation in the meeting

BSPTCL informed that the phase sequence of RYB at Barh end was synchronized with the phase sequence of RBY of Motihari end. This problem had been identified and would be resolved by 25th June 2020.

OCC advised all the utilities to take care of such activities.

Item No. C.18: Issue of Over –Compensation on 400 kV Barh-Patna 1 &2 at Patna Substation--ERLDC

In the 19th SCM of Eastern Region, conversion of Bus Reactor of 125 MVAR as line reactor of 400 kV Barh-Patna 2 circuit was approved by CTU/CEA. 400 kV Barh-Patna 2 is Quad Moose with 93.1 km line length (68 MVAR Line Charging MVAR) and 125 MVAR line reactor. Thus, it is making it overcompensated by 1.8 times. Similar thing is observed for 400 kV Barh-Patna 1 circuit which has 80 MVAR line reactor at Patna end and thus making it over-compensated. **These may cause LC oscillation during switching operation and A/R operation in case of single-phase fault and can result in damage to the circuit breaker and tripping of lines on overvoltage**

In addition to these, these circuits also have 400 kV Patna-Balia 1 & 2 in their respective diameter and if the line reactor are used as bus reactor then due to any switching of main breaker of bus reactor , these is high susceptibility for LC oscillation.

Line Details	L/R at Patna end	Elements in Same Diameter at Patna end
400 kV Barh-Patna 1 (93.1 km Quad moose)	80 MVAR Line reactor at Patna end	400 kV Patna-Balia 2 (50 MVAR Line reactor at Balia) : 195 km line length
400 kV Barh-Patna 2 (93.1 km Quad moose)	125 MVAR Line Reactor at Patna end	400 kV Patna-Balia 1 (50 MVAR Line reactor at Balia) : 195 km line length

In line with the above issue, it is essential that CTU/PGCIL to submit the LC oscillation study for the charging of above 80 and 125 MVAR Line reactor to ERLDC/ERPC and action that has been taken to avoid any overvoltage, LC oscillation or breaker stress issue which can result in its damage and prolonged outage. It is expected that these studies have already been done based on which the above conversions were accorded in the 19th SCM meeting. The study detail will help ERLDC in deciding on real-time charging to avoid any issue and during subsequent operation.

Powergrid may explain.

Deliberation in the meeting

OCC opined that the study results may be obtained from CTU/CEA.

Item No. C.19: Single Bus Operation at 220 kV Chandil--ERLDC

220/132 kV Chandil is an important substation of Jharkhand, having three 220 kV lines outgoing lines connecting Ramanchandrpur, Ranchi(PG), and Santhaldih (WBPDCL), it also has 3 x 150 MVA and 1 x 100 MVA, 220/132 kV ATRs, with a peak load of around 200-250 MW.

However, even after being such an important substation, Chandil has only a Single Bus scheme at 220 kV level, which is significantly reducing the reliability of the substation. Previously a committee was also formed to explore the possibility of upgrading the substation to a double bus scheme, however, after going for sight visit committee was of the view that upgrading to double bus is not possible without acquiring additional space, thus committee recommended to go with bus sectionalizer.

JUSNL may share any plan that they have for improving the reliability of Chandil Substation**.**

Deliberation in the meeting

JUSNL explained that estimate of Bus sectionalizer had been made but the same is yet to be approved.

Item No. C.20: Nomination of nodal persons for communication related to tripping of grid elements and primary frequency response observed at generating stations--ERLDC

For analysis of tripping incident of any grid elements and primary frequency response of generating units in Eastern Region, high resolution data from various generating stations, transmission utilities, SLDCs and other users. For smooth communication regarding this transfer of data, all the regional generating stations, transmission utilities and SLDCs are requested to nominate at least two persons as nodal person(s) for tripping analysis of any grid element and for primary frequency response analysis of generating units. Name, contact number and email address of nominated persons may be shared as per following table.

Entity	Nodal Person(s) for tripping analysis (At least 2 persons)		Nodal Person(s) for primary frequency response analysis (At least 2 persons)	
	Nodal Person-1 Name & Contact Details (Phone, emai id)	Nodal Person-2 Name & Contact Details (Phone, emai id	Nodal Person-1 Name & Contact Details (Phone, emai id	Nodal Person-2 Name & Contact Details (Phone, emai id
NTPC Farakka				
NTPC Kahalgaon				
NTPC Talcher				
NTPC Barh				
NTPC Darlipalli				
BRBCL				
NPGC				
MPL				
Adhunik				
GMR				
JITPL				
KBUNL			Not Applicable	
Teesta V				
Teesta III				
Rangit			Not Applicable	
Chujachen			Not Applicable	
Jorethang			Not Applicable	
Tashiding			Not Applicable	
Dikchu				
Bihar SLDC				
Jharkhand SLDC				
DVC SLDC				
GRIDCO SLDC				
WB SLDC				
Sikkim SLDC			Not Applicable	
POWERGRID ER -1			Not Applicable	
POWERGRID ER -2			Not Applicable	
POWERGRID Odisha			Not Applicable	
DMTCL			Not Applicable	

Members may nominate**.**

Deliberation in the meeting

OCC advised all the concerned utilities to nominate nodal persons within 2-3 days.

Item No. C.21: Nomination of nodal persons for communication related to primary frequency response testing of ER generating units—ERLDC

In compliance to the IEGC regulation, regarding periodic testing of primary frequency response of generating units, bidding process was completed in coordination with all the generating stations. The independent agencies and price per unit to carry out testing has also been finalised. List of generating units where testing is to be done is given below. All the generating stations are requested to nominate at least two persons (one for technical related work and one for contractual related work) and share contact details (Name, Contact No, Mail id) as per following table.

Sr. No	Station	Generating Unit	Testing utility	Contact information of Nodal Person (Technical)	Contact information of Nodal Person (Contractual)	Latest Status of work
1	TALCHER STAGE 2	1	M/s Solvina India Pvt. Ltd			
2		2				
3		3				
4		4				
5	Farakka	1				
6		3				
7		4				
8		5				
9		6				
10	Kahalgaon	1				
11		5				
12		6				
13		7				
14	Darlipalli	1				
15	TSTPP	1				
16		2				
17	Barh	4				
18		5				
19	Adhunik	1				
20		2				
21	BRBCL	1				
22		2				
23	NPGC	1				
24	Teesta V	1				
25	Teesta III	1				
26		2				
27		4				
28		5				
29		6				
30	Dikchu	1				
31		2				
32	MPL	1	M/s Siemens Ltd.			
33		2				
34	GMR	1				
35		2				
36	JITPL	1				
37		2				

All the generating stations were informed about testing via communication dated 22nd April 2020 (generating stations to be tested by M/s Siemens Ltd.) and 13th May 2020 (generating stations to be tested by M/s Solvina India Pvt. Ltd). All the generating stations are requested to place order on the respective agencies for further start of testing. Progress in this regard may be shared with ERLDC as shown in above table. In case of any difficulty, following persons from ERLDC may be contacted.

Name	Contact No	Mail id
Saurav Kumar Sahay	9432013173	saurav.sahay@posoco.in
Raj Protim Kundu	9903329591	rajprotim@posoco.in

One meeting via video conferencing will be organized by ERLDC with generating stations and respective testing agencies to discuss the details of testing process.

Members may nominate.

Deliberation in the meeting

OCC advised all the concerned utilities to nominate nodal persons within 2-3 days.

PART D:: OPERATIONAL PLANNING

Item No. D.1: Anticipated power supply position during July 2020

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of July 2020 were prepared by ERPC Secretariat on the basis of LGBR for 2019-20 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc. is enclosed at **Annexure D1.**

Members may confirm.

Deliberation in the meeting

*Updated anticipated power supply position during July 2020 is enclosed at **Annexure D1.***

Item No. D.2: Shutdown proposal of transmission lines and generating units for the month of July 2020

Generator shutdown for July2020 is enclosed at **Annexure D2.**

ERLDC may place the list of transmission line shutdown discussed on 15th June 2020 through VC.

Members may confirm.

Deliberation in the meeting

Most of the generators are informed that unit overhauling is not being taken up as per the LGBR because of lock down.

WBPDCL informed that they are taking shutdown of BKTPP UNIT 5 for 10 Days from 1/7/2020.

OCC advised all the generators to take consent from their beneficiaries in case of any deviation in the schedule of overhauling of their units.

*Approved list of shutdown of transmission lines for month of July 2020 is enclosed at **Annexure D2.***

Item no. D.3: Prolonged outage of Power System elements in Eastern Region as on 10-06-2020

(i) Thermal Generating units:

S.No	Station	State	Agency	Unit No	Capacity MW	Reason(s)	Outage Date
1	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	1	49.5	R & M WORK	14-Mar-2018
2	BALIMELA HPS	ODISHA	OHPC	2	60	R & M WORK	20-Nov-2017
3	KOLAGHAT	WEST BENGAL	WBSETCL	1	210	POLLUTION PROBLEM	10-May-2018
4	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	5	37.5	R & M WORK	25-Oct-2016
5	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	7	37.5	ANNUAL MAINTENANCE	06-Dec-2019
6	KOLAGHAT	WEST BENGAL	WBSETCL	2	210	ESP FIELD MAINTENANCE	26-Dec-2019
7	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	6	37.5	R & M WORK	16-Oct-2015
8	BALIMELA HPS	ODISHA	OHPC	1	60	R & M WORK	05-Aug-2016
9	CHANDRAPURA TPS	DVC	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-2017
10	DPL	WEST BENGAL	WBPDCL	7	300	MAINTENANCE	04-Jun-2020
11	NABINAGAR(BRBCL)	BIHAR	NTPC	2	250	TO ATTEND APH GEARBOX SEAL OIL LEAKAGE THEREAFTER PUT UNDER RSD/LOW SYSTEM DEMAND FROM 00:00HRS OF 24.05.20	21-May-2020
12	ADHUNIK	JHARKHAND	APNRL	2	270	lube oil leakage of turbine LO pipe line	07-Jun-2020
13	BALIMELA HPS	ODISHA	OHPC	4	60	SPARKING IN PMG	02-Mar-2020
14	KOLAGHAT	WEST BENGAL	WBSETCL	4	210	FURNACE DRAFT VERY HIGH	17-Nov-2019
15	KODERMA	DVC	DVC	2	500	ECONOMISER TUBE LEAKAGE	05-Jun-2020
16	BARAUNI TPS	BIHAR	BSPHCL	6	110	ELECTRICAL PROTECTION TRIP;PROBLEM IN BEARING GEAR MOTOR	25-Feb-2020
17	U.KOLAB	ODISHA	OHPC	3	80	GUIDE BEARING TEMPERATURE HIGH	07-Jan-2020
18	SAGARDIGHI	WEST BENGAL	WBSETCL	2	300	AUXILLARY SUPPLY FAILED	18-Mar-2020
19	BOKARO'B'	DVC	DVC	3	210	PROBLEM IN ASH POND	12-Sep-2019
20	KOLAGHAT	WEST BENGAL	WBSETCL	3	210	BOTTOM ASH PROBLEM	24-Nov-2019

Generators/ constituents are requested to update the expected date of revival of the units.

(ii) Hydro Generating units:

S.No	Station	State	Agency	Unit No	Capacity (MW)	Reason(s)	Outage Date
1	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	5	37.5	R & M WORK	25-Oct-2016
2	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	7	37.5	ANNUAL MAINTENANCE	06-Dec-2019
3	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	1	49.5	R & M WORK	14-Mar-2018

4	BALIMELA HPS	ODISHA	OHPC	2	60	R & M WORK	20-Nov-2017
5	BALIMELA HPS	ODISHA	OHPC	1	60	R & M WORK	05-Aug-2016
6	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	6	37.5	R & M WORK	16-Oct-2015

It is seen that about 282 MW hydro capacities in Odisha is under forced outage / planned outage in the period of peak monsoon and therefore not available for providing the much needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units

(iii) Transmissionelements

SL NO	Transmission Element / ICT	Agency	Outage Date	Reasons for Outage
1	400 KV IBEUL JHARSUGUDA D/C	IBEUL	29-04-2018	TOWER COLLAPSE AT LOC 44,45
2	220 KV PANDIABILI - SAMANGARA D/C	OPTCL	03-05-2019	49 NOS OF TOWER COLLAPSED.AS REPORTED BY SLDC OPTCL, TOTAL 60 NOS OF TOWER IN BETWEEN 220KV PANDIABILI – SAMANGARA LINE IN WHICH 48 NOS TOWERS FULLY DAMAGED AND 12 NOS TOWERS PARTIALLY DAMAGED. WORK UNDER PROGRESS.
3	400 KV MOTIHARI(DMTCL)-GORAKHPUR-I	POWERGRID/DMTCL	13-08-2019	LINE SWITCHED OFF DUE TO ANTICIPATED TOWER COLLAPSE AT LOC 27/0(132) DUE TO CHANGE OF COURSE OF GANDAK RIVER.TOWER COLLAPSED REPORTED AT LOC 27/0(132) ON 15/08/19 AT 07:00 HRS. 400KV BARH -GORAKHPUR 1 CHARGED AT 18:57 HRS ON 05.02.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI.
4	400 KV MOTIHARI(DMTCL)-GORAKHPUR-II	POWERGRID/DMTCL	13-08-2019	Earlier reconfigured Barh - Gorokpur # II again LILOED back at Motihari and the portion beyond Motihari shall be termed as 400 KV MOTIHARI(DMTCL)-GORAKHPUR-II
5	400 KV BARH-MOTIHARI(DMTCL) -I	POWERGRID/DMTCL	04-09-2019	TOWER COLLAPSE AT LOCATION 26/0 AND 25/5. 400KV BARH -GORAKHPUR 2 CHARGED AT 10:06 HRS ON 31.01.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI. 400KV BARH -GORAKHPUR 1 CHARGED AT 18:57 HRS ON 05.02.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI.
6	400KV-MERAMUNDALI-NEW DUBRI-D/C	OPTCL	20-03-2020	3 NOS. OF D/C TOWER COLLAPSED AT LOC NO 17 , 18 AND 19 AT APPROX 10 KM FROM MEERAMUNDALI.
7	315 MVA 400/220 kv ICT II at Jeypore	POWERGRID	29-03-2020	PRD operated,Rupture of R phase diaphragm in OLTC chamber
8	220 kV Howrah - KTPP II	WBSETCL	01-04-2020	Tower collapse at loc no 66 due to soil erosion
9	400 KV KOLAGHAT-NEW CHANDITALA	WBSETCL	25-04-2020	For connectivity in between 220KV KTPP-Howrah Ckt and 400KV KTPP-New Chanditalackt. Part of line to be used at 220 KV to supply power to Howrah from Kolaghat
10	220/132 KV 100 MVA ICT 3 at Chandil	JUSNL	30-04-2020	ICT BURST AND DAMAGED AFTER FIRE REPORTED
11	220 KV-BEGUSARAI-NEW PURNEA-2	BSPTCL	17-05-2020	B-N Dist-146.8km FC-Ib-1.18kA FROM NEW PURNEA,TRIPPED AGAIN ON SOTF AT 12:00 HRS

12	220 KV Havelikharagpur-Sheikhopursarai D/C	BSPTCL	27-05-2020	3 Nos tower tower collapse
13	220KV-BIRPARA-MALBASE-1	POWERGRID/ BHUTAN	30-05-2020	Tower Diversion work of Loc No.-57 due to course change of Torsa River
14	220/132 KV 100 MVA ICT I AT LALMATIA	FSTPP/JUSNL	22-01-2019	Failure of HV side breaker
15	220 KV NEW-PURNEA MADHEPURA CKT-I	POWERGRID	05-06-2020	LBB of 220 KV New Purnea-Madhepura I operated
16	220KV 220KV-DALKHOLA (WB)-DALKHOLA (PG)-2	WBSETCL	08-06-2020	LINE UNDER S/D
17	220KV-BUDHIPADAR-KORBA-2	OPTCL	09-06-2020	Earth wire snapped between loc no 5 & 6.
18	220KV TTPS-TSTPP-1	OPTCL	09-06-2020	B_phocnductor snapped at loc. 96

(Reported as per Clause 5.2(e) of IEGC)

** Transmission licensees whose line were out due to tower collapse/ bend, may please update the detail restoration plan and as on date work progress status inOCC.

Also Monthly progress report to be submitted to ERLDC/ERPC till restoration of the element.

Members may update.

Deliberation in the meeting

OCC advised all concerned constituents to update list.

PART E::ITEMS FOR INFORMATION

The following agenda items are placed for information and necessary compliance:

Item No. E.1: Submission of data in MERIT Order portal--CEA

CEA vide mail dated 9th July 2019 informed that the MERIT Order portal had been launched on 23rd June, 2017 by Honourable Minister of Power. One of the most important advantages of "Merit" Portal is Transparent information dissemination pertaining to marginal variable cost and source wise purchase of electricity and indication of supply side reliability, adequacy, and cost of power procurement.

However, it has been observed that many of the states are not filling the data regularly and sometimes the data filled varies widely from the data available on the respective RLDCs daily reports.

It is requested that the states may be advised to fill the data regularly and check that correct data is filled on the MERIT Portal.

In 159th OCC, all the SLDCs were advised to fill the correct data in MERIT portal on regular basis.

Item No. E.2: Status of 1st Third Party Protection Audit:

The compliance status of 1st Third Party Protection Audit observations is as follows:

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	49	72.06
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

** Pending observations of Powergridare related to PLCC problems at other end.*

The substation wise status of compliance are available at ERPC website (Observations include PLCC rectification/activation which needs a comprehensive plan).

In 118th OCC, all the constituents were advised to comply the pending observations at the earliest. All the STUs informed that most of the observations are related to funding from PSDF. DPRs have been submitted to PSDF committee.

Item No. E.3: Commissioning of new transmission elements in Eastern Region

The details of new units/transmission elements commissioned in the month of March to May – 2020 based on the inputs received from beneficiaries

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	132 KV D/C Gumla-Simdega T/L	JSUNL	03-03-2020		

2	220 KV Darbhanga (BSPTCL) - Darbhanga(DMTCL) - 2	BSPTCL	03-03-2020	13:06	Due to non-commissioning of the bay at Darbhanga (BSPTCL) end, Line was connected to motipur by connecting one ckt of Darbhanga (BSPTCL)-Motipur with this line. After commissioning of the bay, Line charged as per original plan.
3	220 KV Godda-Lalmatia I	JSUNL	04-03-2020	12:49	
4	220 KV Godda-Lalmatia II	JSUNL	04-03-2020	13:00	
5	220 kV Meramundali-Narsinghpur-I	OPTCL	06-03-2020		220/33 kV Grid S/S, Narsinghpur charged by LILO arrangement in 220 kV MeramundaliBhanjanagarckt -I
6	220kV Bhanjanagar-Narsinghpur-I	OPTCL	06-03-2020		
7	765KV/132KV 255 MVA ICT 1 AT DARLIPALI	NTPC	09-03-2020	14:02	
8	400KV-Baharampur-Bheramara-3 Along With Associated 400KV Main Bay (Bay No 416)	PGCIL	06-05-2020	13:37	Only India Portion
9	400 KV Berhampur- BheramaraCkt IV	PGCIL	07-05-2020	12:02	Only India Portion
10	220/132 KV,150 MVA ICT-I at Godda	JSUNL	11-05-2020	14:18	
11	220/132 KV,150 MVA ICT-II at Godda	JSUNL	11-05-2020	14:20	

Item No. E.4: UFR operation during the months of March to May 2020

Frequency profile for the months as follows:

Month	Max (Date/Time)	Min (Date/Time)	% Less IEGC Band	% Within IEGC Band	% More IEGC Band
March, 2020	50.32; 22/03/20; 17:04:10	49.69; 19/03/20 & 31/03/20; 15:29:30&05:12:10	**5.74**	**71.16**	**23.10**
April, 2020	50.30; 04/04/20;18:02:10	49.61; 01/04/20;22:07:30	**4.99**	**75.20**	**19.81**
May, 2020	50.29; 26/05/20 & 28/05/20; 18:04:10& 19:01:00	49.57; 28/05/20; 17:27:10	**4.23**	**76.69**	**19.08**

Hence, no report of operation of UFR has been received from any of the constituents.

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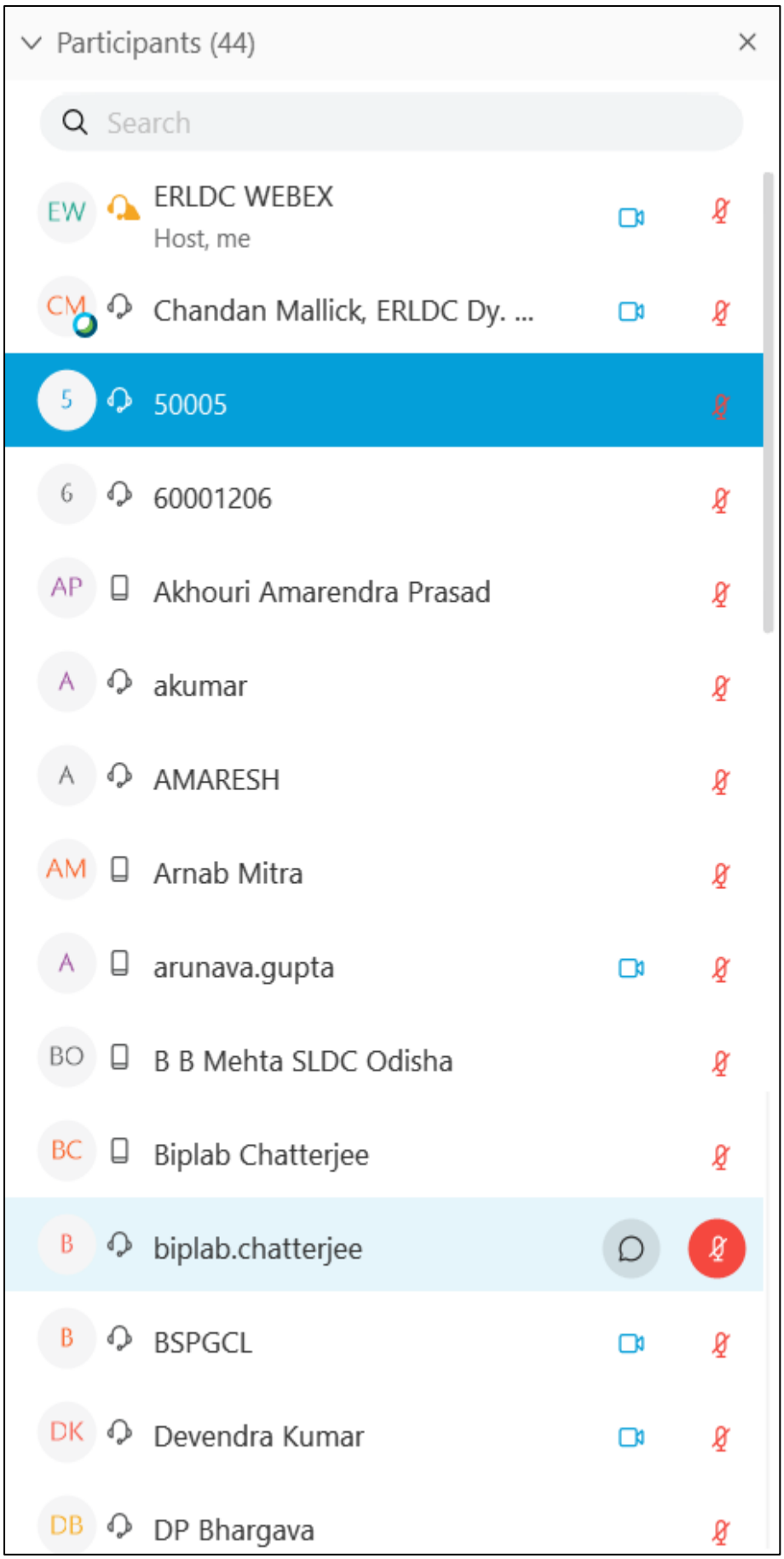
Annexure A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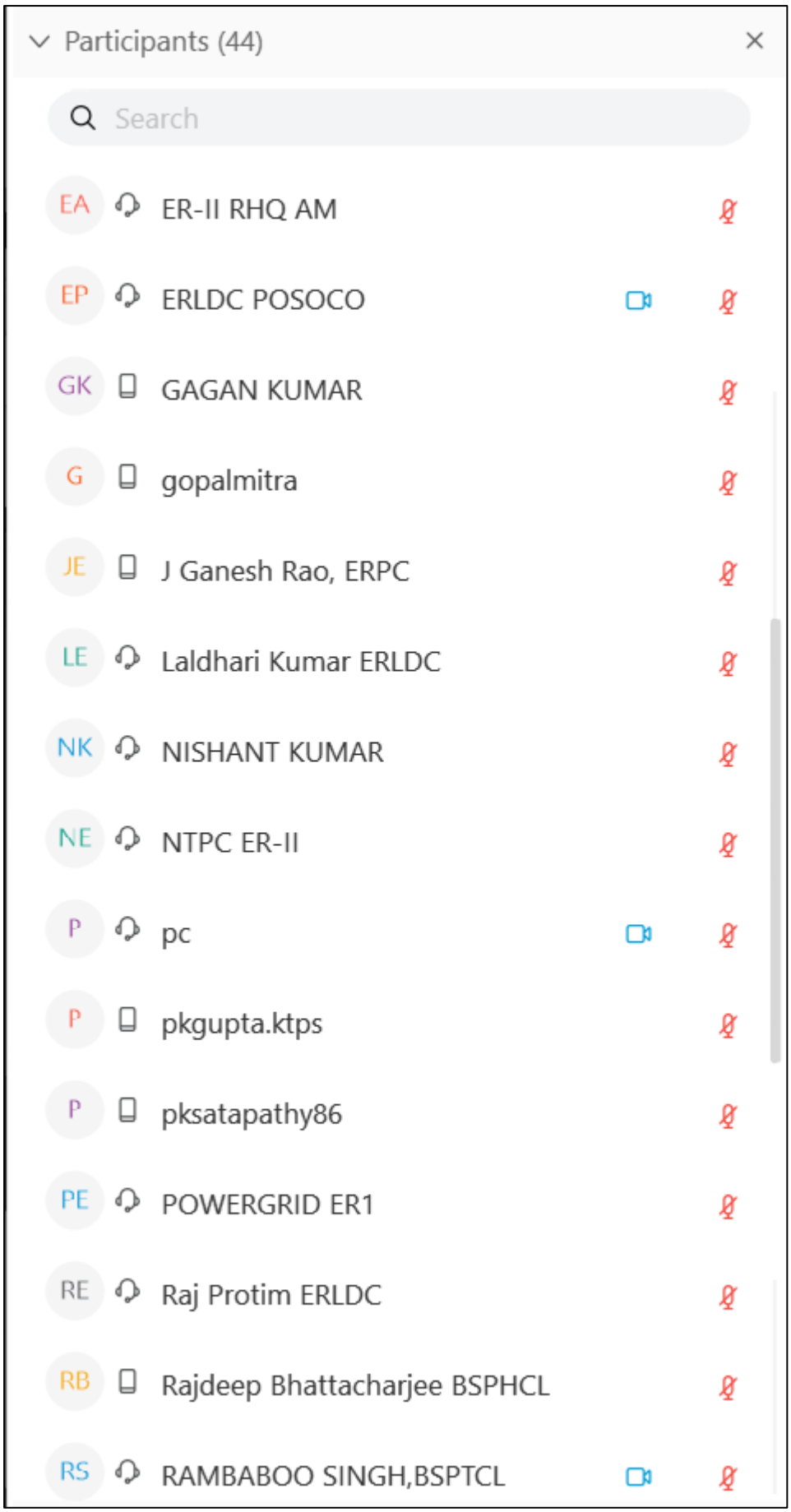
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EP ERLDC POSOCO
GK GAGAN KUMAR
G gopalmitra
JE J Ganesh Rao, ERPC
LE Laldhari Kumar ERLDC
NK NISHANT KUMAR
NE NTPC ER-II
P pc
P pkgupta.ktps
P pksatapathy86
PE POWERGRID ER1
RE Raj Protim ERLDC
RB Rajdeep Bhattacharjee BSPHCL
RS RAMBABOO SINGH,BSPTCL

RS RAMBABOO SINGH,BSPTCL

SP S K Sharma, ER-I Hq, NTPC, Patna

SB Saurabh Kumar, BRBCL

S shyam.ies11

SE SHYAMAL KONAR, ERLDC

S sikkim_sldc

S singhjs

S sldc

SB SLDC BIHAR

SD SLDC DVC

SE Surajit Banerjee ERLDC

TE T R Mohapatra ERLDC

TJ Tushar Ranjan,SLDC, Jharkhand

YA Yamana Ayyappa

YS YOGESH SINGLA

Annexure B4

Request to ERPC for extension of Force Majeure relief DMTCL LILO restoration

June 2020

Ref.: All Updates and intimations submitted by DMTCL to LTTCs & ERPC since zero date (Dec. 15th, 2019)

Coverage

1. Background
2. Chronology / events post zero date
3. Impact of pandemic and lockdown
4. Strategy & way forward
5. Current status & timelines
6. Relief sought

Background

Background

- The LILO section of DMTCL was severely impacted by a Force Majeure event between August – October 2019
- The FM event was an outcome of River Gandak changing its course following very heavy rains in Bihar and hilly regions upstream
- As an outcome, 4 towers, 2 each of Barh – Motihari and Motihari – Gorakhpur 400kV LILO line were washed away by the river *(Presentations made to the ERPC in this regard dated Sep. 19, 2019 and Oct. 24, 2019)*
- Vide letter dated Nov. 21, 2019, ERPC approved relief under the FM provisions of the TSA with the following conditions:
    - Dec. 15, 2019 to be considered as zero date
    - 6 months from zero date is granted for completion of entire restoration works on LILO section
    - Barh – Motihari line to be commissioned by May 14, 2020
    - Motihari-Gorakhpur line to be commissioned by June 14, 2020

Chronology of activities / events post Zero date

Chronology

Chronology	Date
Activities leading up to zero date	
Drone survey ○ *Carried out during collapse of towers to estimate the further cutting of river banks*	Before Zero date
Soil investigation ○ *Performed at both side of the river banks to identify the requirement of foundation type and also to estimate the bearing capacity of the soil*	Before Zero date
Hydrology Study ○ *Done to estimate the river discharge, velocity and further to estimate scour depth at river location; Done by LASA*	Before Zero date
Bathymetry Study ○ *Done to further estimate the details of scour of river Gandak*	Before Zero date
Pile Design ○ *Carried out by Space consultant – Ahmedabad, who is doing design for PGCIL and other TBCB players*	Before Zero date
Vetting of Pile designs ○ *Conducted by IIT Mumbai*	Before Zero date
Access Roads ○ *Built a new access road on the river stream*	Before Zero date

Chronology

Chronology	Date
Activities leading up to zero date	
Preparatory works at site ○ *Soliciting support from villages located on either banks to enable movement of heavy machinery, material and man power* ○ *Working with villagers to ensure support and solve ROW issues* ○ *Tie-up for procurement of boats* ○ *Cleaning the site of elephant grass etc.* ○ *Completing Safety, Health and Environment assessment of the site as per Sekura requirements* ○ *Discussion with reputed pile / EPC contractors*	Before Zero date
Investment Approvals ○ *Received internal management and Board approvals for increasing the number of towers to be built on pile foundations and enhancing the spans* ○ *Note the original plan as presented to ERPC was to build 6 towers on piles as against four that got washed away* ○ *As a prudent operator with the responsibility to ensure stable power supply, further internal approvals were received to build 10 towers (instead of 6) on piles and replace four towers built on open cast with two taller towers to enhance the span (2kms away from river on one bank and >1 Km on the other bank) (totally 12 towers instead of 6) (Refer Annexure 1 for comparison of old versus new scheme)* ○ *As per technical studies and design recommendations, 12 new towers had to be manufactured and procured, plus 160 piles (~28 meter) and 2 open cast had to be constructed*	Nov. 2019

Chronology

Chronology	Date
Activities leading up to zero date	
Investment Approvals (contd.) ○ *Significant additional capex was approved* ○ *The target above had to be achieved within the timelines prescribed by ERPC* ○ *The target above required additional resources, higher capex and a capable and large EPC contractor* ○ *In addition to the above, approvals were received for exploring unique engineering solutions to deploy ERS after the flood waters receded*	Nov. 2019
Commencement of construction	
Award of contracts & ground breaking ○ *KEC International was awarded the turnkey EPC contract* ○ *Several additional contracts were awarded to local contractors to support KEC, while creating jobs and goodwill locally* ○ *Massive mobilization was initiated by KEC and DMTCL teams and work was progressed 24x7 notwithstanding the harsh winter conditions* ○ *Reference is drawn to updates shared by DMTCL vide letter dated Dec. 11, 2019* ○ *LASA was appointed as Owner's Engineer to ensure Quality on civil works* ○ *Tata Projects was appointed as Owner's Engineer to ensure Quality on tower manufacturing and erection works* ○ *M/s Geodynamics by DMTCL, M/s Pilex by KEC were appointed to carry out Pile Integrity Tests* ○ *M. Ghani, retd. Irrigation Dept. expert was appointed to advice on revetment works*	Nov. to Dec. 2019

Chronology

Chronology	Date
Construction progresses notwithstanding challenges	
Project progress well on track to achieve ERPC deadline: ○ *By Feb. 2020, casting of 95 piles were completed on both the Barh and Gorakhpur lines* ○ *Delivery of towers, conductors and other parts had commenced* ○ *Tower erection had commenced on three towers of Barh line* ○ *Three temporary islands (approx. 9000 sq. meters.) were created in the river for the three river locations (26/0 on Barh line and 27/0 and 26/3 on Gorakhpur line) with more than 450 meters access road within river (refer to pictures in Annexure 2)* ○ *Reference is drawn to updates shared by DMTCL vide letters dated Jan 14, 2020 and Feb 14, 2020* ○ *Several complex engineering challenges were encountered during this phase and all of them were overcome with unique engineering solutions (refer to Annexure 3)* ○ *Work on casting piles had commenced on 27/0 and preparatory works on commencing casting were in advanced progress for 26/3 and 26/0* ○ *The region also witnessed very heavy unseasonal rains and thunderstorms starting late Feb. 2020 (which continues till date) requiring stoppage of works and additional time to repair the works damaged by high water levels and strong currents (refer Annexure 4 for pictures and press clips of unseasonal rain in region)* ○ *FM Notices on the above and subsequent FM events associated with unseasonal rains and thunderstorms have been shared vide intimation from DMTCL dated Mar 4, 2020; Mar 11, 2020; Mar 24, 2020; Mar 25, 2020; Apr 04,2020; Apr 22, 2020; May 08,2020; May 21,2020* ○ *Pictures on progress of various activities is attached as Annexure 5*	Jan. to mid Mar. 2020

Chronology

Chronology	Date
Activities leading up to zero date	
Emergency restoration System ○ *By the 1st week of March 2020, pile foundations for 3 new towers required for ERS charging of Barh – Motihari line were completed (48 piles) along with other piles at various locations.* ○ *These 3 towers plus the tower in the river location and Areraj end would have enabled commissioning of the line within the 'May' deadline set by ERPC for the Barh line in the normal course (while other additional restoration work was progressing in parallel)* ○ *While seeking relief from the ERPC in Sep-19 & Oct-19 installation on ERS was not considered feasible due to span limitations, flood conditions, etc.* ○ *However, DMTCL team along with constant guidance and encouragement from BSPTCL continued to pursue alternate engineering solutions for implementation to enable power flow* ○ *In the 1st week of March, DMTCL successfully implemented a three-phase single conductor engineering solution involving 3 ERS poles, 2 newly installed towers mounted on pile foundations and one old tower that was re-erected to overcome span limitations* ○ *Picture of the arrangement are attached as Annexure 6* ○ *The arrangement on the Barh line was capable of carrying > ~250MW, meeting the power requirement of North Bihar region and was available to be charged before Holi (Mar. 8th, 2020), however, it got commissioned on March 19, 2020 following inspection by CEIG.* ○ *Since charging, the ERS system has withstood several thunderstorms and unseasonal rains that lashed the region and has enabled operation of the DMTCL section **with 100% Availability to date** through the summer season*	In Mar till lockdown

Impact of pandemic & lockdown

Impact of pandemic & lockdown

Chronology	Date
Pandemic and the impact of lockdown	
Lockdown 1 ○ *Till the date of announcement of the Lockdown 1, notwithstanding new FM events (as intimated) and engineering challenges as summarized in Annexure 3, every attempt was made to accelerate work while keeping a close watch on Quality and Safety* ○ *By working almost 24x7, the focus was to ensure that work progressed rapidly (also with a view of keeping some buffer for unknown surprises and time lost on account of new FM events)* ○ *Progress achieved prior to the lockdown is attached as Annexure 7, which is quite significant w.r.t overall quantum of work to be executed.* ○ *With the announcement of Lockdown 1, all work at site came to a grinding halt* ○ *The extent of resources available at site on the date of Lockdown is attached as Annexure 8* ○ *The focus immediately shifted to implementing the lockdown announced by the Hon'ble Prime Minister and ensuring strict implementation of Government Guidelines* ○ *While DMTCL and our contractors were preparing to implement guidelines, on Mar. 25, 2020, a day after the lock down was announced, the local authorities along with police visited the site and took all labourers based out of their camps into custody (pictures attached as Annexure 9)* ○ *With due support from BSPTCL and with appreciation to the fact that DMTCL / contractors needed time to facilitate implementation of guidelines, the authorities released the labourers* ○ *However, this dealt a severe blow to the morale of the teams and most labourers began to abandon the site without notice*	25-Mar-20 to 14-Apr-20

Impact of pandemic & lockdown

Chronology	Date
Pandemic and the impact of lockdown	
Lockdown 1 (contd.) ○ *March and April are ideal working windows in the river with water levels and currents being at manageable levels to operate safely. This precious window was lost* ○ *Piles for the 3 river locations (1 on Barh line and 2 on Gorakhpur line) were expected to be largely completed during this period* ○ *The lockdown also meant that hundreds of labour required to protect the temporary islands created in the river for the 3 tower locations could not work* ○ *Unseasonal rains in the hills upstream and FM events as per our FM intimations and regular updates dated Mar 25, 2020; Apr 04,2020; Apr 22, 2020; resulted in high water levels and currents, which seriously damaged the islands created and equipment / machinery (Refer Annexure 10)* ○ *More than 2 months of work got washed away impacting both time and the project cost* ○ *As a result while work completely stopped, the project cost got impacted negatively owing to:* 1. *Higher than expected ERS rentals owing to delay in final restoration;* 2. *Cost associated with damage to equipment and work in the river;* 3. *Stranded cost of equipment and stranded cost of labour we managed to retain at site;* 4. *Higher EPC costs claimed by the EPC contractor; just to name a few* ○ *Intimation of FM Events include Lockdown 1 was submitted by DMTCL dated Mar 25, 2020; Apr 04,2020; Apr 22, 2020;*	25-Mar-20 to 14-Apr-20

Impact of pandemic & lockdown

Chronology	Date
Pandemic and the impact of lockdown	
Lockdown 2 ○ *Based on relaxations announced by the MHA on Apr. 16, 2020; DMTCL received permission from the District Authorities to commence construction from Apr. 21, 2020* ○ *However, due to continuous unseasonal rain during last week of Apr-20 and sealing of Areraj (area adjoining site) due to +ve cases of Coivd-19 (Most skilled manpower associated with construction stay at Areraj) work effectively started from May-20 (For newspaper coverage of rain and Areraj sealing refer Annexure 11)* ○ *However, movement of man and material was seriously constrained due to various issues such as need for clarity on MHA guidelines, sealing of inter-state movements, restrictions on movement enforced by authorities, sealing of areas housing material stores, etc.* ○ *Availability of construction material involving steel, cement, sand and aggregates was seriously constrained , Cost of limited construction material available in the region was sky rocketing thereby seriously impacting project economics (already dented by the previous FM event)* ○ *Skilled manpower - trailers & truck mounted rigs drivers, manual rigs, Ajax, JCBs, cranes, etc had abandoned the site and migrated back to their villages across the country* ○ *The economics of the project were impacted further with the announcement by the government on relaxations granted to DISCOMs on timely payments to the Licensees with collections dropping by more than 60-70% in April (this also could seriously impact the ability of licensees to service debt, meet Working Capital requirements, maintaining credit ratings while in DMTCL's case also requiring to shoulder additional capex)* ○ *Intimation of FM as a result of lockdown 2 including other FM events have been submitted on Apr. 22, 2020 and May 8,2020;* ○ *All pre-monsoon maintenance and protection works which had stopped during Lockdown 1 were re-initiated and completed (Refer Annexure 12 for progress and pictures)*	15-Apr-20 to 03-May-20

Impact of pandemic & lockdown

Chronology	Date
Pandemic and the impact of lockdown	
Lockdown 3 ○ *Determined to progress work and achieve as much as we can before monsoon arrives, the DMTCL team work with local authorities and contacts to accelerate progress* ○ *Attempts were made to seek permission from respective state governments and ensure movement of skilled manpower from other states albeit at materially higher costs* ○ *Work on 27/0 river location (Gorakhpur) was continued as several piles were casted prior to Lockdown 1. While island and the access were washed away, alternate strategy was adopted at an additional cost to progress construction by calling for very large boats to move man and material and piles were casted* ○ *Supervisory senior staff members from Sekura / DMTCL as well as KEC were also seriously constrained from coming to the site to support and accelerate progress on account of travel restrictions* ○ ***Migration of skilled labour and refusal to return to work (in addition to travel restrictions / limitations) continued to be one of the biggest challenges*** ○ ***However, given the strict implementation of MHA guidelines including social distancing norms, the number of people / teams / labour that could be deployed was limited thereby impacting the speed of work*** ○ *Unseasonal rains coupled with snow melt in May resulted in frequent rise in water levels and strong currents thereby killing any hope of carrying out work on the temporary islands in river locations for 26/0 Barh line and 26/3 Gorakhpur line and also effecting work at other loc (Refer pictures in Annexure 13)*	04-May-20 to 17-May-20

Impact of pandemic & lockdown

Chronology	Date
Pandemic and the impact of lockdown	
Lockdown 4 ○ ***Notwithstanding all challenges and costs, as a prudent operator, DMTCL is determined to ensure that power continues to flow through the monsoon season pending completion of restoration works*** ○ *This called for adoption of an alternate design and implementation strategy for the outstanding work albeit at a significantly higher cost* ○ *Limited availability of skilled labour continued to plague progress* ○ *While DMTCL was working closely with its design an engineering teams and contractors on finalizing the alternate strategy, the progress was impacted once again with the sealing of Sareya village from 25th-May-2020 to 4th-Jun-2020 (11 days) by authorities (Sareya houses our labors as well as our material stores and is located on one of the river banks housing our site) (Refer Annexure 14)* ○ *The DMTCL teams continue to work with district authorities to seek support in providing relaxations for movement of our men and material, but restrictions continue* ○ *Intimation of FM as a result of lockdown 3 & 4 including other FM events have been submitted via letter dated May 8, 2020; May 21, 2020;*	18-May-20 to 31-May-20

Strategy and way forward

Strategy & way forward

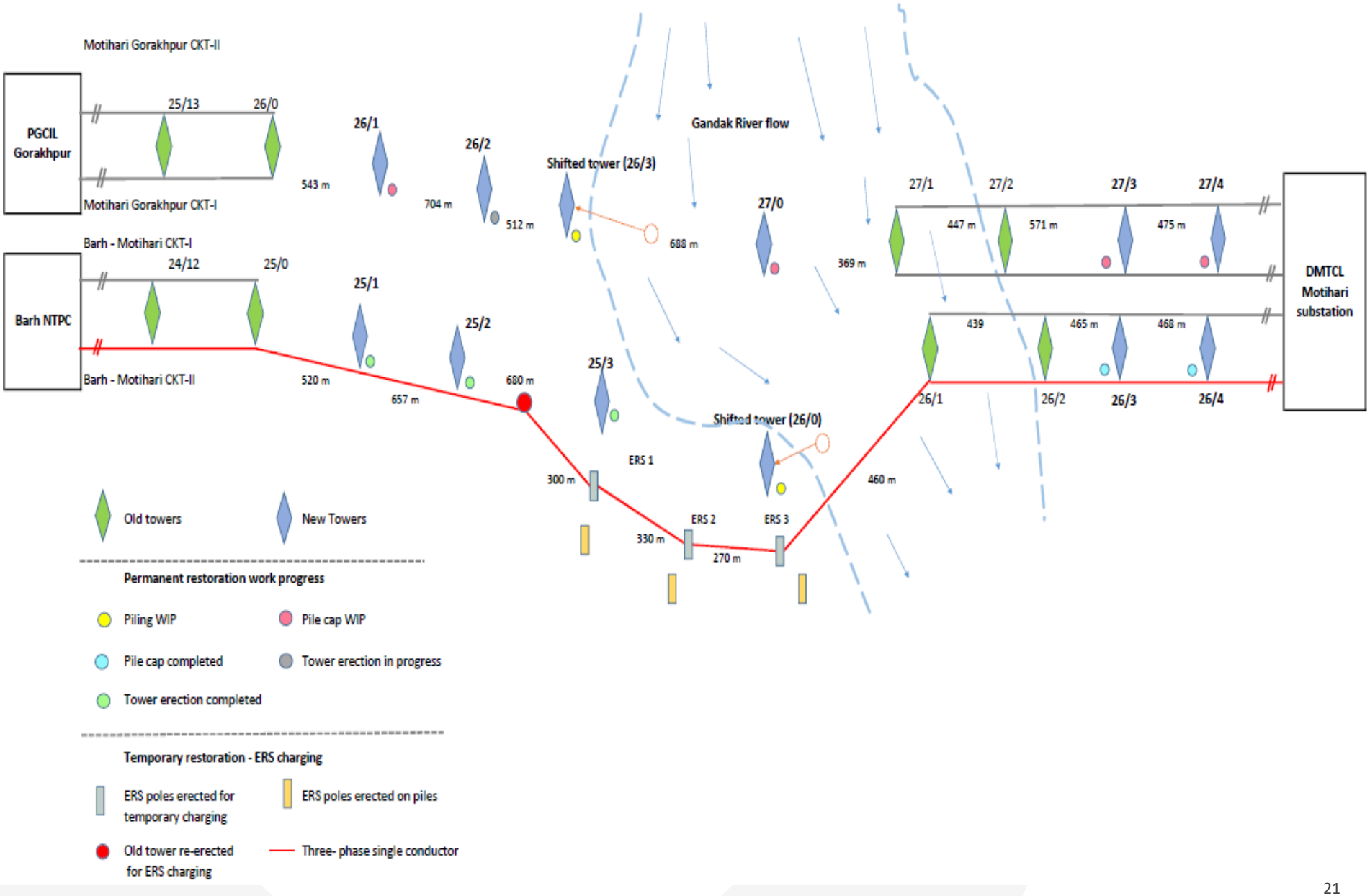
- Lockdown 5 (Unlock 1) continues to impact the pace of works for reasons largely similar to those detailed during Lockdown 3 & 4
- Suitable intimations on FM with respect to Lockdown 5 (Unlock 1) will be submitted by DMTCL seeking relief
- Completion of restoration is expected to be delayed beyond the deadline set by the ERPC (June 14, 2020)
- Monsoon is expected to arrive on time (early July) in Bihar as per met forecasts
- The ERS system will not be able to operate safely during monsoon seasons
- Construction work will not be possible in the river and river bank (loc 26/0, 27/0, 26/3) during the monsoon season due to higher water levels and strong currents (July to November)
- Accordingly, the following strategy has been adopted notwithstanding significant additional costs:
  - As a prudent operator, DMTCL would like to try and ensure that power continues to flow notwithstanding the challenges being faced
  - Accordingly, two alternate options or strategies are being pursued
- **Option1:** a engineering solution has been implemented basis which, 3 ERS poles are proposed to be mounted on newly cast three 22 meter piles along with shorter piles for holding the guys (pictures of newly casted piles and schematic on ERS are attached as Annexure 15)
  - To ensure minimum disruption of power flow, 3 new ERS poles have been procured at site
  - The new poles are proposed to be first installed on piles and thereafter just prior to phase of stringing, the existing ERS will be disconnected to have minimum outage
  - Subject to approval of outage, this is proposed to be implemented in the third week of June 2020
  - This will be implemented if Option 2 (see next slide) cannot be implemented

Strategy & way forward

- In parallel, 26/0 (last pile foundation on Barh line), which was in the river is now being moved to land (with modifications to tower as well as foundation design (DD+ 6 on 20 piles instead of 16) (Refer Annexure 15)
- Work on 26/0 is progressing and unless new challenges emerge on account of early rains, storms, Covid-19, etc., we are attempting to complete this tower before monsoon picks-up
- Work on 27/0 (river location in Gorakhpur line) is also progressing well with all 16 piles completed and pile cap in progress. Unless new challenges emerge on account of early water levels or currents, Covid-19, etc., this tower can be completed before monsoon picks-up
- 26/3 (Gorakhpur line) has been moved from river to land with an anticipation that atleast work on piles will be completed before monsoon arrives (Refer Annexure 15)
    - In order to overcome span limitation on account of the movement, an additional new tower (13th tower DD+ 50) has been designed and ordered
    - 16 new 35 m/1200 mm dia piles will be casted on the land location (5 pile completed)
- **Option 2:** In case either of 26/0 or 27/0 is completed prior to monsoon, power can be evacuated through this tower by charging one circuit each of Barh-Motihari and Motihari-Gorakhpur line to take full load of existing 132 kV lines and 80% capacity of 2 X 200MVA ICT which will be 360 MW (Refer Annexure 16)
- Post completion of 26/3 and all outstanding works on other towers, both circuits will be normalized as per the new scheme

Current status and timelines

Current status 400 KV Barh - Gorakhpur Transmission Line (LILO) section



Current status and tentative timelines – being attempted

Tower No.	Current Status	Tentative timelines- being attempted
Barh-Motihari Line		
25/1 (G)	Completed	…..
25/2 (G)	Completed	…..
25/3 (G)	Completed	…..
26/0 (G)	Moved from river to land; 12/20 piles completed	Mid July
26/3 (A)	All 16 piles and 4 pile cap completed	Tower Erection and Stringing After charging of Motihari Gorakhpur Circuit
26/4 (A)	All 4 legs completed	As above
Motihari-Gorakhpur Line		
26/1 (G)	All 16 piles completed; Pile cap WIP	Mid July
26/2 (G)	16 piles & 4 pile cap completed, Erection WIP	Mid July
26/3 (G)	Moved from river to land; Boring commenced, 5 piles completed	Piles targeted to be completed by mid July, new DD+50 tower has been ordered; completion post monsoon
27/0 (R)	16 piles completed; 2 Pile cap completed, 3rd pile cap in progress	Mid July
27/3 (A)	All 16 piles completed; 2 Pile cap completed, 2 pile cap WIP	Mid July
27/4 (A)	2/4 legs completed	Mid July

Kindly Note: the timelines indicated above assume that covid related limitations / conditions don't deteriorate any further, site is not impacted by any new FM conditions including unseasonal rains and thunder storms, rains will arrive in Bihar only in early July and river will not wash away the banks or change course again (A – Areraj bank; G – Gopalganj bank)

Relief sought

Key Considerations

The ERPC is kindly requested to note:

- Updates shared by DMTCL on the restoration status at regular intervals
- Steps taken by DMTCL to implement a **long term solution** as against a short term solution notwithstanding significant additional costs (**12 towers instead of 4** that got washed away)
- The FM notices submitted by DMTCL with respect to the Lockdown announced by the government and the unseasonal rains that have lashed the region
- Unprecedented challenges faced by DMTCL on account of the FM events including loss of crucial summer window, restrictions on movement, availability of material, sealing of surrounding areas, non availability of skilled labour on account of reverse migration, unseasonal rains and water currents, etc.
- **Progress achieved (64% in initial 3 months period**) by DMTCL notwithstanding the challenging conditions detailed above
- DMTCL's voluntary initiative and achievement in **implementing a ERS solution that has ensured flow of power through the summer season** with 100% ERS availability to date
- Steps planned by DMTCL (subject to nature permitting) to **ensure flow of power through the monsoon** season (**ERS on piles**, Option2 detailed earlier)
- **Limitations in operations for more than 67 days** on account of Lockdown 1-4
- Restrictions on movement and number of manpower that can be deployed on account of social distancing norms and its impact on timelines
- **Notification by the Ministry of Finance** stating that all the contractual obligations scheduled to be completed on or after **20.02.2020 has been extended by not less than three to six months** for the period for the performance obligation was affected by lockdown restrictions/ force majeure events.
- Serious safety issues associated with working in the river or its banks during the monsoon season and till the water level recedes on the banks (until Nov.)

Key Considerations

The ERPC is kindly requested to note (contd.):

- Significant financial impact incurred by DMTCL on account of:
  - Additional capex being incurred on account of the FM event last year
  - Additional capex being incurred as a prudent operator in implementing a long term solution (12 towers (10 on piles, 2 open foundations) and increasing the span in place of 4 that got washed away as detailed earlier) {being tried possibly for first time in industry to ensure power flow}
  - Further additional capex being incurred on account of moving two towers from river to land locations as detailed earlier
  - Losses incurred on having to abandon the temporary islands in river locations and the additional cost being incurred on the 27/0 river location
  - Idling costs incurred on men and material during lockdown period
  - High cost of material and machinery on account of severe shortages
  - High cost of labour (both skilled and unskilled on account of shortages
  - Costs associated with ERS rentals for the solution implemented earlier
  - Additional cost of ERS rentals and pile solutions being implemented (Option 1 referred above)
  - Several other associated costs that were not envisaged
  - Reduced cash flow, could impact on debt repayment, ratings and working capital on account of the relaxations offered by the government to DISCOMs on payment timelines

Key Considerations

The ERPC is kindly requested to note (contd.):

- Overall severe negative impact on project economics on account of the unforeseen costs detailed above as a result of the Force Majeure events and for reasons beyond reasonable control of DMTCL
- Limitation to currently envisage or anticipate any potential changes / impacts in the river as well as on the banks of River Gandak during or post the upcoming monsoon season
- The factors beyond DMTCL's reasonable control that has resulted in overflow of restoration schedule into the monsoon season
- Safety limitations with regard to progressing construction due to high water currents in the river or its banks during the monsoon season

Relief sought

- **The ERPC is kindly requested to take note of the above and**
  - **Grant relief under the Force Majeure provisions of the TSA**
  - **Grant extension for completion of restoration works by a period of 5 months beyond with zero date starting post the monsoon season (work has to stop for safety reasons) and time required to re-establish access to the site**
  - **Issue Availability Certificate pending final restoration within the extended timelines permitted by the ERPC**

sekura

Safe. Secure. Sustainable.

Thank You

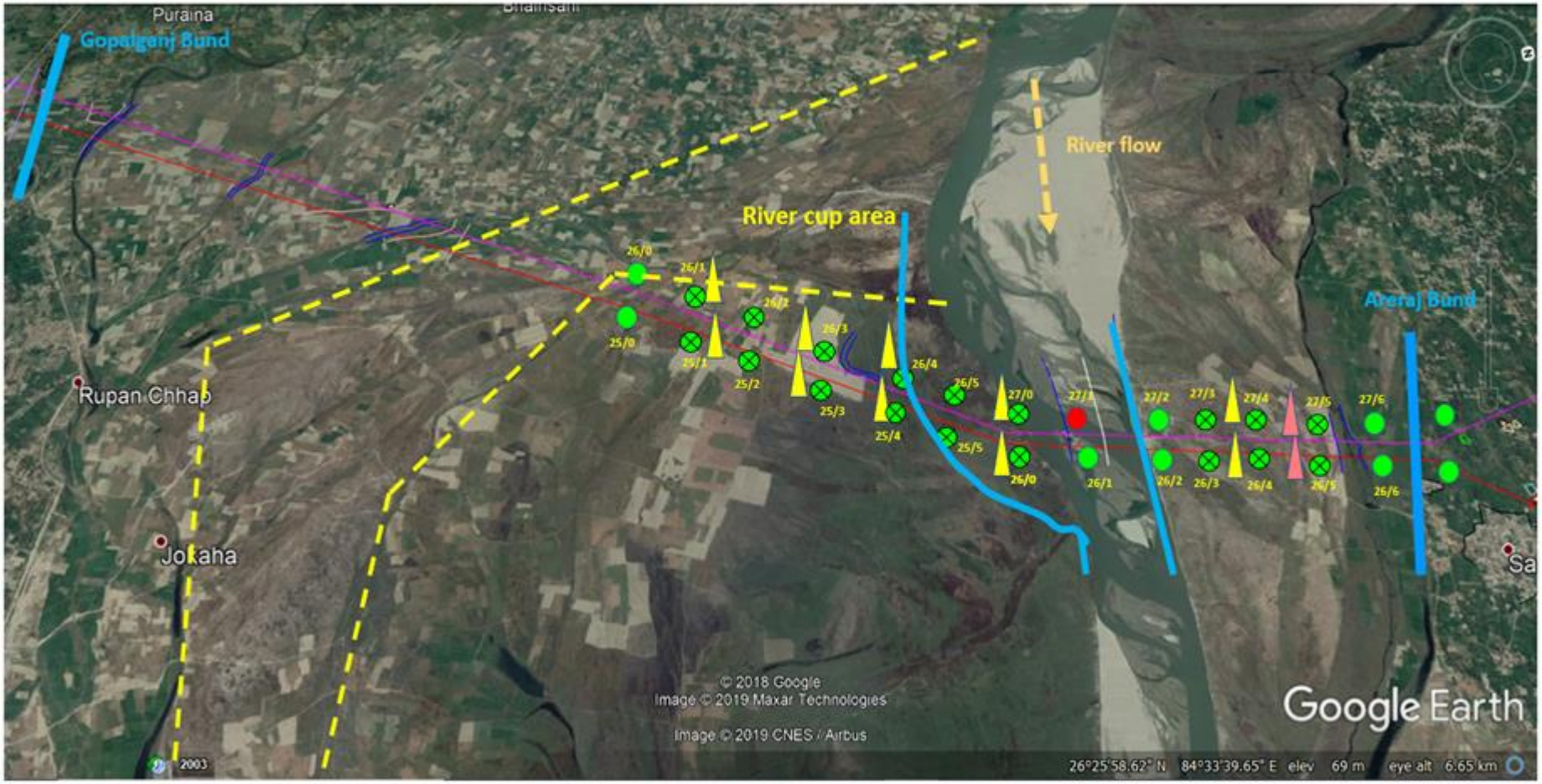
Sekura Energy Ltd. Is a portfolio company of Edelweiss Infrastructure Yield Plus

DMTCL is a subsidiary of Sekura Energy Ltd.

The Management System of Sekura Energy Ltd. and DMTCL has been approved by Lloyd's Register to: ISO14001:2015, ISO 45001:2018

Annexure 1 – Old vs New Transmission scheme for Gandak stretch

Barh-Gorakhpur LILO - Transmission stretch with existing and proposed new towers



Icons	Details	Numbers
	Existing towers to be removed – 14 No's Damaged towers - 4 No's	18
	Proposed new towers with pile foundations	10

Icons	Details	Numbers
	Proposed new tower with open cast foundation	2
	New tower erection	1
	Existing towers	

Annexure 2 – Temporary Island created for piling works in Gandak river

Loc 26/3 Gorakhpur Line

Loc 27/0 Gorakhpur Line

Temporary Island created for piling to be done in river locations

Annexure 3 – Engineering challenges faced and solutions

S. No	Challenges	Solution
1	*Gandak River Data: 50 years data to design the foundations in Gandak river was very crucial and we were unable to get the same from any authority due to un-organized record keeping. Authorities contacted- WRD, Valmiki Dam, local Gandak Disaster Management Office*	*Appointed LASA to arrange for data as they were the agency engaged by Bihar Govt for river study. They manage to get 32 years data which were taken in to consideration for all the studies.*
2	*Bathymetry Survey: Contouring of river bed is very much essential to understand the river flow and to understand river span/erosion happening. 2019 was the year of prolonged monsoon and high water level with high current were observed till Oct 2019.*	*Has been managed to complete bathymetry by end Oct'2019 by engaging 4 teams in 4 boats and inputs were provided to designer by 1st week of Nov 2019. Pile design modification done in Nov 2019 which was ready since Sept 2019.*
3	*Tower design: Readily available with us, however, shifting of 2 locations from existing main course to land (as 3 island created for piling work got damaged)*	*Taken up in last week of April 2020 on war footing basis and tower manufacturing clearance given by 7th May 2020. Additional quantity of approx. 90 MT tower part to be manufactured.*
4	*Encountering hidden conductor at river location 27/0*	*Piling team was mobilized at location 27/0 by mid Feb-20, liner driven at 2 locations for 10 mtrs and further boring work taken up, however, we found conductor (due to last year tower collapsed incident) at around 15-18 mtrs which has forced us to abandon the bore. Another 8 pit were done as trial, based on the same we have shifted all 16 piles and work commenced in 1st week of March 2020*

Annexure 4 – Effect of unseasonal rain on restoration work at site

Damage done to temporary Island during last week of Feb 2020

Damage done to access roads and piling location due to rain during first and second week of Mar 2020

Annexure 4 – Newspaper coverage of unseasonal rain at site

आपदा. भादो जैसा बना मौसम, तापमान में चार डिग्री की गिरावट, फसलों को नुकसान

तेज हवा के साथ बारिश, ओले भी पड़े

18 किमी प्रति घंटे की रफ्तार से चली हवा, 26 मिमी हुई बारिश

ये हुए नुकसान

बारिश से ये हुए फायदे

शहर की सड़कों पर बहने लगा नाला, लोग परेशान

किसानों व आम लोगों पर भारी पड़ी बेमौसम बारिश

मूसलाधार बारिश व ओलावृष्टि से फसलों को भारी क्षति सड़कों पर जलजमाव से स्थिति नारकीय, कड़ी ठंड, घरों में दुबके लोग

कई मोहल्लों की स्थिति नारकीय सफाई व्यवस्था की खुल रही पोल

अभी एक सप्ताह छाये रहेंगे बादल, बारिश के भी आसार

- 24 घंटे में 3.5 डिग्री दिन तो रात का 2.0 डिग्री बढ़ा तापमान

संवाददाता ▷ गोपालगंज

मौसम के उलटफेर का सिलसिला जारी है. बुधवार की आधी रात को अचानक मौसम में बदलाव हुआ. हवा के साथ बारिश हुई. सर्दी जाते-जाते एक बार फिर से लौट आयी है. गुरुवार की सुबह मौसम फिर बदला. सूर्य सुबह से ही तेवर में आ गये. दिन का पारा बढ़कर 31.1 डिग्री पर पहुंच गया, जबकि रात का पारा भी 19 डिग्री को पार कर गया. तापमान के अचानक दिन में 3.5 तो रात में 2.0 डिग्री बढ़ोतरी होने से लोग पसीने से तर-बतर होने लगे. गर्मी का एहसास करने लगे. हवा की रफ्तार 5.8 किलोमीटर प्रति घंटे रही. वर्षा की संरचना में परिवर्तन हो रहा है. गेहूं, चना, राई समेत कई फसलें प्रभावित हो रही हैं.

मौसम विज्ञानी डॉ एसएन पांडेय ने बताया कि इस हफ्ते बदली छायी रहेगी और छुटपुटबांदी के साथ ही बारिश के भी आसार अभी बने हुए हैं. दक्षिण पश्चिमी दिशा से सामान्य से तेज हवा चलने का अनुमान है. हवा की गति 30 से 35 किलोमीटर प्रति घंटे की रफ्तार से चलेगी. 13 से 14 मार्च तक बारिश के आसार बने हैं. आसमान में बदली छायी रहेगी.

आपदा • 18 किमी प्रतिघंटे की रफ्तार से चली हवा, 12.6 मिमी हुई बारिश, 11 बजे तक बारिश

मौसम बना बेईमान, रबी की फसल पर बारिश का सितम

बारिश बनी परेशानी कहीं कीचड़, कहीं पानी

Newspaper coverage of rain during last week of Feb 2020

Newspaper coverage of unseasonal rain during first and second week of Mar 2020

Annexure 5 – Restoration work progress

Jan 2020

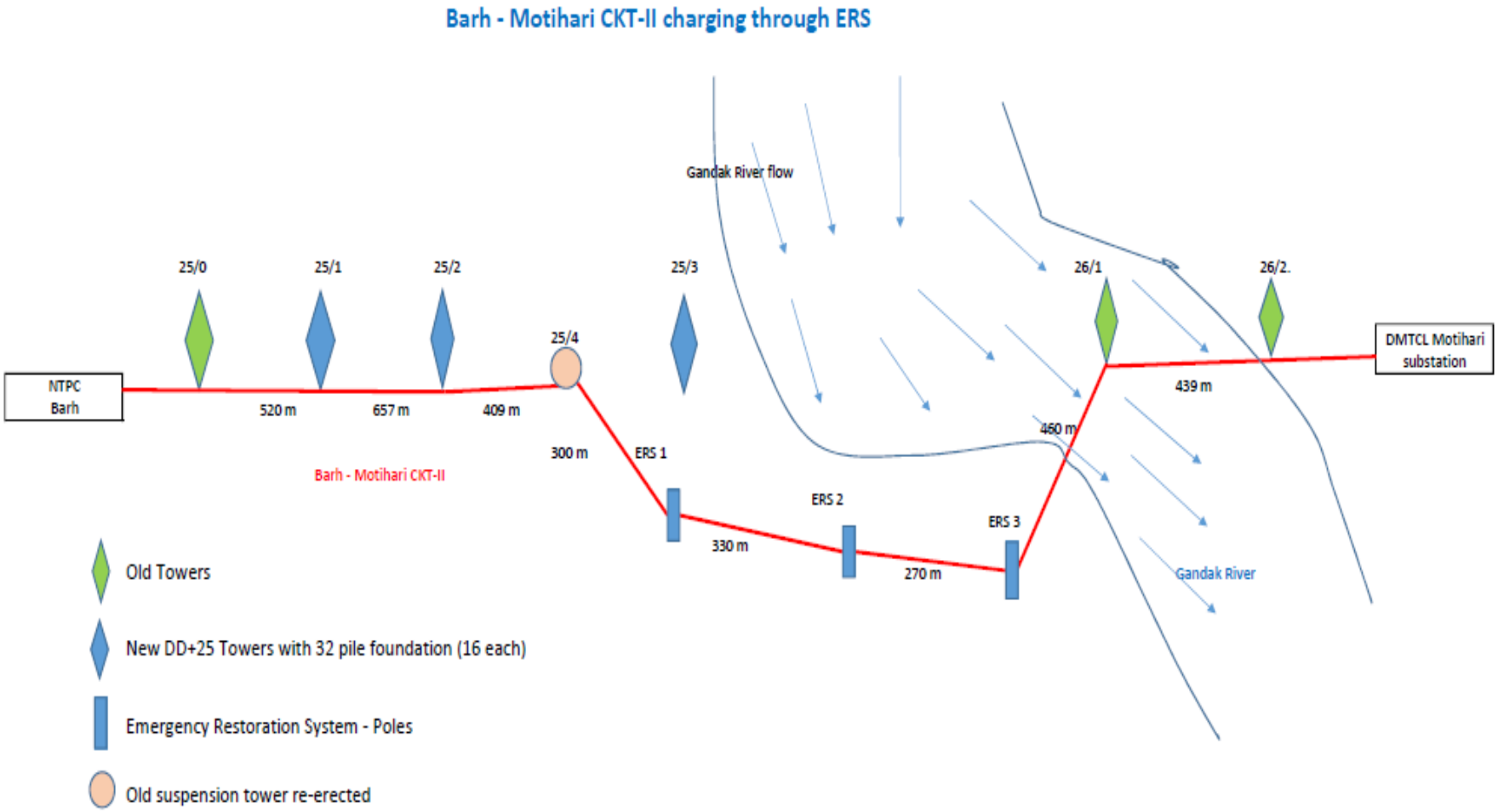
Feb 2020

Annexure 5 – Restoration work progress

Mar 2020

ERS erection during Mar-20 for temporary restoration of Barh line

Annexure 6 – ERS system for charging of temporary charging of Barh-Motihari Line



Annexure 7 – Schedule planned vs Actual

S.No	Activities	% weightage breakup	Total quantity	Completion achieved as on 25th –Mar-2020	Status as on 25-Mar-2020 (%)
1	Material Procurement (12 nos Towers, 125 kms Conductors, Insulator, Earthwire, OPGW)	40%	LoT	Except OPGW accessories all material got delivered	39%
2	Piling	28%	160	112	19.5 %
3	Pile caps/open foundation	12%	48	12	3%
4	Tower erection	10%	12	3	2.5 %
5	Stringing	10%	10.67	0	0%
6	Total percentage of work completed				64%

Annexure 8 – Resources available at site on the date of lockdown (Mar. 25, 2020)

List of machineries which are at site as on Mar. 25, 2020

1. Truck Mounted Rig - 6 Nos
2. Ajax Fiori - 3 Nos
3. Tractor - 6 Nos
4. Dredger - 3 Nos
5. Motorised Boat - 2 Nos
6. Manual boat - 2 Nos
7. Hydra - 2 Nos
8. Tripod - 3 Nos
9. Plate bending machine - 3 Nos
10. Welding machine - 12 nos
11. Vertical pump - 2 Nos
12. DG set - 8 Nos
13. Hand breaker - 2 Nos
14. Vibrator - 3 Nos
15. Vehicle - 7 Nos

Annexure 9 – Police visiting site and taking labors into custody

Annexure 10- Effect of unseasonal rain during lockdown 1

Annexure 11 – Damage done to access roads & Island location during lockdown 2

Damage done to access road for material mobilization and movement to Island loc

Condition of Island due to rain

Annexure 11 – Newspaper coverage of rain and Areraj sealing during lockdown 2

27.04.2020 | प्रभात खबर | 05

चिंता. वैशाख बना सावन, सप्ताह में चार दिन हुई बारिश, गेहूं की फसल को हुई भारी क्षति

जिले में 17.9 व हथुआ में 50.2 मिमी बारिश

भोरे में तेज आंधी और बारिश के कारण गेहूं की फसल को भारी नुकसान

खेतों में जमा है पानी, सड़ रही काटी गयी गेहूं की फसल

संवेदनहीन और कर्तव्यहीन कृषि पदाधिकारी पर हो कार्रवाई : रवि

Unseasonal rain in region during last week of Apr-20

अरेराज नपं की चारों ओर सीमा हुई सील

स्वास्थ्य कर्मियों के पास सेफ्टी किट नहीं

अरेराज व बंजरिया के छह हजार घरों का डोर-टू-डोर सर्वे

कोरोना से जंग • पीपराकोठी के कई जगहों पर सब्जी बाजार में भीड़ हो जा रही अनियंत्रित

तीन किमी क्षेत्र को सील करने का दिया आदेश

• कोरोना का कनफर्म केस मिलने पर प्रशासन अलर्ट
• अरेराज नगर क्षेत्र में केवल दवा की दुकानें ही खुलेंगी

03

कैंसर मरीज को दिखाने गये थे मुम्बई, हड़कंप

एक कैंसर मरीज को प्रशासनीय भेजेंगे

डॉक्टर को भी किया क्वारंटाइन

कोरोना पीड़ितों व संदिग्धों को एम्बुलेंस से मोतिहारी लाया

Sealing of Areraj (area adjoining restoration site) during last week of Apr-20

Annexure 12 – Pre-Monsoon activities

Protection of tower foundation via Gabions

Tree cutting in transmission line

Protection of tower foundation in Darbhanga Line

Protection of tower foundations in LILO section

Annexure 13 - Effect on island due to rains and snow melt during lockdown 3

Island loc 27/0 – Gorakhpur Line

Island loc 26/3 – Gorakhpur line

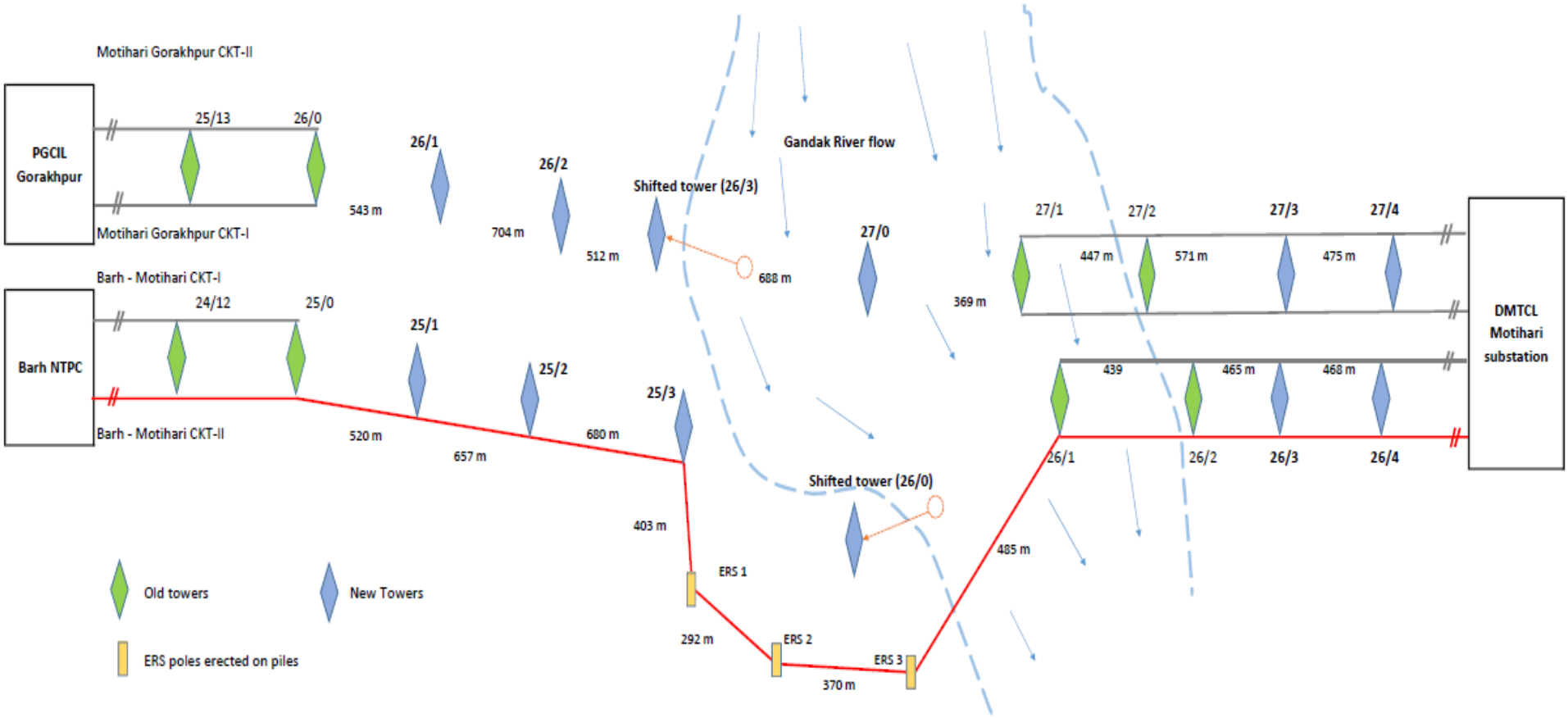
Condition of Loc for installation of ERS on pile foundation

Condition of access road from Gopalganj side

Annexure 14 – Sealing of Sareya village due to COVID-19 cases in village

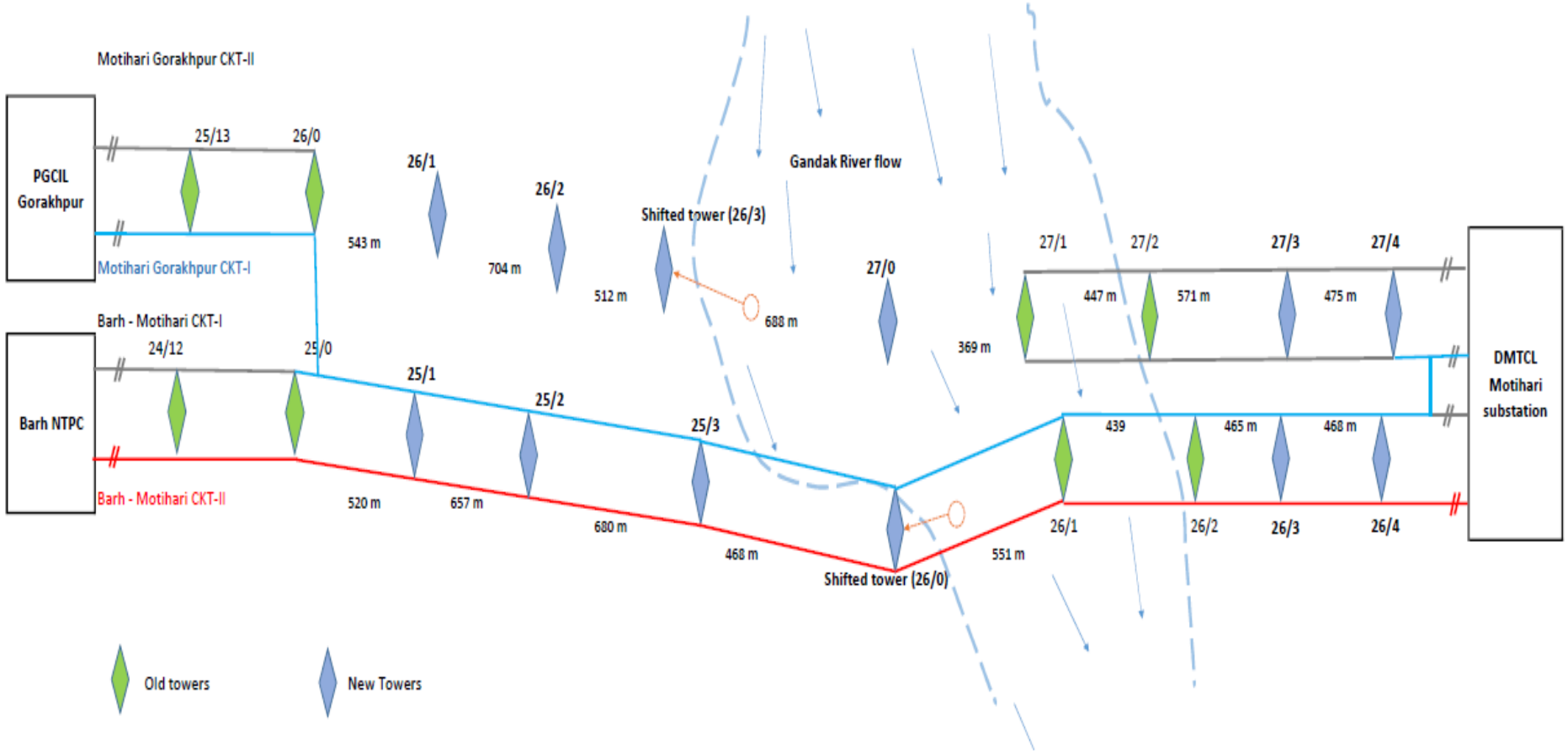
Annexure 15 – Pictures of newly casted piles and ERS erection

Annexure 15 – Schematic of ERS on pile and tower shifting



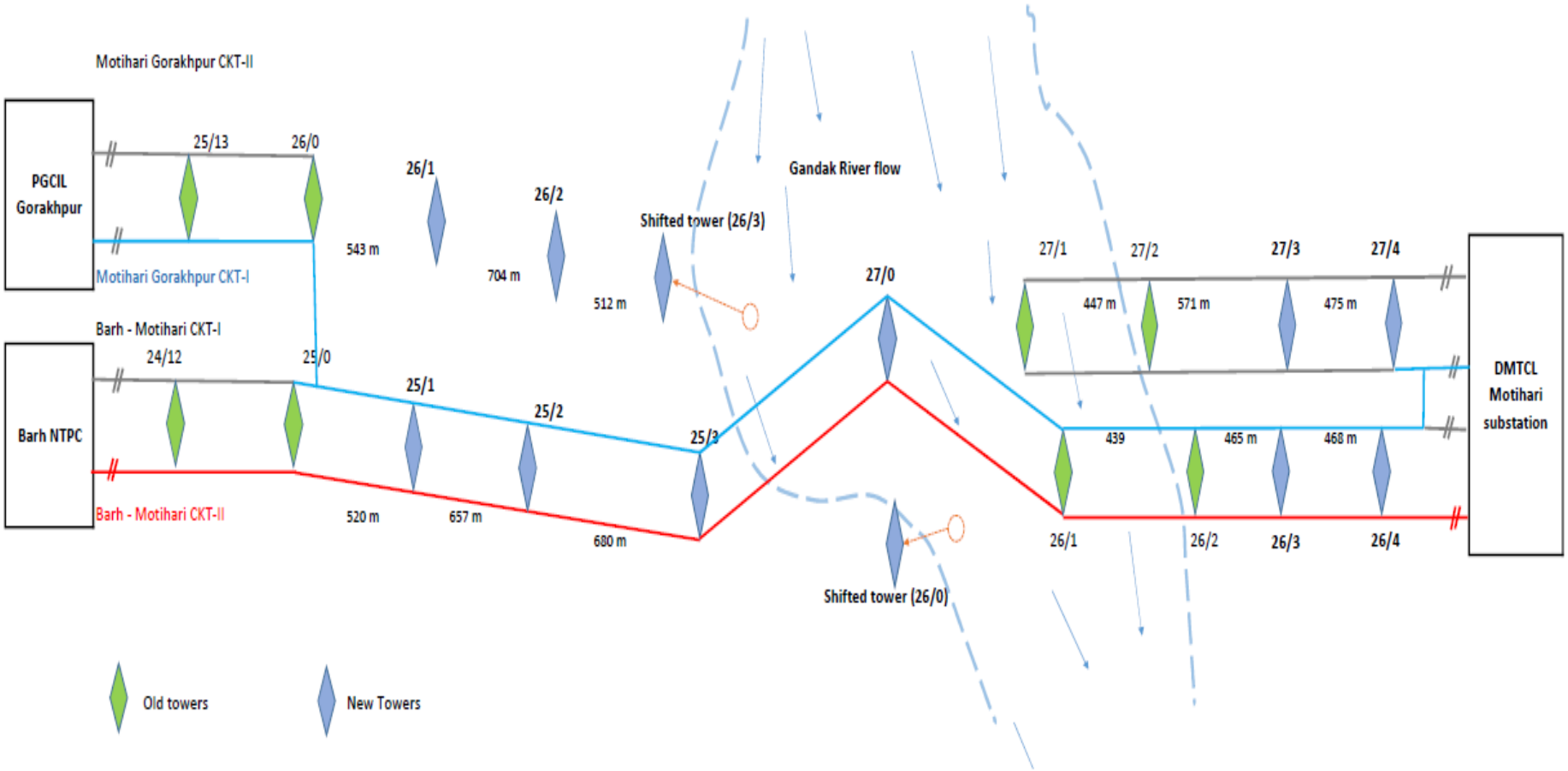
S. No	Details	Quantities
1	ERS poles on pile foundations	3
2	Tower shifted from river to Land	2

Annexure 16 – Use of 26/0 or 27/0 (Based on Erection completion)



Use of new tower 26/0 of Barh-Motihari line for charging one circuit each of Barh-Motihari and Motihari-Gorakhpur Line

Annexure 16 – Use of 26/0 or 27/0 (Based on Erection completion)

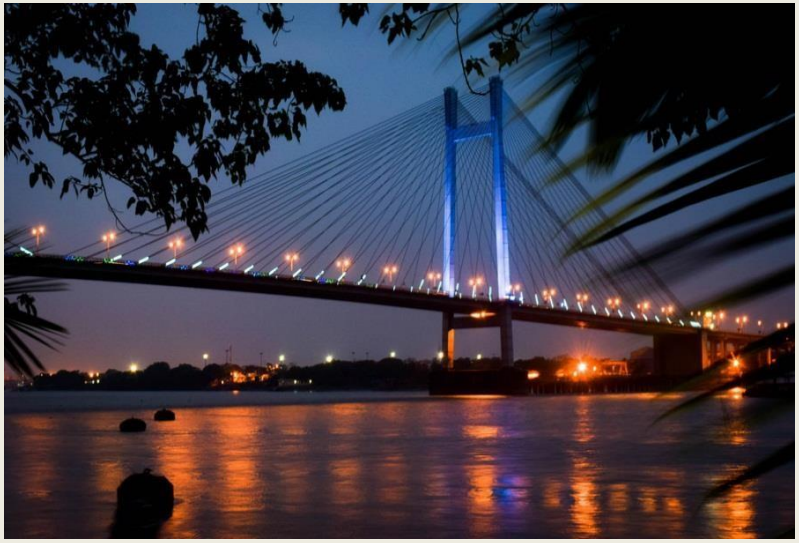


Use of new tower 27/0 of Motihari-Gorakhpur line for charging one circuit each of Barh-Motihari and Motihari-Gorakhpur Line

Power System Operation Corporation Ltd.

Annexure C1

168th OCC Meeting



Through WeBex

16th June, 2020

ER Grid Performances

Content

- Frequency highlight from March-20 to May-20.
- Transmission Element addition from March-20 to May-20.
- So far Maximum Demand and Consumption of Eastern Region.
- Eastern Region Grid Performance During Covid – 19 lock down.
- 9 PM 9 Min Light off event – 05th Apr, 2020.
- Cyclone “AMPHAN” - Highlight
- RTM Implementation 01st June, 2020

Highlights for the month of March'20 to May'20

Frequency

Mar-20

Max: 50.32 Hz; 22/03/20; 17:04 hrs Min: 49.69 Hz; 19/03/20; 15:29 hrs & Avg: 50.01 Hz **31/03/20; 05:12**

71.16% of the time freq was with in IEGC Band

Apr-20

Max: 50.30 Hz; 04/04/20; 18:02 hrs
Min: 49.61 Hz; 01/04/20; 22:07 hrs
Avg: 50.01 Hz
75.20% of the time freq was with in IEGC Band

May-20

Max: 50.29 Hz; 26/05/20; 18:04 hrs & 28/05/20; 19:01 hrs Min: 49.57 Hz; 28/05/20; 17:27 hrs
Avg: 50.01 Hz
76.69% of the time freq was with in IEGC Band

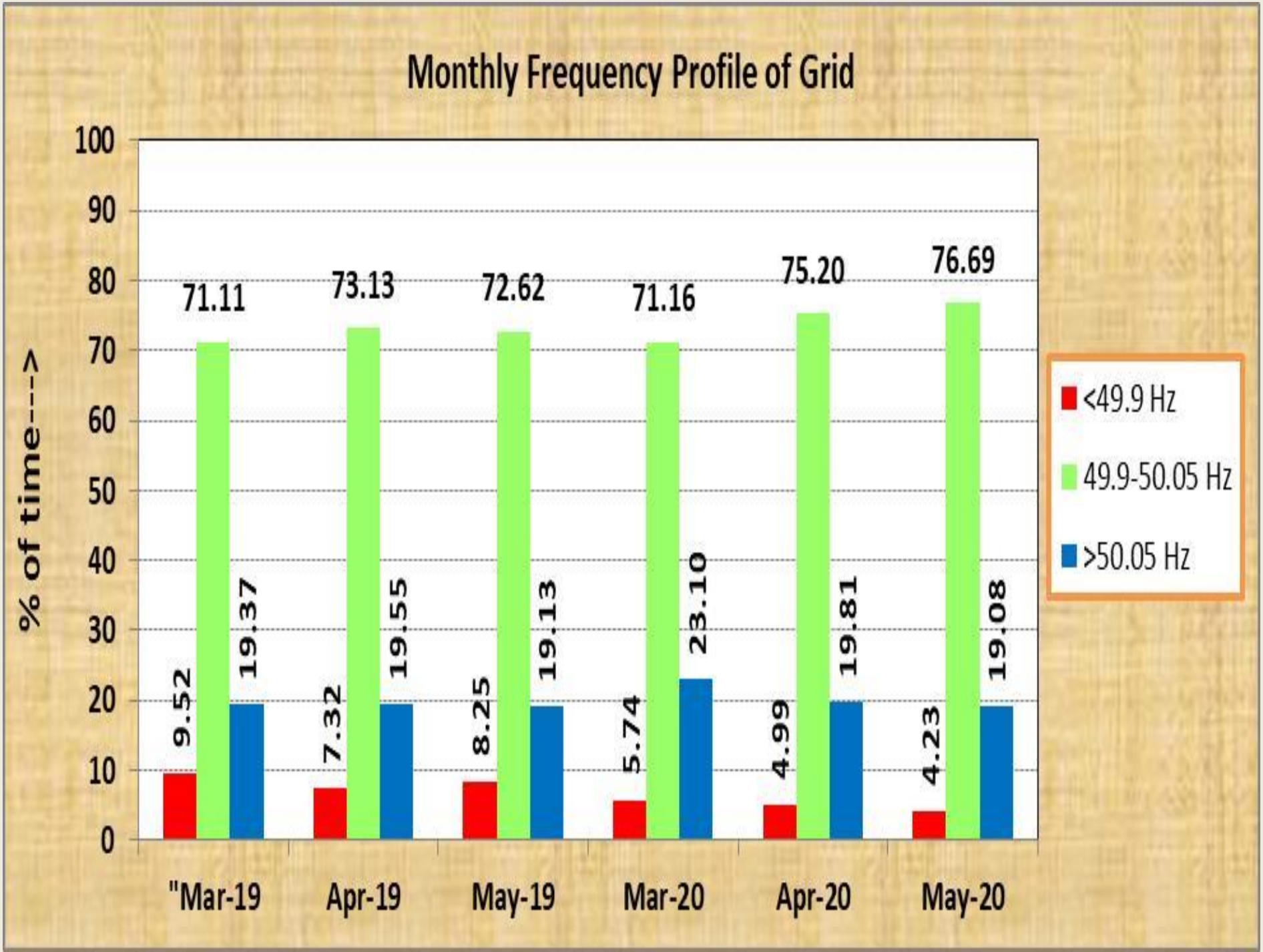
Peak Demand*

ER: 20596 MW on 18th Ma

BSPHCL : 5378 MW ; ON 18/05/20
JUVNL: 1472 MW; ON 24/05/20 DVC: 3275 MW; ON 20/03/20 GRIDCO: 4430 MW; ON 23/03/20 WB: 7915 MW;

Energy met

Max. 427.9 MU on 18th May *2020*
Avg. 377 MU in February *2020*


Monthly Frequency Profile of Grid
% of time--->
100
90
80
70
60
50
40
30
20
10
0
71.11
73.13
72.62
71.16
75.20
76.69
9.52
19.37
7.32
19.55
8.25
19.13
5.74
23.10
4.99
19.81
4.23
19.08
"Mar-19
Apr-19
May-19
Mar-20
Apr-20
May-20
<49.9 Hz
49.9-50.05 Hz
>50.05 Hz

New Element addition during the month:

Mar-20

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	Darlipali Unit-1 (800 MW)	NTPC	01-03-2020	0:00	COD
2	220 KV Godda-Lalmatia I	JSUNL	04-03-2020	12:49	
3	220 KV Godda-Lalmatia II	JSUNL	04-03-2020	13:00	
4	220 kV Meramundali-Narsinghpur-I	OPTCL	06-03-2020		220/33 kV Grid S/S, Narsinghpur charged by LILO arrangement in 220 kV Meramundali Bhanjanagar ckt -I
5	220kV Bhanjanagar-Narsinghpur-I	OPTCL	06-03-2020		
6	765KV/132KV 255 MVA ICT 1 AT DARLIPALI	NTPC	09-03-2020	14:02	

Apr-20:
Nil

May-20:

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400KV-Baharampur-Bheramara-ckt-III	PGCIL	06-05-2020	13:37	Only Indian Portion
2	400 KV Berhampur-Bheramara-Ckt IV	PGCIL	07-05-2020	12:02	Only Indian Portion
3	220/132 KV,150 MVA ICT-I at	JSUNL	11-05-20	14:18	

	Godda				
4	220/132 KV,150 MVA ICT-II at Godda	JSUNL	11-05-20	14:20	

So Far Highest Demand

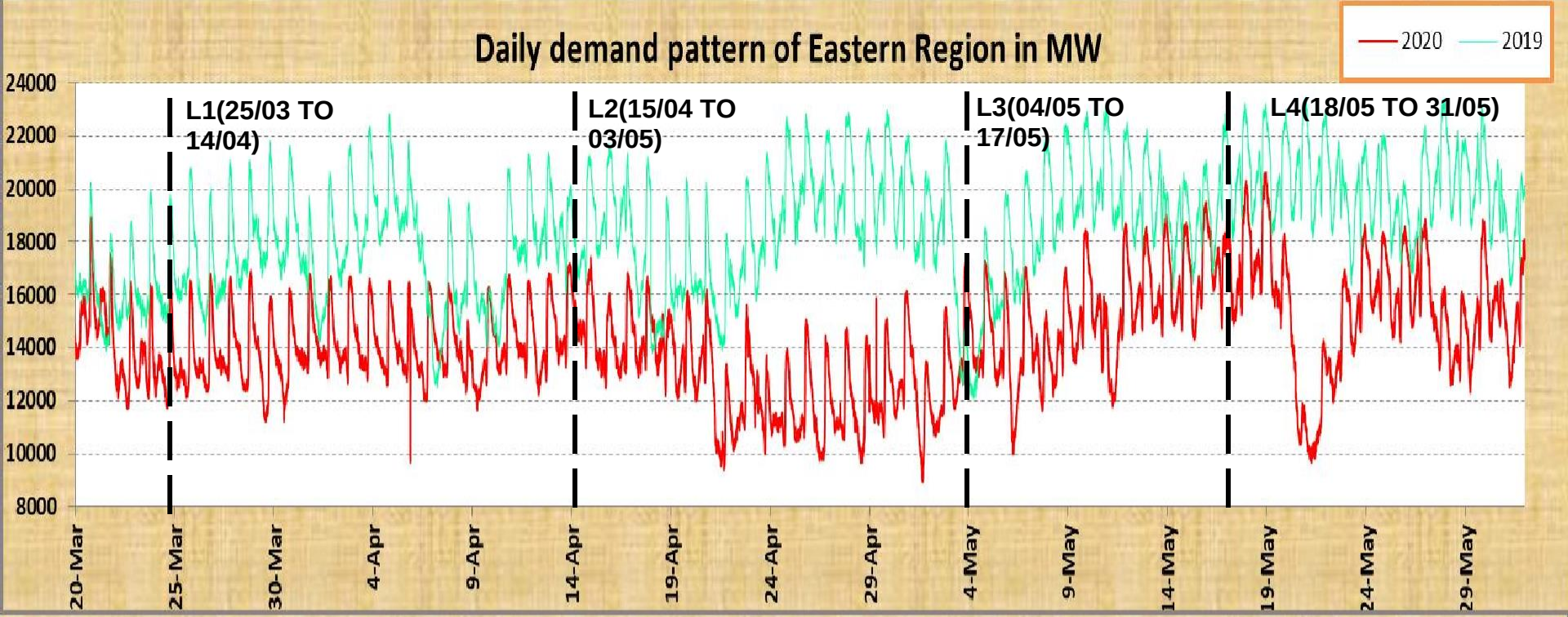
Constitute	Demand (in MW)	Date	Time	Dmd met (MW) on 18th May'20 (max dmd met day)	
				MW	Time
Bihar	5972	03-Sep-19	20:07	5378	21:51
DVC	3543	21-Dec-19	18:06	2465	19:27
Jharkhand	1472	24-May-20	12:45	1470	20:20
Odisha	5558	23-Aug-18	20:21	4027	21:17
Sikkim	193	24-Jan-20	18:28	94	08:55
W. Bengal	9546	27-May-19	23:31	7915	23:27
ER	23451	21-Aug-19	20:47	20596	23:34

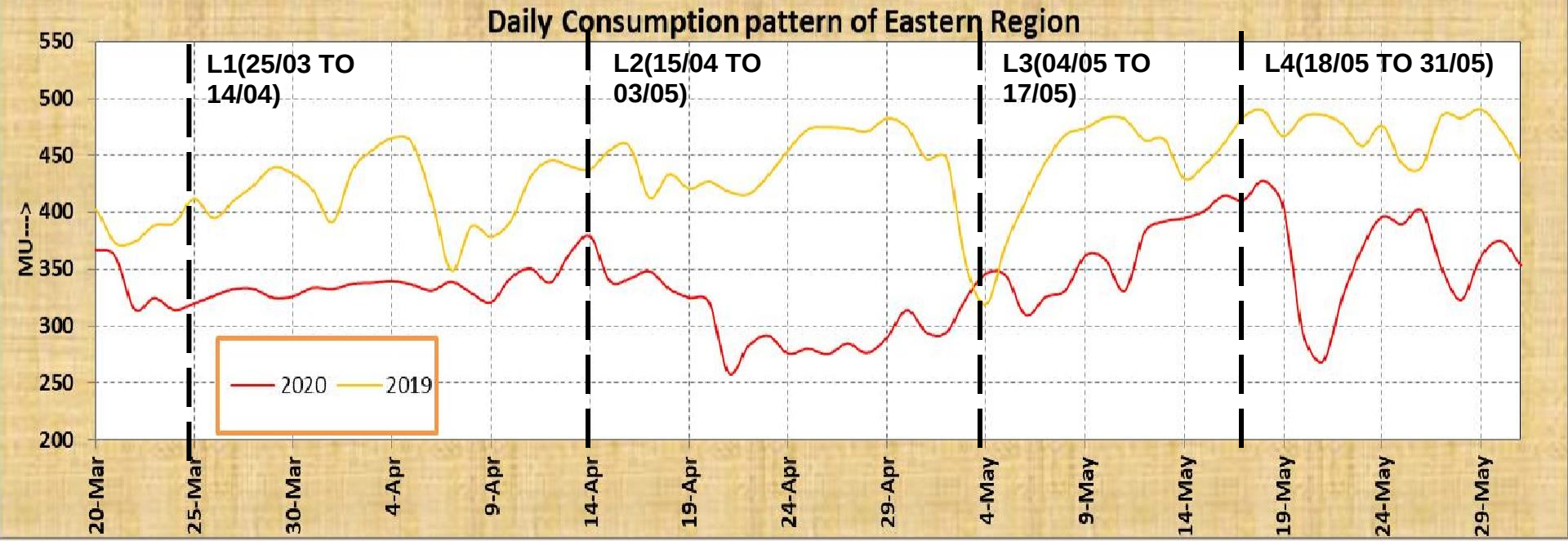
So Far Highest Energy Consumption

Constitute	Energy consumption (in MUs)	Date	Energy met on 18th May'20 (max dmd met day)
Bihar	121.4	02-Sep-19	105.8

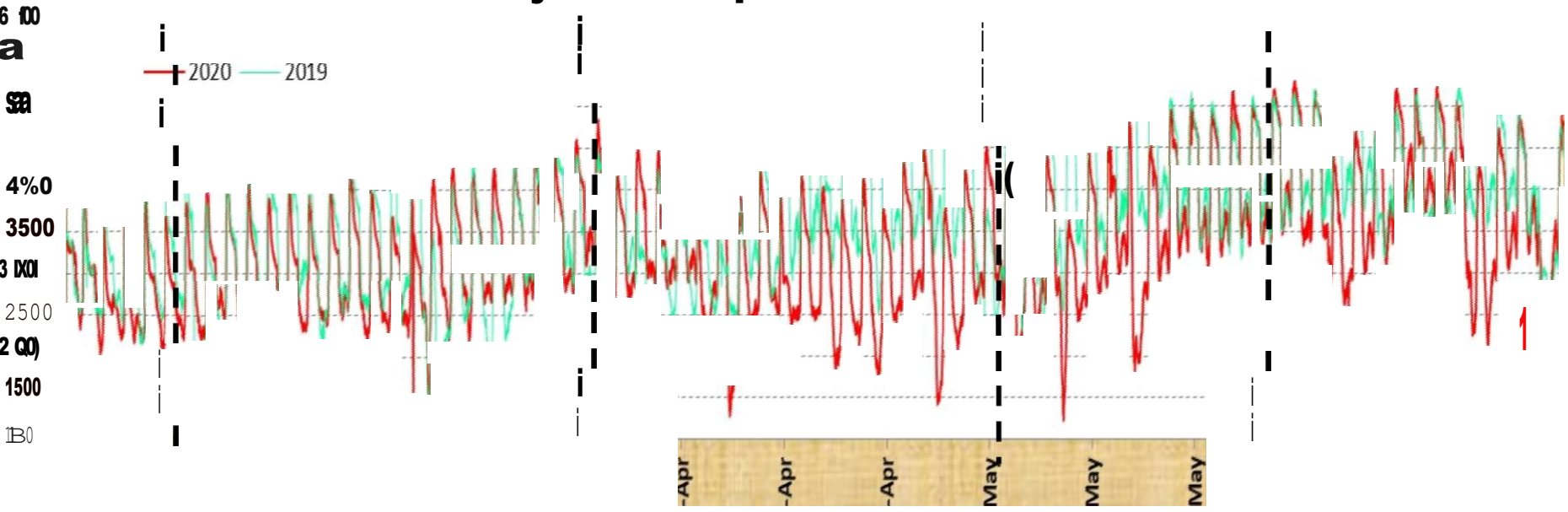
DVC	75.8	12-Jul-18	52.9
Jharkhand	28.3	25-May-20	26.8
Odisha	123.5	02-Oct-18	83.3
Sikkim	2.5	28-Jan-20	1.3
W. Bengal	199.9	28-May-19	157.7
ER	506.0	25-Jun-19	427.9

Grid Performance During Covid-19 lock down

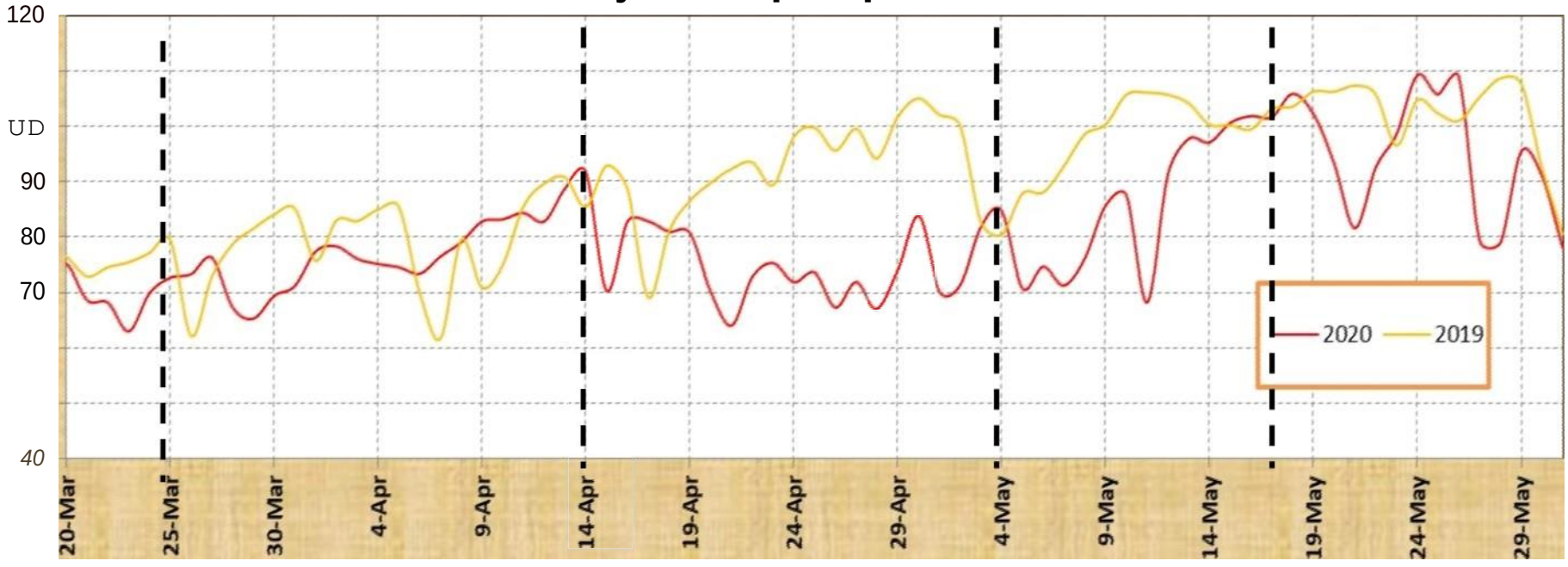

Daily demand pattern of Eastern Region in MW
2020
2019
L1(25/03 TO 14/04)
L2(15/04 TO 03/05)
L3(04/05 TO 17/05)
L4(18/05 TO 31/05)
24000
22000
20000
18000
16000
14000
12000
10000
8000
20-Mar
25-Mar
30-Mar
4-Apr
9-Apr
14-Apr
19-Apr
24-Apr
29-Apr
4-May
9-May
14-May
19-May
24-May
29-May

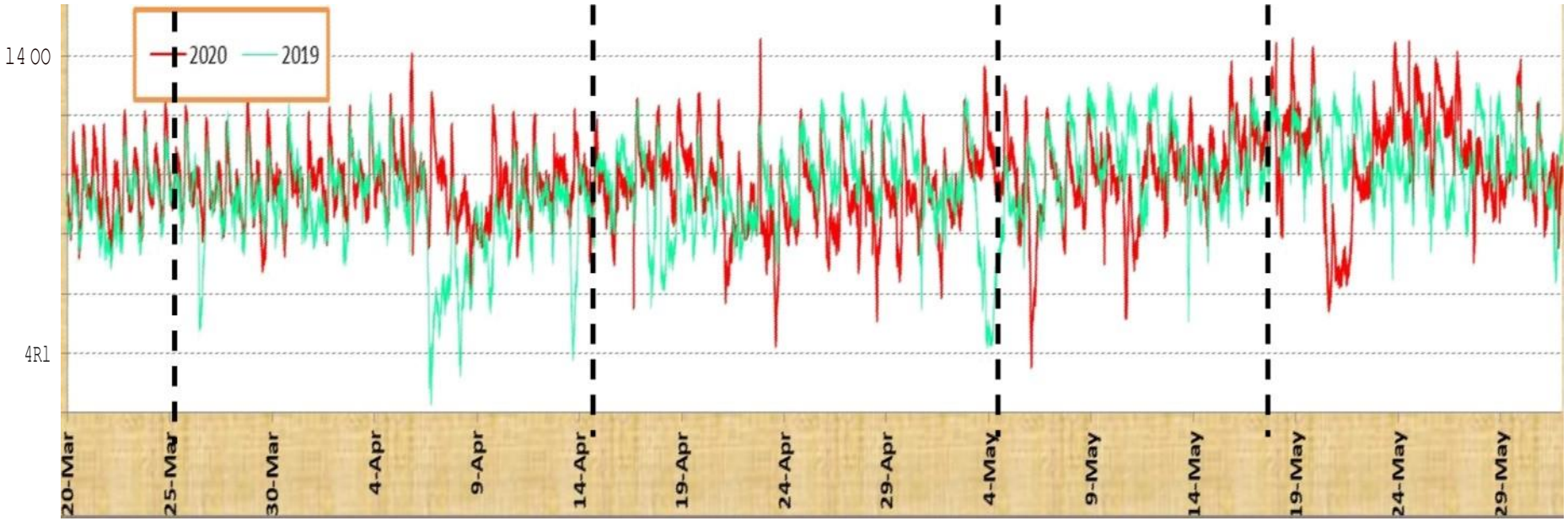

Daily Consumption pattern of Eastern Region
L1(25/03 TO 14/04)
L2(15/04 TO 03/05)
L3(04/05 TO 17/05)
L4(18/05 TO 31/05)
MU--->
550
500
450
400
350
300
250
200
2020
2019
20-Mar
25-Mar
30-Mar
4-Apr
9-Apr
14-Apr
19-Apr
24-Apr
29-Apr
4-May
9-May
14-May
19-May
24-May
29-May

Daily demand paxernof Bihar in MW

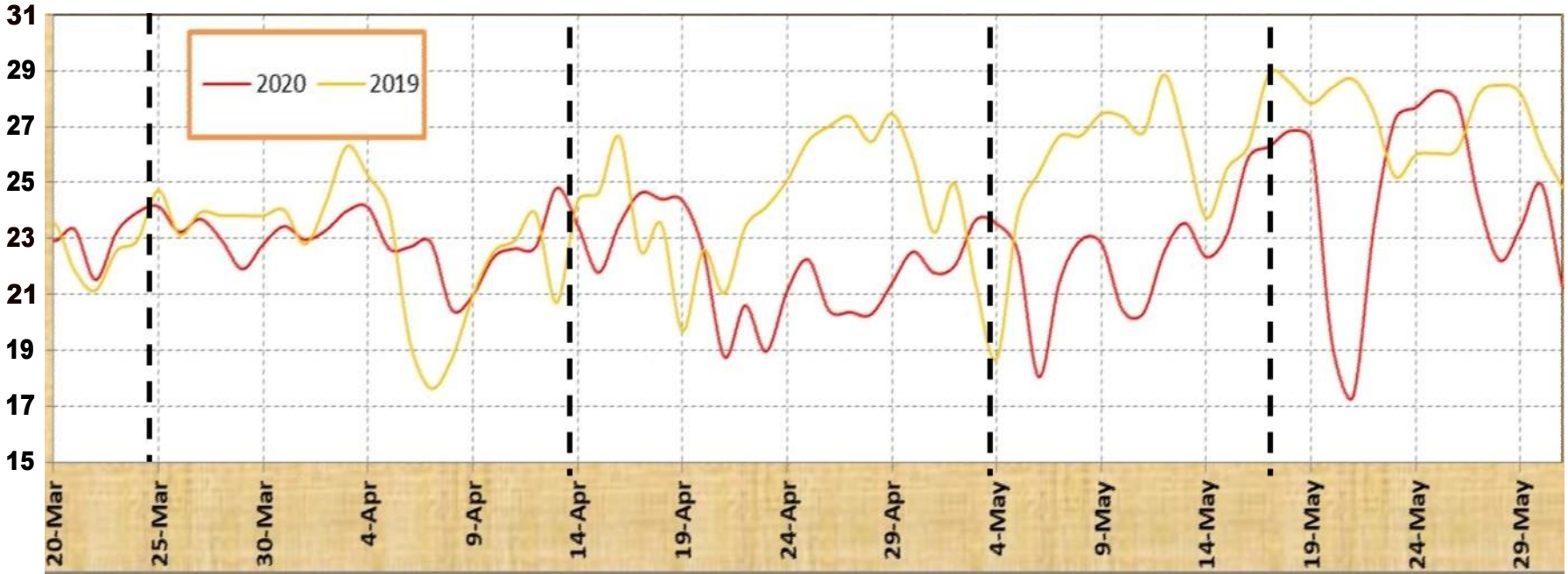


Daily Consumption pah ern of Bihar

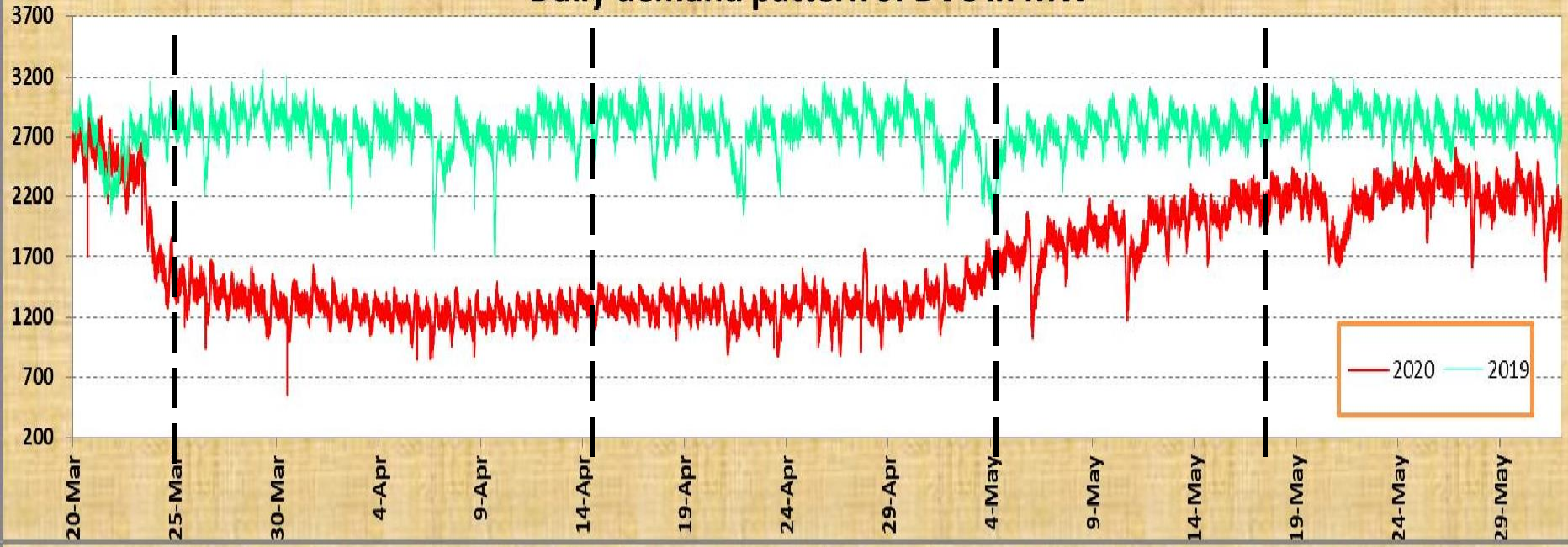




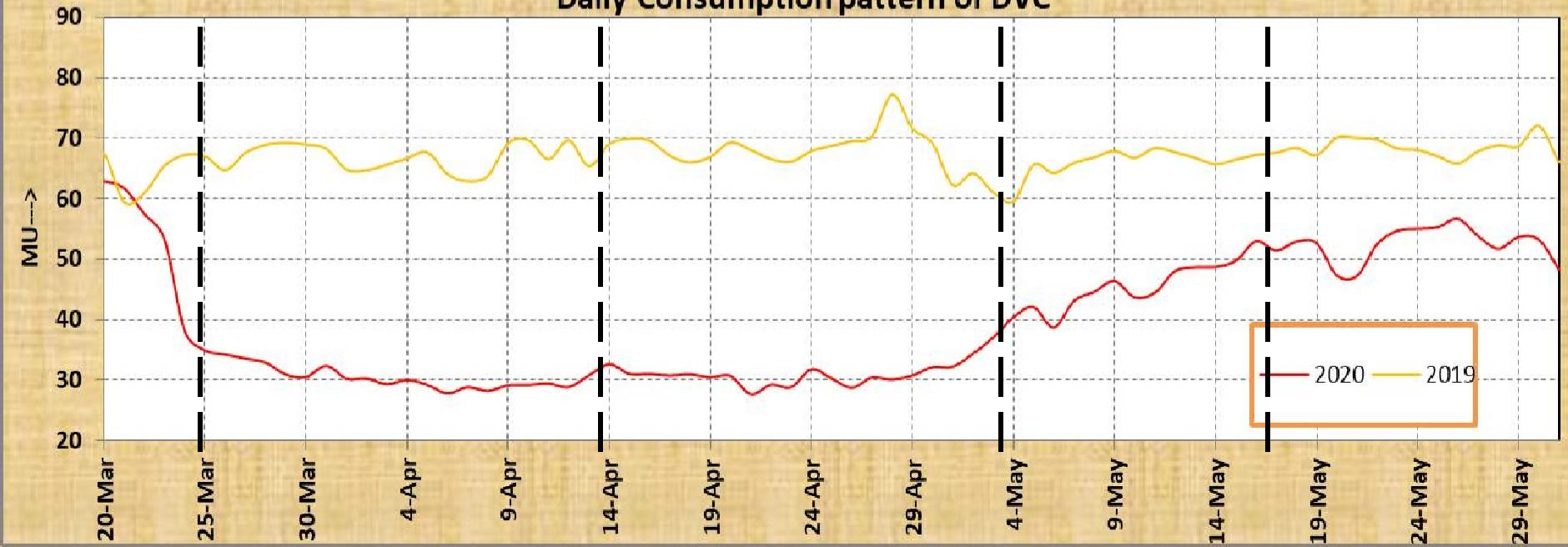
Daily Consumption pah ern of Jharkhand

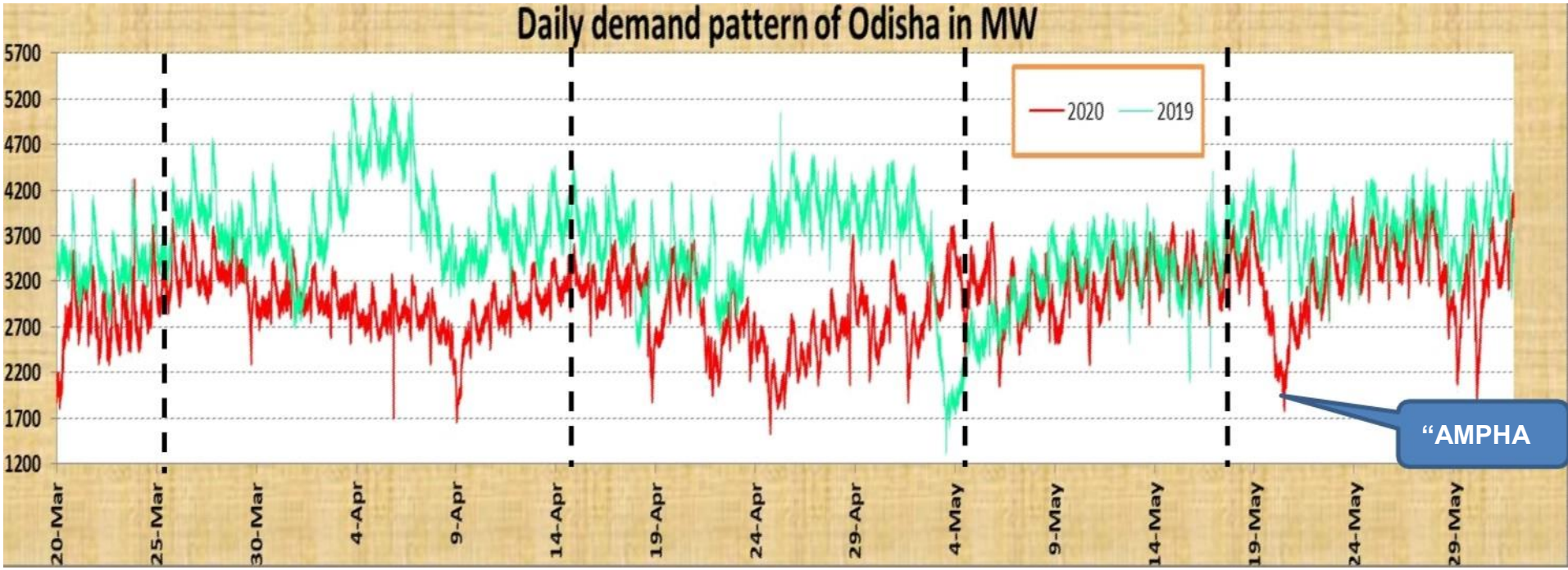


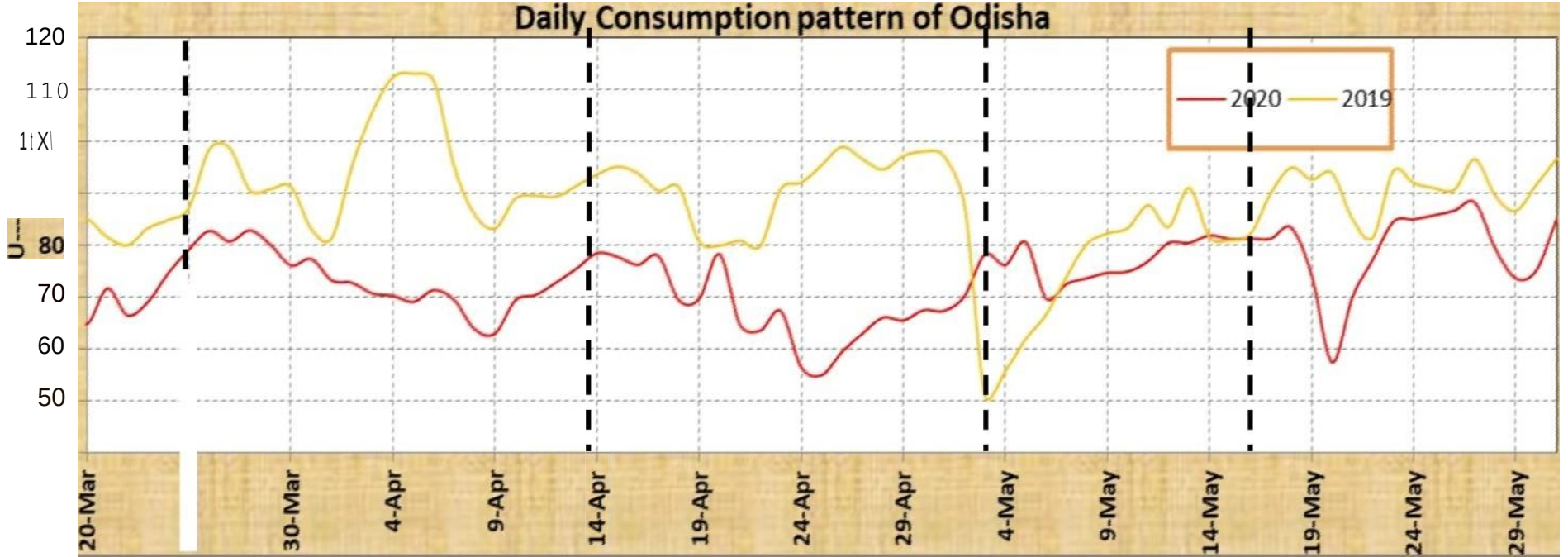
Daily demand pattern of DVC in MW

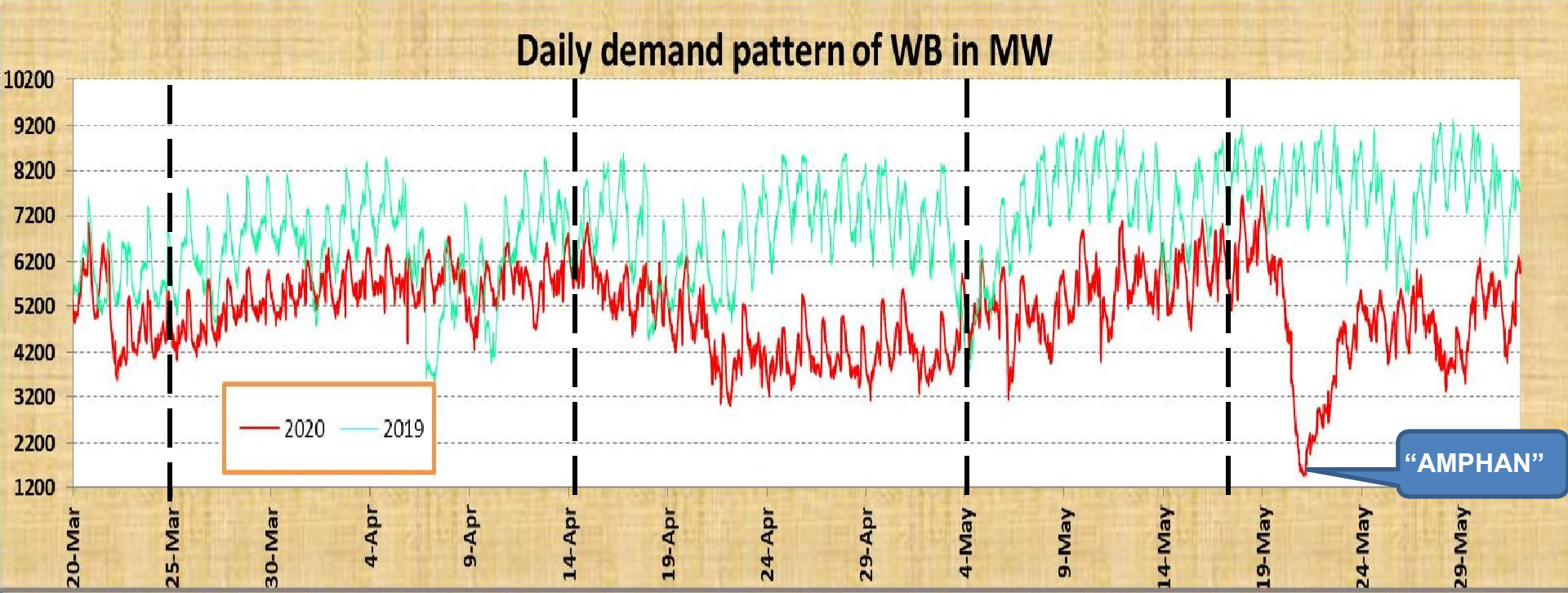


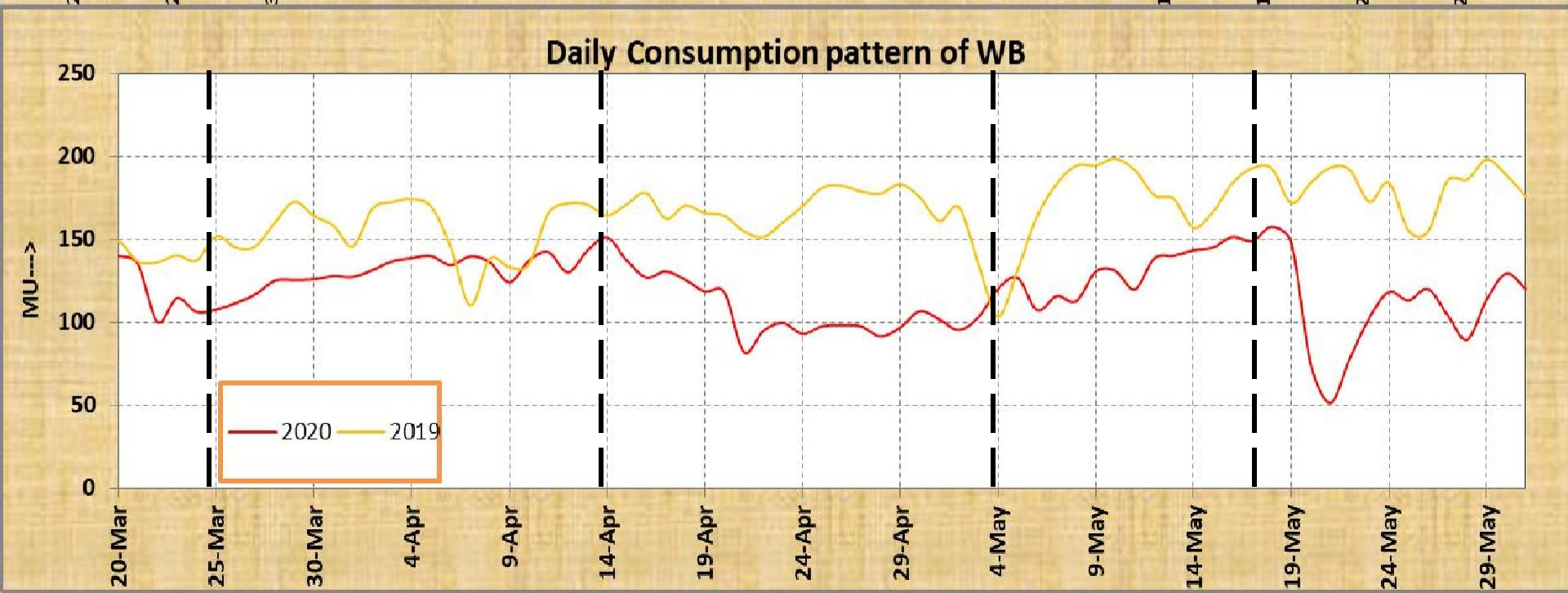
Daily Consumption pattern of DVC



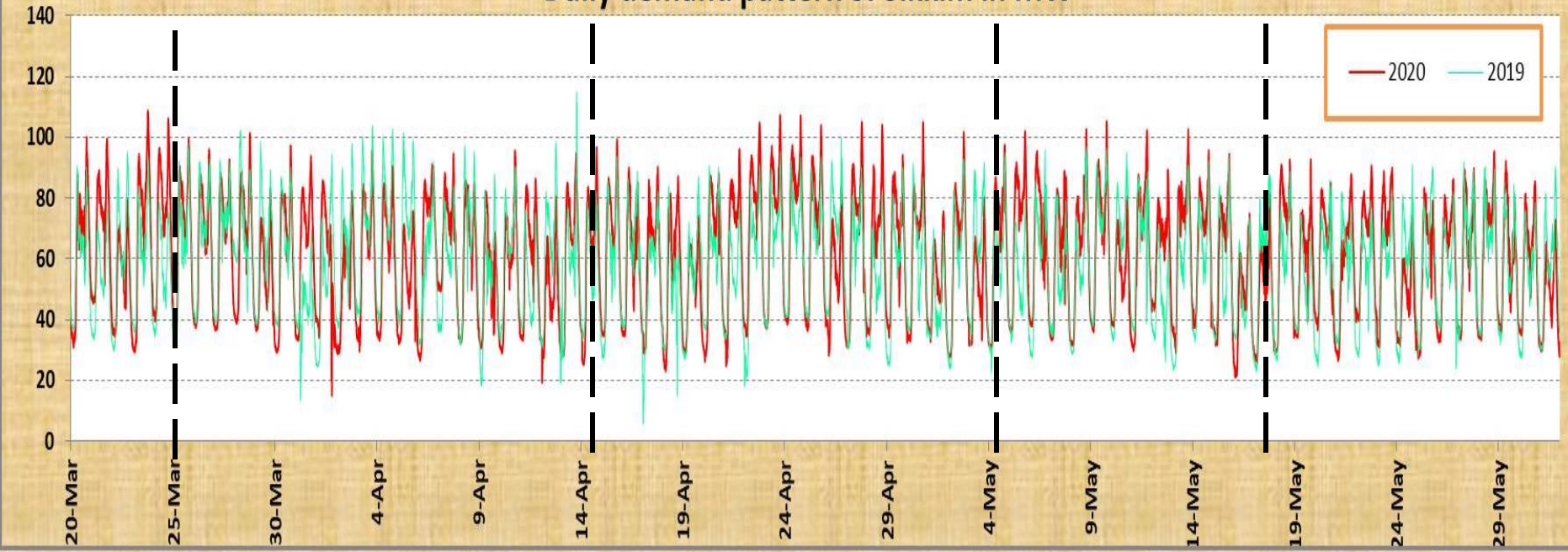

Daily demand pattern of Odisha in MW
5700
5200
4700
4200
3700
3200
2700
2200
1700
1200
2020
2019
20-Mar
25-Mar
30-Mar
4-Apr
9-Apr
14-Apr
19-Apr
24-Apr
29-Apr
4-May
9-May
14-May
19-May
24-May
29-May
"AMPHA


Daily Consumption pattern of Odisha
120
110
80
70
60
50
2020
2019
20-Mar
30-Mar
4-Apr
9-Apr
14-Apr
19-Apr
24-Apr
29-Apr
4-May
9-May
14-May
19-May
24-May
29-May

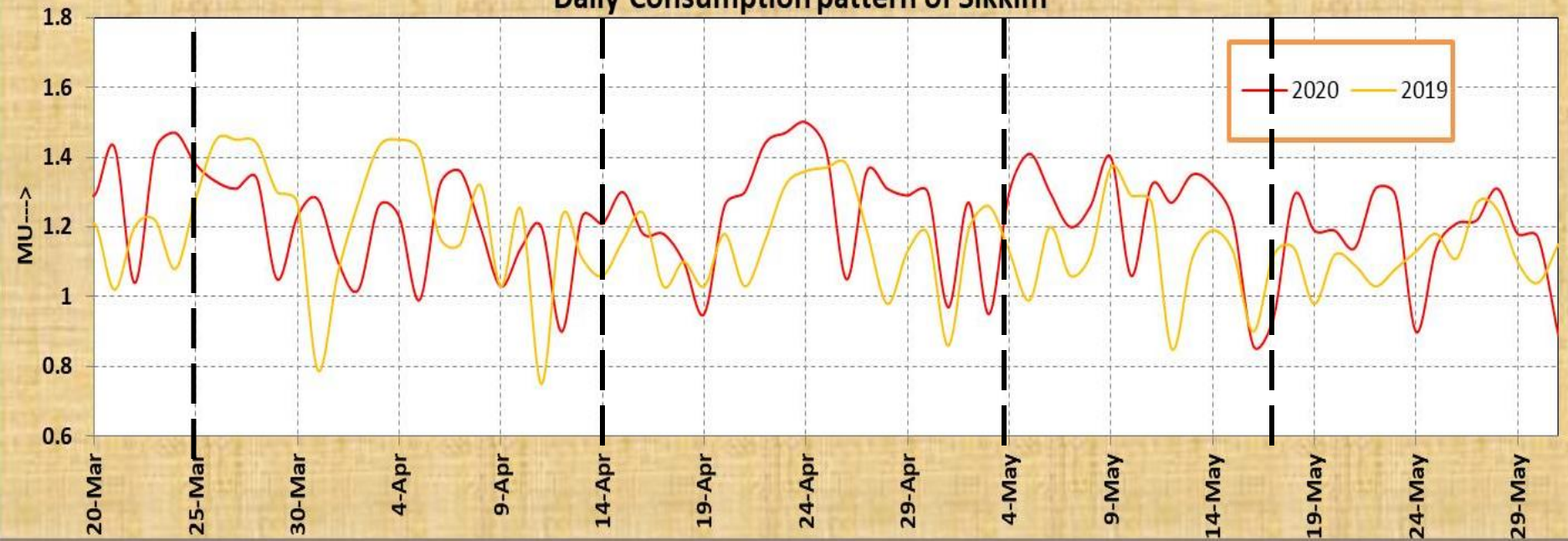

Daily demand pattern of WB in MW
10200
9200
8200
7200
6200
5200
4200
3200
2200
1200
2020
2019
"AMPHAN"
20-Mar
25-Mar
30-Mar
4-Apr
9-Apr
14-Apr
19-Apr
24-Apr
29-Apr
4-May
9-May
14-May
19-May
24-May
29-May


Daily Consumption pattern of WB
MU--->
250
200
150
100
50
0
2020
2019
20-Mar
25-Mar
30-Mar
4-Apr
9-Apr
14-Apr
19-Apr
24-Apr
29-Apr
4-May
9-May
14-May
19-May
24-May
29-May

Daily demand pattern of Sikkim in MW

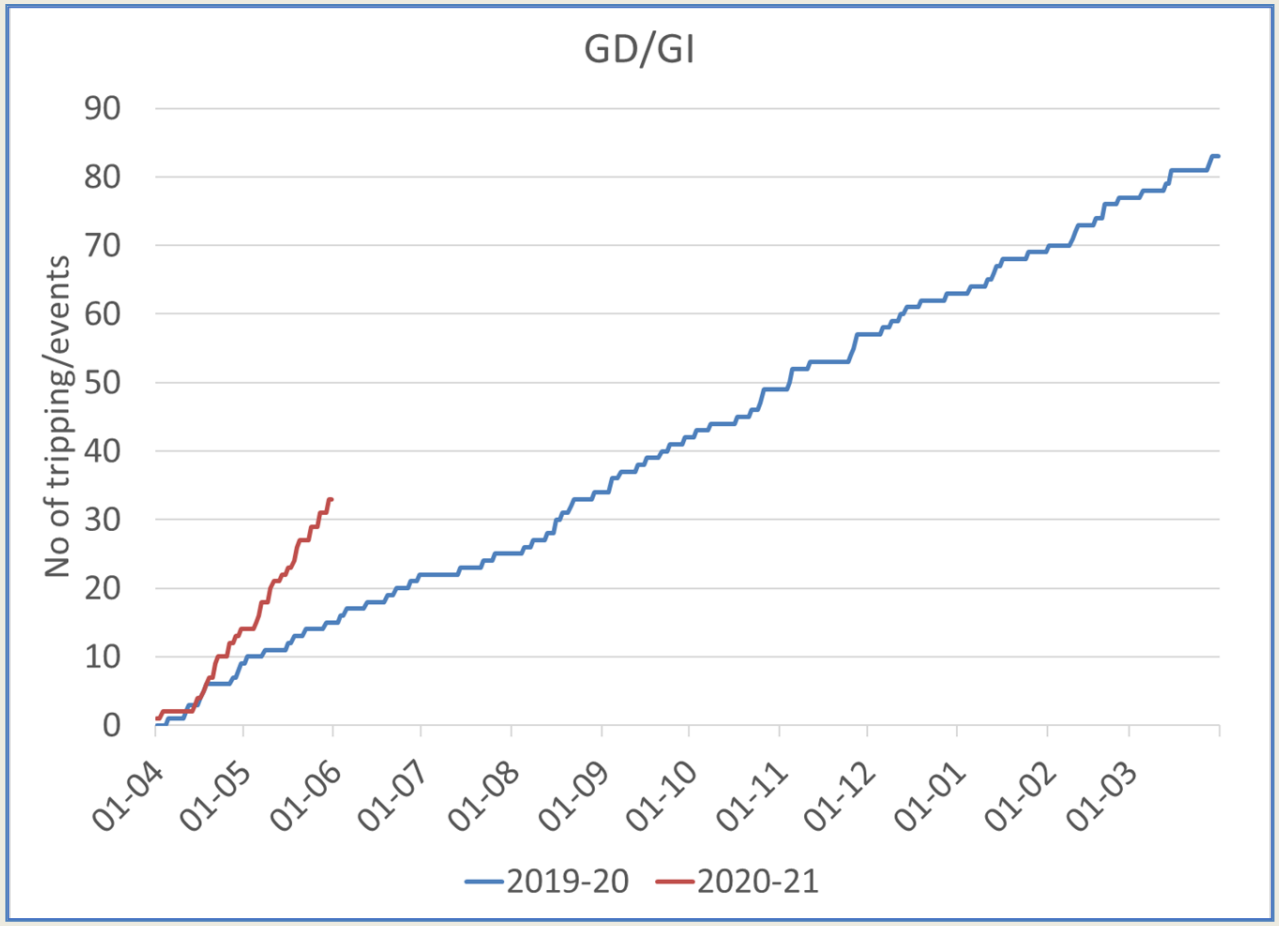


Daily Consumption pattern of Sikkim

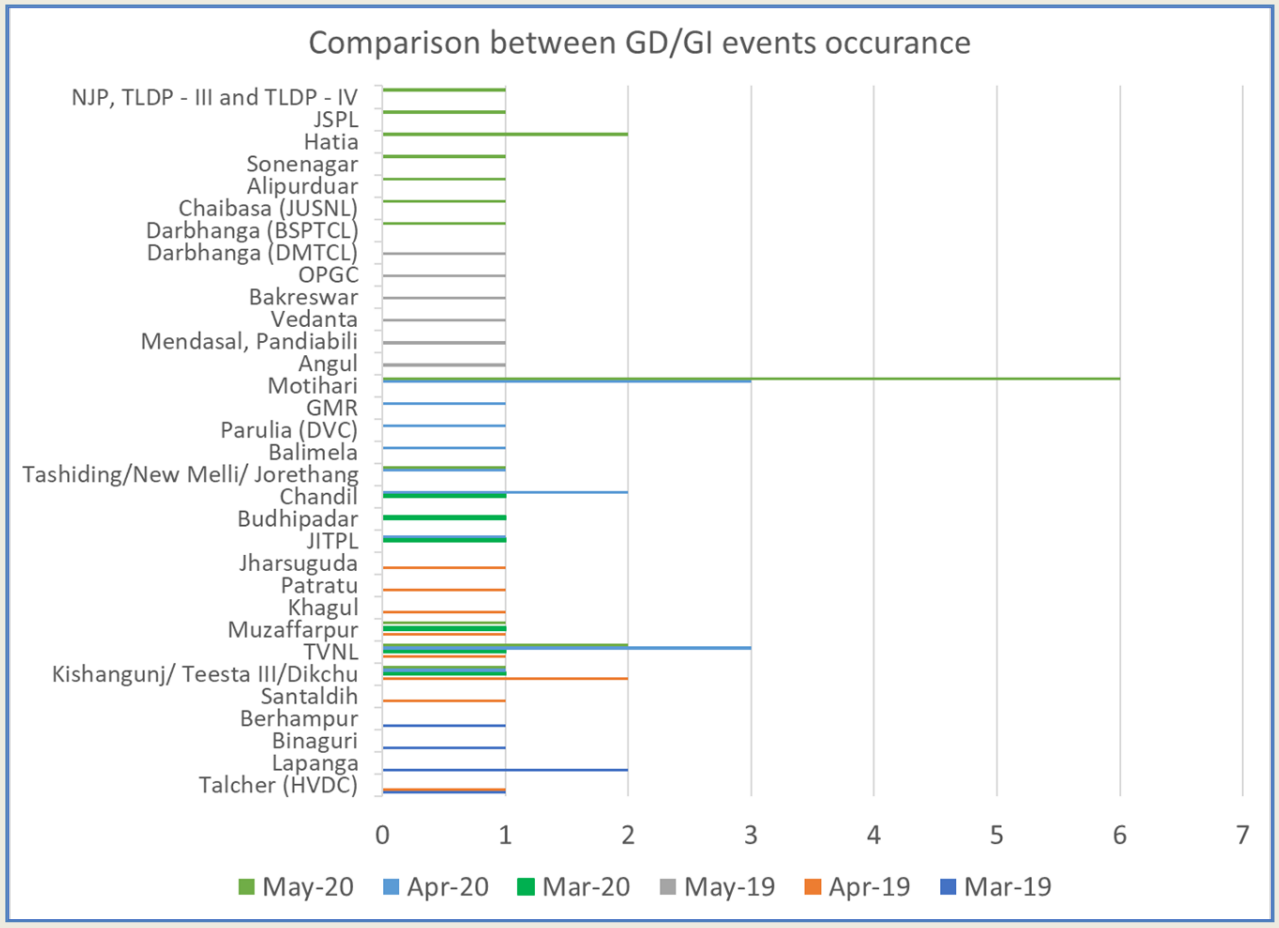


Grid Performance-Transmission Elements During Covid-19 lock down period

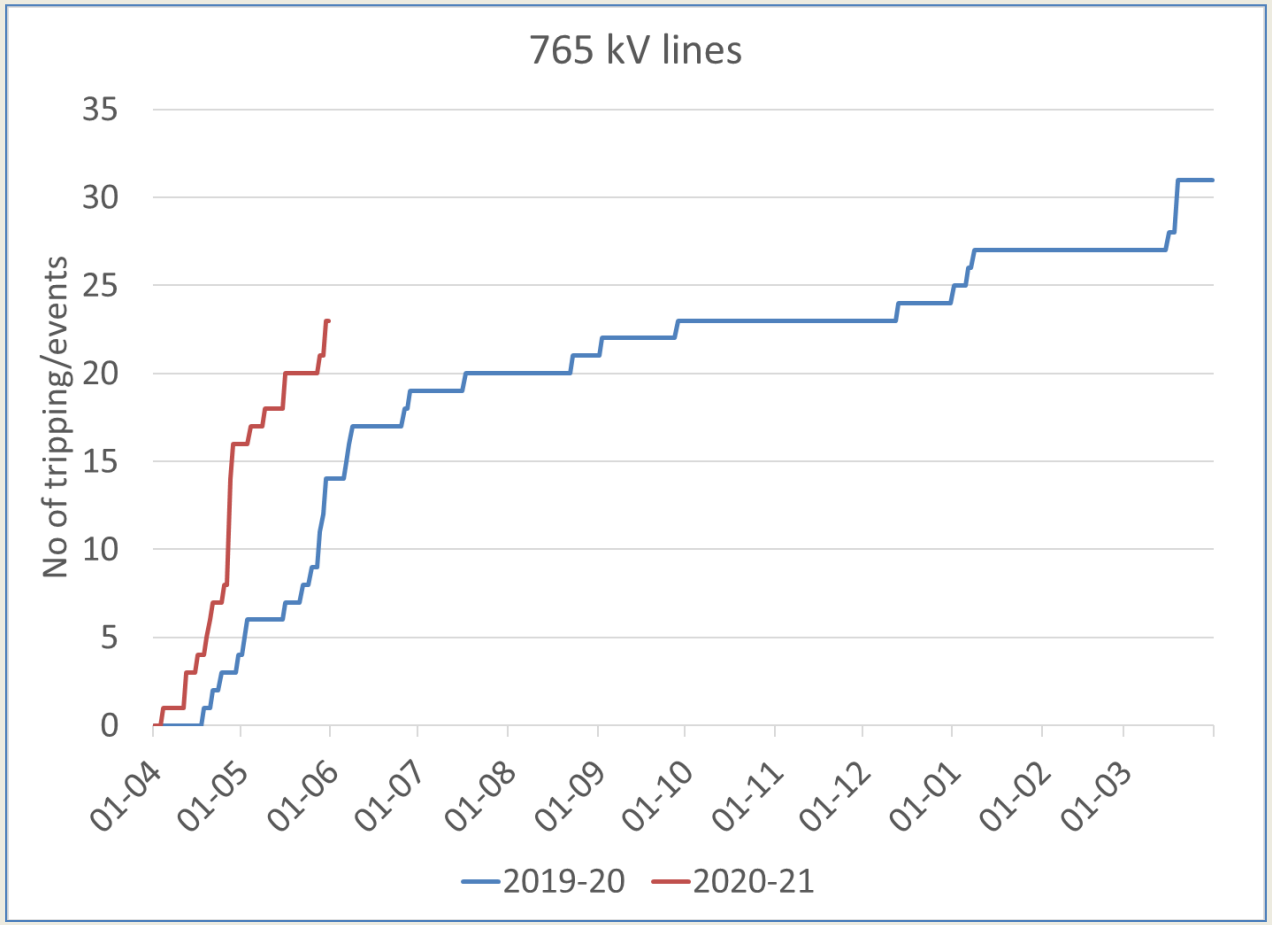
Growing no of GD/GI in Eastern Region



Repeated GD/GI at same place

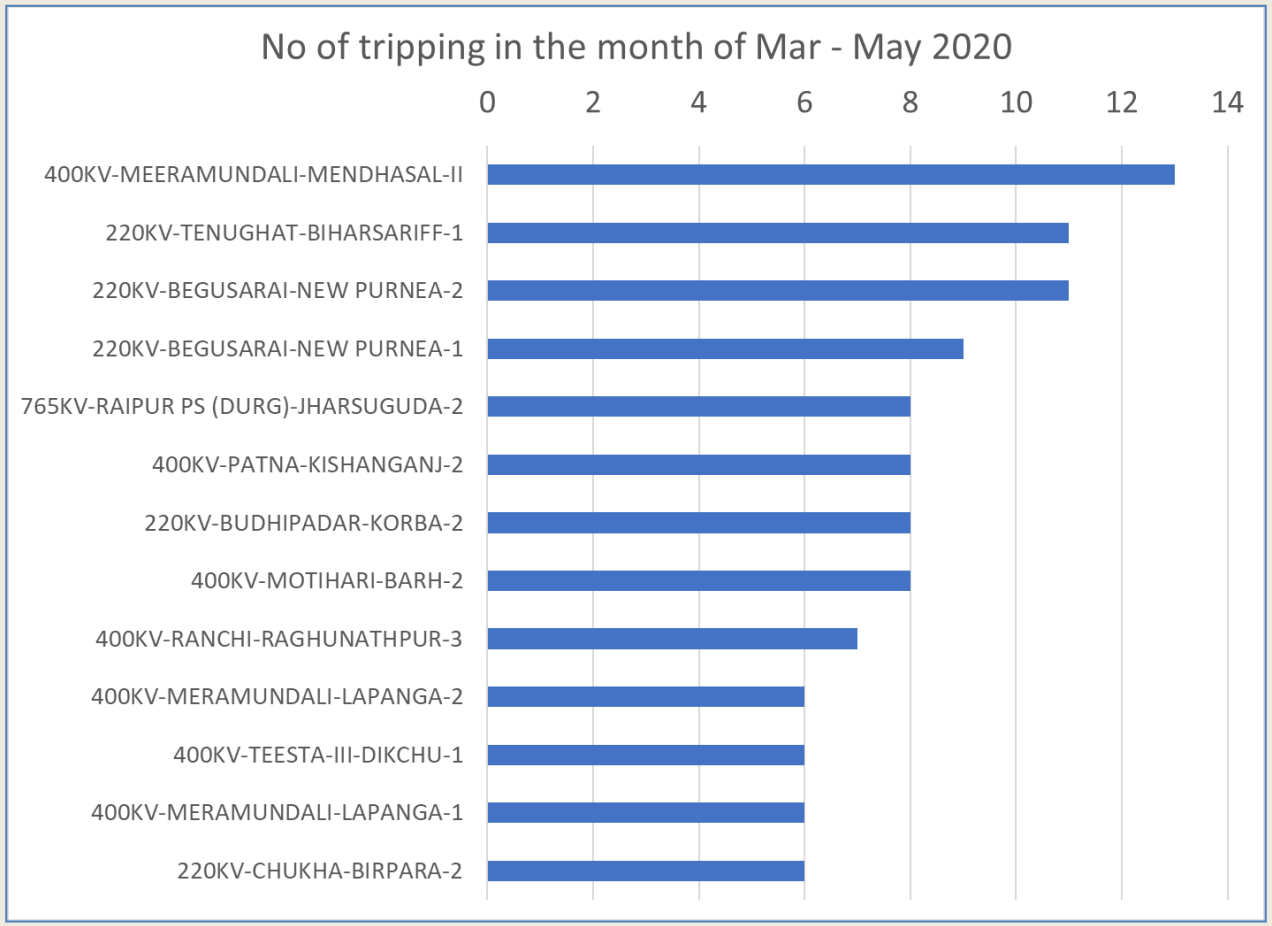


Growing no of tripping incidents of 765 kV transmission lines



Source: ERLDC Log book

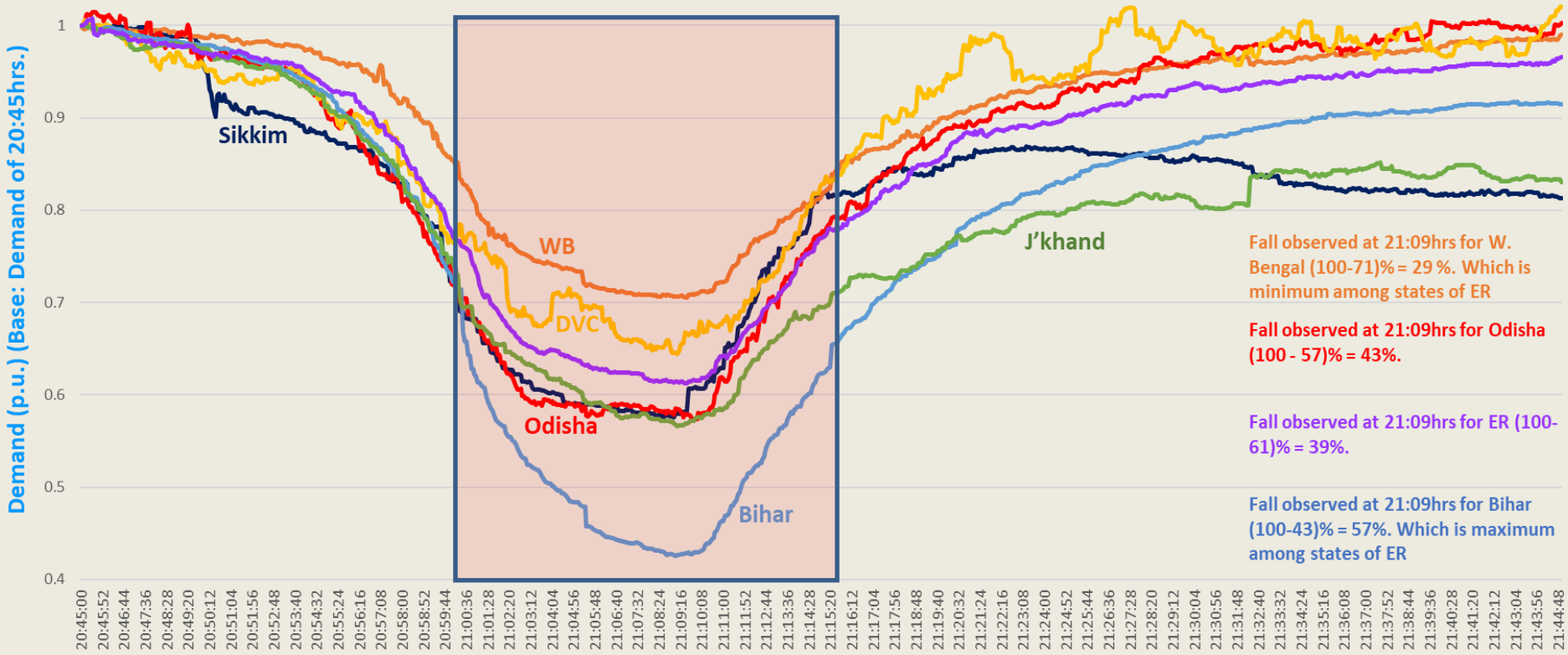
Repeated tripping of same transmission elements



In case of majority tripping, fault found in nearby location.

9 PM 9 Min
Light Off Event
05th Apr 2020

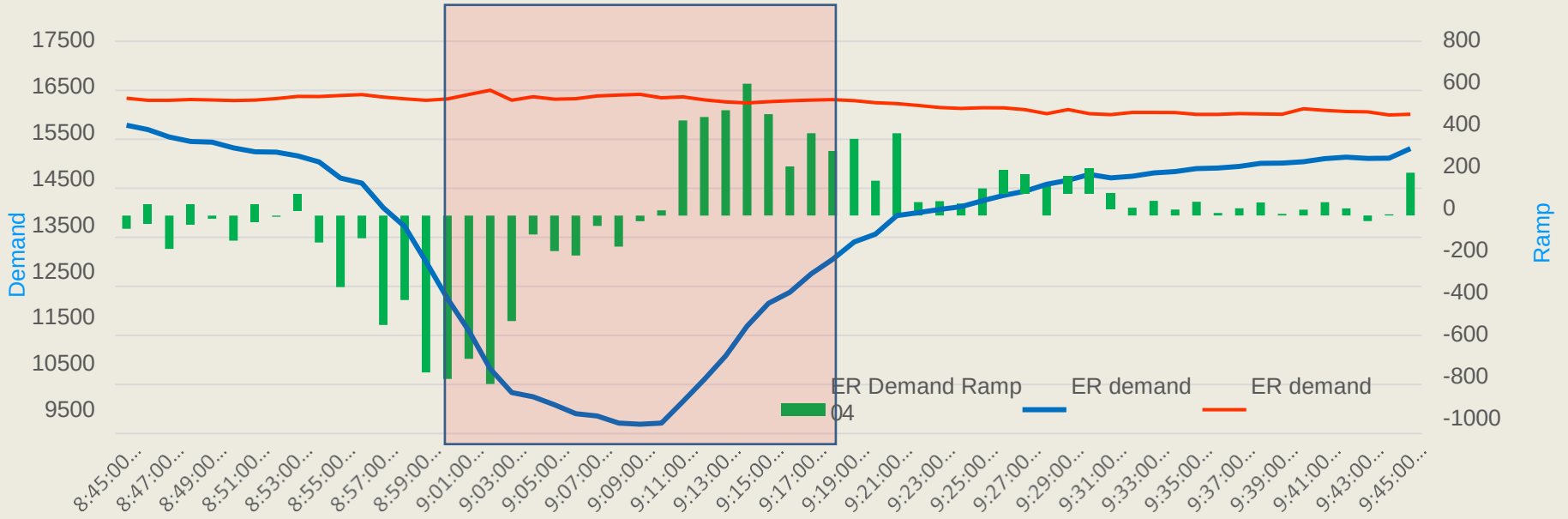
Demand changes (P.U.) of Eastern Region & States of ER from 20:45hrs. to 21:45Hrs.



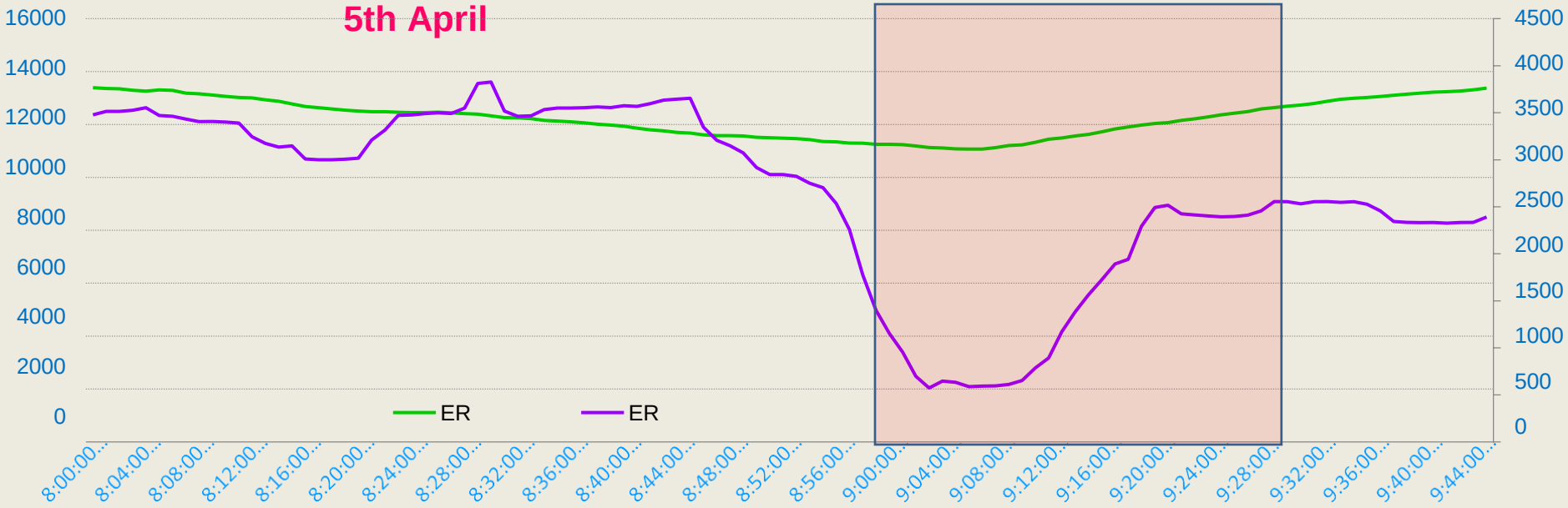
	Time	Bihar demand	DVC demand	Jharkhand demand	Odisha demand	West Bengal demand	Sikkim demand	ER Demand
Absolute Demand (M.W.)	20:45	3713.0	1320.3	1286.4	2937.5	6242.8	57.2	15785.6
	21:00	2694.6	1013.9	962.0	2116.2	5335.3	41.4	12246.9
	21:09	1583.5	852.4	732.0	1700.8	4410.	33.0	9685.5

						2		
% Change w.r.t 20:45	21:00	27.4	23.2	25.2	28.0	14.5	27.7	22.4
	21:09	57.4	35.4	43.1	42.1	29.4	42.4	38.6

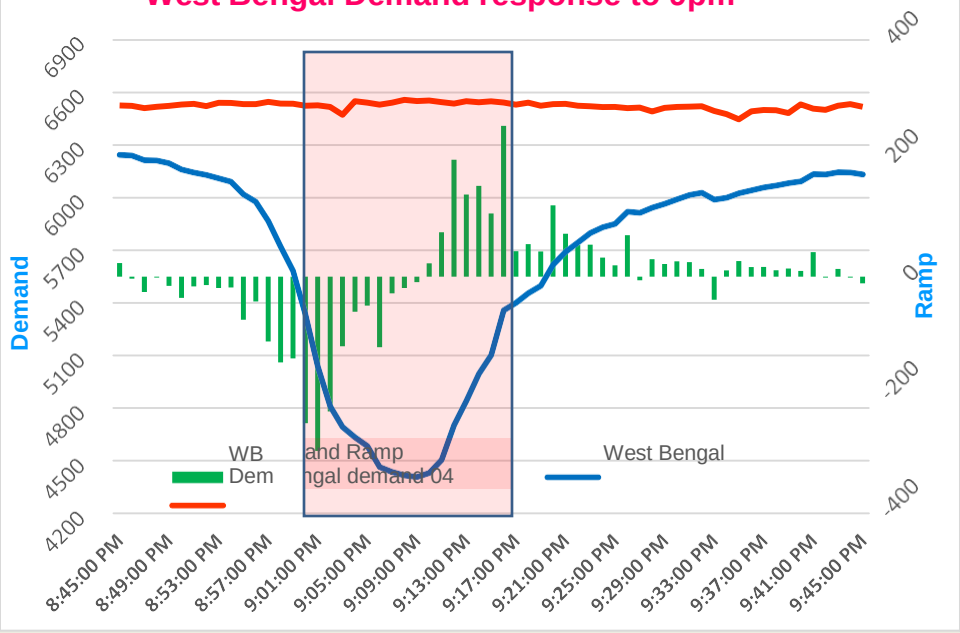
ER Demand response to 9pm 9min event



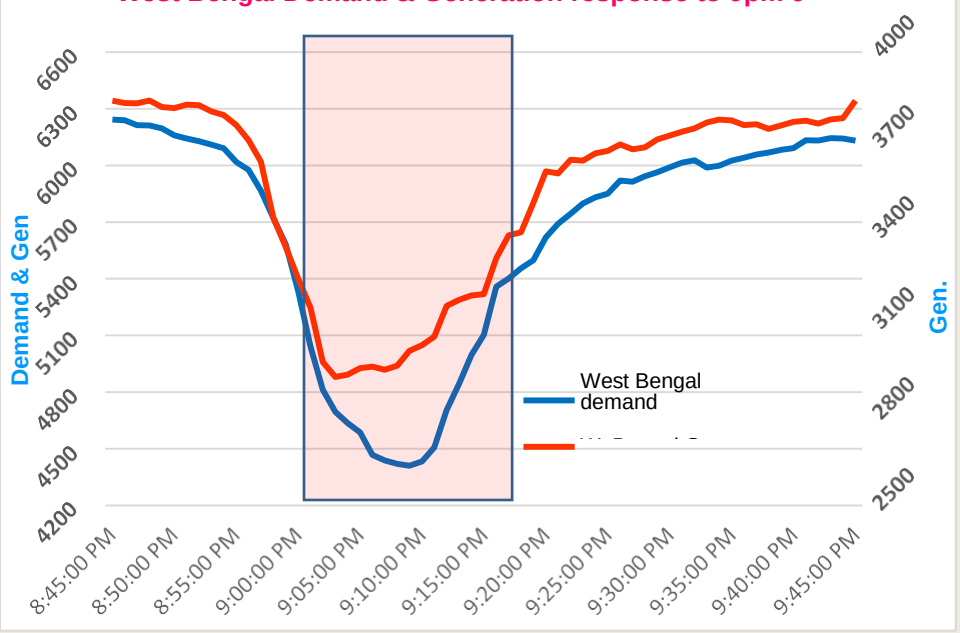
Eastern region Thermal & Hydro Genearation
5th April



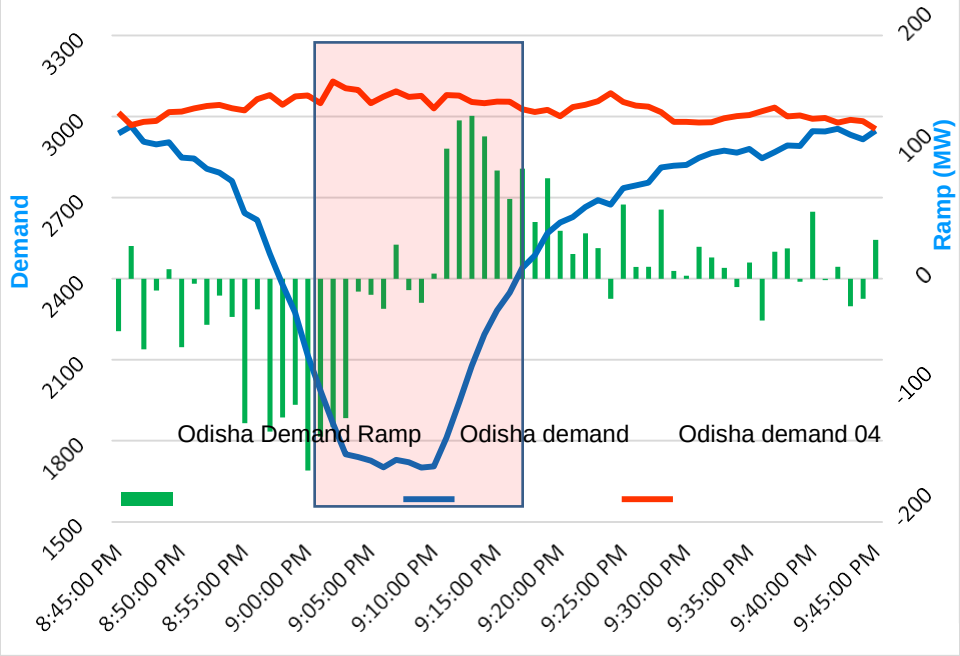
West Bengal Demand response to 9pm



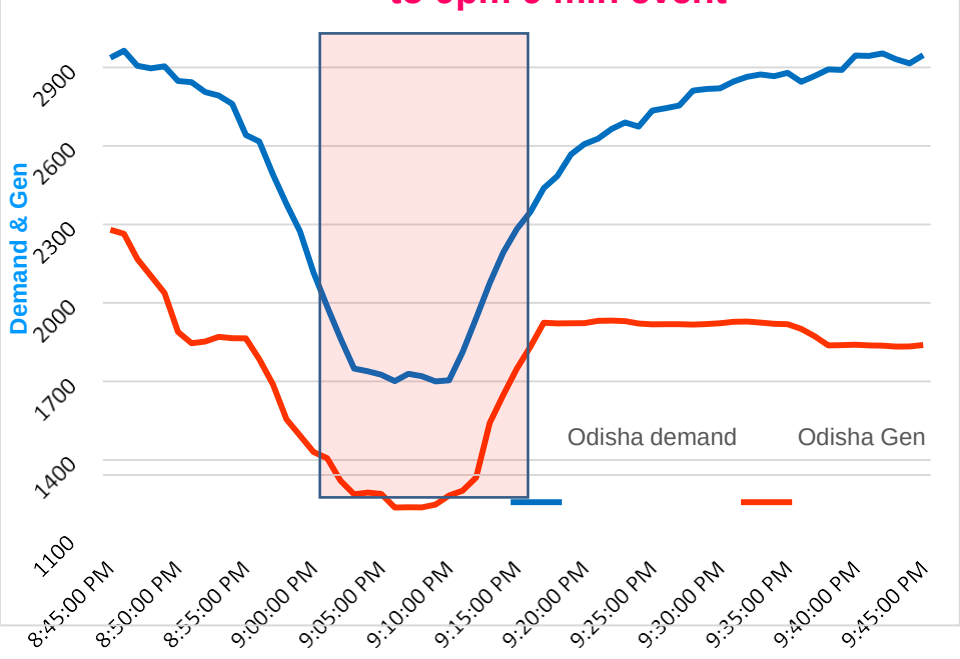
West Bengal Demand & Generation response to 9pm 9



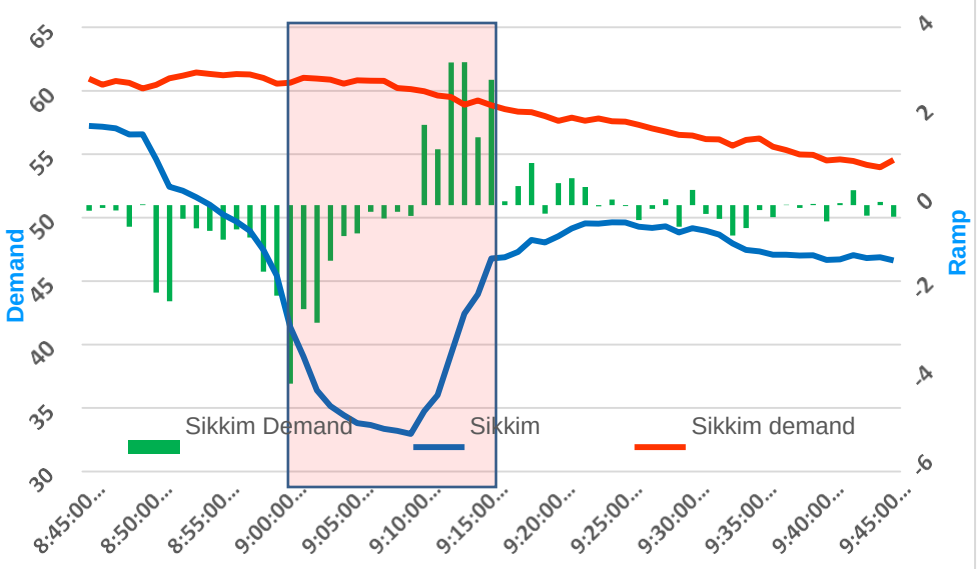
Odisha Demand response to 9pm 9min event



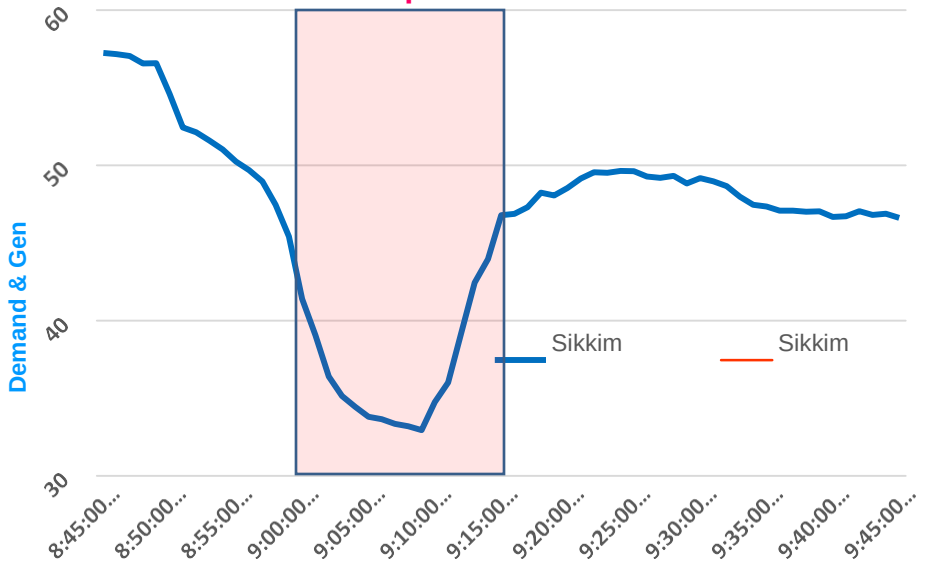
Odisha Demand & Generation response to 9pm 9 min event



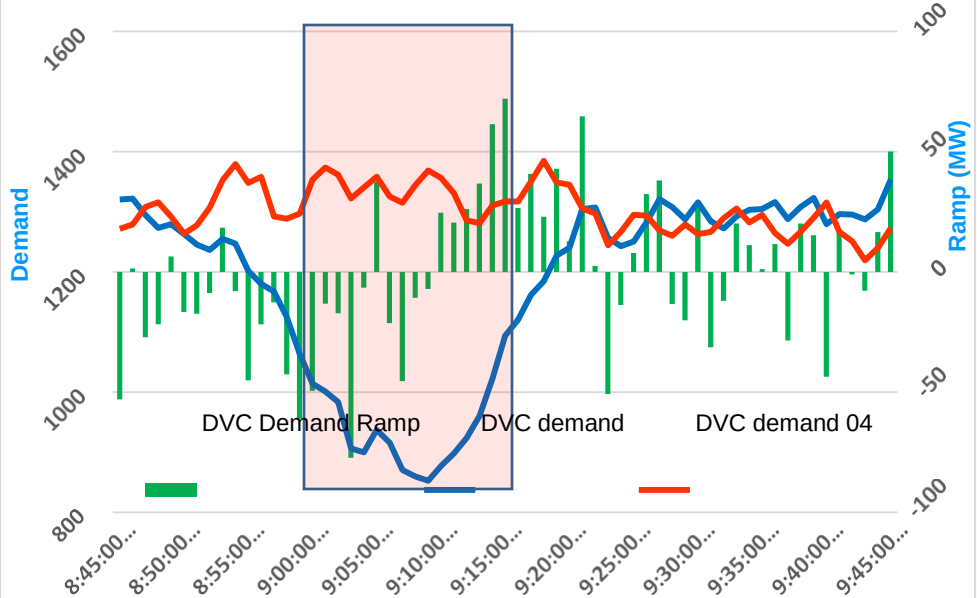
Sikkim Demand response to 9pm 9min



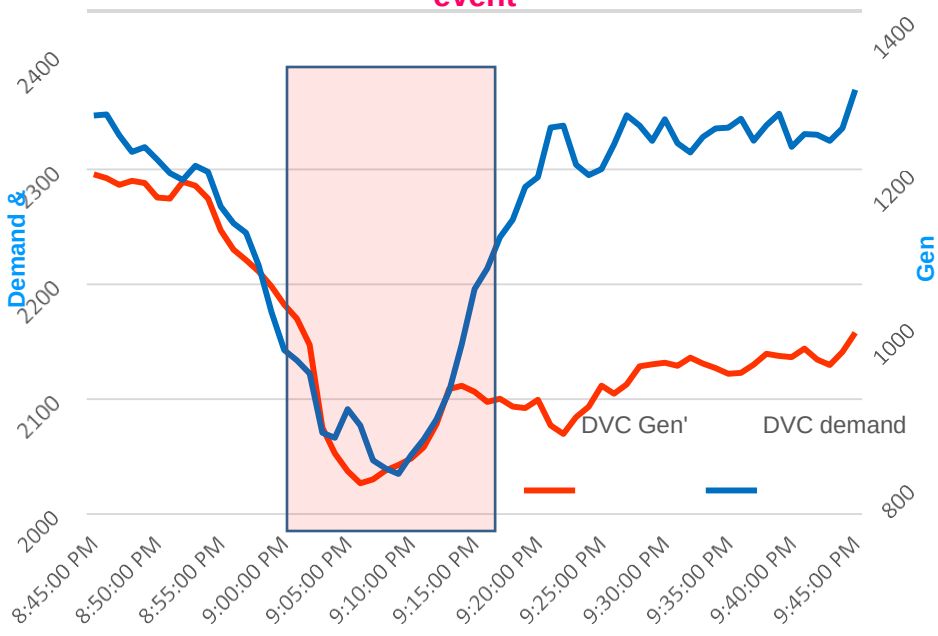
Sikkim Demand & Generation response to 9pm 9 min



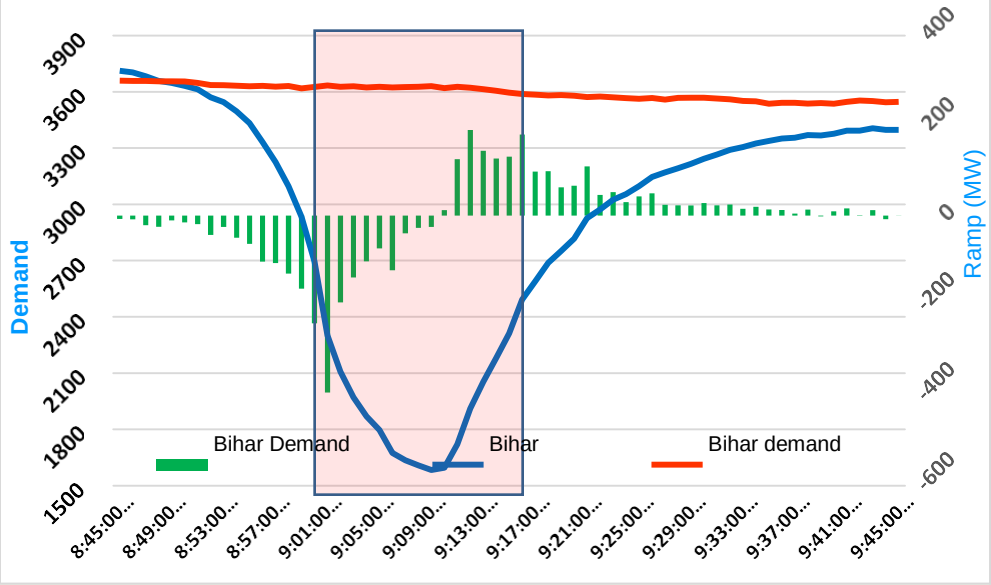
DVC Demand response to 9pm 9min event



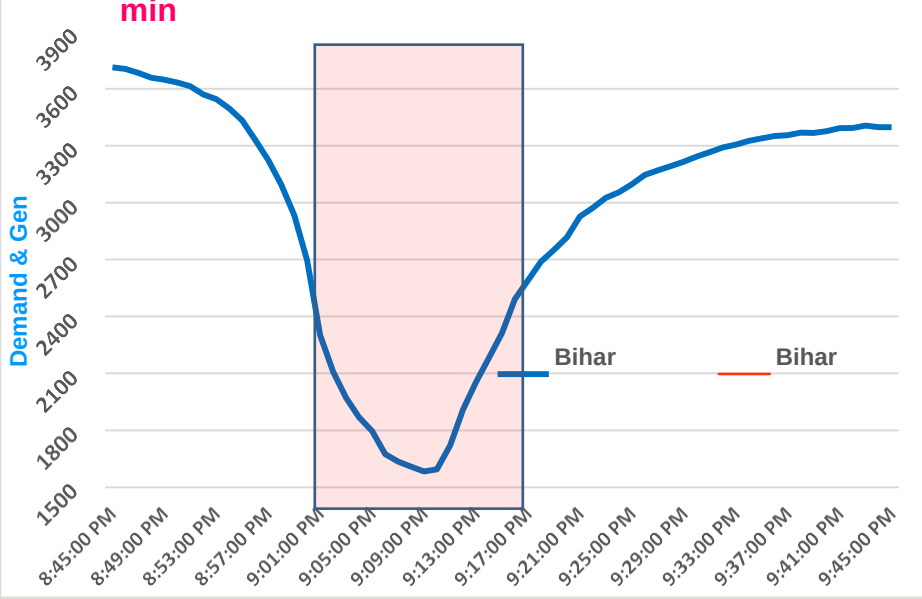
DVC Demand & Generation response to 9pm 9 min event



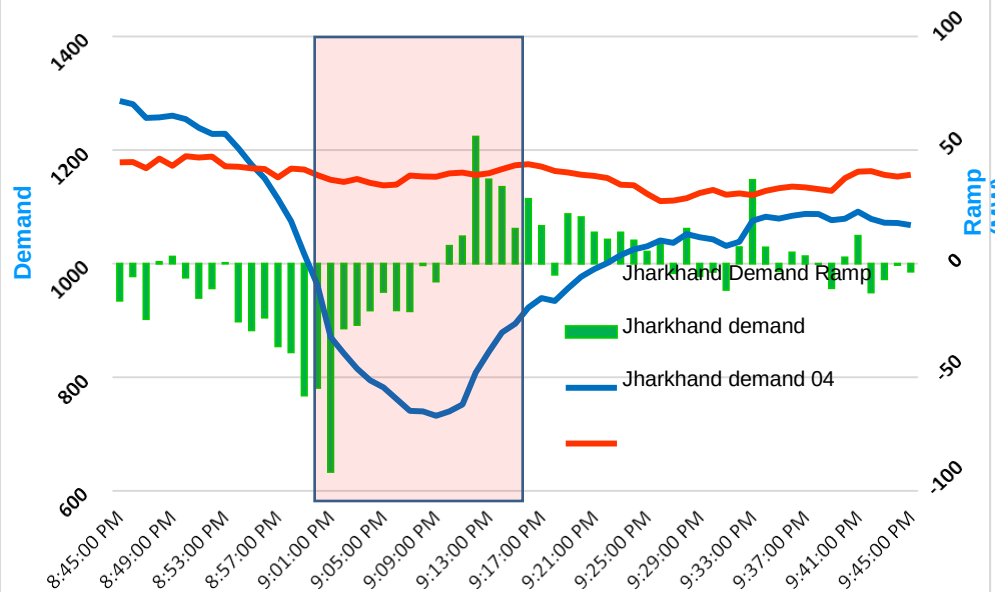
Bihar Demand response to 9pm 9min



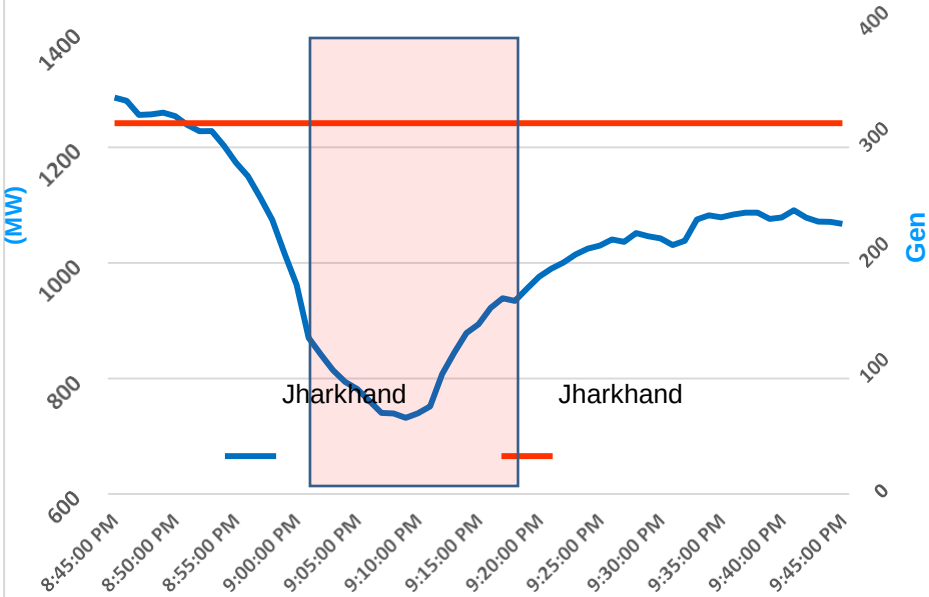
Bihar Demand & Generation response to 9pm 9 min



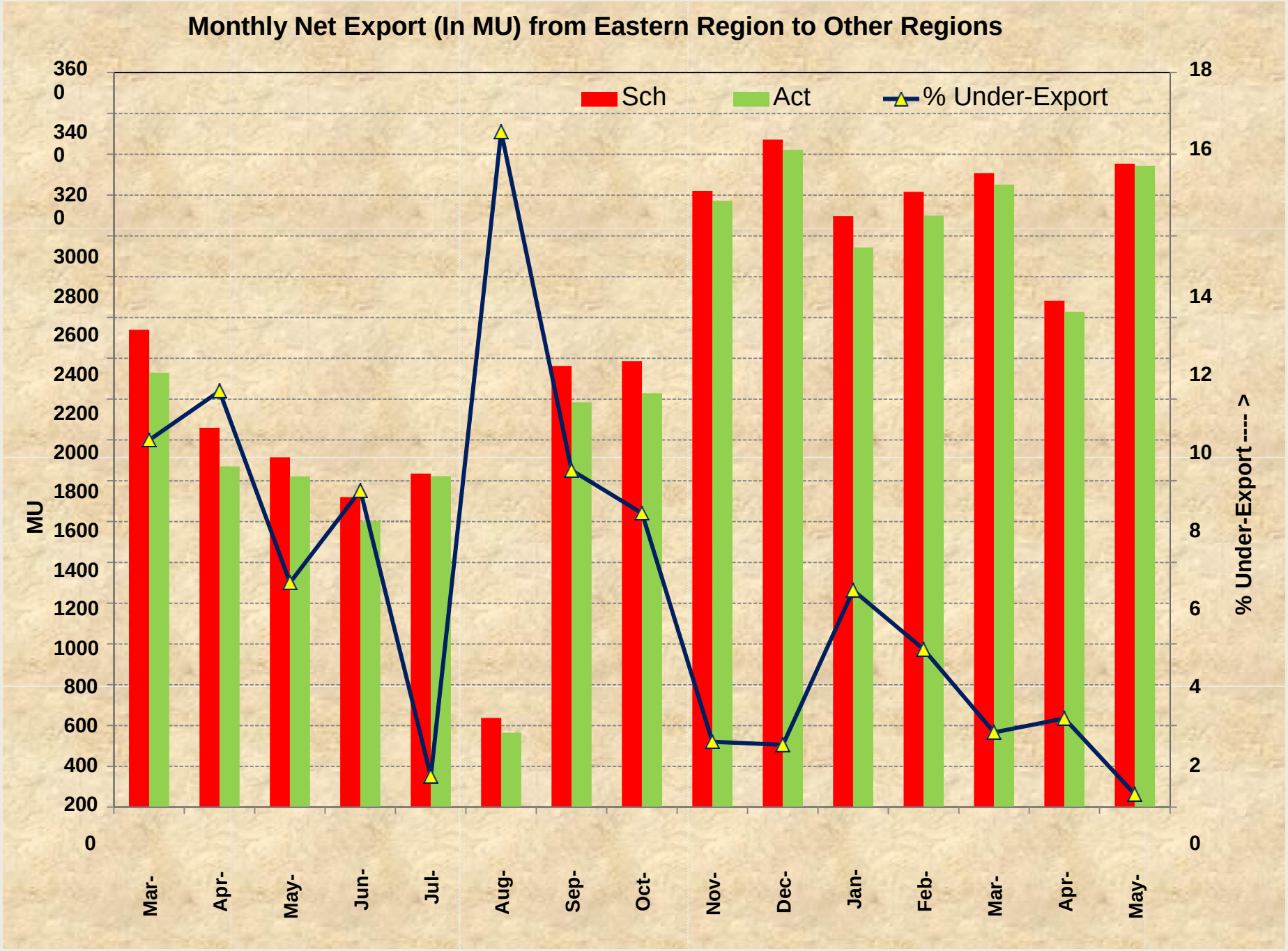
Jharkhand Demand response to 9pm 9min event



Jharkhand Demand & Generation response to 9pm 9 min

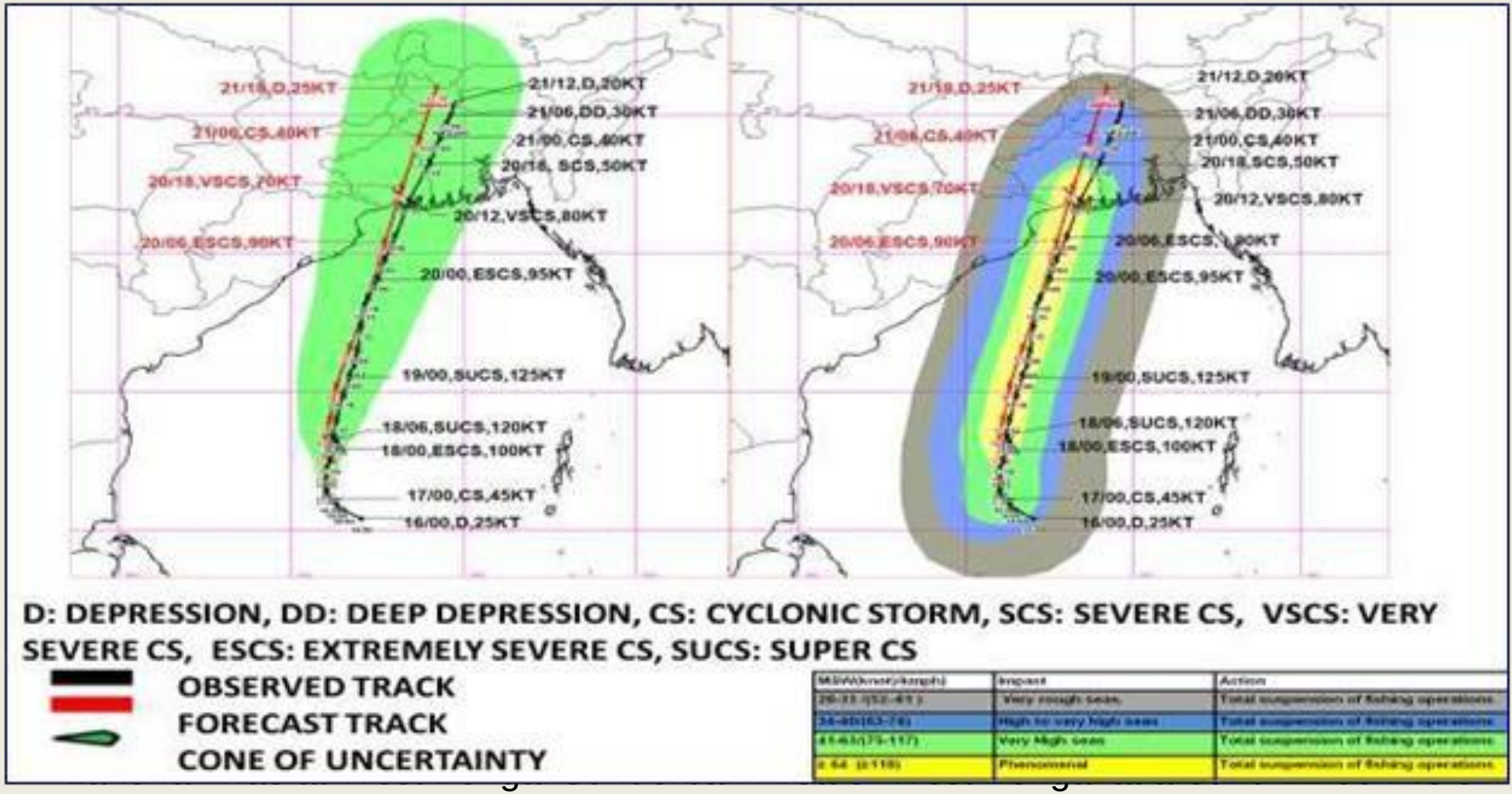


Over Drawl / Under Injection by ER Entities
Non-compliance of direction issued by SLDC


Monthly Net Export (In MU) from Eastern Region to Other Regions
Sch
Act
% Under-Export
MU
% Under-Export ---- >
360 0
340 0
320 0
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
18
16
14
12
10
8
6
4
2
0
Mar-
Apr-
May-
Jun-
Jul-
Aug-
Sep-
Oct-
Nov-
Dec-
Jan-
Feb-
Mar-
Apr-
May-

Effect of Cyclone “AMPHAN”

Super Cyclonic Storm “AMPHAN” over the southeast Bay of Bengal(16th – 21st May 2020)



20.05.20

- Effect of Cyclone as reduction in ER demand was observed 19th Evening Hour and

minimum ER demand was 10352 Mw at 19:30 of 20.05.20.

Preparedness and Action Plan

- A WebEx meeting was conducted on 18th May 2020 to discuss preparedness and action plan of utilities and SLDC.
- Detail advisory from ERLDC to all SLDCs, Generator and transmission licensees was issued on 18th May 2020.
- Close co-ordination with IMD officials for timely update of the weather situation.
- Shift timings were advanced to avoid movement of control room personnel during the land fall of the cyclone.
- Additional man power was deployed in control room on 20th and 21st May and back up team was also identified for support in case of any contingency.
- Senior executives were also present on 20th Night at ERLDC control room.

List of Units under Reserve Shutdown during Cyclone Period

S. No	Station	State	Agency	Unit No	Capacity (MW)	Outage	
						Date	Time
1	MEJIA TPS	DVC	DVC	5	250	19-May-20	11:38
2	DPL	WEST BENGAL	WBPDCL	8	250	19-May-20	19:04
3	JITPL	IPP	JITPL	2	600	20-May-20	02:45
4	BAKRESHWAR	WEST BENGAL	WBPDCL	3	210	20-May-20	05:03
5	BAKRESHWAR	WEST BENGAL	WBPDCL	1	210	20-May-20	05:21
6	BAKRESHWAR	WEST BENGAL	WBPDCL	4	210	20-May-20	06:26
7	SANTALDIH	WEST BENGAL	WBPDCL	6	250	20-May-20	05:25
8	SAGARDIGHI	WEST BENGAL	WBPDCL	4	500	20-May-20	06:54
9	SAGARDIGHI	WEST BENGAL	WBPDCL	1	350	20-May-20	08:44
10	FSTPP	FSTPP	NTPC	1	200	20-May-20	09:17
11	TENUGHAT	Jharkhand	TVNL	2	210	20-May-20	10:36
12	FSTPP	FSTP	NTPC	2	200	20-May-20	13:18

		P					
Total Outage under RSD (CS+SS)					**344 0**		

Complete outages of substations

Voltage level	No. of affected Substation	
400KV	6	Haldia, Rajarhat, Subhasgram, Jeerat, Chanditala, New Duburi
220KV	11	Haldia, New, Rajarhat, New town, Bantala, Subhasgram, EMSS, Lakhikantpur, Kasba, Rishra, Haldia, BUDGEBUDGE
132KV	13	New Haldia , Tamluk , Contai, Bajkul , Joka , Sonarpur , Falta , Kakdeep , Foodpark, Ashokenagar, Jangilpara

Outage Details of Odisha system:

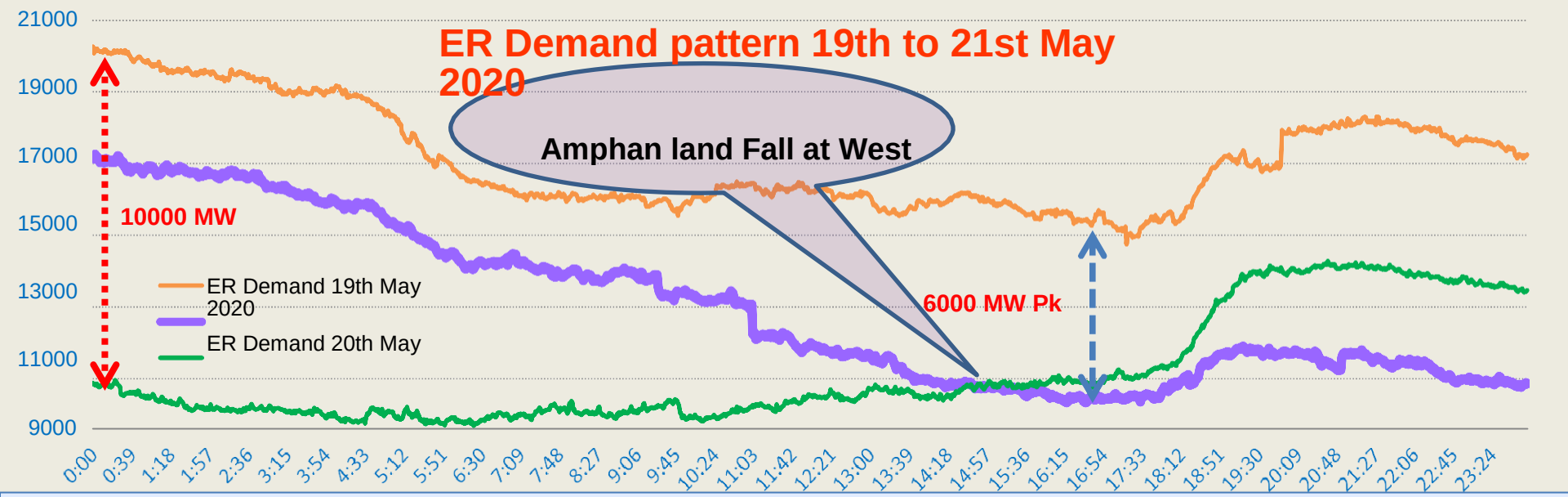
5 number of transmission lines tripped at voltage level of 132 kV and above

163 number of 33/11 KV Stations power supply interrupted .

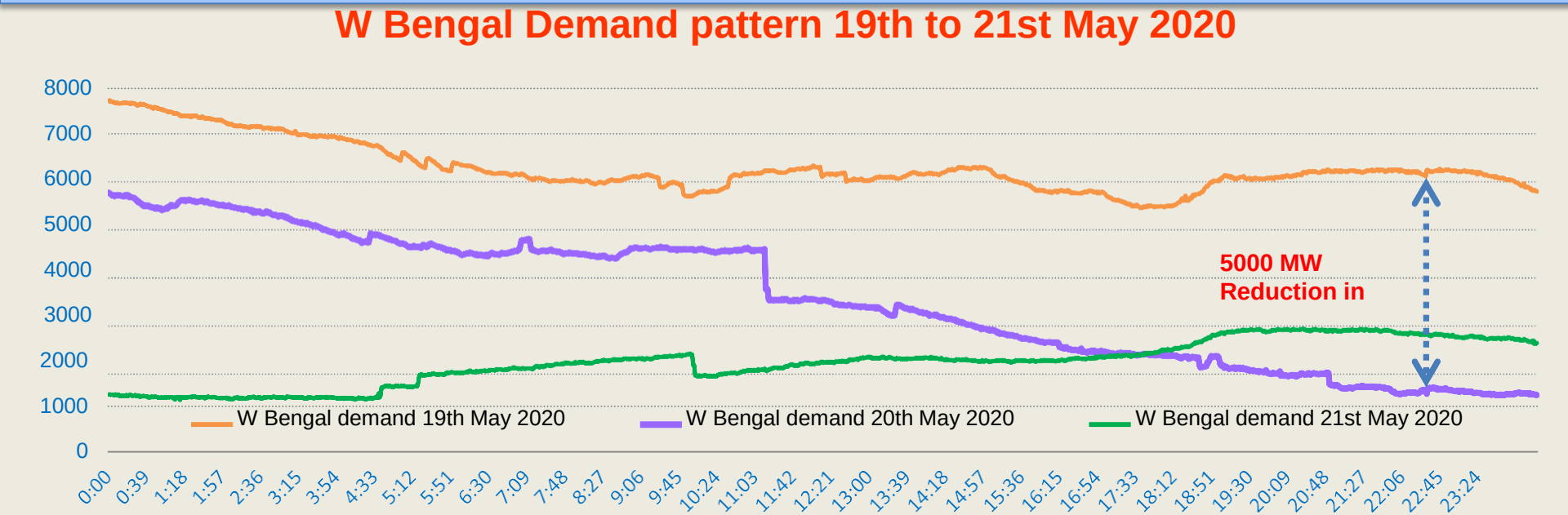
65 number of 33kV feeders and 582 number of 11 KV feeders were tripped.

Outage Details of West Bengal system:

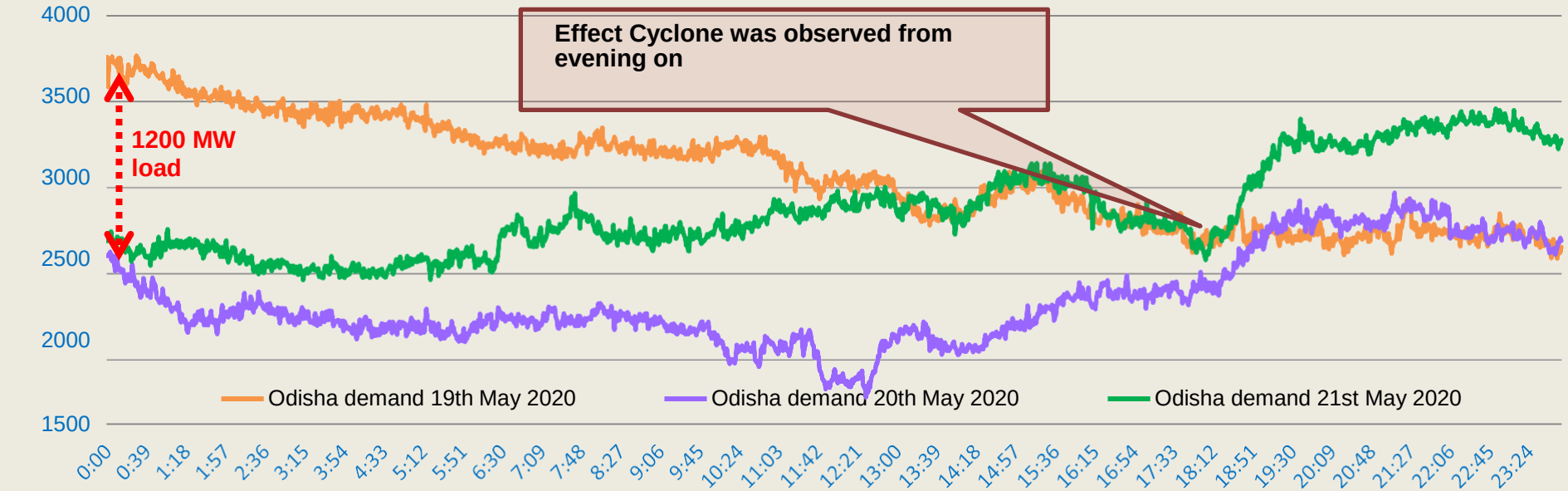
29 number of transmission lines at voltage level of 220 kV and above were tripped.



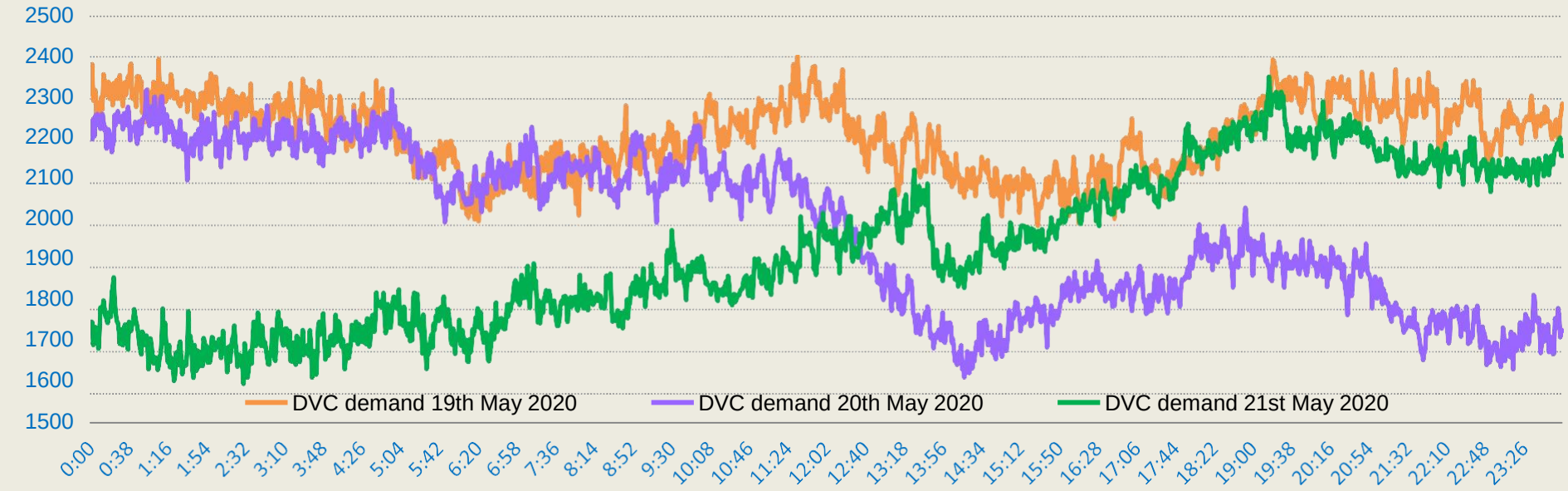
ER Minimum Demand was 10326 MW at 16:32 Hrs on 20.05.20. Total reduction during peak respect to 19th was around 6000 MW. Reduction compare to normal day was



Odisha Demand pattern 19th to 21st May 2020



DVC Demand pattern 19th to 21st May 2020

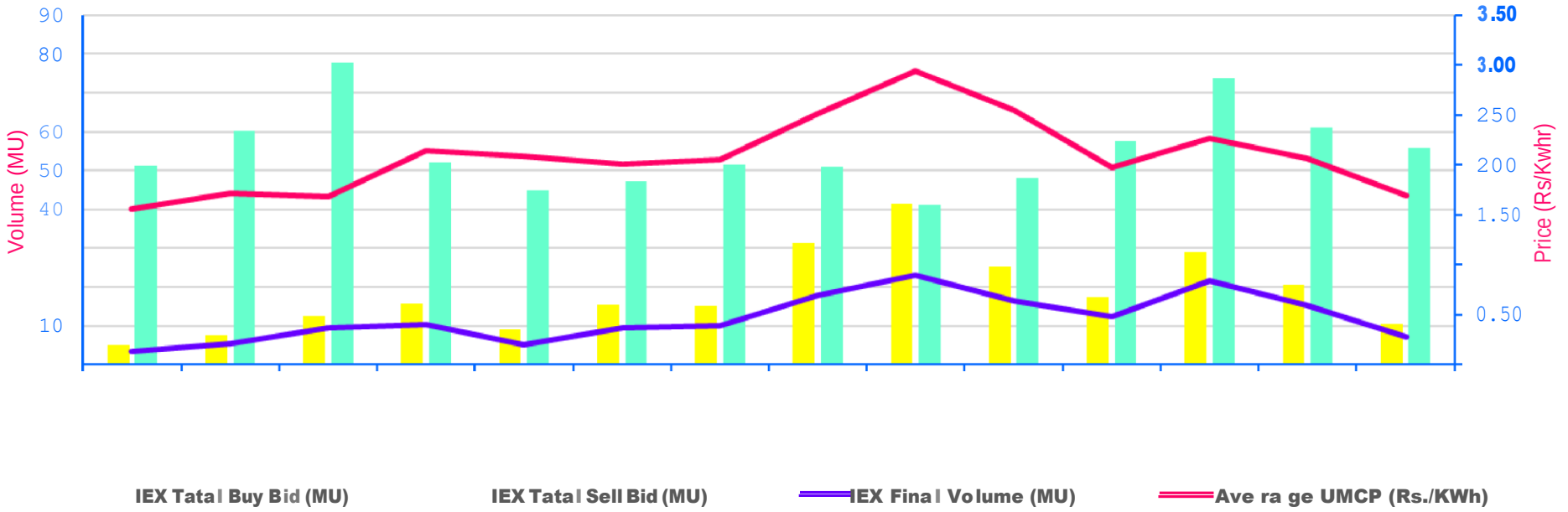


RTM Implementation
01st June, 2020

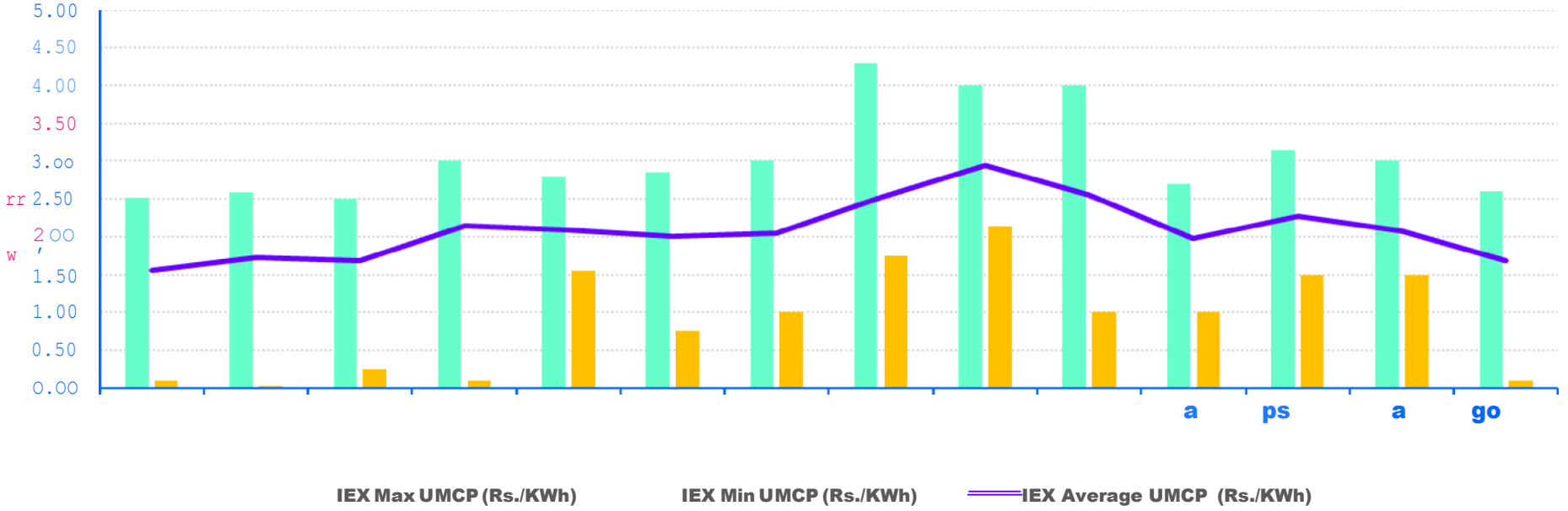
Modification in New WBES for RTM Implementation w.e.f 01.06.2020

- **REMC MODULE** implemented at SR, NR and WR.
  - RE generators registered under regional REMC will submit their LTA/MTOA/STOA transactions requisition or revision in REMC module and WBES fetch data from REMC at the time of schedule preparation.
- **Changes in LTA/MTOA/STOA module to avoid IR mismatch during real time scheduling**
  - **LTA/MTOA transctions**
    1. Uniform procedure for creation of New Utility name, LTA/MTOA transctions number.
    2. Single point access to the utility for submission of mutual agreed schedule of all LTA/MTOA transctions. (Applicant of the transctions)
    3. **REMC Inter-Regional (IR) renewable LTA/MTOA transactions r**equisition will be submitted at seller RLDC/SLDC REMC module
  - **STOA transctions**
    - Only STOA data entry at Buyer RLDC end.
- Implementation of **4th as well as 7/8th TB** revision logic.
- Computation and sharing of **IR path margin on each block** with NLDC.
- RTM data auto fetch from NLDC.

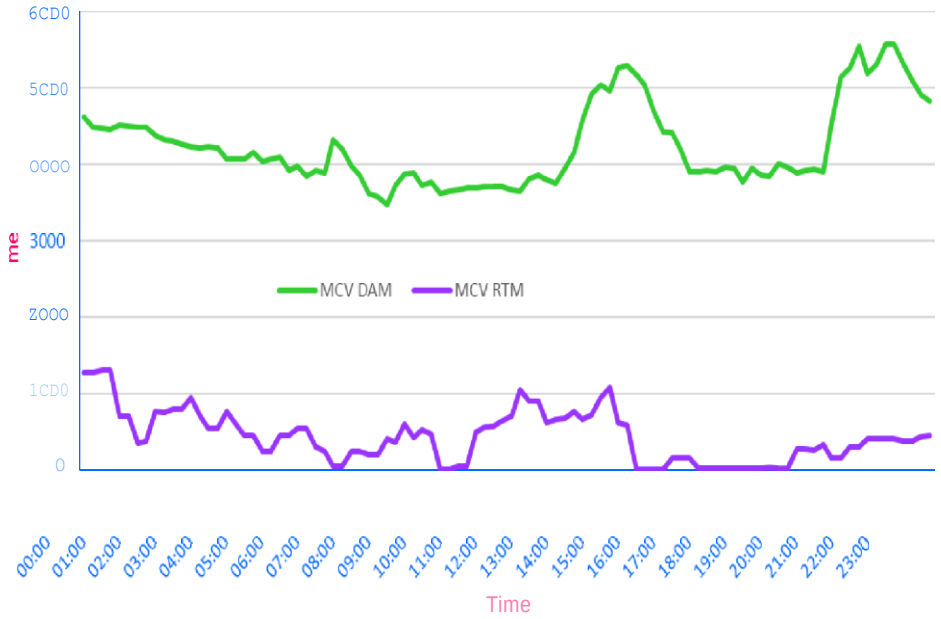
IEX (RTM) MCV trend - 1st June to 14th June 2020



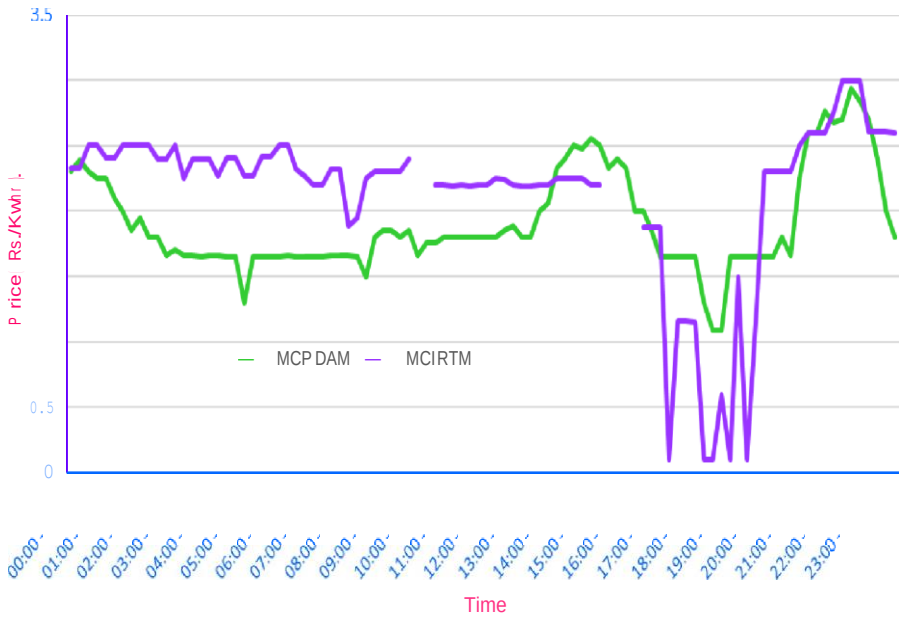
IEX MCP trend - 1st June to 14th June 2020



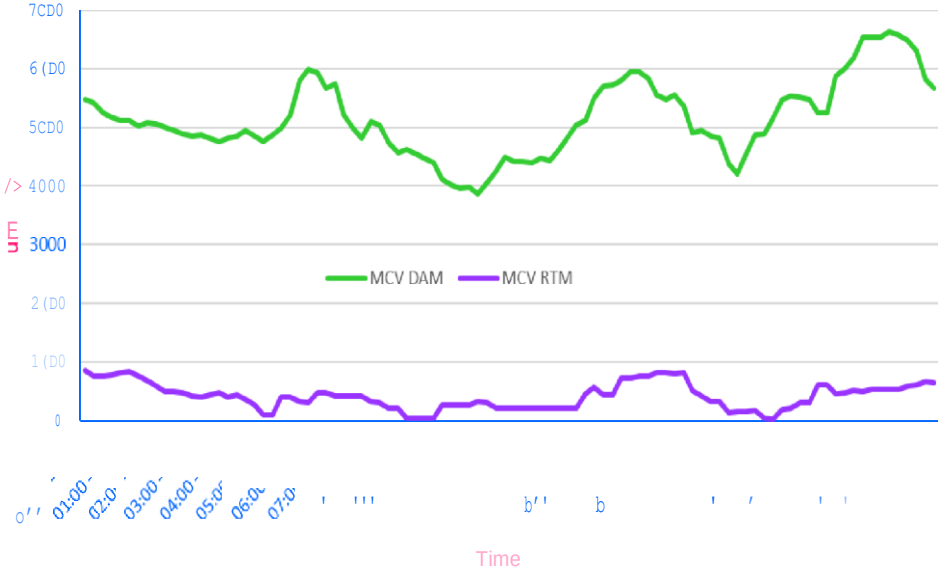
IEX - DAM MCV vs RTM MCV - 4th June 2020



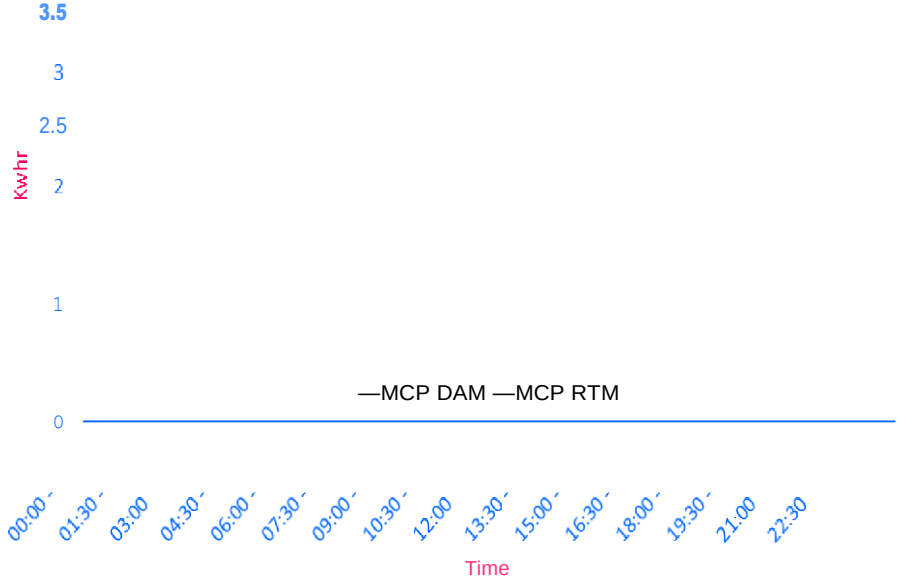
IEX - DAM MCP vs RTM MCP - 4th June 2020



IEX - DAM MCV vs RTM MCV - 7th June 2020

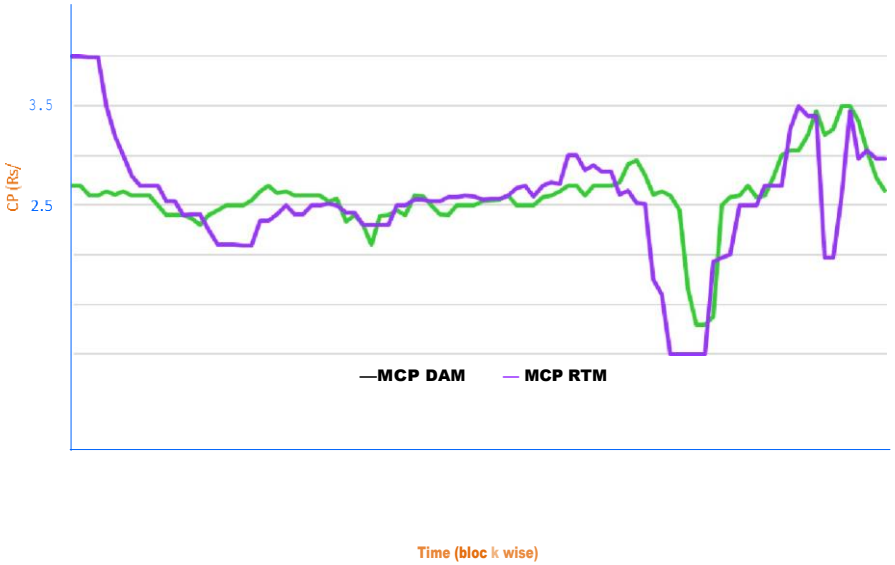


IEX - DAM MCP vs RTM MCP - 7th June 2020

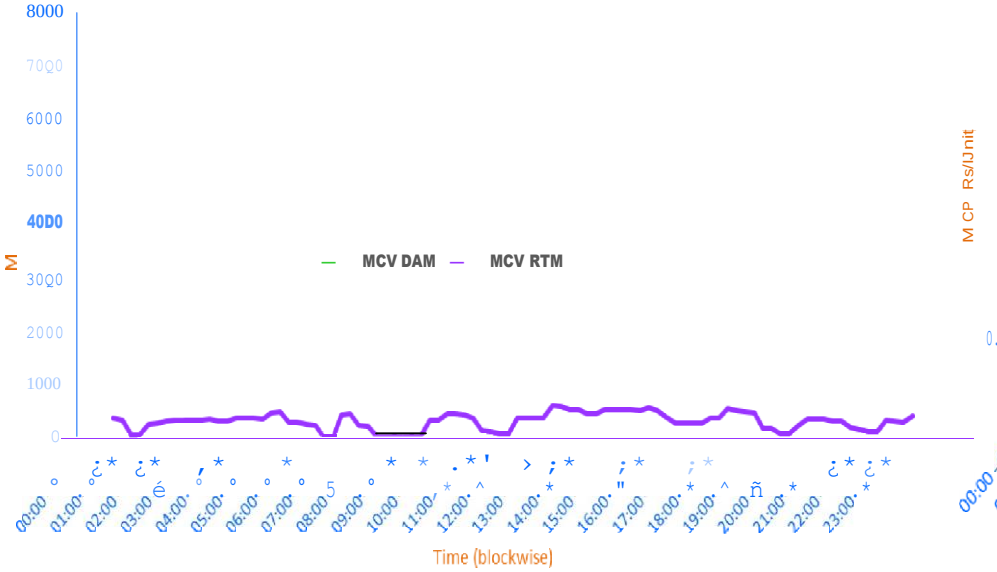


IEX - DAM MCV vs RTM MCV - 10th June 2020

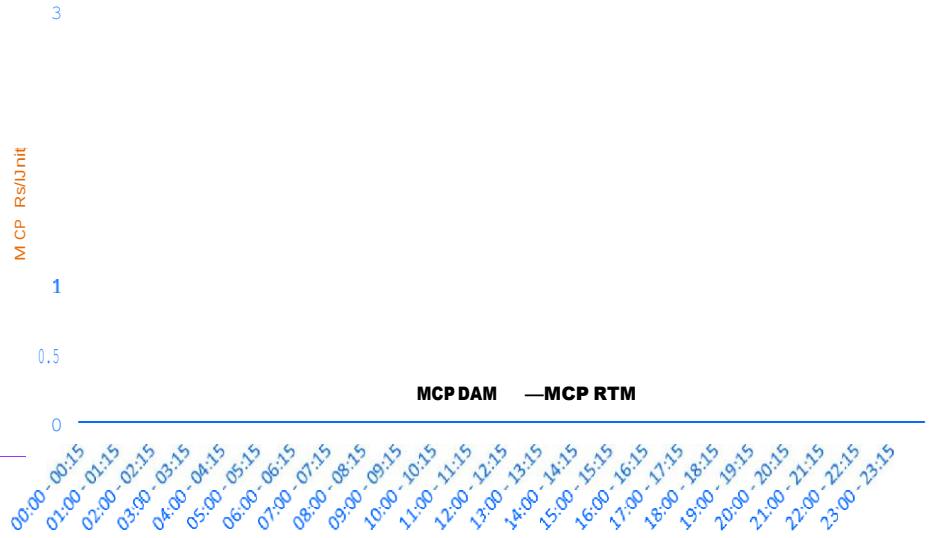
IEX - DAM MCP vs RTM MCP - 10th June 2020



IEX - DAM MCV vs RTM MCV - 14th June 2020



IEX - DAM MCP vs RTM MCP - 14th June 2020




THANKS

Presentation for 168th OCC meeting

Performance of ER generating units during the event of sudden frequency change

- On 28th May 2020, at 17:26:50.760 hrs, sudden loss of 5346 MW generation occured at Sasan, Vindhyachal and Rihand STPP in WR
- Frequency changed from 50.021 Hz to 49.549 Hz. Later stabilized at 49.649 Hz.
- Satisfactory response observed:
  - Budge Budge unit 1 & 2, Balimela unit 3, 5 & 6
  - MPL, Teesta III, Teesta V, Dikchu, Barh unit 4, BRBCL unit 1
- Data not received for Jharkhand SLDC

Performance of ER generating units during the event of sudden frequency change

- In case of following generators initial response did not last for 10 seconds.
  - Kahalgaon
  - GMR
  - APNRL
  - JITPL
  - TSTPP Stage – 2
  - Sagardighi & BBGS u#3 (WB)
  - DSTPS, Mejia & Koderma (DVC)
- Except KhSTPP stage 1, JITPL, TSTPP Stage -2, RTPS and Bokaro another sustained and satisfactory response observed within 60-180 seconds for above generators.
- Response of BRBCL unit 3 was oscillatory in nature.
- All are requested to go through the detailed report shared by ERLDC. Reason for non-satisfactory performance may be shared.

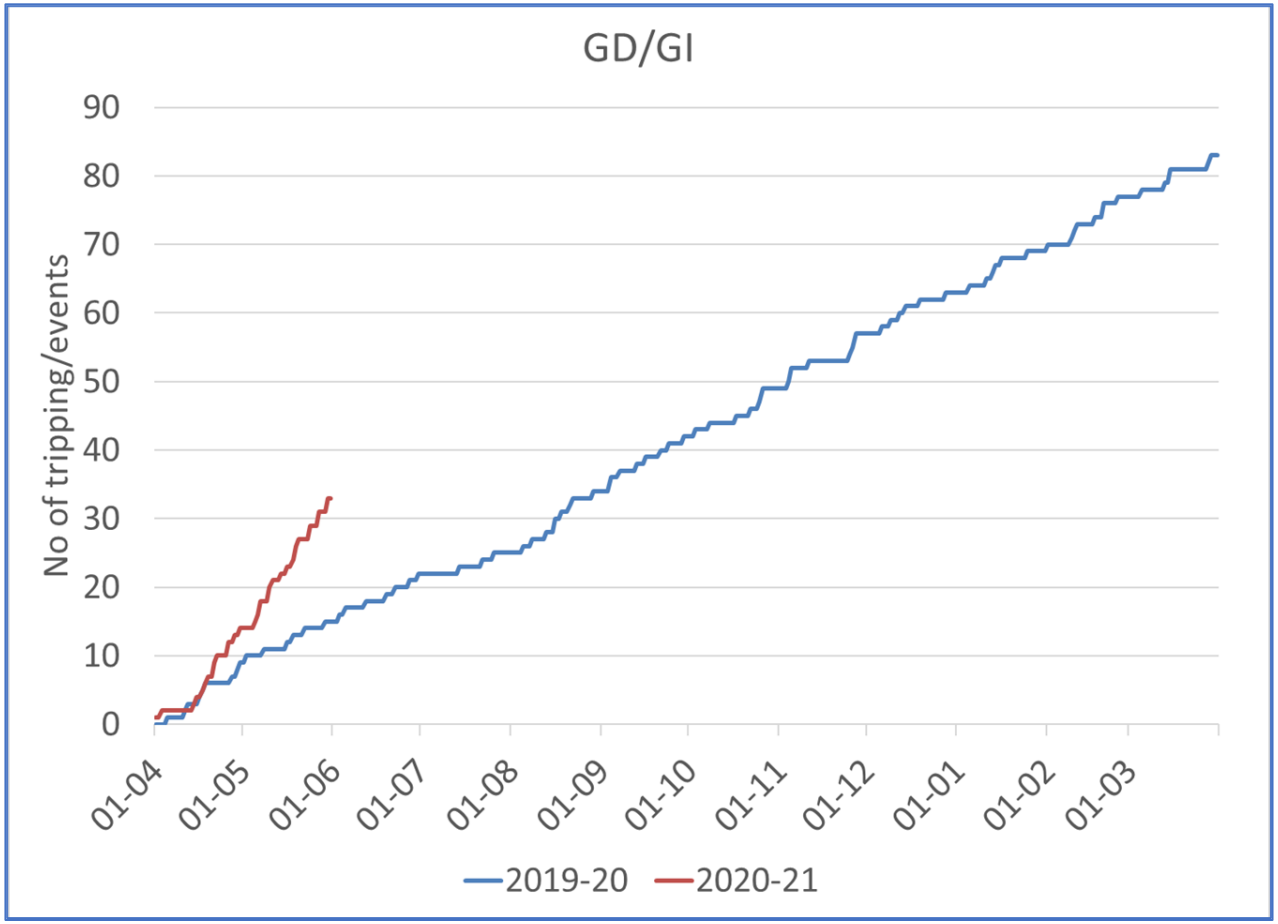
Performance of regional generating stations and state control areas

Category	Name of generating stations and state control area
Satisfactory response	MPL, Teesta III, Teesta V, Dikchu, Barh unit 4, BRBCL unit 1, NPGC unit 1.
Response has been observed but tuning required	Kahalgaon Stage 1 and 2, GMR, Adhunik JITPL, Talcher Stage 2; WB SLDC FRC, DVC SLDC FRC, Jharkhand SLDC FRC
Non-Satisfactory response	Farakka Stage 2 & 3, Barh unit 5, NPGC BRBCL unit 3, Talcher Stage 1, GRIDCO SLDC FRC
Unit not available	Darlipalli, BRBCL unit 2
Data not received	Jharkhand SLDC (ERLDC SCADA data were used to evaluate the performance)

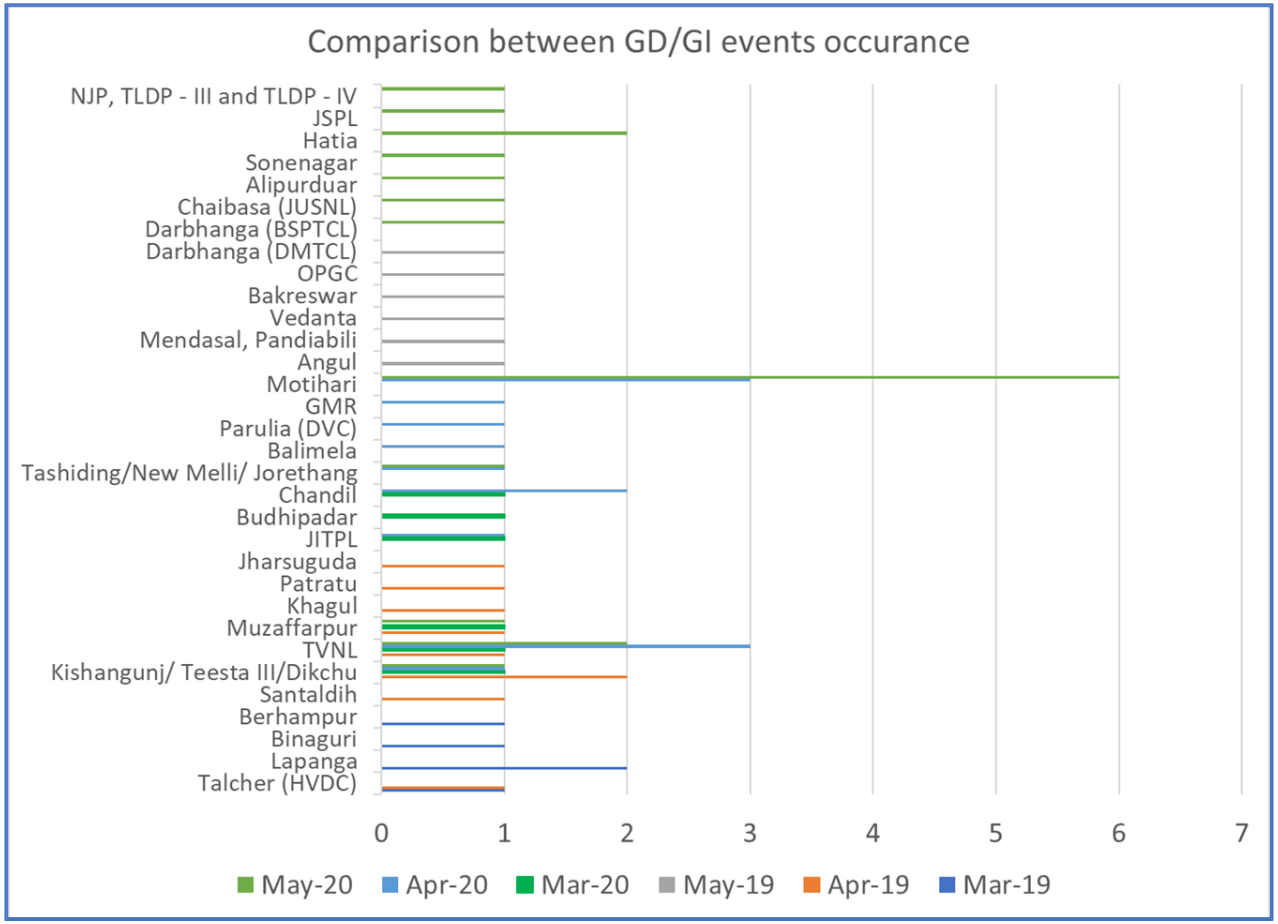
Generating stations for which Response has been observed but tuning required

Name of Plant	Remarks
Kahalgaon Stage 1	Response did not last for more than 30 seconds. For unit 1, generation reduced after initial response. Initial response from all units were satisfactory.
Kahalgaon Stage 2	Initial response was oscillatory. Response of unit 6 did not last for more than 1 min. Final response from all units were satisfactory
GMR	Only unit 1 was in service. Initial response did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Adhunik	Initial response did not last for more than 10 seconds. Around 4 min later final response observed. Time taken for providing full final response may be reduced
JITPL	Response did not last for more than 10 seconds.
BRBCL unit 3	Response of the units are oscillatory in nature.
Talcher Stage 2	Response did not last for more than 10 seconds. Except for unit 4, generation was decreasing after providing response.
Budge Budge	Response from unit 1 and 2 were satisfactory. Initial response from unit 3 did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Koderma, Mejia B & DSTPS (Andal)	Initial response did not last for more than 10 seconds. After reduction in generation, generation increased again within 60-180 sec. Final response is satisfactory.
RTPS unit 1 & Bokaro unit 1	Response was not satisfactory and initial response did not last more than 10 seconds
Sagardighi unit 3	Initial response did not last for more than 10 seconds. After reduction in generation, generation increased again within 120 sec. Final response is satisfactory.

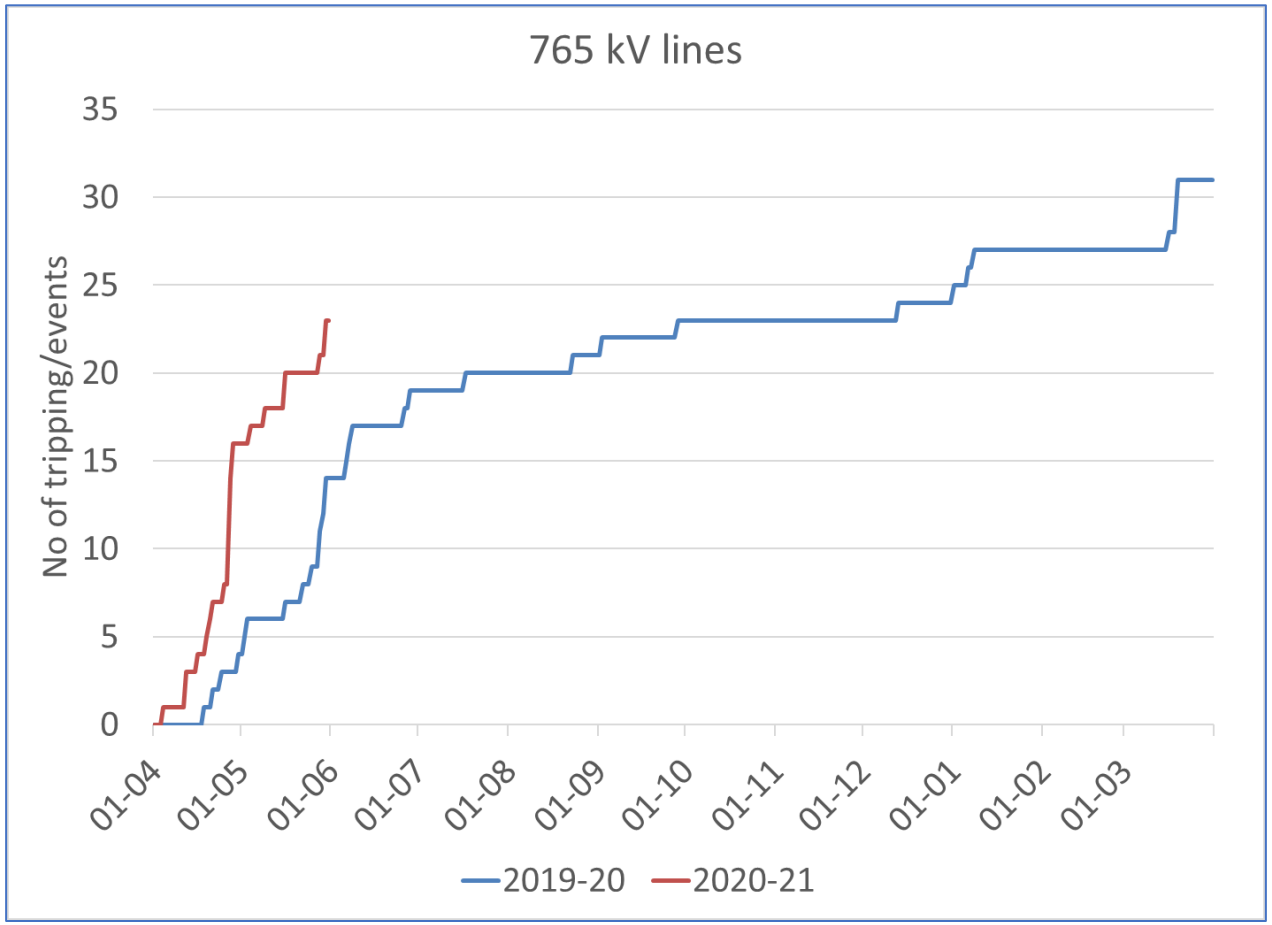
Growing no of GD/GI in Eastern Region



Repeated GD/GI at same place

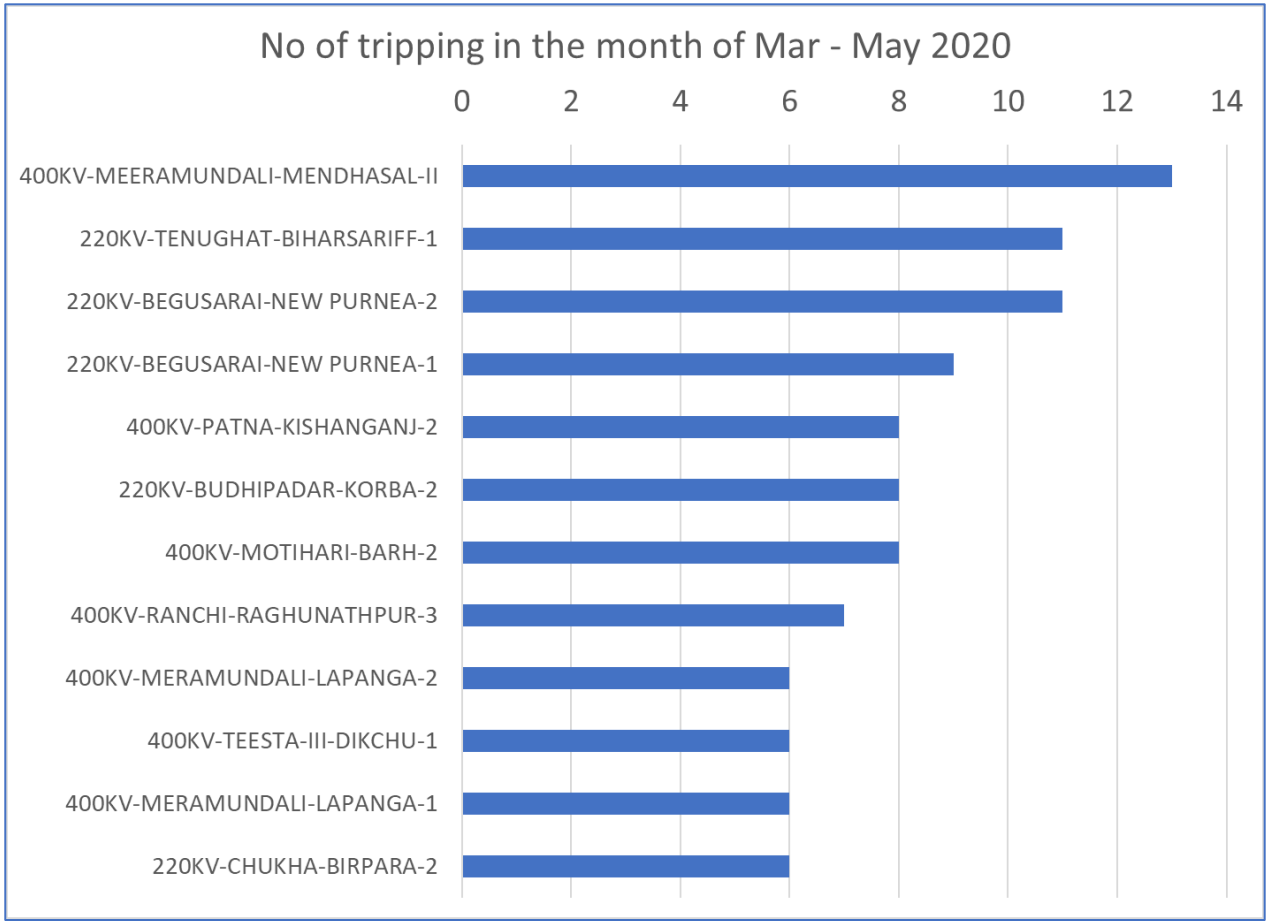


Growing no of tripping incidents of 765 kV transmission lines



Source: ERLDC Log book

Repeated tripping of same transmission elements



In case of majority tripping, fault found in nearby location.

Primary frequency response testing of ER generating units

- Primary frequency response of 37 units in Eastern Region will be tested by M/s Siemens Ltd. and M/s Solvina India Pvt. Ltd.
- Allocated generators were informed by POSOCO via communication Dated 22nd Apr 2020 and 13th May 2020 respectively
- Generating stations are requested to nominate details of at least two nodal persons (one for technical and one for contractual) as stated in next slide.
  - Latest status of work may be shared.
- In case of any difficulties, following persons from ERLDC may be contacted

Name	Contact No	Mail id
Saurav Kumar Sahay	9432013173	saurav.sahay@posoco.in
Raj Protim Kundu	9903329591	rajprotim@posoco.in

Sr. No	Station	Generating Unit	Testing utility	Contact information of Nodal Person (Technical)	Contact information of Nodal Person (Contractual)	Latest Status of work
1	TALCHER STAGE 2	1	M/s Solvina India Pvt. Ltd			
2		2				
3		3				
4		4				
5	Farakka	1				
6		3				
7		4				
8		5				
9		6				
10	Kahalgaon	1				
11		5				
12		6				
13		7				
14	Daripalli	1				
15	TSTPP	1				
16		2				
17	Barh	4				
18		5				
19	Adhunik	1				
20		2				
21	BRBCL	1				
22		2				
23	NPGC	1				
24	Teesta V	1				
25	Teesta III	1				
26		2				
27		4				
28		5				
29		6				
30	Dikchu	1				
31		2				
32	MPL	1	M/s Siemens Ltd.			
33		2				
34	GMR	1				
35		2				
36	JITPL	1				
37		2				

Nomination from BRBCL has been received

Nomination of nodal persons for tripping and frequency

- For smooth communication regarding this transfer of data, all the regional generating stations, transmission utilities and SLDCs are requested to nominate at least two persons as nodal person(s) for tripping analysis of any grid element and for primary frequency response analysis of generating units.

Entity	Nodal Person(s) for tripping analysis (At least 2 persons)		Nodal Person(s) for primary frequency response analysis (At least 2 persons)	
	Nodal Person-1 Name & Contact Details (Phone, emai id)	Nodal Person-2 Name & Contact Details (Phone, emai id	Nodal Person-1 Name & Contact Details (Phone, emai id	Nodal Person-2 Name & Contact Details (Phone, emai id
NTPC Farakka				
NTPC Kahalgaon				
NTPC Talcher				
NTPC Barh				
NTPC Darlipalli				
BRBCL				
NPGC				
MPL				
Adhunik				
GMR				
JITPL				
KBUNL			Not Applicable	
Teesta V				
Teesta III				
Rangit			Not Applicable	
Chujachen			Not Applicable	
Jorethang			Not Applicable	
Tashiding			Not Applicable	
Dikchu				
Bihar SLDC				
Jharkhand SLDC				
DVC SLDC				
GRIDCO SLDC				
WB SLDC				
Sikkim SLDC			Not Applicable	
POWERGRID ER -1			Not Applicable	
POWERGRID ER -2			Not Applicable	
POWERGRID Odisha			Not Applicable	
DMTCL			Not Applicable	

Nomination from BRBCL has been received

Submission of detailed tripping information on Transmission Element Tripping

- A format for submission of detailed information on Transmission element tripping has been prepared for analysis and record keeping. The format includes the details to ensure the better record keeping in view of various requirement in line with IEGC and CEA Regulations.
- Same format has been shared in Excel form for ease of data update by the transmission owners/licensee.

Individual Element Tripping Report by Utilities/ISTS/ISGS/IPP to ERLDC under IEGC section 5.2(r), 5.9.5, 5.9.6 (a), (b) & (c))			
Name of the element	400 kV S/S A - S/S B 1		
Reporting Substation	S/S A		
Date of Tripping	Time of tripping	Date of Restoration	Time of Restoration
01-12-2019	21:30	01-12-2019	22:30
Antecedent Conditions			
Element Loading in MW	Other Element Outage from Reporting Substation	Any protection System was out of service	Weather Condition
400 MW (Export)	None	None	Rain and Lightening
Disturbance Recorder Analysis			
Tripping time in ms			
Relay flag from Main 1			
Relay flag from Main 2			
Additional Relay from any Other protection			
Fault location (in km)			
Fault clearing time			
Voltage and Current Details	R Phase	Y Phase	B Phase
Fault current in kA			
Pre Fault Voltage in kV			
During Fault Volatge in kV			
Post Fault Voltage in kV			
Circuit Breaker Counter			
LA Counter			
PLCC Counter	Pre Event	Post Event	
TX1			
RX1			
TX2			
RX2			
DT1			
DT2			
Root cause of the tripping (May be selected from drop down list)	High Resistive Fault	(Other May sepcify Here)	
Additional detail for Root Cause	Fault was due to bamboo tree at location XXX		
Auto-reclose operation occurred for SLG fault	Yes		
In case of No A/R Operation , Reason to be mentioned		In case of Unsuccessful A/R , Reason to be mentioned	
Any other Fault in Reclaim Time		Any other Fault within Dead time	
Equipment Damage Detail			
Name of Equipment		Other Specify Here	
Make of Equipment			
Manufacturing Year			
Installation Year			
Last Testing done			
Whether Replaced or Not			
Remedial Action Taken			
Additional Information if any			
Contact Details of Analysis Person			

Annexure C2

Presentation for 168th OCC meeting

Item no. C.2

Item No. C.20

Item No. C.21

Item no. C.2: Governor response for the month of May 2020

Performance of ER generating units during the event of sudden frequency change

- On 28th May 2020, at 17:26:50.760 hrs, sudden loss of 5346 MW generation occured at Sasan, Vindhyachal and Rihand STPP in WR
- Frequency changed from 50.021 Hz to 49.549 Hz. Later stabilized at 49.649 Hz.
- Satisfactory response observed:
  - Budge Budge unit 1 & 2, Balimela unit 3, 5 & 6
  - MPL, Teesta III, Teesta V, Dikchu, Barh unit 4, BRBCL unit 1
- Data not received for Jharkhand SLDC

Performance of ER generating units during the event of sudden frequency change

- In case of following generators initial response did not last for 10 seconds.
  - Kahalgaon
  - GMR
  - APNRL
  - JITPL
  - TSTPP Stage – 2
  - Sagardighi & BBGS u#3 (WB)
  - DSTPS, Mejia & Koderma (DVC)
- Except KhSTPP stage 1, JITPL, TSTPP Stage -2, RTPS and Bokaro another sustained and satisfactory response observed within 60-180 seconds for above generators.
- Response of BRBCL unit 3 was oscillatory in nature.
- All are requested to go through the detailed report shared by ERLDC. Reason for non-satisfactory performance may be shared.

Performance of regional generating stations and state control areas

Category	Name of generating stations and state control area
Satisfactory response	MPL, Teesta III, Teesta V, Dikchu, Barh unit 4, BRBCL unit 1, NPGC unit 1.
Response has been observed but tuning required	Kahalgaon Stage 1 and 2, GMR, Adhunik JITPL, Talcher Stage 2; WB SLDC FRC, DVC SLDC FRC, Jharkhand SLDC FRC
Non-Satisfactory response	Farakka Stage 2 & 3, Barh unit 5, NPGC BRBCL unit 3, Talcher Stage 1, GRIDCO SLDC FRC
Unit not available	Darlipalli, BRBCL unit 2
Data not received	Jharkhand SLDC (ERLDC SCADA data were used to evaluate the performance)

Generating stations for which Response has been observed but tuning required

Name of Plant	Remarks
Kahalgaon Stage 1	Response did not last for more than 30 seconds. For unit 1, generation reduced after initial response. Initial response from all units were satisfactory.
Kahalgaon Stage 2	Initial response was oscillatory. Response of unit 6 did not last for more than 1 min. Final response from all units were satisfactory
GMR	Only unit 1 was in service. Initial response did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Adhunik	Initial response did not last for more than 10 seconds. Around 4 min later final response observed. Time taken for providing full final response may be reduced
JITPL	Response did not last for more than 10 seconds.
BRBCL unit 3	Response of the units are oscillatory in nature.
Talcher Stage 2	Response did not last for more than 10 seconds. Except for unit 4, generation was decreasing after providing response.
Budge Budge	Response from unit 1 and 2 were satisfactory. Initial response from unit 3 did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Koderma, Mejia B & DSTPS (Andal)	Initial response did not last for more than 10 seconds. After reduction in generation, generation increased again within 60-180 sec. Final response is satisfactory.
RTPS unit 1 & Bokaro unit 1	Response was not satisfactory and initial response did not last more than 10 seconds
Sagardighi unit 3	Initial response did not last for more than 10 seconds. After reduction in generation, generation increased again within 120 sec. Final response is satisfactory.

Item No. C.20: Nomination of nodal persons for tripping and performance of primary frequency response

Nomination of nodal persons for tripping and frequency

- For smooth communication regarding this transfer of data, all the regional generating stations, transmission utilities and SLDCs are requested to nominate at least two persons as nodal person(s) for tripping analysis of any grid element and for primary frequency response analysis of generating units.

Entity	Nodal Person(s) for tripping analysis (At least 2 persons)		Nodal Person(s) for primary frequency response analysis (At least 2 persons)	
	Nodal Person-1 Name & Contact Details (Phone, emai id)	Nodal Person-2 Name & Contact Details (Phone, emai id	Nodal Person-1 Name & Contact Details (Phone, emai id	Nodal Person-2 Name & Contact Details (Phone, emai id
NTPC Farakka				
NTPC Kahalgaon				
NTPC Talcher				
NTPC Barh				
NTPC Darlipalli				
BRBCL				
NPGC				
MPL				
Adhunik				
GMR				
JITPL				
KBUNL			Not Applicable	
Teesta V				
Teesta III				
Rangit			Not Applicable	
Chujachen			Not Applicable	
Jorethang			Not Applicable	
Tashiding			Not Applicable	
Dikchu				
Bihar SLDC				
Jharkhand SLDC				
DVC SLDC				
GRIDCO SLDC				
WB SLDC				
Sikkim SLDC			Not Applicable	
POWERGRID ER -1			Not Applicable	
POWERGRID ER -2			Not Applicable	
POWERGRID Odisha			Not Applicable	
DMTCL			Not Applicable	

Nomination from BRBCL has been received

Submission of detailed tripping information on Transmission Element Tripping

- A format for submission of detailed information on Transmission element tripping has been prepared for analysis and record keeping. The format includes the details to ensure the better record keeping in view of various requirement in line with IEGC and CEA Regulations.
- Same format has been shared in Excel form for ease of data update by the transmission owners/licensee.

Individual Element Tripping Report by Utilities/ISTS/ISGS/IPP to ERLDC under IEGC section 5.2(r), 5.9.5, 5.9.6 (a), (b) & (c))			
Name of the element	400 kV S/S A - S/S B 1		
Reporting Substation	S/S A		
Date of Tripping	Time of tripping	Date of Restoration	Time of Restoration
01-12-2019	21:30	01-12-2019	22:30
Antecedent Conditions			
Element Loading in MW	Other Element Outage from Reporting Substation	Any protection System was out of service	Weather Condition
400 MW (Export)	None	None	Rain and Lightening
Disturbance Recorder Analysis			
Tripping time in ms			
Relay flag from Main 1			
Relay flag from Main 2			
Additional Relay from any Other protection			
Fault location (in km)			
Fault clearing time			
Voltage and Current Details	R Phase	Y Phase	B Phase
Fault current in kA			
Pre Fault Voltage in kV			
During Fault Volatge in kV			
Post Fault Voltage in kV			
Circuit Breaker Counter			
LA Counter			
PLCC Counter	Pre Event	Post Event	
TX1			
RX1			
TX2			
RX2			
DT1			
DT2			
Root cause of the tripping (May be selected from drop down list)	High Resistive Fault	(Other May sepcify Here)	
Additional detail for Root Cause	Fault was due to bamboo tree at location XXX		
Auto-reclose operation occurred for SLG fault	Yes		
In case of No A/R Operation , Reason to be mentioned		In case of Unsuccessful A/R , Reason to be mentioned	
Any other Fault in Reclaim Time		Any other Fault within Dead time	
Equipment Damage Detail			
Name of Equipment		Other Specify Here	
Make of Equipment			
Manufacturing Year			
Installation Year			
Last Testing done			
Whether Replaced or Not			
Remedial Action Taken			
Additional Information if any			
Contact Details of Analysis Person			

Item No. C.21: Nomination of nodal persons for primary frequency response testing

Primary frequency response testing of ER generating units

- Primary frequency response of 37 units in Eastern Region will be tested by M/s Siemens Ltd. and M/s Solvina India Pvt. Ltd.
- Allocated generators were informed by POSOCO via communication Dated 22nd Apr 2020 and 13th May 2020 respectively
- Generating stations are requested to nominate details of at least two nodal persons (one for technical and one for contractual) as stated in next slide.
  - Latest status of work may be shared.
- In case of any difficulties, following persons from ERLDC may be contacted

Name	Contact No	Mail id
Saurav Kumar Sahay	9432013173	saurav.sahay@posoco.in
Raj Protim Kundu	9903329591	rajprotim@posoco.in

Sr. No	Station	Generating Unit	Testing utility	Contact information of Nodal Person (Technical)	Contact information of Nodal Person (Contractual)	Latest Status of work
1	TALCHER STAGE 2	1	M/s Solvina India Pvt. Ltd			
2		2				
3		3				
4		4				
5	Farakka	1				
6		3				
7		4				
8		5				
9		6				
10	Kahalgaon	1				
11		5				
12		6				
13		7				
14	Daripalli	1				
15	TSTPP	1				
16		2				
17	Barh	4				
18		5				
19	Adhunik	1				
20		2				
21	BRBCL	1				
22		2				
23	NPGC	1				
24	Teesta V	1				
25	Teesta III	1				
26		2				
27		4				
28		5				
29		6				
30	Dikchu	1				
31		2				
32	MPL	1	M/s Siemens Ltd.			
33		2				
34	GMR	1				
35		2				
36	JITPL	1				
37		2				

Nomination from BRBCL has been received

पावर सिस्टम ऑपरेशन करपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)
Eastern Regional Load Despatch Centre: 14, Golf Club Road, Tollygunge, Kolkata-700 033.
CIN: U40105DL2009GOI188682
फ़ोन: 033- 24235755, 24174049 फैक्स : 033-24235809/5029 Website:www.erldc.org, Email ID- erldc@posoco.in

Date: 12-06-2020

Report on governor response observed at generators in the Eastern Region for the events of sudden frequency change, occurred in May 2020

Frequency response characteristics (FRC) has been analyzed pan India for one event of sudden frequency change occurred in the month of May 2020. The details of this event and the overall response of Eastern region have been summarized in the Table 1.

Table 1: Summary of the events and Frequency Response Characteristic (FRC) of Eastern Region for the events

Event	Frequency Change	ER FRC
Event: On 28th May 2020, at 17:26:50.760 hrs, 5346 MW generation loss at Sasan, Vindhyachal and Rihand STPP in WR.	**50.021 Hz to 49.549 Hz**. Later stabilized at 49.649 **Hz.**	**20%**

Despite of repeated reminders to generating stations, **generation end data (generation output in MW and frequency/speed measured at generator end) are yet to be received from NPGC. FRC of state control area is yet to be received from SLDC Jharkhand**. Based on data received from generating stations & SLDCs and SCADA data archived at ERLDC, performance of regional generating stations and state control areas has been analyzed and summarized in table 2.

Among state generating units, **satisfactory response has been observed for Budge Budge unit 1 & 2, Balimela unit 3, 5 & 6**. Response of these generating units are shown in **Annexure 1**. Tuning of governors are required for Budge Budge unit 3, Koderma unit 1 and 2 and DSTPS unit 1 & 2. Details are shown in table 3. Non satisfactory response has been observed for RTPS unit 1, Bokaro A unit 1, U. Kolab and IBTPS units.

It has been observed in case of few generators e.g. **Kahalgaon, GMR, APNRL, JITPL, TSTPP Stage – 2, Sagardighi & BBGS u#3 (WB) and DSTPS, Mejia & Koderma (DVC), initial response did not sustain for more than 10 seconds**. Within 60-180 seconds, another satisfactory and sustained response were given by some generating units. **These generating stations are requested to share the reason for non-sustained initial response. They are also requested to confirm that generating units were not running in valve wide open prior to the event.**

Table 2: performance of regional generating stations and state control areas for the events in the month of May 2020

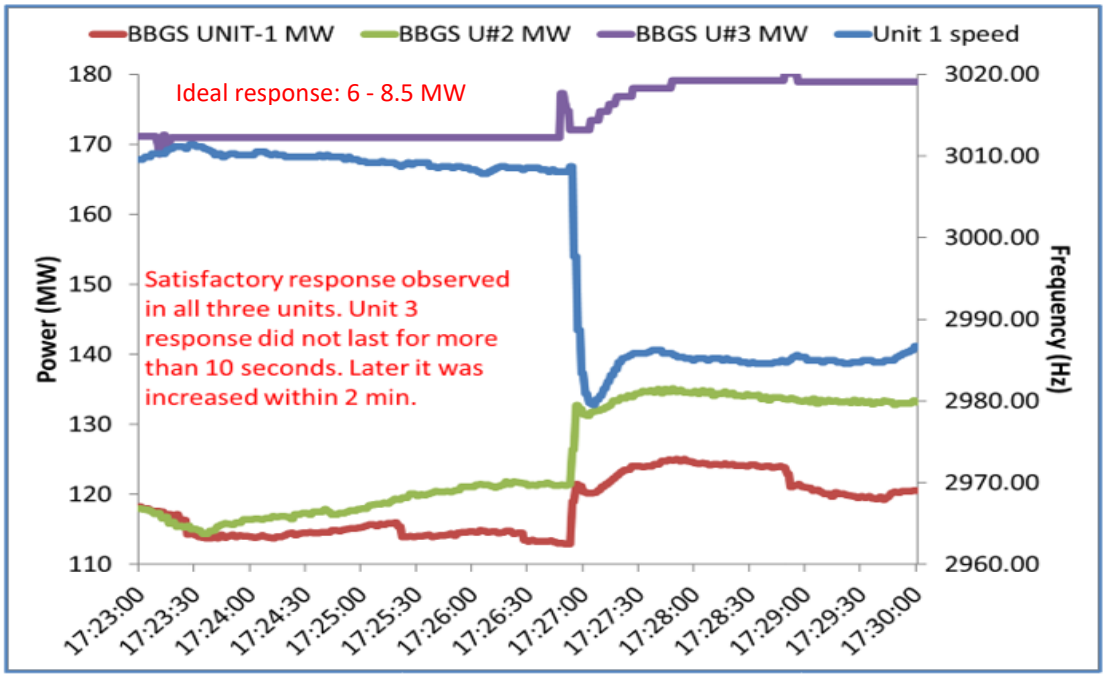
Category	Name of generating stations and state control area
Satisfactory response	MPL, Teesta III, Teesta V, Dikchu, Barh unit 4, BRBCL unit 1, NPGC unit 1.

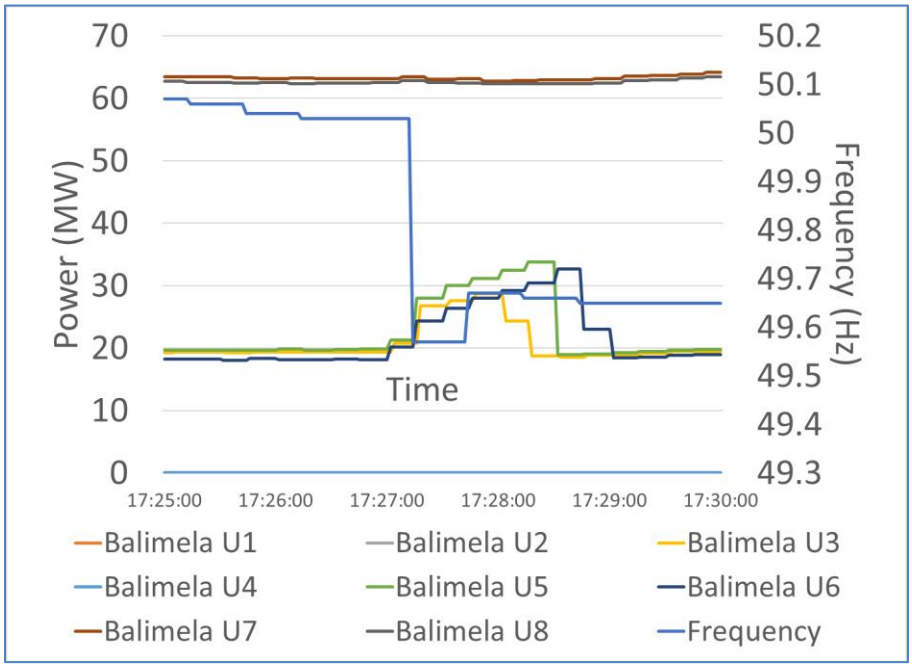
Category	Name of generating stations and state control area
Response has been observed but tuning required	Kahalgaon Stage 1 and 2, GMR, Adhunik JITPL, Talcher Stage 2; WB SLDC FRC, DVC SLDC FRC, Jharkhand SLDC FRC
Non-Satisfactory response	Farakka Stage 2 and 3, Barh unit 5, BRBCL unit 3, Talcher Stage 1, GRIDCO SLDC FRC
Unit not available	Darlipalli, BRBCL unit 2
Data were not available (data not received from SLDC/regional generating station)	NPGC, Jharkhand SLDC (ERLDC SCADA data were used to evaluate the performance)

Table 3: Generating stations where further tuning is required

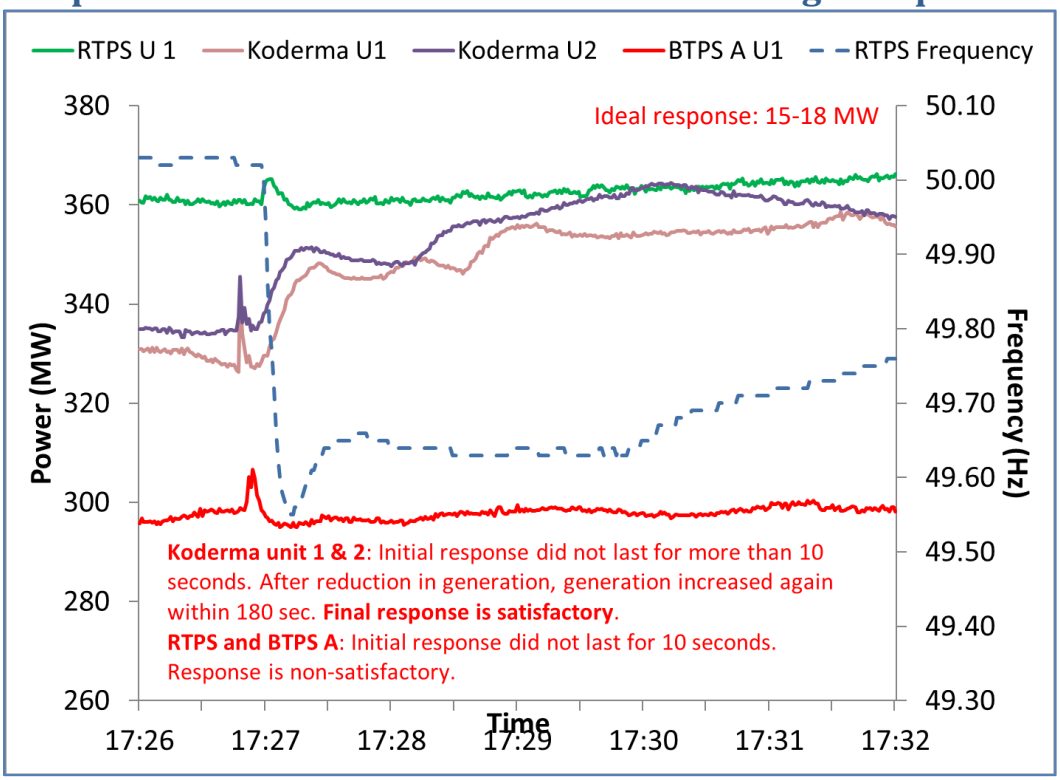
Name of Plant	Remarks
Kahalgaon Stage 1	Response did not last for more than 30 seconds. For unit 1, generation reduced after initial response. Initial response from all units were satisfactory.
Kahalgaon Stage 2	Initial response was oscillatory. Response of unit 6 did not last for more than 1 min. Final response from all units were satisfactory
GMR	Only unit 1 was in service. Initial response did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Adhunik	Initial response did not last for more than 10 seconds. Around 4 min later final response observed. Time taken for providing full final response may be reduced
JITPL	Response did not last for more than 10 seconds.
BRBCL unit 3	Response of the units are oscillatory in nature.
Talcher Stage 2	Response did not last for more than 10 seconds. Except for unit 4, generation was decreasing after providing response.
Budge Budge	Response from unit 1 and 2 were satisfactory. Initial response from unit 3 did not last for more than 10 seconds. Within 2 min, generation increased again. Time to achieve final response may be reduced. Final response was satisfactory.
Koderma, Mejia B & DSTPS (Andal)	Initial response did not last for more than 10 seconds. After reduction in generation, generation increased again within 60-180 sec. Final response is satisfactory.
RTPS unit 1 & Bokaro unit 1	Response was not satisfactory and initial response did not last more than 10 seconds
Sagardighi unit 3	Initial response did not last for more than 10 seconds. After reduction in generation, generation increased again within 120 sec. Final response is satisfactory.

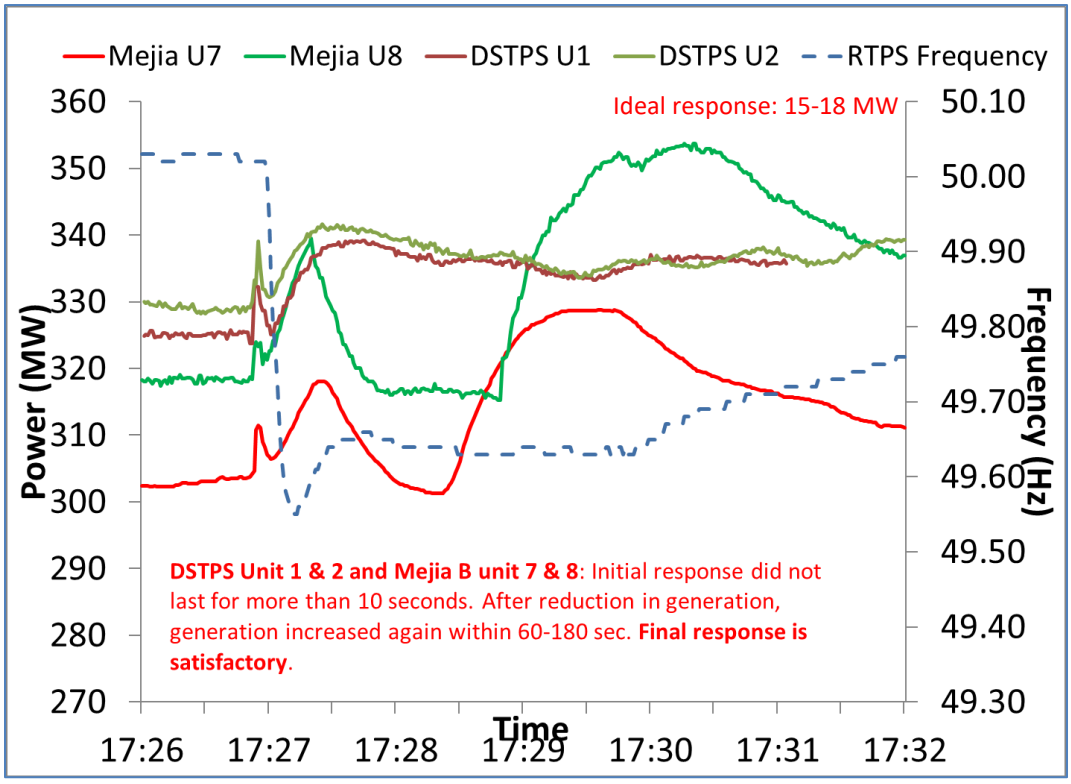
Annexure 1: Variation of generation of state generating stations for which satisfactory response has been observed during the event of sudden frequency change

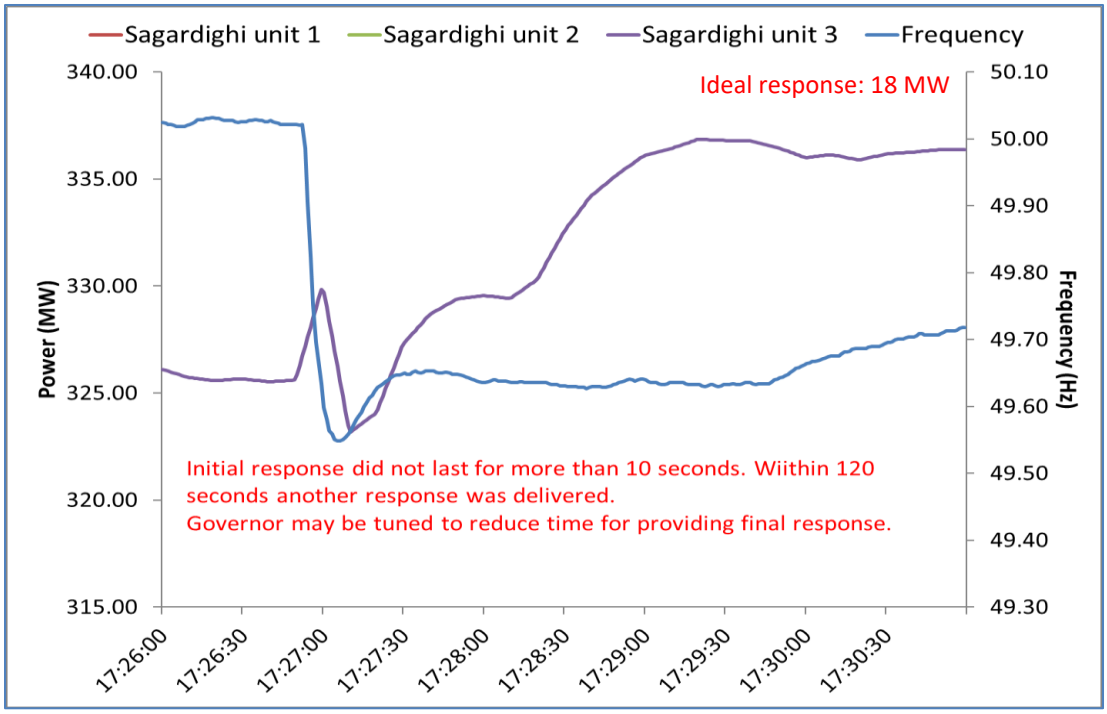




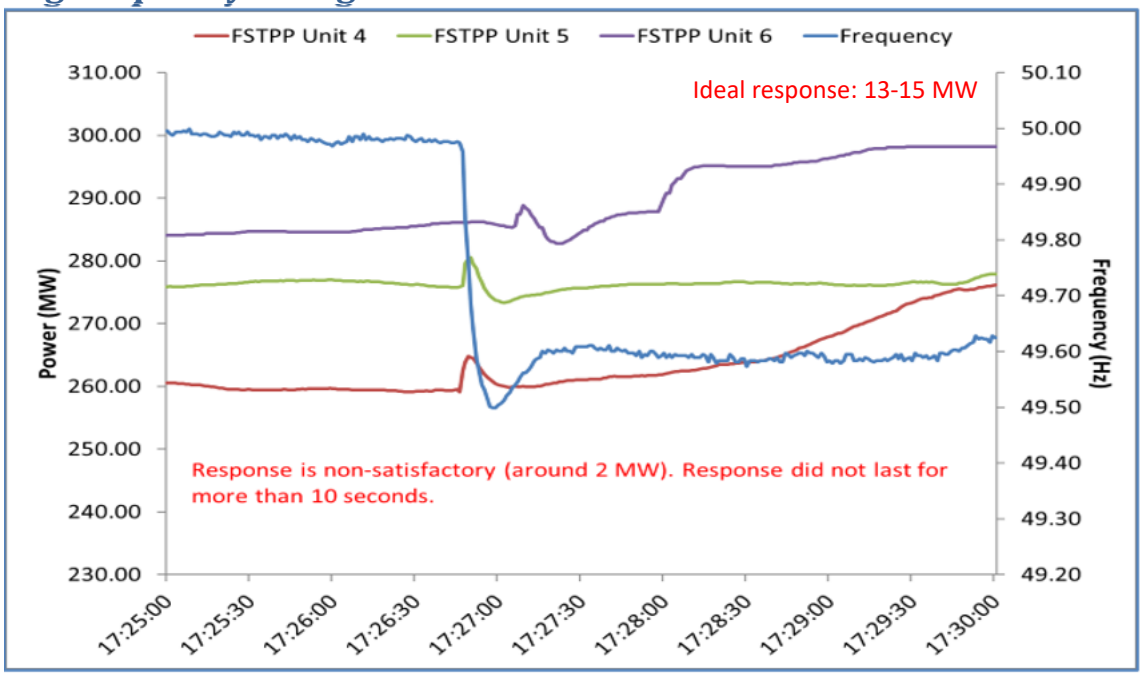
Annexure 2: Variation of generation of state generating stations for which response has been observed but further tuning is required

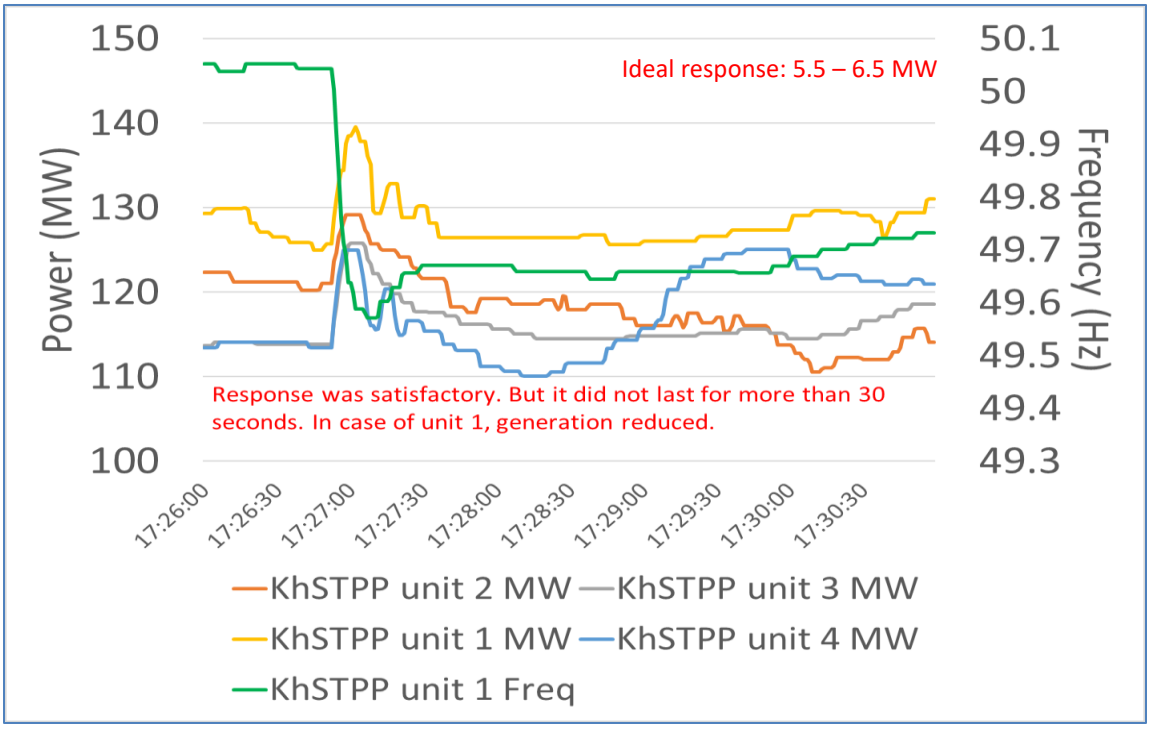


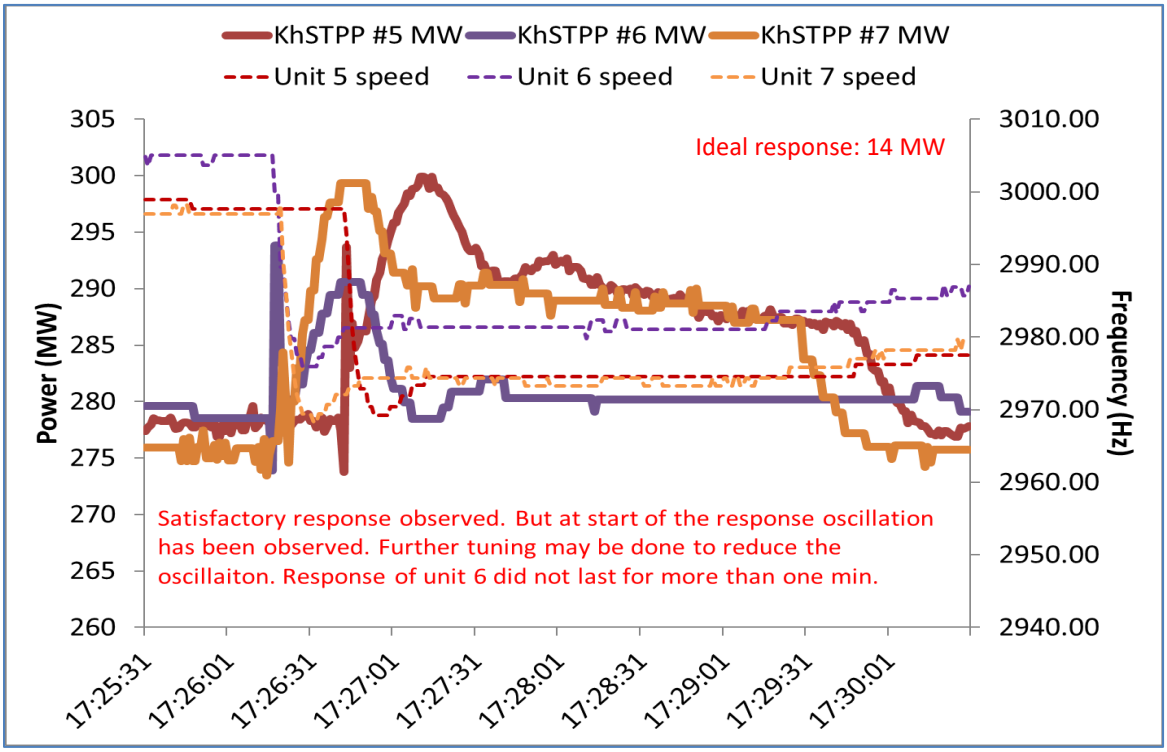


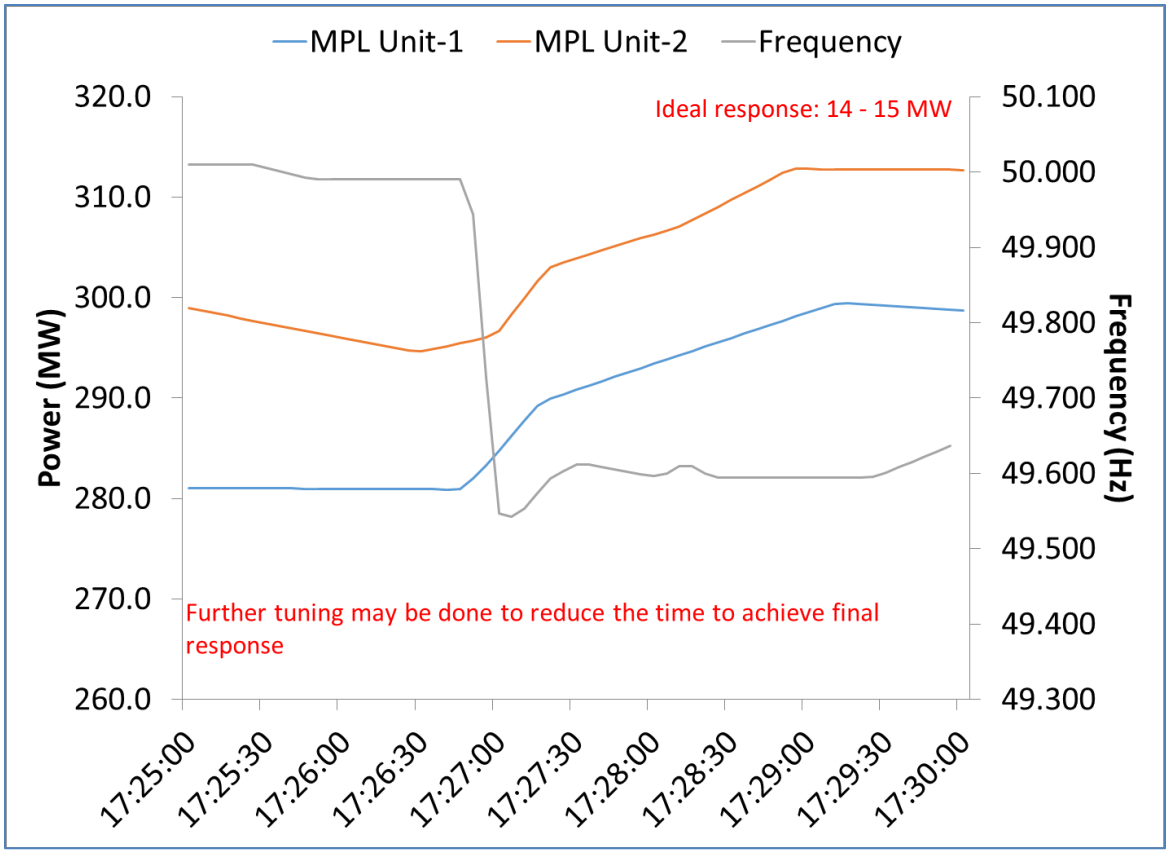


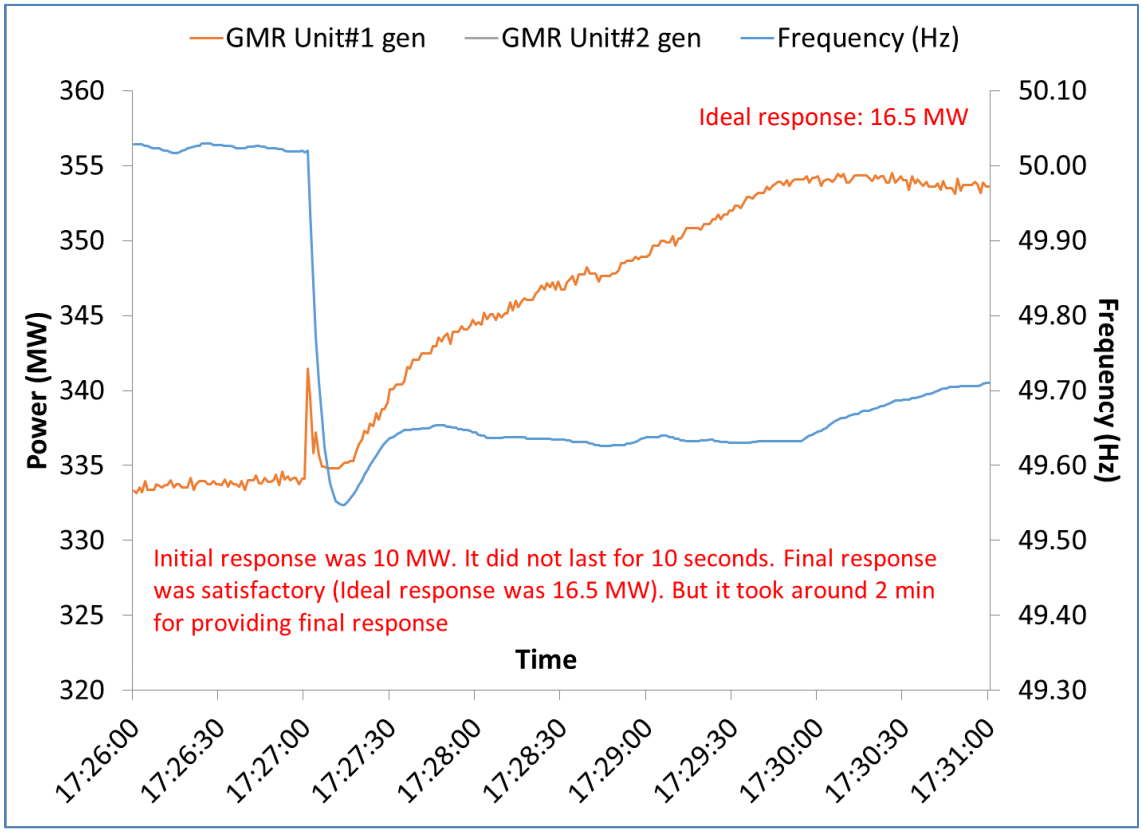
Annexure 3: Variation of generation of regional generating stations during frequency change

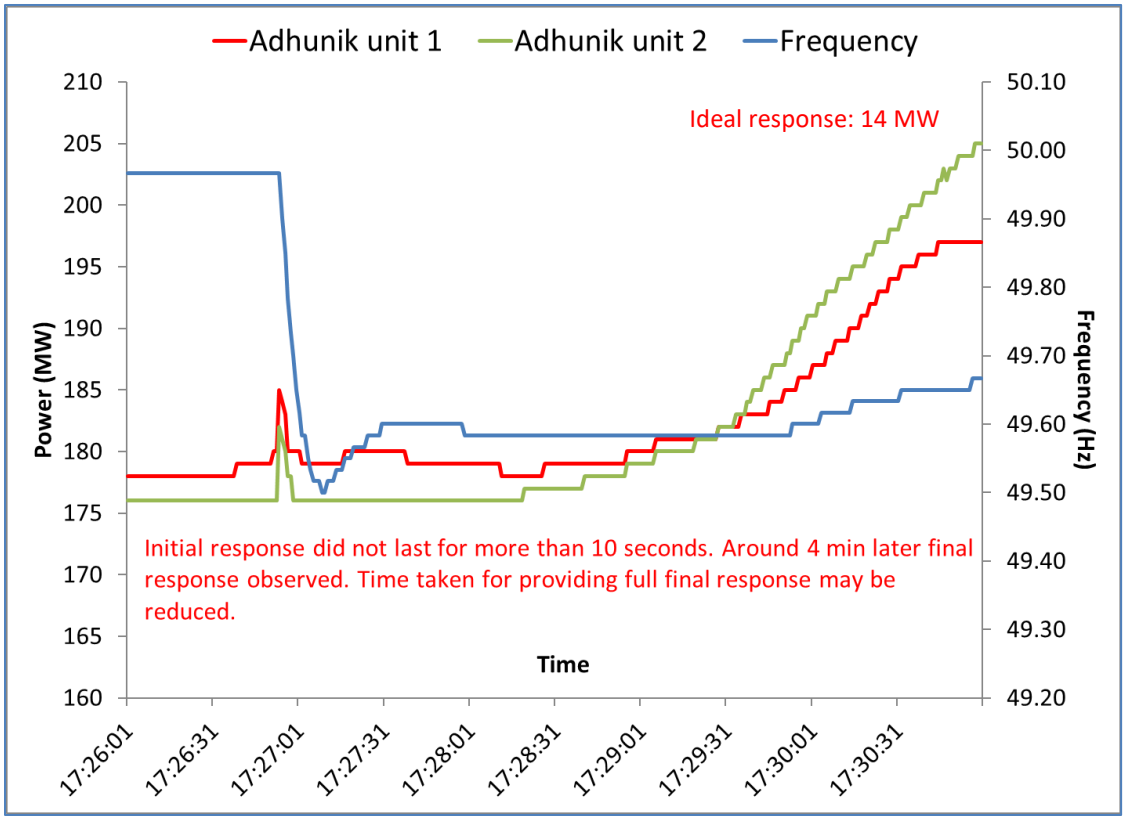


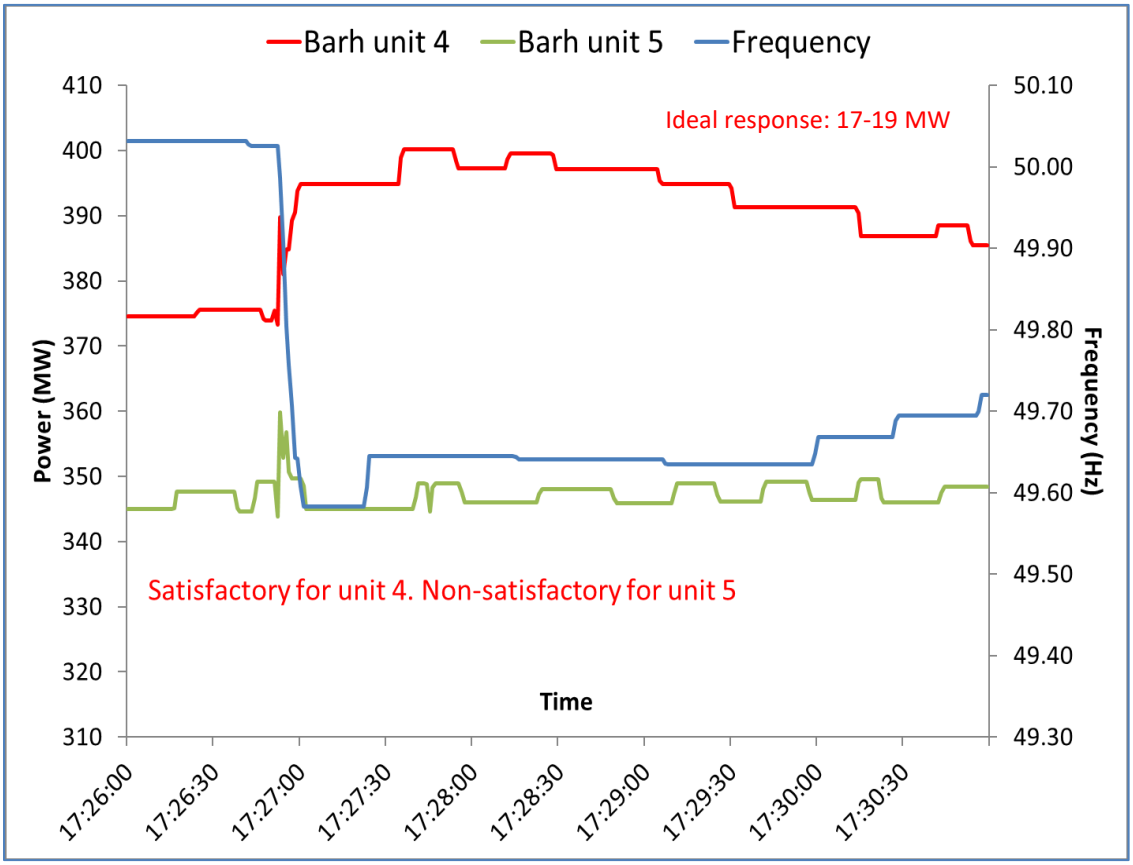

Ideal response: 5.5 – 6.5 MW
Response was satisfactory. But it did not last for more than 30 seconds. In case of unit 1, generation reduced.
Power (MW)
Frequency (Hz)
150
140
130
120
110
100
50.1
50
49.9
49.8
49.7
49.6
49.5
49.4
49.3
17:26:00
17:26:30
17:27:00
17:27:30
17:28:00
17:28:30
17:29:00
17:29:30
17:30:00
17:30:30
KhSTPP unit 2 MW
KhSTPP unit 3 MW
KhSTPP unit 1 MW
KhSTPP unit 4 MW
KhSTPP unit 1 Freq

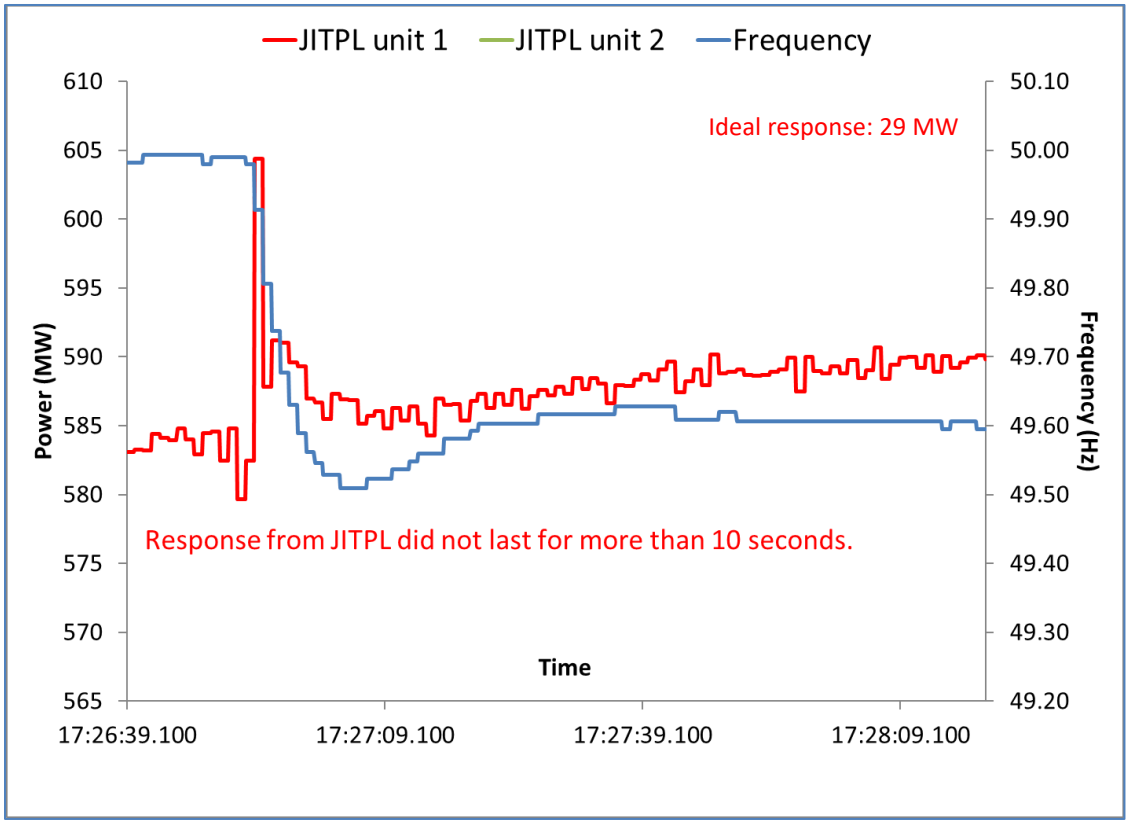

KhSTPP #5 MW
KhSTPP #6 MW
KhSTPP #7 MW
Unit 5 speed
Unit 6 speed
Unit 7 speed
Ideal response: 14 MW
Satisfactory response observed. But at start of the response oscillation has been observed. Further tuning may be done to reduce the oscillaiton. Response of unit 6 did not last for more than one min.
Power (MW)
Frequency (Hz)
305
300
295
290
285
280
275
270
265
260
3010.00
3000.00
2990.00
2980.00
2970.00
2960.00
2950.00
2940.00
17:25:31
17:26:01
17:26:31
17:27:01
17:27:31
17:28:01
17:28:31
17:29:01
17:29:31
17:30:01

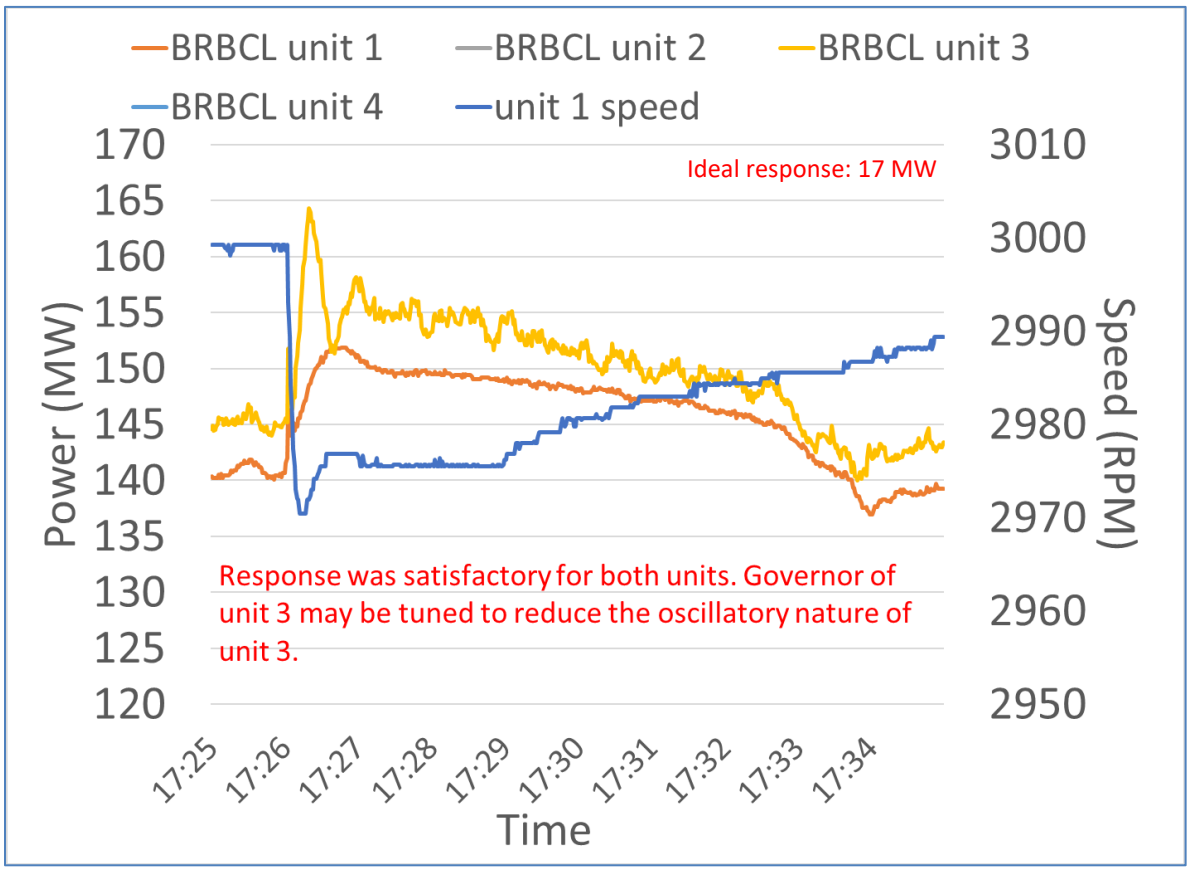

MPL Unit-1
MPL Unit-2
Frequency
Ideal response: 14 - 15 MW
Further tuning may be done to reduce the time to achieve final response
Power (MW)
Frequency (Hz)
320.0
310.0
300.0
290.0
280.0
270.0
260.0
50.100
50.000
49.900
49.800
49.700
49.600
49.500
49.400
49.300
17:25:00
17:25:30
17:26:00
17:26:30
17:27:00
17:27:30
17:28:00
17:28:30
17:29:00
17:29:30
17:30:00

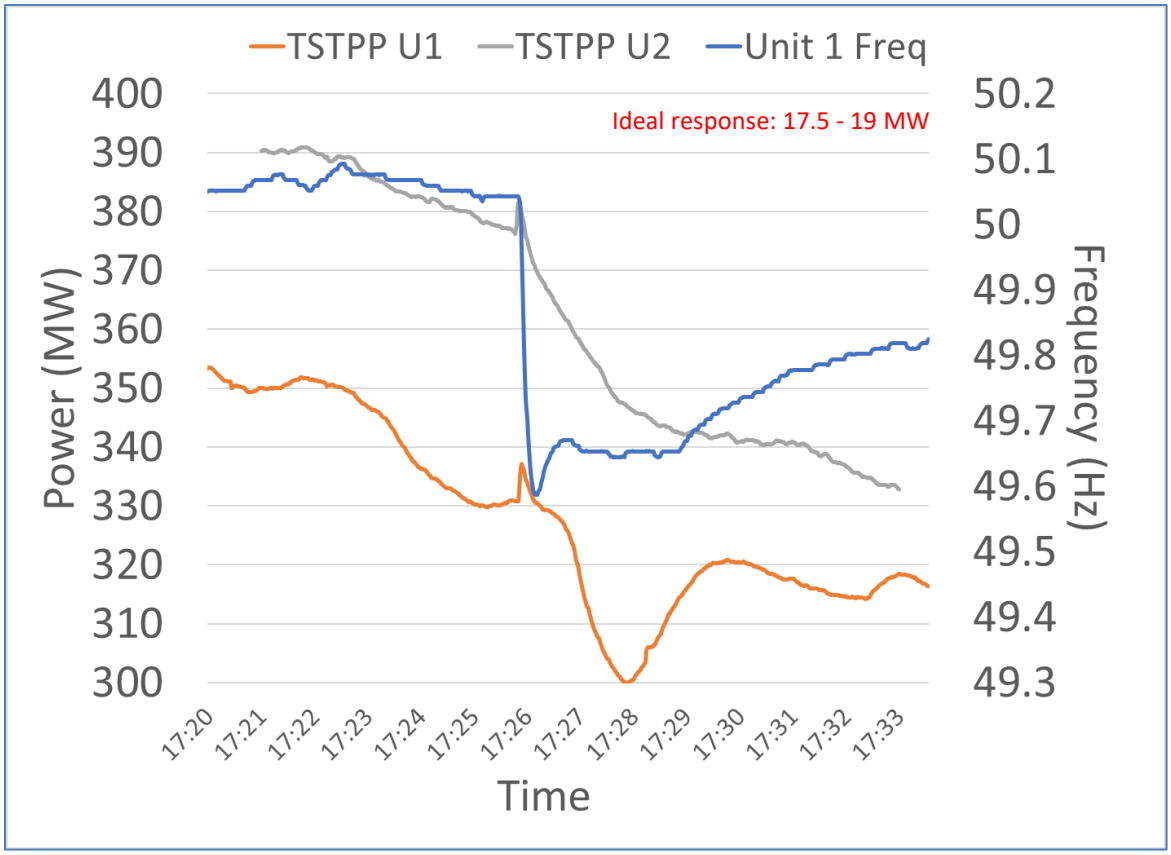

GMR Unit#1 gen
GMR Unit#2 gen
Frequency (Hz)
Ideal response: 16.5 MW
Initial response was 10 MW. It did not last for 10 seconds. Final response was satisfactory (Ideal response was 16.5 MW). But it took around 2 min for providing final response
Time
Power (MW)
Frequency (Hz)
360
355
350
345
340
335
330
325
320
50.10
50.00
49.90
49.80
49.70
49.60
49.50
49.40
49.30
17:26:00
17:26:30
17:27:00
17:27:30
17:28:00
17:28:30
17:29:00
17:29:30
17:30:00
17:30:30
17:31:00

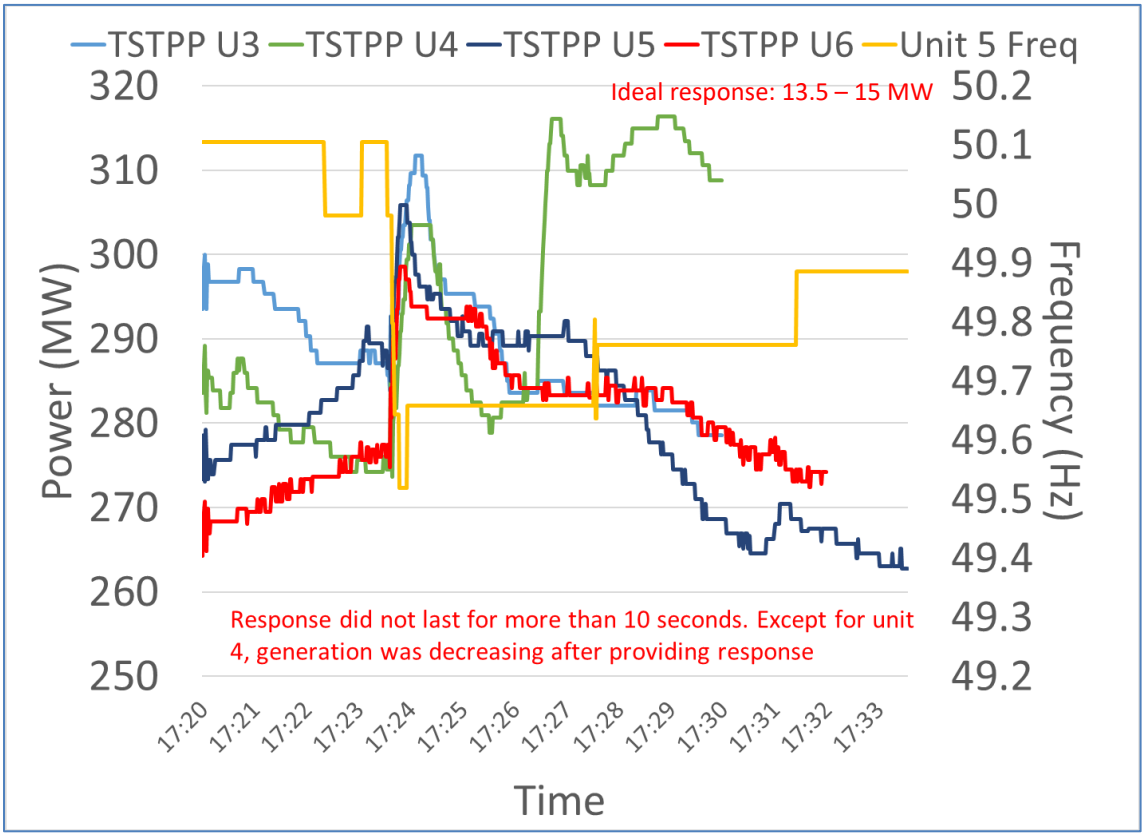

Adhunik unit 1
Adhunik unit 2
Frequency
Ideal response: 14 MW
Initial response did not last for more than 10 seconds. Around 4 min later final response observed. Time taken for providing full final response may be reduced.
Power (MW)
Frequency (Hz)
Time
210
205
200
195
190
185
180
175
170
165
160
50.10
50.00
49.90
49.80
49.70
49.60
49.50
49.40
49.30
49.20
17:26:01
17:26:31
17:27:01
17:27:31
17:28:01
17:28:31
17:29:01
17:29:31
17:30:01
17:30:31

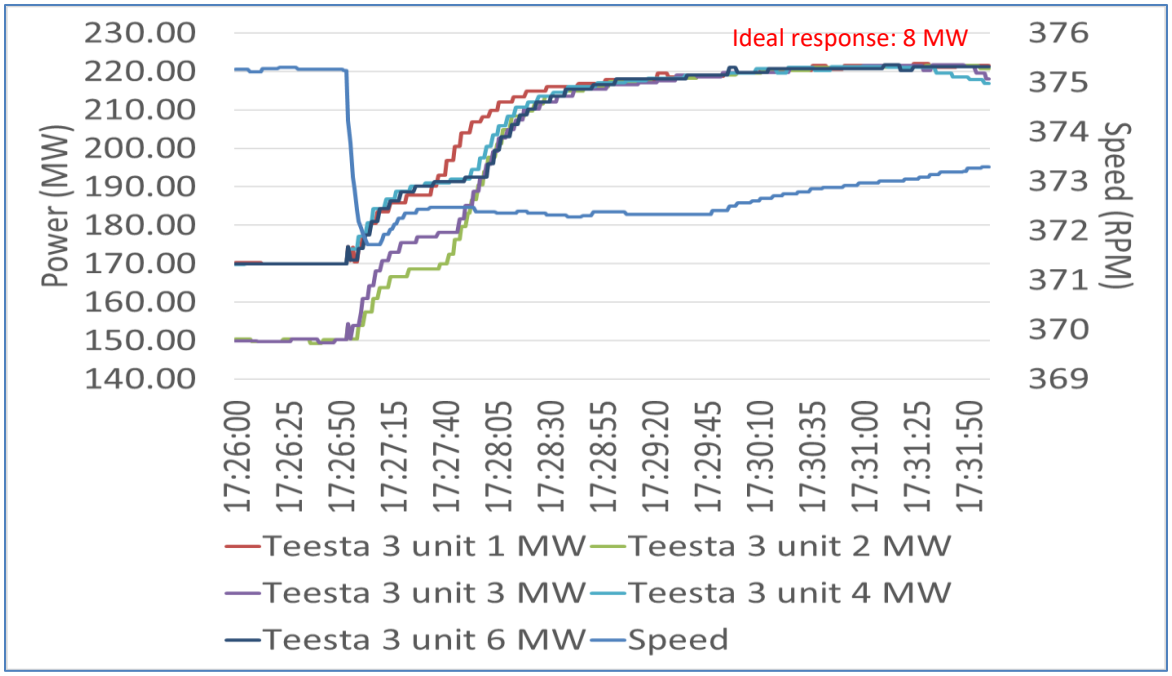

Barh unit 4
Barh unit 5
Frequency
Ideal response: 17-19 MW
Satisfactory for unit 4. Non-satisfactory for unit 5
Power (MW)
Frequency (Hz)
Time
410
400
390
380
370
360
350
340
330
320
310
50.10
50.00
49.90
49.80
49.70
49.60
49.50
49.40
49.30
17:26:00
17:26:30
17:27:00
17:27:30
17:28:00
17:28:30
17:29:00
17:29:30
17:30:00
17:30:30

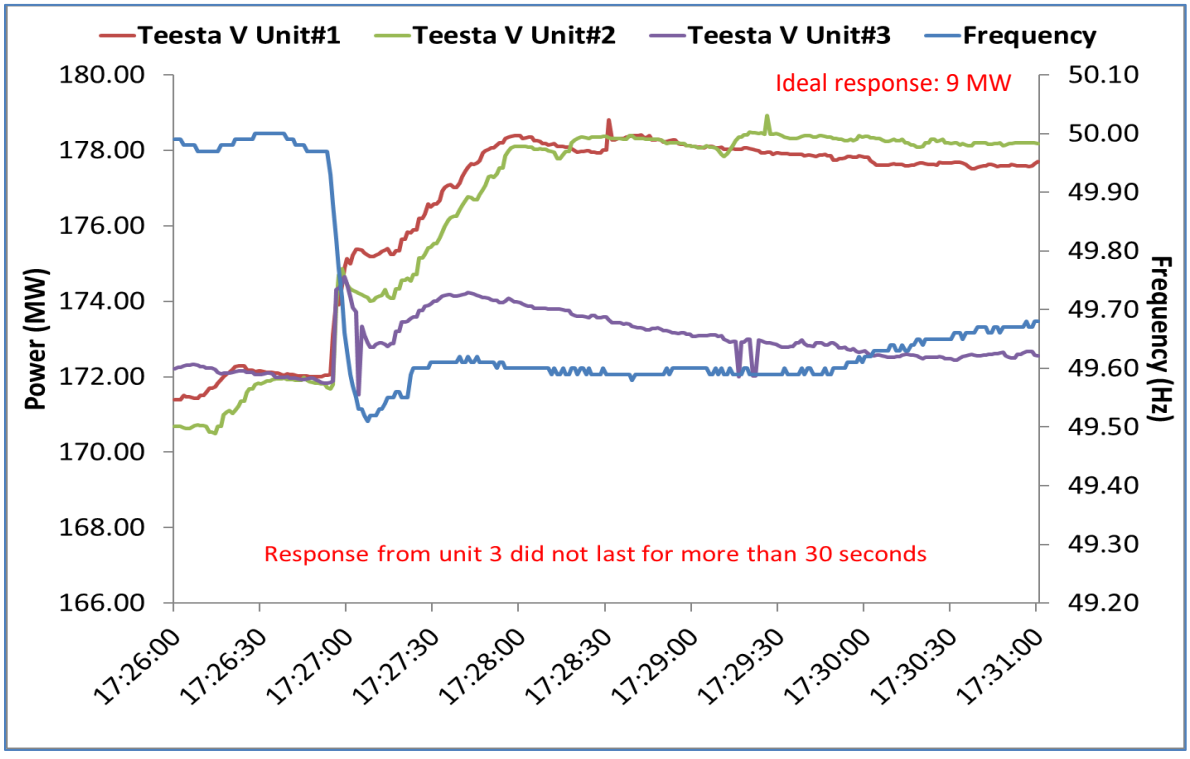

JITPL unit 1
JITPL unit 2
Frequency
Ideal response: 29 MW
Response from JITPL did not last for more than 10 seconds.
Power (MW)
Frequency (Hz)
Time
610
605
600
595
590
585
580
575
570
565
50.10
50.00
49.90
49.80
49.70
49.60
49.50
49.40
49.30
49.20
17:26:39.100
17:27:09.100
17:27:39.100
17:28:09.100

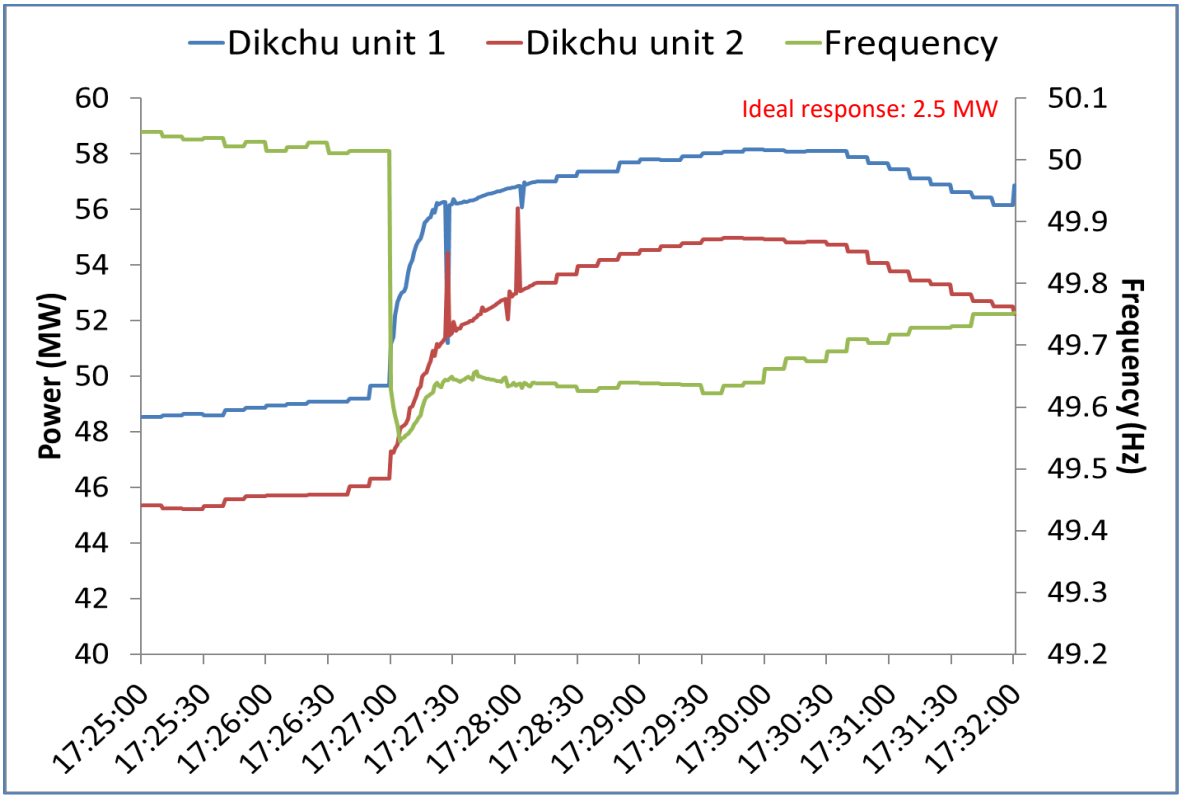

BRBCL unit 1
BRBCL unit 2
BRBCL unit 3
BRBCL unit 4
unit 1 speed
Ideal response: 17 MW
Response was satisfactory for both units. Governor of unit 3 may be tuned to reduce the oscillatory nature of unit 3.
Power (MW)
Speed (RPM)
Time
170
165
160
155
150
145
140
135
130
125
120
3010
3000
2990
2980
2970
2960
2950
17:25
17:26
17:27
17:28
17:29
17:30
17:31
17:32
17:33
17:34

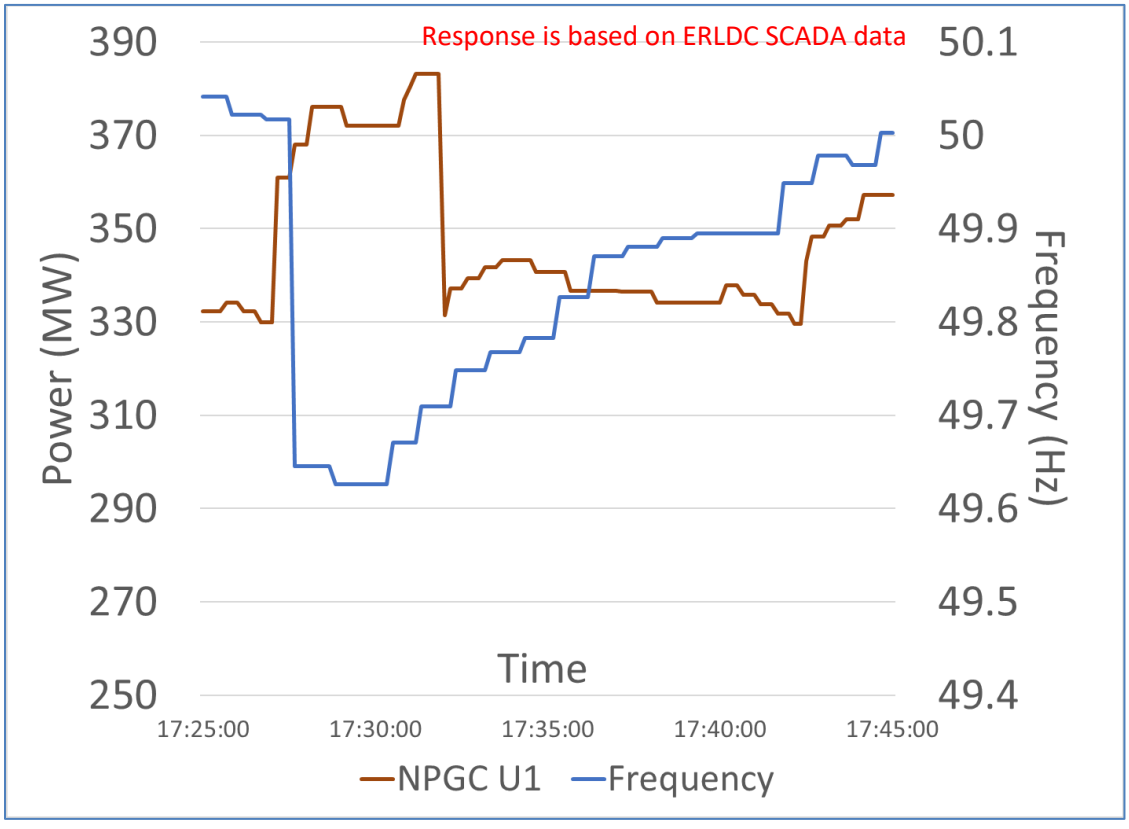

TSTPP U1
TSTPP U2
Unit 1 Freq
Ideal response: 17.5 - 19 MW
Power (MW)
Frequency (Hz)
Time
400
390
380
370
360
350
340
330
320
310
300
50.2
50.1
50
49.9
49.8
49.7
49.6
49.5
49.4
49.3
17:20
17:21
17:22
17:23
17:24
17:25
17:26
17:27
17:28
17:29
17:30
17:31
17:32
17:33


TSTPP U3
TSTPP U4
TSTPP U5
TSTPP U6
Unit 5 Freq
Ideal response: 13.5 – 15 MW
Response did not last for more than 10 seconds. Except for unit 4, generation was decreasing after providing response
Power (MW)
Frequency (Hz)
Time
320
310
300
290
280
270
260
250
50.2
50.1
50
49.9
49.8
49.7
49.6
49.5
49.4
49.3
49.2
17:20
17:21
17:22
17:23
17:24
17:25
17:26
17:27
17:28
17:29
17:30
17:31
17:32
17:33

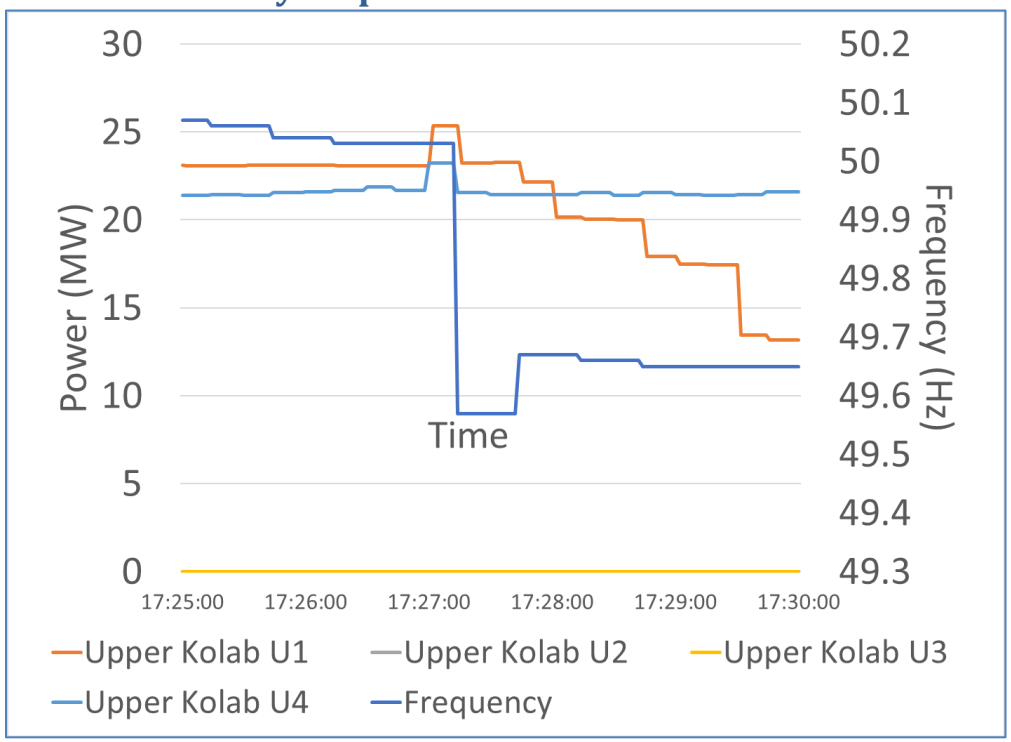

Ideal response: 8 MW
Power (MW)
Speed (RPM)
230.00
220.00
210.00
200.00
190.00
180.00
170.00
160.00
150.00
140.00
376
375
374
373
372
371
370
369
17:26:00
17:26:25
17:26:50
17:27:15
17:27:40
17:28:05
17:28:30
17:28:55
17:29:20
17:29:45
17:30:10
17:30:35
17:31:00
17:31:25
17:31:50
Teesta 3 unit 1 MW
Teesta 3 unit 2 MW
Teesta 3 unit 3 MW
Teesta 3 unit 4 MW
Teesta 3 unit 6 MW
Speed

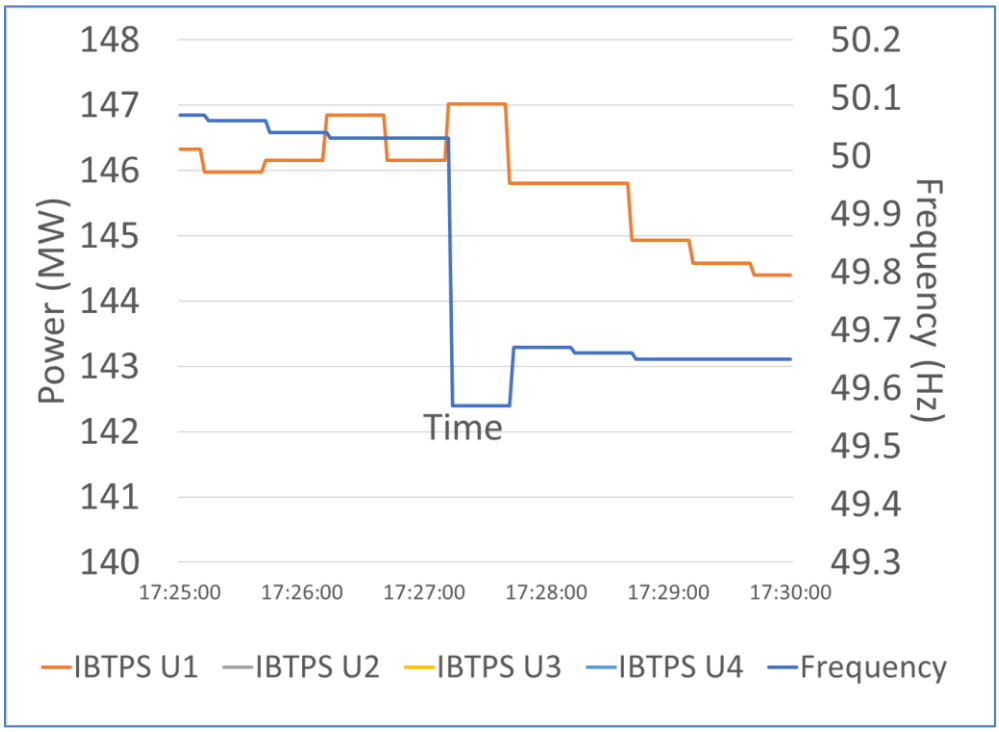

Teesta V Unit#1
Teesta V Unit#2
Teesta V Unit#3
Frequency
Ideal response: 9 MW
Power (MW)
Frequency (Hz)
180.00
178.00
176.00
174.00
172.00
170.00
168.00
166.00
50.10
50.00
49.90
49.80
49.70
49.60
49.50
49.40
49.30
49.20
Response from unit 3 did not last for more than 30 seconds
17:26:00
17:26:30
17:27:00
17:27:30
17:28:00
17:28:30
17:29:00
17:29:30
17:30:00
17:30:30
17:31:00


Dikchu unit 1
Dikchu unit 2
Frequency
Ideal response: 2.5 MW
Power (MW)
Frequency (Hz)
60
58
56
54
52
50
48
46
44
42
40
50.1
50
49.9
49.8
49.7
49.6
49.5
49.4
49.3
49.2
17:25:00
17:25:30
17:26:00
17:26:30
17:27:00
17:27:30
17:28:00
17:28:30
17:29:00
17:29:30
17:30:00
17:30:30
17:31:00
17:31:30
17:32:00


Response is based on ERLDC SCADA data
Power (MW)
Frequency (Hz)
390
370
350
330
310
290
270
250
50.1
50
49.9
49.8
49.7
49.6
49.5
49.4
Time
17:25:00
17:30:00
17:35:00
17:40:00
17:45:00
NPGC U1
Frequency

Annexure 4: Variation of generation of state generating stations for which non – satisfactory response has been observed





Annexure 5: FRC shared by GRIDCO SLDC

S No	Particulars	Dimension	Balimela U1	Balimela U2	Balimela U3	Balimela U4	Balimela U5	Balimela U6	Balimela U7	Burla U1	Burla U2	Burla U3	Burla U5	Rengali U1	Rengali U2	Rengali U3	Indravati U1	Upper Kolab	Upper Kolab	Upper Kolab	IBTPS U1	IBTPS U2	GRIDCO Interchange
1	Actual Net Interchange before the Event (5/28/20 5:26 PM)	MW	0	0	-19	0	-20	-18	-63	0	-40	-17	0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0	0	22	147	######	-58
2	Actual Net Interchange after the Event (5/28/20 5:26 PM)	MW	0	0	-19	0	-20	-18	-63	0	-40	-17	0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0	0	22	146	######	-36
3	Change in Net Interchange (2 - 1)	MW	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.0	0.0	-0.2	-0.7	######	21.9
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Control Area Response (3 - 4)	MW	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.0	0.0	-0.2	-0.7	######	21.9
6	Frequency before the Event	HZ	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05
7	Frequency after the Event	HZ	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98	49.98
8a	Change in Frequency (7 - 6)	HZ	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
8	Effective change in Frequency considering RGMO *	HZ	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
9	Frequency Response Characteristic (5 / 8)	MW/HZ	0	0	0	0	1	-1	0	0	0	0	0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0	0	3	10	######	-318
10	Net System Demand met before the Event	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Internal Generation before the Event (10 - 1)	MW	0	0	19	0	20	18	63	0	40	17	0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0	0	-22	-147	######	58
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	0.0	0.0	7.7	0.0	7.9	7.3	25.3	0.0	15.9	6.9	0.0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.0	0.0	-8.8	-58.7	######	23.3
14	Composite ideal response (12 + 13)	MW/Hz	0.0	0.0	7.7	0.0	7.9	7.3	25.3	0.0	15.9	6.9	0.0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.0	0.0	-8.8	-58.7	######	23.3
15	Percentage of ideal response {(9/14)x100}	%	0.0%	0.0%	0.0%	0.0%	16.5%	-8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.0%	0.0%	-36.4%	-17.3%	######	-1361.3%

* In RGMO mode, generation should not be reduced for load throw off when freq <= 50 Hz

Note: +ve exchange=> import; (-)ve exchange => export

Talcher Stage II generation is considered inside ER for calculating Regional FRC.

As ISGS is generating Power (Hence Export), -Ve value is shown for their power exchange

Annexure 6: FRC shared by WB SLDC

FREQUENCY RESPONE CHARACTERISTIC CALCULATION IN WBSETCLSYSTEM (EASTERN REGION)

Event: Incidence on 28.05.2020 at 17:26:50hr

Sl.No.	Particulars	Dimensions	TPH	BUDGE BUDGE	SDRN	HEL	CESC	DPL S/O	TLDP_III	TLDP_IV
1	Actual net interchange before the Event (17:26:00)	MW	-35.8	-407	0	-331	467	-211	0	-157.5
2	Actual net interchange after the Event (17:28:00)	MW	-36.5	-438	0	-331	429	-209	0	-158.8
3	Change in Net Interchange (2-1)	MW	-0.7	-31	0	0	-38	2	0	-1.3
4	Generation loss(+)/ load throw off (-) during the event	MW	0	0	0	0	0	0	0	0
5	Control Area Response (3-4)	MW	-0.7	-31	0	0	-38	2	0	-1.3
6	Frequency before the Event	Hz	50.02	50.02	50.02	50.02	50.02	50.02	50.02	50.02
7	Frequency after the Event	Hz	49.65	49.65	49.65	49.65	49.65	49.65	49.65	49.65
8	Change in the frequency (7-6)	Hz	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37
9	Frequency Response Characteristic(5/8)	MW/Hz	1.89	83.78378	0	0	102.7027	-5.40541	0	3.5135135
10	Net System demand met before the Event	MW					833			
11	Internal Generation before the Event (10-1)	MW	35.80	407	0	331	366	211	0	157.5
12	Ideal load response assuming 4% per Hz(0.04*row10)	MW/Hz	0.00	0	0	0	33.32	0	0	0
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	14.32	162.8	0	132.4	146.4	84.4	0	63
14	Composite ideal response (12+13)	MW	14.32	162.8	0	132.4	179.72	84.4	0	63
15	Percentage of ideal response {(9/14)*100}	%	13.212	51.46424	#DIV/0!	0	57.14595	-6.40451	#DIV/0!	5.5770056

FREQUENCY RESPONE CHARACTERISTIC CALCULATION IN WBSETCLSYSTEM (EASTERN REGION)

Event: Incidence on 28.05.2020 at 17:26:50hr

Sl.No.	Particulars	Dimensions	BTPS	STPS	KTPP	BKTPP	SGTPP	WBSETCL (C.S.D.)	PPSP GEN	PPSP LOAD	HYDEL	WBSEDCL	W.B. Demand
1	Actual net interchange before the Event (17:26:00)	MW	-31	-253.7	-158.5	-180.1	-653	1369	0	0	-46	2454	3545
2	Actual net interchange after the Event (17:28:00)	MW	-32	-253.7	-158.3	-189.5	-653	1298	0	0	-40	2423	3468
3	Change in Net Interchange (2-1)	MW	-1	0	0.2	-9.4	0	-71	0	0	6	-31	-77
4	Generation loss(+)/ load throw off (-) during the event	MW	0	0	0	0	0	0		0	0	0	0
5	Control Area Response (3-4)	MW	-1	0	0.2	-9.4	0	-71	0	0	6	-31	-77
6	Frequency before the Event	Hz	50.02	50.02	50.02	50.02	50.02	50.02	50.02	50.02	50.02	50.02	50.02
7	Frequency after the Event	Hz	49.65	49.65	49.65	49.65	49.65	49.65	49.65	49.65	49.65	49.65	49.65
8	Change in the frequency (7-6)	Hz	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37
9	Frequency Response Characteristic(5/8)	MW/Hz	2.702703	0	-0.54054	25.40541	0	191.891892	0	0	-16.216216	83.7837838	208.10811
10	Net System demand met before the Event	MW	0	0	0	0	0	3545				2553	
11	Internal Generation before the Event (10-1)	MW	31	253.7	158.5	180.1	653	2176	0		46	99	-3545
12	Ideal load response assuming 4% per Hz(0.04*row10)	MW/Hz	0	0	0	0	0	141.8	0		0	102.12	0
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	12.4	101.48	63.4	72.04	261.2	870.4	0		18.4	39.6	-1418
14	Composite ideal response (12+13)	MW	12.4	101.48	63.4	72.04	261.2	1012.2	0		18.4	141.72	-1418
15	Percentage of ideal response {(9/14)*100}	%	21.79599	0	-0.85259	35.26569	0	18.9579028	#DIV/0!	#DIV/0!	-88.13161	59.1192378	-14.676171

WBSEDCL SYSTEM: WBSEDCL Drawal + (HYDEL + PPSP) GEN + Embedded IPP Gen - PPSP pumping Load

WBSETCL Systyem : S/O GEN [WBPDCL +TLDP3 +TLDP4 + Hydel + HEL + TPH +CPL +PPSP + IPC(H)L + EHT IPP] + ISGS Drawal + DPL Surplus (No negative sign) + CESC Surplus (No negative sign)

EHT IPP: _MW as per hourly reading

Annexure 7: FRC shared by DVC SLDC

Frequency Response Characteristic Calculation in Eastern Region

On Dt. 28-05-2020 at 17:26Hrs Generation Loss of 5346 MW generation loss at Sasan, Rihand and VSTPS

S No	Paricular	Dimension	DVC Interchange
1	Actual Net Interchange before the Event (17:26:40)	MW	-1156
2	Actual Net Interchange after the Event (17:27:40)	MW	-1316
3	Change in Net Interchange (2 - 1)	MW	-160.4
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0
5	Control Area Response (3 - 4)	MW	-160.4
6	Frequency before the Event	HZ	50.03
7	Frequency after the Event	HZ	49.65
8a	Change in Frequency (7 - 6)	HZ	-0.377
8	Effective change in Frequency considering RGMO *	HZ	-0.377
9	Frequency Response Characteristic (5 / 8)	MW/HZ	425
10	Net System Demand met before the Event	MW	2020
11	Internal Generation before the Event (10 - 1)	MW	3176
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	80.8
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	1270.2
14	Composite ideal response (12 + 13)	MW/Hz	1351.0
15	Percentage of ideal response {(9/14)x100}	%	31.4%

gen/load -1

* In RGMO mode, generation should not be reduced for load throw off when freq <= 50 Hz

Note: +ve exchange=> import; (-)ve exchange => export

Talcher Stage II generation is considered inside ER for calculating Regional FRC.

As ISGS is generating Power (Hence Export), -Ve value is shown for their power exchange

ANNEXURE D1

ABSTRACT OF STATEWISE/SYSTEMWISE/CONSTITUENTWISE PEAK DEMAND- vs- AVAILABILITY IN EASTERN REGION FOR THE PERIOD FROM APRIL-2020 TO MARCH-2021

(ALL FIGURES IN MW & NET)

SL.NO		PARTICULARS	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
1		BIHAR												
	i)	NET MAX DEMAND	5495	5880	6100	5700	6390	6450	5595	4900	4850	5100	5150	5300
	ii)	NET POWER AVAILABILITY- Own+KBUNL	563	515	484	450	543	545	591	568	590	645	651	639
		Central Sector+Bi-Lateral	3585	4177	4158	4500	4399	4442	4481	4680	4613	4845	4607	4950
	iii)	SURPLUS(+)/DEFICIT(-)	-1347	-1188	-1458	-750	-1448	-1464	-523	348	353	390	108	289
2		JHARKHAND												
	i)	NET MAX DEMAND	1450	1455	1450	1400	1420	1450	1425	1430	1450	1450	1400	1400
	ii)	NET POWER AVAILABILITY- Own Source	296	341	341	386	386	386	386	341	341	283	214	236
		Central Sector+Bi-Lateral+CPP	873	918	947	950	1008	1004	1000	958	923	973	977	982
	iii)	SURPLUS(+)/DEFICIT(-)	-281	-196	-162	-64	-26	-60	-39	-131	-186	-194	-209	-182
3		DVC												
	i)	NET MAX DEMAND (OWN)	3050	3065	3130	3130	2980	2970	2945	2980	3000	3150	3080	3100
	ii)	NET POWER AVAILABILITY- OWN SOURCE	4930	5116	5086	5026	5244	5287	5522	5325	5280	5158	5145	5355
		- Central Sector+MPL	407	480	457	529	529	529	528	519	494	487	509	511
		BI-LATERAL EXPORT BY DVC	2053	2069	1934	2200	1673	1587	1498	1650	1632	2103	2268	2271
	iii)	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	234	462	479	225	1120	1258	1607	1215	1142	392	305	495
4		ODISHA												
	i)	NET MAX DEMAND	5200	5180	4975	4200	5130	5100	5410	4700	5025	5000	5030	5290
	ii)	NET POWER AVAILABILITY- OWN+IPP+CPP	3768	3714	3746	3529	4110	4032	3742	3522	3600	3472	3385	3668
		- Central Sector	1644	1739	1690	1743	2081	2104	2096	1930	1915	2033	2029	1986
	iii)	SURPLUS(+)/DEFICIT(-)	212	273	461	1072	1061	1036	428	752	490	505	384	364
5		WEST BENGAL												
5.1		WBSEDCL												
	i)	NET MAX DEMAND (OWN)	7190	7140	7315	6000	7235	7335	7375	6065	6085	6015	6460	7825
	ii)	IPCL DEMAND	85	86	84	0	83	83	83	81	79	79	82	84
	iii)	TOTAL WBSEDCL's DEMAND (incl.B'Desh+Sikkim+IPCL)	7480	7431	7609	7569	7528	7628	7668	6356	6374	6099	6547	7914
	iv)	NET POWER AVAILABILITY- Own Source	4609	4564	4577	4707	4352	4655	4824	4398	4503	4604	4544	4681
		Contribution from DPL	465	465	465	465	465	465	465	465	407	396	465	465
		- Central Sector+Bi-lateral+IPP&CPP+TLDP+IPCL	2587	2627	2758	2777	2886	2846	2855	2443	2281	2410	2547	2671
	v)	EXPORT (TO B'DESH & SIKKIM)	205	205	210	0	210	210	210	210	210	5	5	5
	vi)	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	181	225	190	1949	175	338	475	951	817	1311	1009	-97
5.2		CESC												
	i)	NET MAX DEMAND	2150	2350	2370	2050	2000	2050	2000	1850	1450	1360	1600	1820
	ii)	NET POWER AVAILABILITY - OWN SOURCE	750	750	750	820	750	750	750	750	500	750	750	750
		IMPORT FROM OTHER SOURCE	860	1060	1080	690	710	760	710	560	410	340	310	530
		IMPORT FROM HALDIA ENERGY LTD.	540	540	540	540	540	540	540	540	540	270	540	540
	iii)	TOTAL AVAILABILITY	2150	2350	2370	2160	2000	2050	2000	1850	1450	1360	1600	1820
	iv)	SURPLUS(+)/DEFICIT(-)	0	0	0	0	0	0	0	0	0	0	0	0
6		WEST BENGAL (WBSEDCL+DPL+CESC+IPCL) (excluding DVC's supply to WBSEDCL's command area)												
	i)	NET MAX DEMAND OWN (Excl. Export)	9425	9576	9769	8050	9318	9468	9458	7996	7614	7454	8142	9729
	ii)	NET POWER AVAILABILITY- Own Source	5824	5779	5792	5527	5567	5870	6039	5613	5411	5750	5759	5896
	iii)	CS SHARE+BILETARAL+IPP/CPP+TLDP+HEL	3987	4227	4378	4472	4136	4146	4105	3543	3231	3020	3397	3741
	iv)	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXP.	386	430	400	1949	385	548	685	1161	1027	1316	1014	-92
	v)	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXP.	181	225	190	1949	175	338	475	951	817	1311	1009	-97
7		SIKKIM												
	i)	NET MAX DEMAND	105	105	100	95	100	100	110	128	128	127	122	113
	ii)	NET POWER AVAILABILITY- Own Source	8	8	8	8	8	8	8	4	2	2	2	2
		- Central Sector	166	173	172	175	186	185	184	176	151	162	182	184
	iii)	SURPLUS(+)/DEFICIT(-)	69	77	80	88	94	93	81	52	25	37	62	73
8		EASTERN REGION At 1.02 AS DIVERSITY FACTOR												
	i)	NET MAX DEMAND	24239	24765	25023	22575	24841	25037	24454	21699	21634	21844	22475	24443
	ii)	BI-LATERAL EXPORT BY DVC	2053	2069	1934	2200	1673	1587	1498	1650	1632	2103	2268	2271
	iii)	EXPORT BY WBSEDCL	205	205	210	0	210	210	210	210	210	5	5	5
	iv)	NET TOTAL POWER AVAILABILITY OF ER (INCLUDING CS ALLOCATION +BILATERAL+CPP+HEL)	26050	27187	27259	27295	28196	28536	28682	27179	26550	26829	26856	28149
	v)	PEAK SURPLUS(+)/DEFICIT(-) OF ER AFTER EXPORT (v = iv - i -ii - iii)	-447	148	91	2520	1473	1703	2520	3620	3074	2877	2108	1430

Annexure D2 ERLDC, KOLKATA

TRANSMISSION ELEMENTS (BAYS) OUTAGE APPROVED

SI	NAME OF THE ELEMENTS	FROM		TO		REMARKS	S.D availing agency	Reason	SUBJECT TO CONSENT FROM AGENCY	MEETING COMMENTS
		DATE	TIME	DATE	TIME					
1	Main bay of 400kv Maithon-MPL Ckt#2,(Bay no 406) at MPL	25-06-2020	08:00	08-07-2020	18:00	OCB	POWERGRID,ER-II	Upgradation of Bay equipmenets under ERSS- XVII Project work. Shut down of Bays proposed in respect of line shut down for reconductoring work.		
2	AMP of 10C04-Q01 BAY at Talcher	01-07-2020	07:00	01-07-2020	19:00	OCB	ER-II/Odisha/HVDC Talcher	Annual maintenance of 10C04-Q01 bay equipment/		
3	703 Main bay of 765kV/400kV,1500MVA ICT-I at Sundergarh	01-07-2020	09:00	04-07-2020	18:00	OCB	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
4	400 KV Keonjhar Main Bay (Bay No-401) at Rengali	01-07-2020	09:00	01-07-2020	17:00	ODB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
5	765kV Srikakulam Ckt 2 Main Bay 726 at Angul	01-07-2020	09:00	03-07-2020	18:00	OCB	ER-II/Odisha/Angul SS	Guide Valve Replacement	NLDC	
6	400KV Main bay of 400KV RKL-I AT CHAIBASA	01-07-2020	9:30	01-07-2020	17:30	ODB	POWERGRID ER-I	AMP WORK OF 404 BAY		
7	Barh 1 main bay (418) at Patna	01-07-2020	9:30	02-07-2020	18:00	OCB	POWERGRID ER-I	BCU Upgradation wiring		
8	220KV Bus Coupler Bay AT Kishanganj	01-07-2020	9:00	01-07-2020	18:00	ODB	POWERGRID ER-I	AMP of GIS BC bay No-202 Requested by ER1		
9	40252- Tie Bay of Keonjhar line & 315MVA ICT I at Baripada	02-07-2020	09:00	02-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
10	AMP of 10C04-Q02 BAY Talcher	02-07-2020	07:00	02-07-2020	19:00	OCB	ER-II/Odisha/HVDC Talcher	Annual maintenance of 10C04-Q02 bay equipment/		
11	400KV Tie bay of 400KV RKL-1 LINE & ICT2 AT CHAIBASA	02-07-2020	9:30	02-07-2020	17:30	ODB	POWERGRID ER-I	AMP WORK OF 405 BAY		
12	400KV Punathangchu-1(JIGME INTERIM-1) Main Bay at Alipurduar	02-07-2020	09:00	02-07-2020	18:00	ODB	POWERGRID,ER-II	Bay AMP Work		
13	132 BUS sectionalizer -1 (109 Bay) at Rangpo	02-07-2020	09:00	02-07-2020	17:00	ODB	POWERGRID,ER-II	AMP Works		
14	108 BAY(Main bay of 132KV Baripada-Bangriposi line) at Baripada	03-07-2020	09:00	03-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		After Joda ICT returns
15	KEONJHAR (PG) -OPTCL RANKI LINE-I (208 MAIN & 208 LINE BAY at Keonjhar)	03-07-2020	09:00	03-07-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Work ,Testing of line CTs and Line Bay maintenance work (Shutdown will taken if not avail in June)		
16	400 KV Keonjhar- Talcher # 2 Tie Bay (Bay No-402 at Rengali	03-07-2020	09:00	03-07-2020	17:00	ODB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
17	Main bay of 400 KV New PPSP-2 line at New Ranchi	03-07-2020	9:00	03-07-2020	17:00	ODB	POWERGRID ER-I	AMP		

18	400kV Nabinagar1 main bay (410 bay) at Patna	03-07-2020	9:30	04-07-2020	18:00	OCB	POWERGRID ER-I	BCU Upgradation wiring		
19	400kv Main bay of 125MVAR B/R at Sasaram	03-07-2020	9:00	03-07-2020	18:00	ODB	POWERGRID ER-I	AMP Work		
20	40952- 400KV Jamshedpur line Main Bay at Baripada	04-07-2020	09:00	04-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
21	201 TBC BAY at Keonjhar	04-07-2020	09:00	04-07-2020	18:00	ODB	ER-II/Odisha/Keonjhar	Re-checking of Contact Resistance Measurement/		
22	765kV Srikakulam Ckt 2 Tie Bay 725 at Angul	04-07-2020	09:00	07-07-2020	18:00	OCB	ER-II/Odisha/Angul SS	Guide Valve Replacement	NLDC	
23	Tie bay of 400KV New PPSP-2 line and Patratu - 2 line at New Ranchi	04-07-2020	9:00	04-07-2020	17:00	ODB	POWERGRID ER-I	AMP		
24	41252- 400KV TISCO Line main Bay at Baripada	05-07-2020	09:00	05-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
25	706 Main Bay of 765/400KV,1500MVA ICT-I at Sundergarh	05-07-2020	09:00	08-07-2020	18:00	OCB	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
26	Barh 2 main bay (415) at Patna	05-07-2020	9:30	06-07-2020	18:00	OCB	POWERGRID ER-I	BCU Upgradation wiring		
27	Bus Reactor (410) Main Bay at Indravati	06-07-2020	09:00	06-07-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of Bus Reactor (410) Main Bay		
28	41652-Future Line Bay GIS at Baripada	06-07-2020	09:00	06-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
29	400 KV Talcher # 2 Main Bay (Bay No-403) at Rengali	06-07-2020	09:00	06-07-2020	17:00	ODB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
30	Main bay of 400 KV Patratu-2 line at New Ranchi	06-07-2020	9:00	06-07-2020	17:00	ODB	POWERGRID ER-I	AMP		
31	Main Bay of 400kV Malda-2 (413-52) at New Purnea S/s	06-07-2020	10:00	06-07-2020	18:00	ODB	POWERGRID ER-I	CT & CB AMP WORK		
32	ICT 2 Main Bay (409) at Patna	06-07-2020	9:30	07-07-2020	18:00	OCB	POWERGRID ER-I	BCU Upgradation wiring		
33	220 KV Pandiabili-ATRI-2 bay (208 BAY) at Pandiabili	07-07-2020	#####	07-07-2020	#####	ODB	ER-II/Odisha/ Pandiabili GIS	AMP WORK of 208 bay (Timing, CRM and DCRM test)		
34	Tie bay of 400KV Chandwa -1 line and future at New Ranchi	07-07-2020	9:00	07-07-2020	17:00	ODB	POWERGRID ER-I	AMP		
35	400kv Tie bay of Convt. Trafo and AC Filter (North side) at Sasaram	07-07-2020	9:00	07-07-2020	18:00	ODB	POWERGRID ER-I	AMP Work		
36	400KV Punathangchu-2(JIGME INTERIM-2) Main Bay at Alipurduar	07-07-2020	09:00	07-07-2020	18:00	ODB	POWERGRID,ER-II	Bay AMP Work		
37	400 kV Talcher 1 (406L) at Rourkela	07-07-2020	09:00	07-07-2020	11:00	ODB	ER-II/ODISHA/ROURKELA	Line Bay AMP		
38	221 KV Pandiabili-ATRI-1 bay (209 BAY) at Pandiabili	08-07-2020	#####	08-07-2020	#####	ODB	ER-II/Odisha/ Pandiabili GIS	AMP WORK of 209 bay (Timing, CRM and DCRM test)		
39	400 Kv Talcher # 1 Main Bay (Bay No-404) at Rengali	08-07-2020	09:00	08-07-2020	17:00	ODB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		

40	765kV Sundargarh Ckt 3 Tie Bay 722 at Angul	08-07-2020	09:00	10-07-2020	18:00	OCB	ER-II/Odisha/Angul SS	Guide Valve Replacement	NLDC	
41	132KV BAY OF 220/132KV ATR-II AT DALTANGANJ	08-07-2020	9:30	08-07-2020	17:30	ODB	POWERGRID ER-I	BAY AMP WORK		
42	Main bay 400KV Chandwa -1 line at New Ranchi	08-07-2020	9:00	08-07-2020	17:00	ODB	POWERGRID ER-I	AMP		
43	400kv Tie bay of 500MVA ICT-1-NABINAGAR-1 at Patna	08-07-2020	9:30	10-07-2020	18:00	OCB	POWERGRID ER-I	CB OVERHAULING + BCU Upgradation wiring		
44	407 Bay (Bidhan nagar Line-1 Main Bay) at Durgapur	08-07-2020	9.00hrs	08-07-2020	17.30 hrs	ODB	POWERGRID,ER-II	R-Ph CT Replacement Works		
45	400 kV 407 main Bay of Baripada-Duburi line at Baripada	09-07-2020	09:00	10-07-2020	17:30	OCB	ER-II/Odisha/BARIPADA S/S	Gasket replacement		
46	721 Main Bay of 765KV Sundargarh-Dharamjaygarh ckt 1 at Sundergarh	09-07-2020	09:00	12-07-2020	18:00	OCB	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
47	Tie bay of 400KV Chandwa-2 line and Future at New Ranchi	09-07-2020	9:00	09-07-2020	17:00	ODB	POWERGRID ER-I	AMP		
48	400kv Tie bay of 500MVA ICT-2-NABINAGAR-2 at Patna	09-07-2020	9:30	10-07-2020	18:00	OCB	POWERGRID ER-I	BCU Upgradation wiring		
49	400kv Main bay of North side Converter Transformer at Sasaram	09-07-2020	9:00	09-07-2020	18:00	ODB	POWERGRID ER-I	AMP Work		
50	Tie bay of 400kv Maithon-MPL Ckt#2/ST-1,(Bay no 405) at MPL	09-07-2020	09:00	28-07-2020	19:00	OCB	POWERGRID,ER-II	Upgradation of Bay equipmenets under ERSS- XVII Project work. Shut down of Bays proposed in respect of line shut down for reconductoring work.		
51	400 Kv Talcher # 1 Tie Bay (Bay No-406) at Rengali	10-07-2020	09:00	10-07-2020	17:00	ODB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
52	400kv Main bay of Chandwa-2 line at New Ranchi	10-07-2020	9:00	10-07-2020	17:00	ODB	POWERGRID ER-I	AMP		
53	400KV Main Bay of 400 kV Gaya-Koderma Ckt-I at Gaya	10-07-2020	9:00	10-07-2020	18:00	ODB	POWERGRID ER-I	For AMP work		
54	400kv tie bay of Barh- 1 and Balia -2 at Patna	10-07-2020	9:30	11-07-2020	18:00	OCB	POWERGRID ER-I	BCU Upgradation wiring		
55	417 Bay (ICT-II & Future Tie Bay) at Durgapur	10-07-2020	9.00hrs	10-07-2020	17.30 hrs	ODB	POWERGRID,ER-II	Air compressor replacement works		
56	Main bay of 400kv Maithon-MPL Ckt#1,(Bay no 403) at MPL	10-07-2020	09:00	25-07-2020	18:00	OCB	POWERGRID,ER-II	Upgradation of Bay equipmenets under ERSS- XVII Project work. Shut down of Bays proposed in respect of line shut down for reconductoring work.		
57	315 MVA ICT#2 Main Bay (BAY NO 406) at Subhasgram	10-07-2020	09:00	10-07-2020	17:00	ODB	POWERGRID,ER-II	AMP of 406 Bay		
58	400 kV 408 Tie Bay of Baripada-Duburi & Baripada- Jamshedpur line at Baripada	11-07-2020	09:00	12-07-2020	17:30	OCB	ER-II/Odisha/BARIPADA S/S	Gasket replacement		
59	765kV Sundargarh Ckt 3 Main Bay 723 at Angul	11-07-2020	09:00	14-07-2020	18:00	OCB	ER-II/Odisha/Angul SS	Guide Valve Replacement	NLDC	

60	400KV Balangir-Jeypore line Main BAY (403 BAY) at Balangir	11-07-2020	09:00 Hrs	11-07-2020	18:00 Hrs	OD B	ER-II/Odisha/Balangir	AMP for 403 52CB & 403 CT		
61	132KV BAY OF 220/132KV ATR-I AT DALTANGANJ	11-07-2020	9:30	11-07-2020	17:30	OD B	POWERGRID ER-I	BAY AMP WORK		
62	315 MVA ICT#3 Main Bay (BAY NO 409) at Subhasgram	11-07-2020	09:00	11-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 409 Bay		
63	400kv main bay of Balia 1 at Patna	12-07-2020	9:30	13-07-2020	18:00	OC B	POWERGRID ER-I	BCU Upgradation wiring		
64	400 kV 410 main Bay of Baripada-Pandiabili line at Baripada	13-07-2020	09:00	14-07-2020	17:30	OC B	ER-II/Odisha/BARIPADA S/S	Gasket replacement		
65	710 Main Bay of 765KV Sundargarh-Angul ckt-3 at Sundergarh	13-07-2020	09:00	16-07-2020	18:00	OC B	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
66	204 LINE BAY at Keonjhar	13-07-2020	09:00	13-07-2020	18:00	OC B	ER-II/Odisha/Keonjhar	Rectification of CB: found faulty timing/ and AMP works (Shutdown will taken if not avail in June)		
67	400 KV ICT # 1 Main Bay (Bay No-407) at Rengali	13-07-2020	09:00	13-07-2020	17:00	OD B	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
68	132KV BAY OF Chatarpur line-1 at Daltonganj	13-07-2020	9:30	13-07-2020	17:30	OD B	POWERGRID ER-I	BAY AMP WORK		
69	400KV Main Bay of 400 kV Gaya-Mainthon Ckt-I at Gaya	13-07-2020	9:00	13-07-2020	18:00	OD B	POWERGRID ER-I	For AMP work		
70	Main Bay of 400kV Kishanganj-1 (407-52) at New Purnea S/s	13-07-2020	9:00	13-07-2020	12:00	OD B	POWERGRID ER-I	CT Oil Sampling		
71	Tie Bay of 400kV Kishanganj-1 & Muzaffarpur-2 (408-52) at New Purnea S/s	13-07-2020	12:00	13-07-2020	15:00	OD B	POWERGRID ER-I	CT Oil Sampling		
72	Main Bay of 400kV Muzaffarpur-2(409-52) at New Purnea S/s	13-07-2020	15:00	13-07-2020	18:00	OD B	POWERGRID ER-I	CT Oil Sampling		
73	400kv Tie bay of Convt. Trafo and AC Filter (East sideside) at Sasaram	13-07-2020	9:00	13-07-2020	18:00	OD B	POWERGRID ER-I	AMP Work		
74	400KV TIE BAY of ICT 2(Bay 406) at Rajarhat	13-07-2020	09:00	13-07-2020	17:00	OD B	POWERGRID,ER-II	AMP work of GIS Bay prior to completion of one year.		
75	315 MVA ICT#4 Main Bay (BAY NO 412) at Subhasgram	13-07-2020	09:00	13-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 412 Bay		
76	206 LINE BAY at Keonjhar	14-07-2020	09:00	14-07-2020	18:00	OC B	ER-II/Odisha/Keonjhar	Rectification of CB: found faulty timing/ and AMP works (Shutdown will taken if not avail in June)		
77	Main Bay of 400kV Kishanganj-2 (410-52) at New Purnea S/s	14-07-2020	12:00	14-07-2020	15:00	OD B	POWERGRID ER-I	CT Oil Sampling		
78	Main Bay of 400kV Muzaffarpur-1(412-52) at New Purnea S/s	14-07-2020	15:00	14-07-2020	18:00	OD B	POWERGRID ER-I	CT Oil Sampling		
79	400kv Tie bay of Barh-2 and Balia-1 at Patna	14-07-2020	9:30	15-07-2020	18:00	OC B	POWERGRID ER-I	BCU Upgradation wiring		
80	132 kv Bus coupler-1(112 Bay) at Rangpo	14-07-2020	09:00	14-07-2020	17:00	OD B	POWERGRID,ER-II	AMP Works		

81	MAIN BAY OF BERHAMPORE-BHERAMARA-1 (BAY-404) at Baharampore	14-07-2020	09:00	14-07-2020	17:00	OD B	POWERGRID,ER-II	Bay AMP		
82	500 MVA ICT#5 Main Bay (BAY NO 415) at Subhasgram	14-07-2020	09:00	14-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 415 Bay		
83	400 kV 411 Tie Bay of Baripada-Pandiabili & Baripada- TISCO line at Baripada	15-07-2020	09:00	16-07-2020	17:30	OC B	ER-II/Odisha/BARIPADA S/S	Gasket replacement		
84	207 MAIN BAY at Keonjhar	15-07-2020	09:00	19-07-2020	18:00	OC B	ER-II/Odisha/Keonjhar	AMP WORKS/Rectification of CB: found faulty timing & DCRM graphs/ (Shutdown will taken if not avail in June)		
85	400 KV ICT # 1 & 2 Tie Bay (Bay No-408) at Rengali	15-07-2020	09:00	15-07-2020	17:00	OD B	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
86	765kV Srikakulam Ckt 1 Tie Bay 728 at Angul	15-07-2020	09:00	17-07-2020	18:00	OC B	ER-II/Odisha/Angul SS	Guide Valve Replacement	NLDC	
87	132KV BAY OF Chatarpur line-II at Daltonganj	15-07-2020	9:30	15-07-2020	17:30	OD B	POWERGRID ER-I	BAY AMP WORK		
88	400kv Main Bay (416) of 400/220 kV 500MVA ICT-I at Gaya	15-07-2020	9:00	15-07-2020	18:00	OD B	POWERGRID ER-I	For AMP work		
89	Tie Bay of 400kV Kishanganj-2 & Muzaffarpur-1 (411-52) at New Purnea S/s	15-07-2020	9:00	15-07-2020	12:00 P M	OD B	POWERGRID ER-I	CT Oil Sampling		
90	Tie bay of Bsf-1 & Gokarna line (423-52) at New Purnea S/s	15-07-2020	15:00	15-07-2020	18:00	OD B	POWERGRID ER-I	CT Oil Sampling		
91	400kv Main bay of East side Converter Transformer (CWD50Q51) at Sasaram	15-07-2020	9:00	15-07-2020	18:00	OD B	POWERGRID ER-I	AMP Work		
92	400KV BONGAIGAON-1 & Future TIE BAY at Alipurduar	15-07-2020	09:00	15-07-2020	18:00	OD B	POWERGRID,ER-II	Bay AMP Work		
93	132 kv Bus sectionalizer-2(110 Bay) at Rangpo	15-07-2020	09:00	15-07-2020	17:00	OD B	POWERGRID,ER-II	AMP Works		
94	400 KV Haldia Line#1 Main Bay (BAY NO 416) at Subhasgram	15-07-2020	09:00	15-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 416 Bay		
95	400 kv Mendhasal -Pandiabili-1 main bay at Mendhasal sub-station/	16-07-2020	#####	16-07-2020	#####	OD B	ER-II/Odisha/ Pandiabili GIS	AMP WORK (Timing, CRM &DCRM test)		
96	Main Bay of 400kV Malda-2 (413-52) at New Purnea S/s	16-07-2020	9:00	16-07-2020	12:00	OD B	POWERGRID ER-I	CT Oil Sampling		
97	Tie Bay of 400kV Malda-2 & Bus Reactor-1 (414-52) at New Purnea S/s	16-07-2020	12:00	16-07-2020	15:00	OD B	POWERGRID ER-I	CT Oil Sampling		
98	Main Bay of 400kV Bus Reactor-1 (415-52) at New Purnea S/s	16-07-2020	15:00	16-07-2020	18:00	OD B	POWERGRID ER-I	CT Oil Sampling		
99	400kv Mian bay of 400/220kv 500MVA ICT-1 at Patna	16-07-2020	9:30	17-07-2020	18:00	OC B	POWERGRID ER-I	BCU Upgradation wiring		
100	400kv Main bay of Ballia 1 at Biharsharif	16-07-2020	9:30	20-07-2020	18:00	OC B	POWERGRID ER-I	CB overhaling		
101	132 kv Bus coupler-2(107 Bay) at Rangpo	16-07-2020	09:00	16-07-2020	17:00	OD B	POWERGRID,ER-II	AMP Works		
102	TIE BAY OF BERHAMPORE-BHERAMARA-1 (BAY-405) at Baharampore	16-07-2020	09:00	16-07-2020	17:00	OD B	POWERGRID,ER-II	Bay AMP		

103	400 KV Subhasgram Rajarhat line Main Bay (BAY NO 404) at Subhasgram	16-07-2020	09:00	16-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 404 Bay		
104	20452- 315MVA ICT II Bay at Baripada	17-07-2020	09:00	17-07-2020	17:30	OD B	ER-II/Odisha/BARIPADA S/S	AMP works		
105	724 Main Bay of 765KV Sundargarh-Dharamjaygarh ckt 2 at Sundergarh	17-07-2020	09:00	20-07-2020	18:00	OC B	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
106	400 kv Mendhasal -Pandiabili-2 main bay at Mendhasal sub-station/	17-07-2020	##### #	17-07-2020	##### #	OD B	ER-II/Odisha/ Pandiabili GIS	AMP WORK (Timing, CRM &DCRM test)		
107	400 KV ICT # 2 Main Bay (Bay No-409) at Rengali	17-07-2020	09:00	17-07-2020	17:00	OD B	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
108	765kv Main Bay (704) of 240MVAR Bus Reactor-II at Gaya	17-07-2020	9:00	17-07-2020	18:00	OD B	POWERGRID ER-I	For AMP work	NLDC	
109	Main Bay of 400kV Malda-1 (416-52) at New Purnea S/s	17-07-2020	9:00	17-07-2020	12:00	OD B	POWERGRID ER-I	CT Oil Sampling		
110	Tie Bay of 400kV Malda-1 & Bus Reactor-2 (417-52) at New Purnea S/s	17-07-2020	12:00	17-07-2020	15:00	OD B	POWERGRID ER-I	CT Oil Sampling		
111	Main Bay of 400kV Farakka (419-52) at New Purnea S/s	17-07-2020	15:00	17-07-2020	18:00	OD B	POWERGRID ER-I	CT Oil Sampling		
112	400KV BONGAIGAON-2 & Siliguri 2 TIE BAY at Alipurduar	17-07-2020	09:00	17-07-2020	18:00	OD B	POWERGRID,ER-II	Bay AMP Work		
113	Tie Bay of 400 KV Subhasgram Rajarhat line and 315 MVA ICT#2 Bay (BAY NO 405) at Subhasgram	17-07-2020	09:00	17-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 405 Bay		
114	201 main bay of 220KV Baripada-Balasore Line -1 at Baripada	18-07-2020	09:00	18-07-2020	17:30	OD B	ER-II/Odisha/BARIPADA S/S	AMP works		
115	400 KV tie bay of Mendhasal-Pandiabili -1 & Mendhasal Pandiabili -2 at Mendhasal sub-station/	18-07-2020	##### #	18-07-2020	##### #	OD B	ER-II/Odisha/ Pandiabili GIS	AMP WORK (Timing, CRM &DCRM test)		
116	765kV Srikakulam Ckt 1 Main Bay Bay 729 at Angul	18-07-2020	09:00	20-07-2020	18:00	OC B	ER-II/Odisha/Angul SS	Guide Valve Replacement	NLDC	
117	132 KV Transfer Bus coupler bay(105 bay) at Daltonganj	18-07-2020	9:30	18-07-2020	17:30	OD B	POWERGRID ER-I	BAY AMP WORK		
118	400kv Main Bay of KAHALGAON-1 at Lakhisarai	18-07-2020	10:00	18-07-2020	17:00	OD B	POWERGRID ER-I	AMP		
119	220kV Side Main Bay of 400/220kv 500MVA ICT-2 at New Purnea S/s	18-07-2020	9:00	18-07-2020	12:00	OD B	POWERGRID ER-I	CT Oil Sampling		
120	Main Bay of 400kV Gokarna (422-52) at New Purnea S/s	18-07-2020	12:00	18-07-2020	15:00	OD B	POWERGRID ER-I	CT Oil Sampling		
121	Tie Bay of 400kV Farakka & Biharshariff-2 (420-52) at New Purnea S/s	18-07-2020	15:00	18-07-2020	18:00	OD B	POWERGRID ER-I	CT Oil Sampling		
122	400 KV Subhasgram Sagardighi line Main Bay (BAY NO 401) at Subhasgram	18-07-2020	09:00	18-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 401 Bay		
123	402-main bay of 400KV Duburi-Pandiabilli Line at DUBURI SS	19-07-2020	09:00	19-07-2020	17:30	OD B	ER-II/Odisha/BARIPADA S/S	AMP works		
124	403-main bay of 400KV Duburi-Baripada Line at Duburi SS	20-07-2020	09:00	20-07-2020	17:30	OD B	ER-II/Odisha/BARIPADA S/S	AMP works		

125	400 KV Indravati - BR # 1 Tie Bay (Bay No-411) at Rengali	20-07-2020	09:00	20-07-2020	17:00	OD B	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
126	ICT 3Bay	20-07-2020	09:30	26-07-2020	18:00	OC B	BARH	Annual maintenance of Bus Reactor Bay equipments		
127	132KV BAY OF Daltonganj-1(JUSSNL) at Daltonganj	20-07-2020	9:30	20-07-2020	17:30	OD B	POWERGRID ER-I	BAY AMP WORK		
128	Tie Bay of 400kV Malda-1 and B/R-II at New Purnea S/s	20-07-2020	10:00	20-07-2020	18:00	OD B	POWERGRID ER-I	CB AMP WORK		
129	400KV Main Bay of Allhabad at Sasaram	20-07-2020	9:00	20-07-2020	18:00	OD B	POWERGRID ER-I	AMP Work		
130	400kv SgTPP-Baharampur#1 and SgTPP-Farakka#2 and Tie bay	20-07-2020	07:00	20-07-2020	15:00	OD B	WBSETCL	MAINTENANCE WORK		
131	Tie Bay of 400 KV Subhasgram Sagardighi line and 315 MVA ICT#1 Bay (BAY NO 402) at Subhasgram	20-07-2020	09:00	20-07-2020	17:00	OD B	POWERGRID,ER-II	AMP of 402 Bay		
132	713 Main Bay of 765KV Sundargarh-Angul ckt-2 at Sundergarh	21-07-2020	09:00	24-07-2020	18:00	OC B	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
133	220kV Side Main Bay of 400/220kv 500MVA ICT-2 at New Purnea S/s	21-07-2020	10:00	21-07-2020	18:00	OD B	POWERGRID ER-I	CB, CT AMP work		
134	400kv Tie bay of Ballia 1 & Purnia 2 at Biharsharif	21-07-2020	9:30	23-07-2020	18:00	OC B	POWERGRID ER-I	CB overhaling		
135	400 KV Indravati Main Bay (Bay No-412) at Rengali	22-07-2020	09:00	22-07-2020	17:00	OD B	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
136	765kV Angul_Sundargarh Ckt 4 Main Bay 720 at Angul	22-07-2020	09:00	24-07-2020	18:00	OC B	ER-II/Odisha/Angul SS	SF6 Gas leakage rectification	NLDC	
137	132KV BAY OF Daltonganj-II(JUSSNL) at Daltonganj	22-07-2020	9:30	22-07-2020	17:30	OD B	POWERGRID ER-I	BAY AMP WORK		
138	400kv Tie Bay of 765/400 kV ICT-I & -Koderma Ckt-II at Gaya	22-07-2020	9:00	22-07-2020	18:00	OD B	POWERGRID ER-I	For AMP work		
139	40102-Tie bay of 400KV Duburi-P/billi & Future line at Duburi SS	23-07-2020	09:00	23-07-2020	17:30	OD B	ER-II/Odisha/BARIPADA S/S	AMP works		
140	NABINAGAR 2 MAIN BAY (407) BAY at Patna	23-07-2020	9:30	23-07-2020	18:00	OD B	POWERGRID ER-I	AMP		
141	400KV Punathangchu-1(JIGME INTERIM-1) & 400KV Punathangchu-2(JIGME INTERIM-2) TIE Bay at Alipurduar	23-07-2020	09:00	23-07-2020	18:00	OD B	POWERGRID,ER-II	Bay AMP Work		
142	220 KV ICT # 1 Main Bay (Bay No-201) at Rengali	24-07-2020	09:00	24-07-2020	17:00	OD B	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
143	400kv Tie Bay of 765/400 kV ICT-II & -Koderma Ckt-I at Gaya	24-07-2020	9:00	24-07-2020	18:00	OD B	POWERGRID ER-I	For AMP work		
144	400kv Main bay of 400/220kv 500MVA ICT-3 at Patna	24-07-2020	9:30	24-07-2020	13:30	OD B	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
145	125 MVAR BR-1 MAIN BAY at Patna	24-07-2020	14:00	24-07-2020	18:00	OD B	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
146	400KV Main bay of Nabinagar-2 (424) at Sasaram	24-07-2020	9:00	24-07-2020	18:00	OD B	POWERGRID ER-I	AMP Work		

147	407 Bay (Bidhan nagar Line-1 Main Bay) at Durgapur	24-07-2020	9.00hrs	24-07-2020	17.30 hrs	OCB	POWERGRID,ER-II	Y-Ph CT Replacement Works		
148	716 Main Bay of 765KV Sundargarh-Angul ckt-1 at Sundergarh	25-07-2020	09:00	28-07-2020	18:00	OCB	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
149	220 KV ICT # 2 Main Bay (Bay No-202) at Rengali	25-07-2020	09:00	25-07-2020	17:00	OCB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
150	765kV Angul-Sundargarh Ckt 4 Tie Bay 719 at Angul	25-07-2020	09:00	31-07-2020	18:00	OCB	ER-II/Odisha/Angul SS	SF6 Gas leakage rectification	NLDC	
151	400kv Main Bay of BALIA-3 at Patna	25-07-2020	9:30	25-07-2020	13:30	OCB	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
152	400kv Main Bay of BALIA-4 at Patna	25-07-2020	14:00	25-07-2020	18:00	OCB	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
153	720Tie Bay of 765KV Sundargarh-Dharamjayhgarh ckt- 1 & 765KV NTPC Darlipalli ck-2 at Sundergarh	26-07-2020	09:00	30-07-2020	18:00	OCB	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
154	132 kV side main bay of 400/132kv 200MVA ICT-1 at Lakhisarai	26-07-2020	10:00	26-07-2020	14:00	OCB	POWERGRID ER-I	AMP works of 109 Bay Equipments.		
155	132 kV side main bay of 400/132kv 200MVA ICT-2 at Lakhisarai	26-07-2020	10:00	26-07-2020	14:00	OCB	POWERGRID ER-I	AMP works of 112 Bay Equipments.		
156	220 KV Transfer Bus coupler Bay (Bay No-203) at Rengali	27-07-2020	09:00	27-07-2020	17:00	OCB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
157	400kv Tie Bay of 765/400 kV ICT-III & Maithon Ckt-I at Gaya	27-07-2020	9:00	27-07-2020	18:00	OCB	POWERGRID ER-I	For AMP work		
158	400kv Tie bay of BARH-3 and BALIA-3 at Patna	27-07-2020	9:30	27-07-2020	13:30	OCB	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
159	400kv Tie bay of BARH-4 and BALIA-4 at Patna	27-07-2020	14:00	27-07-2020	18:00	OCB	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
160	723Tie Bay of 765KV Sundargarh-Dharamjayhgarh ckt- 2 & 765KV NTPC Darlipalli ck-1 at Sundergarh	28-07-2020	09:00	31-07-2020	18:00	OCB	ER-II/Odisha/Sundergarh	SIEMENS Centre guide valve modification work in Mechanism drive and AMP	NLDC	
161	220 KV Bus-coupler Bay (Bay No-204) at Rengali	28-07-2020	09:00	28-07-2020	17:00	OCB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
162	400kv Tie Bay of 765/400 kV ICT-IV & Maithon Ckt-II at Gaya	28-07-2020	9:00	28-07-2020	18:00	OCB	POWERGRID ER-I	For AMP work	NLDC	
163	400kv Main bay of BARH-4 at Patna	28-07-2020	9:30	28-07-2020	13:30	OCB	POWERGRID ER-I	DATA VALIDATION AFTER SAS UPGRADATION WORK		
164	220KV MAIN BAY OF DEHRI at Sasaram	28-07-2020	9:00	28-07-2020	18:00	OCB	POWERGRID ER-I	AMP Work		
165	407 Bay (Bidhan nagar Line-1 Main Bay) at Durgapur	28-07-2020	9.00hrs	28-07-2020	17.30 hrs	OCB	POWERGRID,ER-II	B-Ph CT Replacement Works		
166	200 KV OPTCL # 1 Main Bay (Bay No-208) at Rengali	29-07-2020	09:00	29-07-2020	17:00	OCB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		
167	200 KV OPTCL # 2 Main Bay (Bay No-207) at Rengali	31-07-2020	09:00	31-07-2020	17:00	OCB	ER-II/Odisha/Rengali	For Isolator alignment work and interlock checking		

ERLDC, KOLKATA

TRANSMISSION ELEMENTS (EXCEPT BAYS) OUTAGE APPROVED

Sl	NAME OF THE ELEMENTS	FROM		TO		REMARKS	S.D availing agency	Reason	SUBJECT TO CONSENT FROM AGENCY	MEETING COMMENTS
		DATE	TIME	DATE	TIME					
1	400 kV Patna Kishenganj D/C line	25-06-2020	9:00	20-07-2020	18:00	OCB	POWERGRID ER-I	Permanent restoration of Patna Kishenganj Double ckt line on permanent towers		**May be considered after detailed system study considering HVDC flows & alternate line availability**
2	400 KV FARAKKA-GOKARNA-I	27-06-2020	09:00 Hrs	28-06-2020	18:00 hrs	OCB	POWERGRID,ER-II	For commissioning activity of Rajarhat connectivity for Farakka-Gokarna-I. After returning of shut down , 400 kv Farakka-Gokarna-I will be reconfigured as 400 KV Farakka- Rajarhat & 400 KV Rajarhat-Gokarna. 400 KV Gokarna- Purnea S/D is required to avoid heavy induction at Gokarna tapping point & will be tried to return as soon as the off line measurments will be carried out. 400 KV Gokarna-Rajarhat will be charged first around 12:00 Hrs of 28.06.2020 & 400 KV Farakka-Rajarhat will be charged around 18:00 Hrs of 28.06.2020.	WB	West Bengal agreed to allow the shutdown after implementing an intertrio scheme at Gokarno
3	400 KV GOKARNA-PURNEA	27-06-2020	09:00 HRS	28-06-2020	10:00 HRS	OCB	POWERGRID,ER-II	For commissioning activity of Rajarhat connectivity for Farakka-Gokarna-I. After returning of shut down , 400 kv Farakka-Gokarna-I will be reconfigured as 400 KV Farakka- Rajarhat & 400 KV Rajarhat-Gokarna. 400 KV Gokarna- Purnea S/D is required to avoid heavy induction at Gokarna tapping point & will be tried to return as soon as the off line measurments will be carried out. 400 KV Gokarna-Rajarhat will be charged first around 12:00 Hrs of 28.06.2020 & 400 KV Farakka-Rajarhat will be charged around 18:00 Hrs of 28.06.2020. And REPLACEMENT OF INSULATOR DUE TO FLASHOVER	WB	West Bengal agreed to allow the shutdown after implementing an intertrio scheme at Gokarno
4	MPL-Ranchi CKT # 1 along with tie Bay	01-07-2020	09:00	07-07-2020	18:00	ODB	MPL			
5	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-1	01-07-2020	08:00	01-07-2020	19:00	ODB	OGPTL	And REPLACEMENT OF INSULATOR DUE TO FLASHOVER	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.	
6	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-2	01-07-2020	08:00	01-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.	
7	VSC-I BAY OF STATCOM at Jeypore	01-07-2020	09:00	01-07-2020	18:00	ODB	ER-II/Odisha /Jeypore	AMP OF VSC-I BAY		Details of AMP work may be shared with ERLDC
8	315 MVA ICT#2 at Rourkela	01-07-2020	09:00	15-07-2020	18:00	OCB	ER-II/ODISHA/ROURKELA	Erection works related to Parallelling of ICTs	GRIDCO	Detailed work plan day wise may be shared with ERLDC
9	400KV Main Bus-II at Baripada	01-07-2020	09:00	01-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	GIS Bus Duct and Bus isolator/earthswitch AMP works	GRIDCO	Details of AMP work may be shared with ERLDC

10	A/R OF 400KV Sundargarh-Raigarh Ckt #1&3	01-07-2020	08:00	15-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	For PID Testing of Porcelain Insulator/ Only Auto reclose	NLDC	
11	765KV Sundargarh-Angul Ckt #3	01-07-2020	08:00	03-07-2020	18:00	OCB	ER-II/Odisha/Sundargarh	TP Tower Maintenance work/ rectification of clearance issue	**Will be allowed on daily basis. L/R shutdowns also may be planned.**	Details of maintenance work may be shared with ERLDC
12	A/R OF 400KV Sundargarh-Rourkela Ckt #1&3	01-07-2020	08:00	15-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	For PID Testing of Porcelain Insulator/ Only Auto reclose	shall be allowed from 01-07 July 20.	
13	A/R OF 400KV Sundargarh-Rourkela Ckt #2&4	01-07-2020	08:00	15-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	For PID Testing of Porcelain Insulator/ Only Auto reclose	shall be allowed from 08-15 July 20.	
14	765KV ICT4 at Angul	01-07-2020	09:00	01-07-2020	18:00	ODB	ER-II/Odisha/Angul SS	OLTC Maintenance	NLDC	Details of maintenance work may be shared with ERLDC
15	315MVA, ICT-2 at Balangir	01-07-2020	09:00 Hrs	09-07-2020	18:00 Hrs	OCB	ER-II/Odisha/Balangir	Internal inspection and Bushings lead connection checking due to rise in fault gases.	GRIDCO	Detailed work plan day wise may be shared with ERLDC
16	400KV Rengali-Indrawati S/c Line	01-07-2020	09:00 Hrs	15-07-2020	18:00 Hrs	OCB	ER-II/Odisha/Balangir	Dismantling of 3 nos. existing towers, installation of 4 nos. New towers under existing line and stringing of 5 nos. span for line diversion work due to construction of new Balangir- Khurda Line under East Cost Railway, Balangir	NLDC	300MW curtailment in ER- SR corriodr & Subject to SRPC consent.
17	A/R of 400 kV Baripada-Duburi Line	01-07-2020	07:00	30-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Additional Requirement)"	GRIDCO	
18	A/R of 400 kV Dubur-Pandiabili Line	01-07-2020	07:00	30-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Additional Requirement)"	GRIDCO	
19	A/R of 765 kV Angul-Srikakulam Ckt 1	01-07-2020	07:00	30-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	NLDC	
20	A/R of 400 kV Angul-GMR Ckt 1	01-07-2020	07:00	30-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	GRIDCO	
21	A/R of 400 kV Angul-JITPL Ckt 1	01-07-2020	07:00	30-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"		
22	A/R of 400k kV Angul-GMR Ckt 2	01-07-2020	07:00	10-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	GRIDCO	
23	A/R of 400 kV Angul-JITPL Ckt 2	01-07-2020	07:00	10-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"		

24	765 KV GAYA-Balia S/C	01-07-2020	8:00	15-07-2020	17:00	ODB	POWERGRID ER-I	FOR STRENGTHENING OF 765 KV LINE WIND ZONE-II TOWERS	Subject to NRPC approval & other 765kV lines in ER-NR shall be in service. Pendign work and location of towers to be mentioned	
25	400kV, 125MVAR BR-3 & 50MVAR BR-1 at Jamshedpur	01-07-2020	9:30	01-07-2020	17:30	ODB	POWERGRID ER-I	Replacement of porcelain insulator string with Polymer insulator string at Jamshedpur ss switchyard due to high pollution. (Reactors along with Main & Tie bay remain out of service). Both Reactors are in same dia.		
26	400kV Koderma - Bokaro-I	01-07-2020	8:00	02-07-2020	18:00	ODB	POWERGRID ER-I	For changing flasover insulator.	DVC	
27	A/R of 400kV Koderma - Bokaro-II	01-07-2020	8:00	02-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
28	220kV Bus -1 at New Purnea S/s	01-07-2020	10:00	01-07-2020	18:00	ODB	POWERGRID ER-I	AMP work	BSEB	Details of AMP work may be shared with ERLDC
29	400KV Barh Patna CKT1	01-07-2020	9:00	02-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
30	A/R of 400KV Barh Patna CKT 2	01-07-2020	9:00	02-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
31	A/R OF 400 KV BIHARSHARIF-BANKA-II	01-07-2020	7:00	31-07-2020	18:00	ODB	POWERGRID ER-I	OPGW STRINGING WORK		
32	A/R OF 400 KV BIHARSHARIF-KODERMA-II	01-07-2020	7:00	31-07-2020	18:00	ODB	POWERGRID ER-I	OPGW STRINGING WORK	DVC	
33	A/R OF 400 KV RANCHI-MAITHON(RB)-II	01-07-2020	7:00	31-07-2020	18:00	ODB	POWERGRID ER-I	OPGW STRINGING WORK		
34	A/R OF 400 KV BARH-MOTIHARI-II	01-07-2020	7:00	31-07-2020	18:00	ODB	POWERGRID ER-I	OPGW STRINGING WORK		
35	A/R OF 400 KV MOTIHARI-GORKAHPUR-II	01-07-2020	7:00	31-07-2020	18:00	ODB	POWERGRID ER-I	OPGW STRINGING WORK	NLDC	
36	A/R OF 400 KV PATNA-KISANGANJ-II	01-07-2020	7:00	31-07-2020	18:00	ODB	POWERGRID ER-I	OPGW STRINGING WORK		
37	A/R in non-auto mode in 400KV TeestaIII- Kishanganj-I	01-07-2020	07:00 hrs	31-07-2020	18:00 hrs	ODB	POWERGRID,ER-II	For OPGW installation Work		Deffered till end of Monsoon
38	A/R in non-auto mode in 400KV Malda- Farakka-II	01-07-2020	07:00 hrs	10-07-2020	18:00 hrs	ODB	POWERGRID,ER-II	For OPGW installation Work		
39	A/R in non-auto mode in 132KV Rangpo- Chuzachen-I & II	01-07-2020	07:00 hrs	31-07-2020	18:00 hrs	ODB	POWERGRID,ER-II	For OPGW installation Work		Deffered till end of Monsoon
40	400KV RANGPO-TeestaV-1 LINE	01-07-2020	08:00	01-07-2020	17:00	ODB	POWERGRID,ER-II	For rectifiaction of line issues.		Deffered till end of Monsoon
41	400KV Mejia - Jamshedpur	01-07-2020	08:00	05-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work	DVC	
42	400KV Maithon - Jamshedpur	01-07-2020	08:00	05-07-2020	18:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator repalcement work		
43	220KV Bus#1 at Maithon	01-07-2020	10:00	01-07-2020	18:00	ODB	POWERGRID,ER-II	Stability checking of 220KV Bus for bay no 218 under ERSS- XX	DVC	Detailed work to be done may be shared wit ERLDC
44	220KV Maithon-kalyaneswari#1 Line	01-07-2020	10:00	01-07-2020	18:00	ODB	POWERGRID,ER-II	Stability checking of 220KV Bus for bay no 218 under ERSS- XX	DVC	Detailed work to be done may be shared wit ERLDC
45	315MVA ICT#1 at Subhasgram	01-07-2020	09:00	01-07-2020	17:00	ODB	POWERGRID,ER-II	Retrofitting of REF Relay	WB	

46	400KV MTPS-Maithon Ckt#1	01-07-2020	08:00Hrs	01-07-2020	18:00Hrs	ODB	DVC	For maintenance of line-side isolator.		Details of maintenance work may be shared with ERLDC
47	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-1	02-07-2020	08:00	02-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	NLDC	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.
48	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-2	02-07-2020	08:00	02-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	NLDC	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.
49	VSC-II BAY OF STATCOM at Jeypore	02-07-2020	09:00	02-07-2020	18:00	ODB	ER-II/Odisha /Jeypore	AMP OF VSC-II BAY		Details of AMP work may be shared with ERLDC
50	Switchable Line reactor of 765KV Raipur ckt- 2(709R) at Sundergarh	02-07-2020	09:00	02-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP	NLDC	Details of AMP work may be shared with ERLDC
51	220 KV side of 500 MVA ICT-1 at Pandiabili	02-07-2020	09:00:00	02-07-2020	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP work of 207 bay (Timing, CRM and DCRM)	GRIDCO	
52	A/R of 400 kV Pandiabili-Mendhasal Ckt 2	02-07-2020	07:00	10-07-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Additional Requirement)"	GRIDCO	
53	400 KV Gaya-Koderma Ckt-2	02-07-2020	10:00	02-07-2020	17:00	ODB	POWERGRID ER-I	For Replacement of Flashed insulator in Multi CKT tower.	DVC	
54	400 KV Maithon- Gaya Ckt-1	02-07-2020	10:00	02-07-2020	17:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF 400 KV Gaya-Koderma Ckt-2 on same tower in Multi Ckt portion.		
55	A/R of 400 KV Gaya-Koderma Ckt-1	02-07-2020	10:00	02-07-2020	17:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
56	A/R of 400 KV Maithon- Gaya Ckt-2	02-07-2020	10:00	02-07-2020	17:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
57	400kV, 125MVAR BR-2 at Jamshedpur	02-07-2020	9:30	02-07-2020	17:30	ODB	POWERGRID ER-I	Replacement of porcelain insulator string with Polymer insulator string at Jamshedpur ss switchyard due to high pollution. (Reactor along with Main & Tie bay remain out of service).		
58	220kV Bus -2 at New Purnea S/s	02-07-2020	10:00	02-07-2020	18:00	ODB	POWERGRID ER-I	AMP work	BSEB	
59	400KV Barh Patna CKT 2	02-07-2020	9:00	03-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
60	A/R of 400KV Barh Patna CKT1	02-07-2020	9:00	03-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
61	765kV Sasaram-Fatehpur S/c	02-07-2020	08:00	03-07-2020	18:00	ODB	POWERGRID NR-3	For replacement of flashed insulator by polymer	NLDC	Subject to NRPC approval & other 765kV lines in ER-NR shall be in service.
62	132 KV Kahalgaon(NTPC)-Kahalgaon(BSPTCL) S/C T/L	02-07-2020	09:00	03-07-2020	17:00	OCB	BSPTCL	Reconductoring with HTLS conductor in Railway crossing section	Kahalgaon (BSPTCL) will avail power from Goradih GIS.Consent from SLDC Ranchi will be required.	
63	220 KV DMTCL(Darbhanga)-Darbhanga ckt 1	02-07-2020	09:00	02-07-2020	17:00	ODB	BSPTCL	For bay swapping work with Mushari bay	Darbhanga will avail power from alternate source.	

64	400kv KTPP-Kharagpur#2	02-07-2020	07:00	03-07-2020	15:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
65	400 KV Binaguri-Tala line -4	02-07-2020	09:00	02-07-2020	17:00	ODB	POWERGRID,ER-II	AMP & Identified defect liquidation & jumper Tightening	Deferred by Bhutan till the end of High hydro season	Deferred by Bhutan till the end of High hydro season
66	400KV Rangpo-Kishangunj	02-07-2020	08:00	15-07-2020	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,		Deffered till end of Monsoon
67	220KV Bus#2 at Maithon	02-07-2020	10:00	02-07-2020	18:00	ODB	POWERGRID,ER-II	Stability checking of 220KV Bus for bay no 218 under ERSS- XX	DVC	
68	220KV Maithon-kalyaneswari#2 Line	02-07-2020	10:00	02-07-2020	18:00	ODB	POWERGRID,ER-II	Stability checking of 220KV Bus for bay no 218 under ERSS- XX	DVC	
69	315MVA ICT#2 at Subhasgram	02-07-2020	09:00	02-07-2020	17:00	ODB	POWERGRID,ER-II	Retrofitting of REF Relay	WB	
70	400 KV Maithon-Durgapur Ckt-I	02-07-2020	08:00	14-07-2020	18:00	ODB	POWERGRID,ER-II	Fixing of pilot string and rectification of missing member in top section and liquidation of shutdown nature defects. Ckt wise shut-down shall be taken on alternate day basis.		
71	400 KV Maithon-Durgapur Ckt-II	02-07-2020	08:00	14-07-2020	19:00	ODB	POWERGRID,ER-II	Fixing of pilot string and rectification of missing member in top section and liquidation of shutdown nature defects. Ckt wise shut-down shall be taken on alternate day basis.		
72	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-1	03-07-2020	08:00	03-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	NLDC	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.
73	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-2	03-07-2020	08:00	03-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	NLDC	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.
74	Switchable Line Reactor of 765KV Raipur ckt- 1 (712R) at Sundergarh	03-07-2020	09:00	03-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP	NLDC	Details of AMP work may be shared with ERLDC
75	220 kV Gaya-Bodhgaya Ckt-I	03-07-2020	9:00	03-07-2020	18:00	ODB	POWERGRID ER-I	For replacement of flashed insulator	BSEB	
76	A/R OF 220 kV Gaya-Bodhgaya Ckt-II	03-07-2020	9:00	03-07-2020	18:00	ODB	POWERGRID ER-I	To facilitate the above shutdown	BSEB	
77	400kV,BUS-1 at Jamshedpur	03-07-2020	9:30	11-07-2020	17:30	ODB	POWERGRID ER-I	Replacement of 400kV Bus-I side porcelain insulator string with Polymer insulator string at Jamshedpur ss switchyard due to high pollution. (Outage of all main Bay connected with Bus-I)	JSEB	
78	400kV Koderma - Bokaro-II	03-07-2020	8:00	04-07-2020	18:00	ODB	POWERGRID ER-I	For changing flasover insulator	DVC	
79	A/R of 400kV Koderma - Bokaro-II	03-07-2020	8:00	04-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
80	400kV Kishanganj-New Purnea-I	03-07-2020	10:00	03-07-2020	18:00	ODB	POWERGRID ER-I	final tunning of L/R CSD at New Purnea		
81	400KV Barh Patna CKT1	03-07-2020	9:00	04-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
82	A/R of 400KV Barh Patna CKT 2	03-07-2020	9:00	04-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		

83	220 KV Gaya(PG)-Khizersarai ckt 1	03-07-2020	08:00	03-07-2020	12:00	ODB	BGCL	Rectification of LA earthing & testing of PLCC (End to End)	Khizersarai will avail power from BSF & Bodhgaya	
84	221 KV Gaya(PG)-Khizersarai ckt 2	03-07-2020	12:30	03-07-2020	16:00	ODB	BGCL	Rectification of LA earthing & testing of PLCC (End to End)	Khizersarai will avail power from BSF & Bodhgaya	
85	A/R in non auto mode in 220KV Dalkhola-Kishanganj D/C TL	03-07-2020	07:00 hrs	10-07-2020	18:00 hrs	ODB	POWERGRID,ER-II	For diamonding arrangement for earthwire in 400KV Teesta3-Kishanganj TL in the section T-312/2 to T-312/3 with 220KV Dalkhola-Kishanganj D/C TL & 220KV Siliguri- Kishanganj D/C TL		Deffered till end of Monsoon
86	A/R in non auto mode in 220KV Siliguri-Kishanganj D/C TL	03-07-2020	07:00 hrs	10-07-2020	18:00 hrs	ODB	POWERGRID,ER-II	For diamonding arrangement for earthwire in 400KV Teesta3-Kishanganj TL in the section T-312/2 to T-312/3 with 220KV Dalkhola-Kishanganj D/C TL & 220KV Siliguri- Kishanganj D/C TL		Deffered till end of Monsoon
87	220 KV Alipurduar - Birpara Ckt I	03-07-2020	06:00	03-07-2020	18:00	ODB	POWERGRID,ER-II	Attending shut down nature defects		
88	132 kv Rangpo-Chuzachen Line -1	03-07-2020	09:00	03-07-2020	17:00	OD B	POWERGRID,ER-II	AMP Works	CHUZACHEN	Details of AMP work may be shared with ERLDC
89	400KV Bus# 4 at Maithon	03-07-2020	10:00	03-07-2020	18:00	ODB	POWERGRID,ER-II	Dismantling work of Bus isolator of 400kV RB-1 under ERSS- XVII project work	DVC	Detailed work to be done may be shared wit ERLDC
90	315MVA ICT#3 at Subhasgram	03-07-2020	09:00	03-07-2020	17:00	ODB	POWERGRID,ER-II	Rectification of low oil level in prismatic guage	WB	
91	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-1	04-07-2020	08:00	04-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	NLDC	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.
92	765KV-RAIPUR-PS (DURG)-JHARSUGUDA-2	04-07-2020	08:00	04-07-2020	19:00	ODB	OGPTL	Jumper Rectification work both circuit required shutdown	NLDC	Subject to WRPC approval. Line reactor Shutdowns alos may be planned.
93	3 X 166/7 MVA COUPLING TRANSFORMER at Jeypore	04-07-2020	08:00	05-07-2020	18:00	ODB	ER-II/Odisha /Jeypore	AMP OF COUPLING TRANSFORMER		Details of AMP work may be shared with ERLDC
94	765KV Sundargarh-Angul Ckt #4	04-07-2020	08:00	06-07-2020	08:00	OCB	ER-II/Odisha/Sundargarh	TP Tower Maintenance work/ rectification of clearance issue	**Will be allowed on daily basis. L/R shutdowns also may be planned.**	Details of maintenance work may be shared with ERLDC
95	400KV 50MVAR NON SWITCHABLE L/R OF SASARAM AT DALTANGANJ	04-07-2020	9:30	04-07-2020	17:30	ODB	POWERGRID ER-I	AMP		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
96	400KV SASARAM - DALTANGANJ-II	04-07-2020	9:30	04-07-2020	9:50	ODB	POWERGRID ER-I	TO ISOLATE THE NON SWITCHABLE L/R AT DALTANGANJ FOR AMP WORK		Details of AMP work may be shared with ERLDC
97	400KV SASARAM - DALTANGANJ-II	04-07-2020	17:10	04-07-2020	17:30	ODB	POWERGRID ER-I	FOR TAKING THE NON SWITCHABLE L/R AT DALTANGANJ FOR AMP WORK		Details of AMP work may be shared with ERLDC
98	400KV Barh Patna CKT 2	04-07-2020	9:00	05-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
99	A/R of 400KV Barh Patna CKT1	04-07-2020	9:00	05-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
100	315MVA ICT#4 at Subhasgram	04-07-2020	09:00	04-07-2020	17:00	ODB	POWERGRID,ER-II	Rectification of low oil level in prismatic guage	WB	

101	766 kV New Ranchi-Dharamjaygarh -I	05-07-2020	8:00	25-07-2020	18:30	ODB	POWERGRID ER-I	For tower strengthening work of DMG 1	Subject to WRPC approval. One 765kV line SD will be allowed at a time in WR-ER corridor.	Day wise Details of work may be shared with ERLDC along with photo
102	400 kV Lakhisarai-Biharsharif-I	05-07-2020	9:00	05-07-2020	13:00	ODB	POWERGRID ER-I	Replacement of Energy meter at lakhisarai		
103	400KV Barh Patna CKT1	05-07-2020	9:00	06-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
104	A/R of 400KV Barh Patna CKT 2	05-07-2020	9:00	06-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
105	220 KV Alipurduar - Birpara Ckt II	05-07-2020	06:00	05-07-2020	18:00	ODB	POWERGRID,ER-II	Attending shut down nature defects		
106	125MVAR Bus Reactor at indravati	06-07-2020	09:00	06-07-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of 125MVAR Bus Reactor		Details of AMP work may be shared with ERLDC
107	765KV Sundergarh-Raipur ckt-1 along with its LR	06-07-2020	09:00	06-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	Isolator allignment ,Relay Testing & AMP	May be clubbed with S.No 99	Details of AMP work may be shared with ERLDC
108	220 kV Gaya-Dehri Ckt-I	06-07-2020	9:00	06-07-2020	18:00	ODB	POWERGRID ER-I	For replacement of flashed insulator	BSEB	
109	A/R OF 220 kV Gaya-Dehri Ckt-II	06-07-2020	9:00	06-07-2020	18:00	ODB	POWERGRID ER-I	To facilitate the above shutdown	BSEB	
110	400 KV Gaya -Nabinagar CKT- 1 & Ckt 2	06-07-2020	10:00	15-07-2020	18:00	OCB	POWERGRID ER-I	For Erection of LILO Towers and LILO arrangement at Chandauti Sub-station		
111	400/220kv 500MVA ICT2 at Patna	06-07-2020	9:30	06-07-2020	18:00	ODB	POWERGRID ER-I	Online DGA installation and commissioning work under ICT, augmentation package and BCU upgradation wiring	BSEB	
112	400KV Barh Patna CKT 2	06-07-2020	9:00	07-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
113	A/R of 400KV Barh Patna CKT1	06-07-2020	9:00	07-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
114	132 KV Bus 1 AT MOTIHARI	06-07-2020	8:00	07-07-2020	18:00	OCB	POWERGRID ER-I	Interconnection of Extension Bus (By POWERGRID)to existing Bus (DMTCL)	BSEB	
115	400KV BIHARSHARIF- VARANASI CKT-I	06-07-2020	8:00	09-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of porcelain insulators by polymer insulator on Road/Rail/River/Power crossing at Loc. No. 01 to 10	NLDC	Subject to NRPC approval & other 400kV lines in ER-NR shall be in service.
116	A/R OF 400KV BIHARSHARIF-VARANASI CKT- II	06-07-2020	8:00	09-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	NLDC	
117	220 KV DMTCL(Darbhanga)-Laukahi D/C T/L	06-07-2020	08:00	14-07-2020	17:00	ODB	BSPTCL	For line maintenance work	Laukahi will avail power from alternate sources	Details of maintenance work may be shared with ERLDC
118	132 KV Kahalgaon(GSS)-Lalmatia S/C T/L	06-07-2020	09:00	06-07-2020	17:00	ODB	BSPTCL	For tree pruning work	consent from SLDC Ranchi will be required.	
119	400kv KTPP-Kharagpur#1	06-07-2020	07:00	07-07-2020	15:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
120	220KV Siliguri-Kishanganj-1 line	06-07-2020	09:00	08-07-2020	17:00	ODB	POWERGRID,ER-II	AMP work.		Details of AMP work may be shared with ERLDC

121	400KV RANGPO-TeestaV-2 LINE	06-07-2020	08:00	06-07-2020	17:00	ODB	POWERGRID,ER-II	For rectifiaction of line issues.		Deffered till end of Monsoon
122	132 KV Gangtok-Rangpo-II Line	06-07-2020	09:00	06-07-2020	14:00	ODB	POWERGRID,ER-II	For Annual AMP Works (CT Tan delta)	SIKKIM	Details of AMP work may be shared with ERLDC
123	400KV Durgapur-Maithon Line -2	06-07-2020	9.00 Hrs	06-07-2020	17.00Hrs	ODB	POWERGRID,ER-II	Line Isolator Tightening & bay Isolator replacement work		
124	400KV Maithon - Jamshedpur	06-07-2020	08:00	10-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work		
125	400KV Maithon - Mejia 3	06-07-2020	08:00	08-07-2020	18:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator repalcement work	DVC	
126	500 MVA ICT#5 at Subhasgram	06-07-2020	09:00	06-07-2020	17:00	ODB	POWERGRID,ER-II	Buchholz Canopy Installation	WB	
127	400KV Baripada-Duburi Line	07-07-2020	09:00	08-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of porcelain insulator into polymer insulator in Tr/ line for NH crossing/ Power Line crossing/	GRIDCO	
128	220 KV Budhipadar- Korba #3	07-07-2020	08:00	07-07-2020	08:00	OCB	ER-II/Odisha/Sundargarh	TL Maint work & Rectification of Conductor clearance issue	Subject to WRPC approval	Details of maintenance work may be shared with ERLDC
129	400 kV Kh- Barh # 1	07-07-2020	09:00	08-07-2020	18:00	OCB	KHSTPP	Bay maintenance & testing		Details of maintenance work may be shared with ERLDC
130	400kV Koderma - Gaya-I	07-07-2020	8:00	08-07-2020	18:00	ODB	POWERGRID ER-I	For changing flasover insulator.	DVC	
131	A/R of 400kV Koderma - Gaya-II	07-07-2020	8:00	08-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
132	400 KV RANCHI-RAGHUNATHPUR-1 TL	07-07-2020	9:00	08-07-2020	17:00	ODB	POWERGRID ER-I	Peak Strengthening for Diamond Formation of OPGW between Tower Nos. 540-541 of Ranchi Maithan/RGP Line Crossing over RNC-NRNC Ckt-1 & 2 to restore snapped OPGW during heavy cyclone i	DVC	
133	400 KV RANCHI - MAITHAN TL	07-07-2020	9:00	08-07-2020	17:00	ODB	POWERGRID ER-I	Peak Strengthening for Diamond Formation of OPGW between Tower Nos. 540-541 of Ranchi Maithan/RGP Line Crossing over RNC-NRNC Ckt-1 & 2 to restore snapped OPGW during heavy cyclone		
134	400 KV RANCHI - NEW RANCHI CKT-1	07-07-2020	9:00	08-07-2020	17:00	ODB	POWERGRID ER-I	Peak Strengthening for Diamond Formation of OPGW between Tower Nos. 540-541 of Ranchi Maithan/RGP Line Crossing over RNC-NRNC Ckt-1 & 2 to restore snapped OPGW during heavy cyclone		
135	400 KV RANCHI - NEW RANCHI CKT-2	07-07-2020	9:00	08-07-2020	17:00	ODB	POWERGRID ER-I	Peak Strengthening and Diamond Formation of OPGW between Tower Nos. 540-541 of Ranchi Maithan/RGP Line Crossing over RNC-NRNC Ckt-1 & 2 to restore snapped OPGW during heavy cyclone		
136	400KV Barh Patna CKT1	07-07-2020	9:00	08-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
137	A/R of 400KV Barh Patna CKT 2	07-07-2020	9:00	08-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
138	765 KV Ranchi- Dharmjaygarh line (CKT-II)	07-07-2020	8:00	08-07-2020	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING OF 765 KV D/C Ranchi-Medinipur transmission AT LOC. NO.-03	NLDC	Subject to WRPC approval. One 765kV line SD will be allowed at a time in WR-ER corridor.

139	A/R OF 400 KV PURNEA-FARAKKA -S/C	07-07-2020	8:00	07-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
140	220 KV Muzafferpur -Hazipur D/C T/L	07-07-2020	10:30	07-07-2020	14:30	ODB	BSPTCL	For stringing work of 220 KV Muz(PG)-Gorul D/C T/L	Hajipur will avail restricted power from BTPS	
141	400kv SgTPP-Parulia#2	07-07-2020	08:00	07-07-2020	16:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
142	100 MVAR Bus Reactor at 400/220/132 KV WBSETCL Jeerat SS	07-07-2020	09:00	07-07-2020	17:00	ODB	POWERGRID,ER-II	AMP of 100 MVAR Bus Reactor	WB	Details of AMP work may be shared with ERLDC
143	400 KV S/C Jeerat - Subhasgram TL & 400 KV S/C Sagardighi - Jeerat TL (PGCIL)	07-07-2020	08:00	08-07-2020	17:00	ODB	POWERGRID,ER-II	Stringing b/w AP 40/0 to 41/0 of 400 KV D/C New Jeerat- Jeerat TL Under existing 400 KV S/C Jeerat - Subhasgram & 400 KV S/C Sagardighi - Jeerat Transmission line		
144	MPL-Ranchi CKT # 2 along with tie bay.	08-07-2020	09:00	14-07-2020	18:00	ODB	MPL	Line CT , CVT , EMVT testing,Bay Main CT Testing,Main 1,2 Protection Relay testing,Main Breaker Testing.		
145	400 kV Rourkela-Talcher 2	08-07-2020	09:00	08-07-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE MAINTENANCE WORKS		Details of maintenance work may be shared with ERLDC
146	765KV Sundergarh-Raipur ckt-2 along with its LR	08-07-2020	09:00	08-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	Isolator allignment ,Relay Testing & AMP	Shall be clubbed with Sr.No 100	Details of AMP work may be shared with ERLDC
147	400KV Sundargarh-Rourkela Ckt #2	08-07-2020	08:00	08-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	TL Maint work		Details of maintenance work may be shared with ERLDC
148	80MVAR BR-I at Keonjhar	08-07-2020	09:00	08-07-2020	18:00	ODB	ER-II/Odisha/Keonjhar	CSD tuning / (Shutdown will taken if not avail in June)		
149	400 kV L#406 DVC (RTPS) - PGCIL (RANCHI) ckt 1	08-07-2020	07:00Hrs	08-07-2020	17:00Hrs	ODB	DVC	For repairing of jumper of B phase at location no 33 and checking of tightness of jumpers at all tension locations		
150	Barh PATNA Line # 1	08-07-2020	09:30	09-07-2020	18:00	OCB	BARH	For Auto Reclose relay testing & other testing and Annual maintenance of Bay equipments.		Details of maintenance work may be shared with ERLDC
151	400 kv Ranchi Sipat-2	08-07-2020	9:30	08-07-2020	17:00	ODB	POWERGRID ER-I	FOR REPLACEMENT OF FLASHED INSULATOR	Subject to WRPC approval	
152	A/R OF 400 kv Ranchi Sipat-1	08-07-2020	9:30	08-07-2020	17:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	Subject to WRPC approval	
153	400KV Barh Patna CKT 2	08-07-2020	9:00	09-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of Polymer Insulator in ROAD/POWERLINE/RAILWAY /RIVER Crossing		
154	A/R of 400KV Barh Patna CKT1	08-07-2020	9:00	09-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
155	132 KV Bus 2 AT MOTIHARI	08-07-2020	8:00	09-07-2020	18:00	OCB	POWERGRID ER-I	Interconnection of Extension Bus (By POWERGRID)to existing Bus (DMTCL)	BSEB	
156	400kV Patna-Balia-3	08-07-2020	08:00	09-07-2020	18:00	ODB	POWERGRID NR-3	Erection of Fire wall between Patna-3 & 4 Line Reactor at Balia Substation. Clearance Sketch Enclosed	NLDC	
157	400kV Patna-Balia-4	08-07-2020	08:00	09-07-2020	18:00	ODB	POWERGRID NR-3	Erection of Fire wall between Patna-3 & 4 Line Reactor at Balia Substation. Clearance Sketch Enclosed	NLDC	
158	400 kV S/C FARAKKA-DURGAPUR I TL	08-07-2020	09:00	08-07-2020	17:00	ODB	POWERGRID,ER-II	Rectification of shut down nature defects in various locations in Transmission line.		

159	125MVAR BUS REACTOR at Subhasgram	08-07-2020	09:00	08-07-2020	17:00	OCB	POWERGRID,ER-II	Rectification of oil level in prismatic guage		
160	ICT-I (3x 105 MVA) at Jeypore at Jeypore	09-07-2020	08:00:00	09-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For changing ICT-I combination form Unit-I,II, IV to Unit-I , III & IV for charging Unit-III & Retrofitting works of Overcurrent, REF, Earth Fault Relay	GRIDCO	Subject to return of Jeypore ICT-2
161	400/220KV ICT#2 at Indravati	09-07-2020	08:00	09-07-2020	18:00	ODB	ER-II/Odisha/Indravati	1. AMP works of ICT#2/ Checking of the Aircell of conservator Tank/ During this shutdown Power flow from ICT#2 will be Interrupted/ 2. AMP works of 400KV ICT#2 Main Bay (403) at OHPC S/Y/ During this shutdown Power flow from ICT#2 will be Interrupted/ No Tie bay is in service at OHPC Yard/ 3. AMP works of 220KV ICT#2 Main Bay (205) at OHPC S/Y/ During this shutdown Power flow from ICT#2 will be Interrupted/ No Transfer Bay is in service at OHPC Yard/	GRIDCO	Subject to return of Indravati ICT-1 & Details of AMP work may be shared with ERLDC
162	400KV Sundargarh-Raigarh Ckt #2	09-07-2020	08:00	09-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	TL Maint work	Subject to WRPC approval	Details of maintenance work may be shared with ERLDC
163	400 kV L#405 DVC (RTPS) - PGCIL (MAITHON)	09-07-2020	07:00Hrs	09-07-2020	17:00Hrs	ODB	DVC	For checking of tightness of jumpers at all tension locations		
164	400 kV Farakka-Malda line#1	09-07-2020	09:00	10-07-2020	17:00	OCB	FARAKKA	Annual testing of CB,CT, relay		
165	400 kv Ranchi Sipat-1	09-07-2020	9:30	09-07-2020	17:00	ODB	POWERGRID ER-I	FOR REPLACEMENT OF FLASHED INSULATOR	NLDC	Subject to WRPC approval
166	A/R OF 400 kv Ranchi Sipat-2	09-07-2020	9:30	09-07-2020	17:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	NLDC	Subject to WRPC approval
167	400 KV RANCHI- Maithon(RB)-I	09-07-2020	9:00	09-07-2020	17;00	ODB	POWERGRID ER-I	Replacement of Flashed Insulator		
168	A/R OF 400 KV RANCHI- Maithon(RB)-II	09-07-2020	9:00	09-07-2020	17;00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
169	400 KV PURNEA-FARAKKA -S/C	09-07-2020	8:00	09-07-2020	18:00	ODB	POWERGRID ER-I	REPLACEMENT OF INSULATOR DUE TO FLASHOVER		
170	A/R OF 400KV PURNEA-GOKARNA -S/C	09-07-2020	8:00	09-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	WB	
171	132kv NBU-Siliguri(PGCL) line	09-07-2020	07:00	09-07-2020	15:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
172	125MVAR Bus Reactor- 2 at Alipurduar	09-07-2020	09:00	09-07-2020	18:00	ODB	POWERGRID,ER-II	Reactor AMP Work		Details of AMP work may be shared with ERLDC
173	400 KV Binaguri Bongaigaon Ckt I	09-07-2020	06:00	11-07-2020	18:00	ODB	POWERGRID,ER-II	Conductor adjustment in between loc 235 - 236, conductor repair in between 349/350. The conductor damage occurred due to theft of outer layer of conductor.	NLDC	shall be clubbed along with Sr no 329
174	220KV Siliguri-Kishanganj-2 line	09-07-2020	09:00	11-07-2020	17:00	ODB	POWERGRID,ER-II	AMP work.		Details of AMP work may be shared with ERLDC
175	66 KV Gangtok-Tadong Line	09-07-2020	09:00	09-07-2020	14:00	ODB	POWERGRID,ER-II	For Annual AMP Works (CT Tan delta, CB DCRM and Timing)	SIKKIM	Details of AMP work may be shared with ERLDC
176	400KV Malda-Purnea-I Ckt	09-07-2020	08:00	09-07-2020	12:00	ODB	POWERGRID,ER-II	For taking Oil Sampling		Details of AMP work may be shared with ERLDC
177	400KV Mejia - Jamshedpur	09-07-2020	08:00	10-07-2020	18:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator repalcement work	DVC	

178	400kV Bus-2 at MPL	09-07-2020	11:00	09-07-2020	19:00	ODB	POWERGRID,ER-II	connection of jumper of Bus isolator of 406 bay	MPL	
179	50 MVAR Sagardighi Line Reactor at Subhasgram	09-07-2020	09:00	09-07-2020	17:00	ODB	POWERGRID,ER-II	Retrofitting of REF Relay.		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
180	315MVA ICT # II at Jeypore	10-07-2020	08:00:00	10-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	Retrofitting works of Overcurrent, REF, Earth Fault Relay	GRIDCO	
181	765kv/400KV , 1500MVA ICT-1 at Sundergarh	10-07-2020	09:00	10-07-2020	12:30	ODB	ER-II/Odisha/Sundergarh	To make R Ph out of service to attend in oil leakage and spare ICT changeover in place of R Ph	NLDC	
182	400KV Sundargarh-Raigarh Ckt #4	10-07-2020	08:00	10-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	TL Maint work	Subject to WRPCapproval	Details of maintenance work may be shared with ERLDC
183	401 kV L#406 DVC (RTPS) - PGCIL (RANCHI) ckt 1	10-07-2020	07:00Hrs	10-07-2020	17:00Hrs	ODB	DVC	For repairing of jumper of B phase at location no 33 and checking of tightness of jumpers at all tension locations		
184	400 KV RANCHI- Maithon(RB)-II	10-07-2020	9:00	10-07-2020	17:00	ODB	POWERGRID ER-I	Replacement of Flashed Insulator		
185	A/R OF 400 KV RANCHI- Maithon(RB)-I	10-07-2020	9:00	10-07-2020	17:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
186	400/132kv 315 MVA ICT -III at Lakhisarai	10-07-2020	9:30	11-07-2020	17:30	ODB	POWERGRID ER-I	Final tuning of Main bay CSD under PACKAGE OF SS01 ERSSXX	BSEB	Detailed work to be done may be shared wit ERLDC
187	400KV BIHARSHARIF- VARANASI CKT-II	10-07-2020	8:00	13-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of porcelain insulators by polymer insulator on Road/Rail/River/Power crossing at Loc. No. 01 to 10	NLDC	
188	A/R OF 400KV BIHARSHARIF-VARANASI CKT- I	10-07-2020	8:00	13-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	NLDC	
189	220 KV Muzafferpur -Hazipur D/C T/L	10-07-2020	10:30	10-07-2020	14:30	ODB	BSPTCL	For stringing work of 220 KV Muz(PG)-Gorul D/C T/L	Hajipur will avail restricted power from BTPS	
190	132 KV Lakhisarai(PG)-Lakhisarai ckt 1	10-07-2020	09:00	10-07-2020	17:00	ODB	BSPTCL	For line maintenance work	Lakhisarai will avail power from alternate sources.	Details of maintenance work may be shared with ERLDC
191	400kv KTPP-Arambag	10-07-2020	07:00	11-07-2020	15:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
192	400KV Malda-Purnea-II Ckt	10-07-2020	08:00	10-07-2020	12:00	ODB	POWERGRID,ER-II	For taking Oil Sampling		
193	400KV Bus Bar-2 at Rajarhat	10-07-2020	08:00	10-07-2020	18:00	ODB	POWERGRID,ER-II	AMP work of GIS Bay prior to completion of one year. 400kv Bus Bar-2 required in off condition because of induced induction in EARTH SWITCH-Q2	WB	Details of AMP work may be shared with ERLDC
194	400 KV S/C Berhampore - Jeerat TL (PGCIL)	10-07-2020	08:00	11-07-2020	17:00	ODB	POWERGRID,ER-II	Stringing b/w AP 138/0 to AP139/0 of 765 KV D/C Medinipur-Jeerat TL Over existing 400 KV S/C Berhampore - Jeerat TL	WB	

195	220 KV Alipurduar - Salakati 1 &2	10-07-2020	06:00	10-07-2020	18:00	ODB	POWERGRID,ER-II	Replacement of earth wire between section 425-426	Subject to NERPC approval.	
196	400 kV Jeypore-Indravati Line	11-07-2020	08:00:00	11-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For attending Shut Down nature of defects	NLDC	
197	401 kV L#405 DVC (RTPS) - PGCIL (MAITHON)	11-07-2020	07:00Hrs	11-07-2020	17:00Hrs	ODB	DVC	For checking of tightness of jumpers at all tension locations		
198	400KV KAHALGAON - LAKHISARAI CKT-2	11-07-2020	8:00	11-07-2020	18:00	ODB	POWERGRID ER-I	REPLACEMENT OF INSULATOR DUE TO FLASHOVER		
199	A/R OF 400KV KAHALGAON - LKAHISARAI CKT- 1	11-07-2020	8:00	11-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
200	400KV Maithon - Mejia 3	11-07-2020	08:00	15-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work	DVC	
201	400KV Maithon - Jamshedpur	11-07-2020	08:00	15-07-2020	18:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator replacement work		
202	400KV Bus Bar-1 at Rajarhat	11-07-2020	09:00	11-07-2020	17:00	ODB	POWERGRID,ER-II	AMP work of GIS Bay prior to completion of one year. 400kv Bus Bar-1 required in off condition because of induced induction in EARTH SWITCH-Q1	WB	Details of AMP work may be shared with ERLDC
203	400 kV Jeypore Gajuwaka-1 Line	12-07-2020	08:00:00	13-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For replacement of PID Defective Insulators	NLDC	
204	400kV,BUS-2 at Jamshedpur	13-07-2020	9:30	25-07-2020	17:30	ODB	POWERGRID ER-I	Replacement of 400kV Bus-II side porcelain insulator string with Polymer insulator string at Jamshedpur ss switchyard due to high pollution. (Outage of all main Bay connected		
205	400 KV Bus 1 AT DARBHANGA	13-07-2020	8:00	14-06-2020	18:00	OCB	POWERGRID ER-I	Interconnection of Extension Bus (By POWERGRID)to existing Bus (DMTCL & ATL)	BSEB	
206	400/220kv 315MVA ICT 3 at Biharsharif	13-07-2020	10:00	13-07-2020	18:00	OCB	POWERGRID ER-I	OLTC Overhauling	BSEB	
207	132 KV Lakhisarai(PG)-Lakhisarai ckt 2	13-07-2020	09:00	13-07-2020	17:00	ODB	BSPTCL	For line maintenance work	Lakhisarai will avail power from alternate sources.	Details of maintenance work may be shared with ERLDC
208	400 KV Tala-Binaguri Ckt-III	13-07-2020	08:00 Hrs	16-07-2020	17:30 Hrs	ODB	POWERGRID,ER-II	Replacement of procelien Insulator with CLR at major crossing	Deferred by Bhutan till the end of High hydro season	Deferred by Bhutan till the end of High hydro season
209	220kv Rangpo -New Melli	13-07-2020	09:00	13-07-2020	17:00	ODB	POWERGRID,ER-II	Line Maintenance Works and AMP Works	SIKKIM	Details of AMP work may be shared with ERLDC
210	400KV Durgapur-Farakka Line-2	13-07-2020	9.00hrs	13-07-2020	17.00 hrs	ODB	POWERGRID,ER-II	Main-2 Relay Retrofitting works		
211	400 kV Jeypore Gajuwaka-2 Line	14-07-2020	08:00:00	15-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For replacement of PID Defective Insulators	NLDC	
212	400 kV Kh- Barh # 2	14-07-2020	09:00	15-07-2020	18:00	OCB	KHSTPP	Bay maintenance & testing		Details of maintenance work may be shared with ERLDC
213	400kV 63MVAR L/R OF Muzaffarpur-2(409R-52) at New Purnea S/s	14-07-2020	9:00	14-07-2020	12:00	ODB	POWERGRID ER-I	BAY CT Oil Sampling		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
214	400KV BIHARSHARIF- BALIA CKT-I	14-07-2020	8:00	16-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of porcelain insulators by polymer insulator on Road/Rail/River/Power crossing at Loc. No. 01 to 08	NLDC	

215	A/R OF 400KV BIHARSHARIF- BALIA CKT-II	14-07-2020	8:00	16-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	NLDC	
216	400KV KAHALGAON - FARAKKA CKT- 3	14-07-2020	8:00	11-07-2020	18:00	ODB	POWERGRID ER-I	REPLACEMENT OF PORCELAIN INSULATOR BY POLYMER AT ROAD/RAIL/RIVER CROSSING		
217	A/R OF 400KV KAHALGAON - FARAKKA CKT- 4	14-07-2020	8:00	11-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
218	400kv Kharagpur-NewChanditala#1	14-07-2020	07:00	14-07-2020	15:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
219	132 KV Siliguri-Kursoeng line	14-07-2020	09:00	14-07-2020	17:00	ODB	POWERGRID,ER-II	AMP work.	WB	Details of AMP work may be shared with ERLDC
220	50MVA ICT-I at Gangtok	14-07-2020	09:00	14-07-2020	14:00	ODB	POWERGRID,ER-II	Numerical Relay Retrofitting Works	SIKKIM	
221	400KV BUS-II at Malda	14-07-2020	08:00	14-07-2020	17:00	ODB	POWERGRID,ER-II	ERSS-XVII-B Constructional work	WB	Detailed work to be done may be shared wit ERLDC
222	400KV Indravati-Rengali S/C Line	15-07-2020	09:00	15-07-2020	18:00	ODB	ER-II/Odisha/Indravati	For opening of Isolator(40389R) & Jumper of 50MVAR LR to replace R-PH Bushing of 50MVAR LR, since LR is non switchable one/	Shall be clubbed with Sr.No 19	
223	50MVAR Line Reactor at Indravati	15-07-2020	09:00	18-07-2020	18:00	OCB	ER-II/Odisha/Indravati	For Replacement of R-ph Bushing of 50MVAR LR, Leakage arresting, Filteration of oil, Settlement of oil & Testing/	Shall be clubbed with Sr.No 19	To be taken during Line AMP & Details of AMP work may be shared with ERLDC
224	765kv/400KV , 1500MVA ICT-3 at Sundergarh	15-07-2020	09:00	15-07-2020	12:30	ODB	ER-II/Odisha/Sundergarh	To remove spare form the ICT-3 and takink R-ph into service/	NLDC	
225	A/R OF 400KV Sundargarh-Raigarh Ckt #2&4	15-07-2020	08:00	31-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	For PID Testing of Porcelain Insulator/ Only Auto reclose	Subject to WRPC approval	
226	50 MVAR Line Reactor-1	15-07-2020	09:00	21-07-2020	18:00	OCB	MPL	Equipment Testing & Protection Relay testing		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
227	400kV 63MVAR L/R OF Muzaffarpur-1 at New Purnea S/s	15-07-2020	12:00	15-07-2020	15:00	ODB	POWERGRID ER-I	BAY CT Oil Sampling		To be taken during Line AMP & Details of AMP work may
228	132kv Kudra -dehri-s/c	15-07-2020	9:00	15-07-2020	18:00	ODB	POWERGRID ER-I	Relay Retrofitting at Dehri End	BSEB	
229	400 KV BUS 2 AT DARBHANGA	15-07-2020	8:00	16-07-2020	18:00	OCB	POWERGRID ER-I	Interconnection of Extension Bus (By POWERGRID)to existing Bus (DMTCL & ATL)	BSEB	
230	220KV MUZ-DHALKEBAR (Nepal) -1 & 2 Line	15-07-2020	8:00	20-07-2020	19:00	OCB	POWERGRID ER-I	DE-STRINGING & RE-STRINING OF ONE SPAN OF 400KV LINE IN NEAR BY MUZAFFARPUR SUBSTATION. PLCC & DPC ERECTION, TESTING & COMMISSIO. FOTE PANEL SHIFTING & LINE TESTING ETC.	NLDC	
231	400KV CHANDWA - GAYA CKT - I	15-07-2020	9:00	15-07-2020	18:00	ODB	POWERGRID ER-I	Insulators damaged by miscreants.	Comlpain copy submitted to local authorites may be	

232	A/R OF 400KV CHANDWA - GAYA CKT - II	15-07-2020	9:00	15-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
233	400KV Alipurduar - New Siliguri D/C (QUAD) Line (STERLITE)	15-07-2020	06:00	18-07-2020	18:00	ODB	POWERGRID,ER-II	Stringing at crossing between Loc. No. 13/0 - 14/0 of Jigmeling line and loc. No. 292-293 of Sterlite Line		
234	220KV New Melli THEP line	15-07-2020	09:00	17-07-2020	15:00	ODB	POWERGRID,ER-II	LA Counter replacement work	TASHIDING	Deffered till end of Monsoon
235	400KV Binaguri-New Purnea- I	15-07-2020	09:00	15-07-2020	17:00	ODB	POWERGRID,ER-II	For Insulator Replacement		
236	400KV BUS-I at Malda	15-07-2020	08:00	15-07-2020	17:00	ODB	POWERGRID,ER-II	ERSS-XVII-B Constructional work	WB	Detailed work to be done may be shared wit ERLDC
237	400/220 KV 315 MVA ICT-V at Malda	15-07-2020	08:00	15-07-2020	17:00	ODB	POWERGRID,ER-II	S/D required due to ICT -V's 89B isolator defect i.r.o BUS-I S/D.	WB	
238	315 MVA ICT-3 at Durgapur	15-07-2020	9.00hrs	16-07-2020	17.00 hrs	ODB	POWERGRID,ER-II	Oil Flow Pump replacement works with oil drain & oil filtration.	DVC	
239	400 KV Durgapur -Jamshedpur S/C-I	15-07-2020	08:00	15-07-2020	20:00	ODB	POWERGRID,ER-II	Rectification of shutdown nature defects		
240	400 kV Jeypore-Bolangir Line	16-07-2020	08:00:00	16-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For attending Shut Down nature of defects	Shall be clubbed with sr no. 263	
241	315 MVA ICT#1 at Rourkela	16-07-2020	09:00	31-07-2020	18:00	OCB	ER-II/ODISHA/ROURKELA	Erection works related to Parallelling of ICTs	GRIDCO	
242	400KV Sundargarh Sterlite ckt-1	16-07-2020	09:00	16-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP (Relay Testing)	GRIDCO	Details of AMP work may be shared with ERLDC
243	400KV Balangir-Jeypore S/c line	16-07-2020	09:00 Hrs	25-07-2020	18:00 Hrs	OCB	ER-II/Odisha/Balangir	Dismantling of 2 nos. existing towers, installation of 3nos. New towers under existing line and stringing of 4 nos. span for line diversion work due to construction of new Balangir-	300MW curtailment in ER-SR corriodr & Subject to SRPC consent.	
244	400 kV Farakka-Malda line#2	16-07-2020	09:00	17-07-2020	17:00	OCB	FARAKKA	Annual testing of CB,CT, relay		
245	132kv Mohaniya-karamnasa-s/c	16-07-2020	9:00	16-07-2020	18:00	ODB	POWERGRID ER-I	Relay Retroffiting at Karmanasa End	BSEB	
246	400kV Bus 2 at Biharsharif	16-07-2020	9:30	20-07-2020	18:00	ODB	POWERGRID ER-I	Upgradation of Busbar Scheme under project head	BSEB	
247	400KV BIHARSHARIF-Muzaffarpurl CKT-I	16-07-2020	10:00	16-07-2020	18:00	ODB	POWERGRID ER-I	Flashed insulator replacement		
248	A/R OF 400KV BIHARSHARIF-Muzaffarpurl CKT-II	16-07-2020	10:00	16-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
249	400kv Kharagpur-NewChanditala#2	16-07-2020	07:00	16-07-2020	15:00	ODB	WBSETCL	MAINTENANCE WORK		Details of maintenance work may be shared with ERLDC
250	400KV Binaguri-New Purnea- II	16-07-2020	09:00	16-07-2020	17:00	ODB	POWERGRID,ER-II	For Insulator Replacement		
251	220 kV Bus-I at Malda	16-07-2020	08:00	16-07-2020	17:00	ODB	POWERGRID,ER-II	ERSS-XVII-B Constructional work	WB	Detailed work to be done may be shared wit ERLDC
252	400KV Mejia - Jamshedpur	16-07-2020	08:00	19-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work	DVC	
253	400KV Maithon - Mejia - 3	16-07-2020	08:00	19-07-2020	18:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator repalcement work	DVC	

254	220kV Bus-I at Jeypore	17-07-2020	09:00	17-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP of 220kV Bus-I	GRIDCO	Details of AMP work may be shared with ERLDC

255	400KV Sundargarh Sterlite ckt-2	17-07-2020	09:00	17-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP (Relay Testing)	GRIDCO	Details of AMP work may be shared with ERLDC
256	765kV Sundargarh-Dharamjaygarh Ckt #1	17-07-2020	08:00	17-07-2020	18:00	ODB	ER-II/Odisha/Sundargarh	TL Maint work	Suject to WRPC approval	Details of maintenance work may be shared with ERLDC
257	400kv 63MVAR Switchable L/R of Allhabad north Side (CWL22) at Sasaram	17-07-2020	9:00	17-07-2020	18:00	ODB	POWERGRID ER-I	AMP Work		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
258	400KV BIHARSHARIF- BALIA CKT-II	17-07-2020	8:00	19-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of porcelain insulators by polymer insulator on Road/Rail/River/Power crossing at Loc. No. 01 to 08	NLDC	
259	A/R OF 400KV BIHARSHARIF- BALIA CKT-I	17-07-2020	8:00	19-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	NLDC	
260	400 KV Muzaffarpur- Darbhanga line-2	17-07-2020	8:00	20-07-2020	19:00	ODB	POWERGRID ER-I	STRINING OF ONE SPAN OF 400 KV MUZAFFARPUR- DHALKEBAR LINE & LINE BAY AMP WORK.		Details of AMP work may be shared with ERLDC
261	400KV CHANDWA - GAYA CKT - II	17-07-2020	9:00	17-07-2020	18:00	ODB	POWERGRID ER-I	Insulators damaged by miscreants.	Comlpain copy submitted to local authorites may be sared with ERLDC	
262	A/R OF 400KV CHANDWA - GAYA CKT - I	17-07-2020	9:00	17-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER		
263	132 KV Kursoeng-Rangit line	17-07-2020	09:00	17-07-2020	17:00	ODB	POWERGRID,ER-II	AMP work.	WB	Details of AMP work may be shared with ERLDC
264	132 kv Rangpo-Gangtok line-2	17-07-2020	09:00	17-07-2020	17:00	ODB	POWERGRID,ER-II	AMP Works	SIKKIM	Details of AMP work may be shared with ERLDC
265	50MVA ICT-II at Gangtok	17-07-2020	09:00	17-07-2020	14:00	ODB	POWERGRID,ER-II	Numerical Relay Retrofitting Works	SIKKIM	
266	220 kV Bus-II at Malda	17-07-2020	08:00	17-07-2020	17:00	ODB	POWERGRID,ER-II	ERSS-XVII-B Constructional work	WB	Detailed work to be done may be shared wit ERLDC
267	400KV Indravati-Rengali S/C Line	18-07-2020	17:00	18-07-2020	18:00	ODB	ER-II/Odisha/Indravati	For connnecting Jumpers & closing of Isolator(40389R) of 50MVAR LR after completion of Bushing replacement works and taking into sevice the 50MVAR LR, since LR is non	Shall be clubbed along with Sr no 19	
268	765kv/400KV , 1500MVA ICT-4 at Sundergarh	18-07-2020	09:00	18-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	Spare changeover & Stool arrangement for LA under construction head	NLDC	
269	400kv 50MVAR Non switchable L/R of Kahalgaon-I at Lakhisarai	18-07-2020	9:00	18-07-2020	17:00	ODB	POWERGRID ER-I	Amp work.		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
270	400kV Kahalgaon-Lakhisarai-I	18-07-2020	9:00	18-07-2020	9:10	ODB	POWERGRID ER-I	for taking 50 MVAR Line Reactor-II out of service for AMP works.		Details of AMP work may be shared with ERLDC
271	400kV Kahalgaon-Lakhisarai-I	18-07-2020	16:50	18-07-2020	17:00	ODB	POWERGRID ER-I	for taking 50 MVAR Line Reactor-II in service after AMP works.		Details of AMP work may be shared with ERLDC
272	132 kv Rangpo-Rangit line	18-07-2020	09:00	18-07-2020	17:00	ODB	POWERGRID,ER-II	AMP Works	SIKKIM	Details of AMP work may be shared with ERLDC
273	500MVA ICT-1 at Maithon	18-07-2020	08:00	19-07-2020	18:00	ODB	POWERGRID,ER-II	1. CT replacement work (424T) & (Main Bay-424) and Replacement of MOG and onload testing of CSD	DVC	

274	ICT 3 at Barh	20-07-2020	09:30	25-07-2020	18:00	OCB	BARH	Annual maintenance of Bus Reactor		Details of maintenance work may be shared with ERLDC
275	400kv 80MVAR switchable L/R of NABINAGAR -2 at Patna	20-07-2020	9:30	20-07-2020	12:00	ODB	POWERGRID ER-I	CSD tuning		To be taken during Line AMP
276	400kv 80MVAR switchable L/R of NABINAGAR -1 at Patna	20-07-2020	13:00	20-07-2020	15:00	ODB	POWERGRID ER-I	CSD tuning		To be taken during Line AMP
277	400kv 125MVAR switchable L/R of Barh-2 at Patna	20-07-2020	16:00	20-07-2020	18:00	ODB	POWERGRID ER-I	CSD tuning		To be taken during Line AMP
278	400 KV Bus 1 AT MOTIHARI	20-07-2020	8:00	21-07-2020	18:00	OCB	POWERGRID ER-I	Interconnection of Extension Bus (By POWERGRID)to existing Bus (DMTCL)	BSEB	
279	400kV Bus 1 at Biharsharif	20-07-2020	9:30	26-07-2020	18:00	OCB	POWERGRID ER-I	Upgradation of Busbar Scheme under project head	BSEB	
280	400KV BIHARSHARIF- KODERMA CKT-I	20-07-2020	8:00	22-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of porcelain insulators by polymer insulator on Road/Rail/River/Power crossing at Loc. No. 89 to 92	DVC	
281	A/R OF 400KV BIHARSHARIF-KODERMA CKT- II	20-07-2020	8:00	22-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
282	132 KV Siliguri-Melli line	20-07-2020	09:00	21-07-2020	17:00	ODB	POWERGRID,ER-II	AMP work.	SIKKIM	Details of AMP work may be shared with ERLDC
283	132 kv Rangpo-Melli	20-07-2020	09:00	20-07-2020	17:00	ODB	POWERGRID,ER-II	AMP After 1 yrs of Commissioning	SIKKIM	Details of AMP work may be shared with ERLDC
284	315 MVA ICT-2 at Durgapur	20-07-2020	9.00hrs	21-07-2020	17.00 hrs	ODB	POWERGRID,ER-II	Oil Flow Pump replacement works with oil drain & oil filtration.	DVC	
285	400KV Maithon - Mejia 3	20-07-2020	08:00	23-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work	DVC	
286	400KV Mejia - Jamshedpur	20-07-2020	08:00	23-07-2020	18:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator repalcement work	DVC	
287	400 KV Rourkela-SUNDARGARH#2 LINE	21-07-2020	09:00	21-07-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE MAINTENANCE WORKS		Details of maintenance work may be shared with ERLDC
288	220KV Bus-I at Baripada	21-07-2020	09:00	21-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator allignment work	GRIDCO	
289	220kv bus-1 at Pandiabili	21-07-2020	09:00:00	21-07-2020	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP WORK of bus coupler 206 bay(DCRM test)	GRIDCO	Details of AMP work may be shared with ERLDC
290	400/220KV 315 MVA ICT-1 AT RANCHI	21-07-2020	9:30	21-07-2020	17:00	OCB	POWERGRID ER-I	Installation and commissioning of Backup Impedence Protection Relay in ICT-I	JSEB	
291	400kv 80MVAR switchable L/R of NABINAGAR -2 at Patna	21-07-2020	9:30	21-07-2020	18:00	ODB	POWERGRID ER-I	BAY AMP		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
292	132kv Rangpo-Chuzachen line-2	21-07-2020	09:00	21-07-2020	17:00	ODB	POWERGRID,ER-II	AMP After 1 yrs of Commissioning	CHUZACHEN	Details of AMP work may be shared with ERLDC
293	500MVA ICT-2 at Maithon	21-07-2020	08:00	21-07-2020	18:00	ODB	POWERGRID,ER-II	Fine tunning of CSD	DVC	
294	400 KV D/C Farakka-Berhampore line CKT-1	21-07-2020	09:00	22-07-2020	17:00	ODB	POWERGRID,ER-II	Insulator replacement at crossings.		
295	220 KV Subhasgram-CESC Ckt#1	21-07-2020	09:00	21-07-2020	17:00	ODB	POWERGRID,ER-II	AMP of 202 Bay	WB	Details of AMP work may be shared with ERLDC
296	400 KV S/C Sagardighi - Jeerat TL (PGCIL)	21-07-2020	08:00	22-07-2020	17:00	ODB	POWERGRID,ER-II	Stringing b/w AP 149/0 to AP150/0 of 765 KV D/C Medinipur-Jeerat TL Over existing 400 KV S/C Sagardighi - Jeerat TL	WB	

297	400 KV Rourkela-SUNDARGARH#4 LINE	22-07-2020	09:00	22-07-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE MAINTENANCE WORKS		Details of maintenance work may be shared with ERLDC

298	220KV Bus-II at Baripada	22-07-2020	09:00	22-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator allignment work	GRIDCO	
299	765kv/400KV , 1500MVA ICT-4 at Sundergarh	22-07-2020	09:00	22-07-2020	12:00	ODB	ER-II/Odisha/Sundergarh	Spare changeover	NLDC	
300	132 kV LKR-LKR Line-1	22-07-2020	10:00	22-07-2020	14:00	ODB	POWERGRID ER-I	AMP works of 107 & 107L Bay Equipments.	BSEB	Details of AMP work may be shared with ERLDC
301	400kV New Purnea -Siliguri-1	22-07-2020	10:00	22-07-2020	18:00	ODB	POWERGRID ER-I	Relay retrofitting works IN 63MVAR Siliguri-1 L/R at New Purnea	May be allowed After High Hydro	
302	400kv 80MVAR switchable L/R of NABINAGAR -1 at Patna	22-07-2020	9:30	22-07-2020	18:00	ODB	POWERGRID ER-I	BAY AMP		To be taken during Line AMP & Details of AMP work may be shared with ERLDC
303	400 KV BUS 2 AT MOTIHARI	22-07-2020	8:00	23-07-2020	18:00	OCB	POWERGRID ER-I	Interconnection of Extension Bus (By POWERGRID)to existing Bus (DMTCL)	BSEB	
304	400KV Binaguri - Bongaigaon D/C (Twin) Line	22-07-2020	06:00	25-07-2020	18:00	ODB	POWERGRID,ER-II	Stringing at crossing between Loc. No. 11/0 - 12/0 of Jigmeling line and loc. No. 273-274 of Binaguri - Bongaigaon Line & Conductor adjustment in between loc	Subject to NERPC approval.	
305	220KV Birpara-Chukha Ckt-I	22-07-2020	08:00 Hrs	22-07-2020	17:30 Hrs	ODB	POWERGRID,ER-II	Retrofitting of Numerical Distance Relay	NLDC	Deferred by Bhutan till the end of High hydro season
306	400 KV Jeerat Sagardighi Line	22-07-2020	09:00	22-07-2020	17:00	ODB	POWERGRID,ER-II	A/R relay Retrofitting and Testing in 400 KV Jeerat Sagardighi Line at Jeerat end.	WB	
307	400 KV Rourkela-SUNDARGARH#1 LINE	23-07-2020	09:00	23-07-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE MAINTENANCE WORKS		Details of maintenance work may be shared with ERLDC
308	765kv Sundargarh-Angul ckt-1 with LR at	23-07-2020	08:00	23-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	-AMP of Line Reactor	NLDC	Details of AMP work may be
309	400 kV Farakka-Behrampore line#2	23-07-2020	09:00	24-07-2020	17:00	OCB	FARAKKA	Annual testing of CB,CT, relay		
310	400KV 63 MVAR Kishanganj-1 Line REACTOR at New Purnea S/s	23-07-2020	10:00	23-07-2020	18:00	ODB	POWERGRID ER-I	Relay retrofitting works IN 63MVAR Kishanganj-1 L/R		To be taken during Line AMP & Details of AMP work may
311	400kv (125+50)Bus Reactor 1 & 4 at Biharshariff	23-07-2020	10:00	24-07-2020	18:00	ODB	POWERGRID ER-I	Relay Retrofitment		
312	400KV BIHARSHARIF- KODERMA CKT-II	23-07-2020	8:00	26-07-2020	18:00	ODB	POWERGRID ER-I	Replacement of porcelain insulators by polymer insulator on Road/Rail/River/Power crossing at Loc. No. 92 to 92	DVC	
313	A/R OF 400KV BIHARSHARIF-KODERMA CKT-I	23-07-2020	8:00	26-07-2020	18:00	ODB	POWERGRID ER-I	TO FACILITATE THE S/D OF OTHER CKT ON THE SAME TOWER	DVC	
314	220KV Birpara-Chukha Ckt-II	23-07-2020	08:00 Hrs	23-07-2020	17:30 Hrs	ODB	POWERGRID,ER-II	Retrofitting of Numerical Distance Relay	NLDC	Deferred by Bhutan till the
315	400KV Maithon - Mejia 1	23-07-2020	08:00	23-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work at crossings.	DVC	
316	400 KV D/C Farakka-Berhampore line CKT-2	23-07-2020	09:00	24-07-2020	17:00	ODB	POWERGRID,ER-II	Insulator replacement at crossings.		
317	400 KV Rajarhat Jeerat Line	23-07-2020	09:00	23-07-2020	17:00	ODB	POWERGRID,ER-II	Main-1 Distance Relay Replacement at Jeerat end.	WB	

318	315 MVA ICT-2 at Jeypore	24-07-2020	08:00:00	28-07-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For New Ganrty Tower erection & LA erection of New ICT-4 under SPML Package near ICT-2 area due to low clearance between new Gantry & existing 220kV Jumper of ICT-2 (Outage to be booked under Construction Head)	GRIDCO	
319	400 KV Rourkela- SUNDARGARH#3 LINE	24-07-2020	09:00	24-07-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE MAINTENANCE WORKS		Details of maintenance work may be shared with ERLDC
320	400KV MAIN BUS-I at Baripada	24-07-2020	09:00	24-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	GIS Bus Duct and Bus isolator/earthswitch AMP works	GRIDCO	Details of AMP work may be shared with ERLDC
321	765kv Sundargarh-Angul ckt-2 with LR at Sundergarh	24-07-2020	08:00	24-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	-AMP of Line Reactor -Line Maintenance work	NLDC	Details of AMP work may be shared with ERLDC
322	400kV 63MVAR Switacble L/R of Muzaffarpur-1 at New Purnea S/s	24-07-2020	10:00	24-07-2020	18:00	ODB	POWERGRID ER-I	Relay retrofitting works IN 63MVAR Muzaffarpur-1 L/R		To be taken during Line AMP
323	400/220kv 500MVA ICT 4 at Biharsharif	24-07-2020	10:00	25-07-2020	18:00	ODB	POWERGRID ER-I	CSD Commissioning work under project head ERSS-XX	BSEB	Detailed work to be done may be shared wit ERLDC
324	400KV Maithon - Right Bank # I	24-07-2020	09:00	24-07-2020	17:00	ODB	POWERGRID,ER-II	Insulator Replacement damaged by miscreants	Comlpain copy submitted to local authorites may be sared with ERLDC	
325	400KV Maithon - Right Bank # II	24-07-2020	09:00	24-07-2020	17:00	ODB	POWERGRID,ER-II	To be kept in Non Auto mode during insulator repalcement work		
326	500MVA,400/220KV ICT-2 at Rajarhat	24-07-2020	09:00	24-07-2020	17:00	ODB	POWERGRID,ER-II	For wraping of TAP on tertiary conductor and addition of extra BI/BO card in main Bay BCU of ICT-2 and AMP of ict	WB	Details of AMP work may be shared with ERLDC
327	400 KV S/C Arambag - Durgapur TL (WBSETCL)	24-07-2020	08:00	25-07-2020	17:00	ODB	POWERGRID,ER-II	Stringing b/w AP 33/0 to 34/0 of 765 KV D/C Medinipur- Jeerat TL Over existing 400 KV S/C Arambag - Durgapur TL	WB	
328	400KV Baripada-Keonjhar line	25-07-2020	09:00	26-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of porcelain insulator into polymer insulator in Tr/ line for line crossing		
329	400KV BUS-I & III at Sundergarh	25-07-2020	09:00	25-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP & cable shifting works		Details of AMP work may be shared with ERLDC
330	400kV 63MVAR Switacble L/R of Muzaffarpur-2 at New Purnea S/s	25-07-2020	10:00	25-07-2020	18:00	ODB	POWERGRID ER-I	Relay retrofitting works IN 63MVAR Muzaffarpur-2 L/R		To be taken during Line AMP
331	400KV Maithon - Mejia 2	25-07-2020	08:00	25-07-2020	18:00	ODB	POWERGRID,ER-II	Insulator Replacement work at crossings.	DVC	
332	400KV Bus# 3 at Maithon	25-07-2020	10:00	25-07-2020	19:00	ODB	POWERGRID,ER-II	Dismantling work of Bus isolator of 400kV RB-2 under ERSS- XVII project work	DVC	Detailed work to be done may be shared wit ERLDC
333	400KV BUS-II & IV at Sundergarh	26-07-2020	09:00	26-07-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP & cable shifting works		Details of AMP work may be shared with ERLDC

334	400KV North Bus-2 at Sasaram	26-07-2020	9:00	26-07-2020	18:00	ODB	POWERGRID ER-I	AMP Work	NLDC	Details of AMP work may be shared with ERLDC
335	400kV Bus-2 at MPL	26-07-2020	10:00	26-07-2020	18:00	ODB	POWERGRID,ER-II	Dismantling of Bus isolator of 406 bay	MPL	
336	400kV Subhashgram-Sagardighi	26-07-2020	09:00	28-07-2020	17:00	OCB	POWERGRID,ER-II	For termination of Jumper for LILO work of Subhashgram-Sagardighi line at Jeerat- Construction purpose under ERSS-	WB	Detailed work to be done may be shared wit ERLDC
337	400KV Baripada-Kharagpur line	27-07-2020	09:00	29-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of porcelain insulator into polymer insulator in Tr/ line for line crossing	WB	
338	400/220kv 315 MVA ICT- 2 at Jamshedpur	27-07-2020	9:30	28-07-2020	17:30	ODB	POWERGRID ER-I	Replacement of porcelain insulator string with Polymer insulator string at Jamshedpur ss switchyard due to high pollution and Static Differential, REF, Electromechnical O/c	JSEB	
339	400/132 KV, 315MVA ICT-3 AT BANKA	27-07-2020	9:00	27-07-2020	18:00	ODB	POWERGRID ER-I	INSTALLATION OF PILOT INSULATOR IN 132KV SIDE GANTRY	BSEB	Detailed work to be done
340	125MVAR Bus Reactor-1 at New Purnea S/s	27-07-2020	10:00	27-07-2020	18:00	ODB	POWERGRID ER-I	Relay retrofitting works IN 125MVAR Bus Reactor-1		
341	400KV Maithon - Durgapur 1	27-07-2020	08:00	27-07-2020	18:00	ODB	POWERGRID,ER-II	Jumper Rectification work		
342	400KV Main Bus-2 at MTPS, DVC	27-07-2020	08:00Hrs	27-07-2020	18:00Hrs	ODB	DVC	For maintenance of bus.		Details of maintenance work may be shared with ERLDC
343	400kV Sundargarh_OPGC ckt#2	28-07-2020	09:00	28-07-2020	12:00	ODB	ER-II/Odisha/Sundergarh	Relay AMP works	GRIDCO	Details of AMP work may be shared with ERLDC
344	125MVAR Bus Reactor-2 at New Purnea S/s	28-07-2020	10:00	28-07-2020	18:00	ODB	POWERGRID ER-I	Relay retrofitting works IN 125MVAR Bus Reactor-2		
345	400KV Maithon - Durgapur 2	28-07-2020	08:00	29-07-2020	18:00	ODB	POWERGRID,ER-II	Jumper Rectification work and Internal inspection/Overhauling of interrupter of 400kV CB of Main		
346	400KV Bus #1 at Maithon	28-07-2020	09:00	28-07-2020	17:00	ODB	POWERGRID,ER-II	Replacement of Bus CVT	DVC	
347	400 KV Rajarhat Subashgram Line	28-07-2020	08:00	28-07-2020	17:00	ODB	POWERGRID,ER-II	Line Rectification/Maintenance Works	WB	Details of maintenance work may be shared with ERLDC
348	400KV Main Bus-1 at MTPS, DVC	28-07-2020	08:00Hrs	28-07-2020	18:00Hrs	ODB	DVC	For maintenance of bus.		Details of maintenance work may be shared with ERLDC
349	Barh PATNA Line # 2	29-07-2020	09:30	30-07-2020	18:00	OCB	BARH	For operation testing Auto Reclose Relay testing & other testing and Annual maintenance of Bay equipments.		Details of maintenance work may be shared with ERLDC
350	220 KV Bus Sectionalizer#1 at Binaguri	29-07-2020	09:00	29-07-2020	17:00	ODB	POWERGRID,ER-II	Implimentation of bussectionalizer protection	WB	
351	400KV Baripada-Pandiabilli line	30-07-2020	09:00	31-07-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of porcelain insulator into polymer insulator in Tr/ line for line crossing		
352	400/220kv 315 MVA ICT- 1 at Jamshedpur	30-07-2020	9:30	31-07-2020	17:30	ODB	POWERGRID ER-I	Replacement of porcelain insulator string with Polymer insulator string at Jamshedpur ss switchyard due to high	JSEB	
353	400 KV D/C Arambag - Kolaghat, Arambag - Durgapur TL (WBSETCL)	30-07-2020	08:00	31-07-2020	17:00	ODB	POWERGRID,ER-II	Stringing b/w AP 31/0 to 32/0 of 765 KV D/C Medinipur- Jeerat TL Over existing 400 KV D/C Arambag - Kolaghat, Arambag - Durgapur TL	WB	
354	220 KV Bus Sectionalizer#2 at Binaguri	31-07-2020	09:00	31-07-2020	17:00	ODB	POWERGRID,ER-II	Implimentation of bussectionalizer protection	WB	