



**AGENDA
FOR
181st OCC MEETING**

Date: 22.07.2021

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700033

EASTERN REGIONAL POWER COMMITTEE

AGENDA FOR 181st OCC MEETING TO BE HELD ON 22.07.2021 (THURSDAY) AT 10:30 HRS

PART – A

ITEM NO. A.1: Confirmation of Minutes of 180th OCC Meeting held on 22nd June 2021 through MS Teams online platform.

The minutes of 180th Operation Coordination sub-Committee meeting held on 22.06.2021 was circulated vide letter dated 06.07.2021.

Members may confirm the minutes of 180th OCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B.1: Ensuring reliable power supply at Deoghar and Dumka area during Sharwani Mela-2021

World famous Sharwani mela is going to be celebrated from 25-07-21 to 22-08-21 at Deoghar and Basukinath, Jharkhand. Millions of pilgrims are going to visit the holy site during the same period. A letter dated 02.07.21 from SLDC Jharkhand has been received for power assistance.

In view of the same, uninterrupted and unrestricted power supply to Deoghar and Dumka is extremely important for the above mentioned period. Therefore maintaining healthiness of all the 220 and 132 kV transmission line must be ensure by all the respective transmission asset owners.

In addition to that Jharkhand has requested for following power assistance from DVC and Bihar:

1. 30-35 MW assistance through 132 kV Deoghar-Sultangunj tie with BSPTCL
2. 55-60 MW assistance through 132 kV Maithon-Jamtara tie with DVC
3. 30-35 MW assistance through 132 kV Kahalgaon(BSPTCL)-Lalmatia tie with BSPTCL

DVC and Bihar is requested plan accordingly and share their consent to Jharkhand SLDC.

Members may discuss.

ITEM NO. B.2: Reliable Power Supply to Lalmatia/Godda/Dumka areas of JUSNL

The 220 kV Farakka-Lalmatia S/C was out of service since April 2021 due to tower collapse. The 220/132/33 kV Lalmatia substation is relying on only 132 kV lines. At present the local load at 220 kV Dumka and Godda S/S were being radially fed from 400/220 kV Maithon S/S through 220 kV Maithon-Dumka D/C and 220 kV Dumka-Godda D/C.

In 179th CC meeting, ERLDC representative stressed over the fact that commissioning of 220kV

Tenughat-Govindpur line would increase the system reliability and the said line may be commissioned at the earliest.

In 103rd PCC meeting, during discussion of tripping of 220 kV Maithon-Dumka line-2 on 15/05/21, it was informed that the auto-recloser in the said line is not in operation due to some issues in PLCC. It was also come to notice that there was no formal agreement between JUSNL & Powergrid for O & M of the bay equipment at Maithon end. As a result, bay equipment at Maithon end for 220 kV Maithon-Dumka D/C lines are not being maintained properly.

In view of above, the following issues need to be discussed:

1. Restoration of 220 kV Farakka-Lalmatia S/C line
2. Commissioning of 220 kV Tenughat-Govindpur lines
3. Status of O & M agreement with Powergrid for bay equipments at Maithon end and resolution of autorecloser issues in the 220 kV Maithon-Dumka Lines.

In the 180th OCC meeting:

1. Restoration of 220kV Farraka-Lalmatia S/C line

JUSNL representative submitted that for the restoration of the said line field survey has already been carried out. He informed that cost estimation for the same has been prepared and submitted to HQ for approval so that it can be forwarded to NTPC Farakka for fund requisition.

On query, he further submitted that they would restore the line first and thereafter the necessary arrangement of handing over would be made.

MS ERPC, in regard to this raised serious concern about this line and directed JUSNL to get the work done without further delay and to co-ordinate with ECL regarding handing over of the assets.

2. Commissioning of 220kV Tenughat-Govindpur line

JUSNL representative submitted that Powergrid is doing the work for the 220kV Tenughat-Govindpur line under JCP project. Till date all tower erection has been completed, stringing is in progress and only 3km stringing is left. He further informed that DVC power line crossing at Loc no.73/02 & 74/02 is going on and the line would get ready for charging by 15th July 2021.

SE Operation, ERPC raised concern about the readiness of associated bays of the aforesaid line. JUSNL representative in this regard submitted that line bay at Govindpur is ready and that of TTPS side is under progress. Further OCC advised JUSNL to expedite the works regarding completion of the bays in all respect without any further delay by engaging more manpower.

JUSNL representative also mentioned that there was some delay due to ROW issue but now that has been resolved.

Powergrid representative informed that there are fund related issues and they could not engage their contractor due to lack of fund and as a result the work is getting hampered.

JUSNL representative submitted that due to increased cost of the said work under JCP project the fund clearance was pending at Govt. end. However, the additional fund has been approved by the Govt. and the revised order had also been placed to Powergrid. He further informed that the fund would be released by the Govt. shortly.

3. Status of O & M agreement with Powergrid for bay equipments at Maithon end and resolution of autorecloser issues in the 220 kV Maithon-Dumka Lines

JUSNL representative submitted that there were some issues regarding the agreement but now it has been resolved and the same would be finalized within 10 days.

OCC advised JUSNL to take up the matter of auto-recloser with Powergrid and get it done at the earliest.

In view of all the above deliberations, MS ERPC opined that a separate meeting may be convened to discuss all the above issues with the higher officials of JUSNL, since these issues are of utmost importance for smooth operation of the Grid.

In the Special meeting on “Various Operational & Protection issues related to Jharkhand System” held on 05.07.2021 JUSNL was advised that to expedite all the administrative works related to this issue so that the restoration of 220kV Farraka-Lalmatia S/C line can be done at the earliest.

Regarding Commissioning of 220 kV Tenughat-Govindpur Lines JUSNL updated that fund disbursement issue had been resolved and the work has already been resumed. Powergrid informed that the line would be commissioned within July, 2021.

Regarding Status of O & M agreement with Powergrid for bay equipments at Maithon end and resolution of autorecloser issues in the 220 kV Maithon-Dumka Lines JUSNL updated that in-principal approval for maintenance work of bay equipments at Maithon end by Powergrid would be given immediately. Thereafter formal agreement would be signed with Powergrid in this regard.

JUSNL may update.

ITEM NO. B.3: Outage of Important Transmission System.

1. 132kV Sagbari–Melli.

In the 174th OCC meeting, Sikkim informed that 132kVMelli-Sagabari S/C is under outage because of faulty breaker issue at Sagbari end. Sikkim informed that 132 kV Sagbari S/s is under DISCOM jurisdiction.

In the 176th OCC meeting, Sikkim informed that the circuit breaker issue has been resolved.

They further informed that as the line was under outage for more than two years, there were vegetation & RoW issues. They added that there is conductor snapping in the line between loc. 20 and loc. 29.

In 177th OCC Meeting, Sikkim informed that necessary RoW clearance has been received for 80% section of the line and it would take two more weeks to get the clearance for remaining section of the line OCC advised Sikkim to expedite the work and restore the line at the earliest.

In the 179th OCC meeting, Sikkim submitted that patrolling of the line has been completed and necessary maintenance in this regard has already been carried out for 80% of the line

section. For the rest 20%, pruning and cutting of trees are to be done and for this they need clearance from the Forest Department.

OCC advised Sikkim to expedite the matter with the Forest Dept. of Sikkim and update the status to ERPC/ERLDC at the earliest.

Sikkim vide mail dated 09.06.2021 updated the following status:

- 1) In loc 82,83 & 84 we have low ground clearance which need hill cutting but if needed TL can be charged after putting temporarily barbed wire fencing .
- 2) In loc 98-99 a house had been constructed just below the line and warning had been issued to the owner for not to do vertical extension of the house till any such arrangement is made.
- 3) In loc 116 &117 land owner demanding for intermediate tower and not allowing for us to clear the jungles.
- 4) Loc 128 is in dilapidated condition due to sinking effect posing threat to lives and properties .Local public are asking to shift the tower in safe place before restoration of supply in the TL.
- 5) 80% of jungle clearance has been completed and remaining 20% is in Forest area most of it is under west district and waiting for permission from Forest department.
- 6) The delay in obtaining permission for following trees in forest land is that it cannot be ascertained whether FCA clearance during construction of TL was obtained as the record is not available either in power department or in DFO Office. Regarding this in the it had been told by ERPC that once obtaining environment clearance at the time of construction there need not to take permission for further clearance of ROW from Forest dept and this matter is been conveyed to the Forest department but they informed us as per Forest Act of Sikkim state permission has to be obtained for fresh felling with payment of compensation. File for approval is being send to conservator of Forest from DFO on 10/6/2021.

In the 180th OCC meeting, Sikkim representative submitted that they had updated the status of work vide mail dated 09.06.2021 and there is no further update regarding the said line.

On query regarding the timeline for completion of the work, he added that due to inclement weather condition the work has been slowed down. Once the weather improves they would resume the work in full strength.

Sikkim may update the latest status.

ITEM NO. B.4: Repair/rectification of D/C tower at location 79 of 132kV Rangpo-Melli and 132 kV Rangpo –Gangtok line.

Powergrid had informed that their patrolling team had observed bent in part of tower no. 79 of 132kV Rangpo-Melli line and 132 kV Chuzachen(Rangpo)-Gangtok transmission lines which might further degrade the condition of tower.

In 137th OCC, Powergrid informed that tower no. 79 of 132kV Rangpo-Melli line and Chuzachen (Rangpo)-Gangtok transmission lines falls under the jurisdiction of Energy & Power Department, Govt. of Sikkim.

In 43rd ERPC Meeting, Powergrid informed that the tower at location no. 79 is in vulnerable

condition and needs immediate attention so as to avoid any further devastation.

Sikkim informed that they are in process of obtaining approval from State Govt. for rectification of the defective tower

In view of importance of the said line for power supply to State Capital, ERPC advised Sikkim to resolve the issue on priority basis and same shall be monitored in lower forum of ERPC.

In the 178th OCC meeting, Sikkim informed that they would communicate the status of the proposal for rectification of the defective tower within a month.

In the 179th OCC meeting, Sikkim representative informed that, they had already prepared the estimate which had been placed for approval in CMO office. As soon as the approval gets accorded by the Govt. they would start the work. He further added that the team is also ready for retrofitting.

OCC advised Sikkim to expedite their internal approval and place the work order as soon as possible.

In the 180th OCC meeting, Sikkim representative submitted that the approval is yet to be accorded by the State Govt. and due to Covid-19 lockdown restrictions the matter is getting delayed further.

OCC stressed upon the fact that this line is vital for the State capital Gangtok. Further OCC advised Sikkim to get the approval done and thereafter complete the work without any further delay.

Sikkim representative ensured that they are following up the issue and as soon as the approval gets accorded by the Govt. they would start the work.

Sikkim may update.

ITEM NO. B.5: Repeated events of switching off of Meili Source for Kalimpong

Repeated events of Switching off of Meili source of Kalimpong were reported without prior permission / pre-intimation of SLDC, WB and ERLDC even without taking any code from ERLDC. At 15.23 hrs on 10.07.21 and at 14.13 hrs on 14.07.21 Meili Kalimpong 66 KV line was switched off from Meili end without any intimation and consent of both WB and ERLDC.

These types of event has precedence and was discussed in 177th OCC meeting under agenda (Item No.B.4), and OCC advised Sikkim to share the information of any switching operation of 66 kV Meili-Kalimpong Line to ERLDC. OCC also advised Sikkim that during any kind of switching operation of this important tie line, the Meili S/s personnel shall exchange the information with their counterpart in Kalimpong S/s.

But above two events have clearly shown the same practice has been continued from Meili end. Due to this West Bengal has raised their serious concern on this kind of events.

Sikkim may explain.

ITEM NO. B.6: Reliability Issue at 220/132 kV Budhipadar S/s

The reliability issue at Budhipadar was discussed during analysis of the grid disturbance at Budhipadar S/s on 08/04/2021 in 101st PCC meeting. The issue was also discussed in 178th OCC meeting held on 20/04/2021.

Subsequently in the special meeting held on 10/05/2021, the followings were decided:

- a. The opening of 220 kV Vedanta-Budhipadar lines from Vedanta would be decided based on the system study to be carried out by OPTCL.
- b. Further, SLDC Odisha will plan and submit a SPS for further contingency at Budhipadar and subsequent generation reduction at IB TPS units.
- c. OPTCL to take utmost measure in ensuring the healthiness of substation equipments at Budhipadar till the time the short term measures are being implemented.

Further, OPTCL vide letter dated 29/06/2021 have submitted the study report for intrastate constraints in Odisha system in Budhipadar command area. The report is enclosed at **Annexure-B6**.

The issue of implementation of the SPS at Budhipadar S/s was discussed in 104th PCC meeting held on 13/07/2021 and it was decided to refer this issue to OCC meeting for detailed deliberation.

OPTCL may explain. Members may discuss.

ITEM NO. B.7: Review of implementation of PSDF approved projects of ER.

In 10th NPC meeting held on 09.04.2021, RPCs were advised take up the matter for improvement of the fund disbursement and expeditious implementation of the sanctioned projects under PSDF.

In view of the above, status review of the projects being executed under PSDF funding in Eastern Region would be carried out on regular basis for expediting the projects. All the constituents are requested to furnish/update the status of their respective project in every month.

Concerned utilities may update the present status of the project as given in the **Annexure-B7**.

Members may update.

ITEM NO. B.8: Status of implementation of AGC as a pilot project in States.

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.

WBPDCCL 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 the states.

It was decided to request CERC to include this as an issue in the Agenda for discussion in the

meeting of Forum of Regulators.

In 169th OCC Meeting, SLDC DVC informed that due to COVID-19 pandemic, participation in the tender was very less therefore they are floating a new tender for implementation of AGC. AGC would be implemented by Feb 2021.

Odisha informed that they could not visit Barh NTPC and NLDC due to ongoing COVID 19 pandemic situation.

OCC advised SLDC Odisha and OPGC to interact with Barh NTPC & ERLDC to get the technical specifications & the procedure for implementation of AGC.

Latest Status of implementation:

State	Station/Unit	Deliberation in 180 th OCC Meeting
DVC	Mejia unit#7 &8	DVC representative informed that they had invited for fresh budgetary offers in this regard. SE (O), ERPC advised DVC to expedite this as it has been getting delayed since last three months. DVC submitted that the process also got delayed due to Covid-19 situation. He further ensured that the matter would be expedited and finalized soon.
West Bengal	Unit-5 of Bakreswar TPP	SLDC, West Bengal representative informed that for implementation of AGC among state generators there are two parts to sort out. Firstly, a quantum of DC of WBPDC plants has to be kept as a hot spinning reserve out of 100% allotment to WBSEDCL for utilization under AGC. In present regime, the capacity charge of the plants for that quantum spinning reserve cannot be claimed from WBSEDCL. So, there should be a regulation of WBERC to cover these financial settlements of state generators scheduled to its beneficiary and actually declared by the plant under AGC after implementation of AGC as per direction of WBERC. Secondly the capital cost involved to implement AGC in different state generators and in SLDC should be approved by WBERC to adjust in tariff. Accordingly, necessary orders /regulations need to be issued by WBERC to cover the above points. He further requested the forum to place the matter in the next TCC meeting.
	Unit#3 of OPGC	OPGC representative informed that they had finalized all the technical specifications in consultation with Siemens and are ready to place the order. He further submitted that the necessary command for AGC has to be given by SLDC itself. SLDC Odisha representative submitted they would discuss with OPGC and Siemens and resolve the issue by 15th July'21.

Members may update.

ITEM NO. B.9: Reactive power performance of generating units during the high voltage condition

A. Performance of Regional Generators:

During 180th OCC meeting of ERPC, ERLDC highlighted the issue of inadequate reactive power absorption by generating units during the high voltage condition. Due to inadequate reactive power absorption by generating units, voltage at various 400 kV and 765 kV remained high. As per ERLDC SCADA data the reactive power absorption of following regional generating units (ISGS & IPP) was inadequate during 01st July 2021 to 12th July 2021.

Name of generating units	Maximum MVAR absorption limit (as per capability curve)	MVAR absorption during maximum voltage (as per ERLDC SCADA data)	Maximum voltage during July 2021
Kahalgaon STPS Stage I - 210 MW Unit -1, 2, 3 & 4	> 60 MVAR	< 10-20 MVAR	421 kV
Kahalgaon STPS Stage II - 500 MW Unit – 6 & 7	> 150 MVAR	< 20 MVAR	421 kV
Barh STPS Stage II - 660 MW Unit - 4& 5	> 200 MVAR	<110 MVAR (For significant amount of time MVAR absorption < 40 MVAR)	422 kV
BRBCL - 250 MW Unit -1, 2 & 3	> 100 MVAR	0 MVAR (Unit was generating 20-30 MVAR)	415 kV
Nabinagar STPP Stage I - 660 MW Unit -1	> 250 MVAR	<30 MVAR	420 kV
MPL - 525 MW Unit -1 & 2	> 150 MVAR	< 20 – 40 MVAR	413 kV
JITPL - 600 MW Unit -1 & 2	> 200 MVAR	0 MVAR (Unit was generating 100-130 MVAR)	407 kV

The details of the same is also attached at **Annexure-B9**

In view of the above generating plant to share the following details:

- Reason for not providing VAR absorption in line with capability curve.
- Action taken based on deliberation of 180th OCC meeting and ERLDC letter dated 05th July 2021.

Generators may update.

B. Inadequate reactive power support from Mejia TPS during cyclone Yaas.

During cyclone Yaas, load in Jharkhand and DVC area became very low. As a result, high voltage condition occurred at Maithon. Though MVAR support was expected from nearby generating stations like Mejia B, MVAR absorption was very low by those generating stations (in order of 10-20 MVAR by 500 MW unit). DVC was requested to share reason for inadequate VAR absorption by Mejia B unit 7 & 8 vide mail dated 27th May 2021.

DVC SLDC in coordination with generating station may share reactive power performance of Mejia B and share plan of action in order to improve MVAR support of this generating station.

Reactive power performance of other generating units may also be checked by SLDC.

In the 180th OCC meeting, DVC representative informed that as per the information obtained from Mejia, particularly on the day of Yaas Cyclone, there was high voltage in the system and limitation in terminal voltage absorption was also there. Mejia couldn't perform up to the mark due to the above reasons.

He further informed that they had requested for MVAR data from Mejia for the month of May 2021 and thereafter thorough study would be carried out by them.

OCC advised DVC to share the details of the study along with their findings to ERPC & ERLDC.

DVC may update.

ITEM NO. B.10: Healthiness of 89T isolator of ICT-V at Malda

On 13.03.21 400/220kV 315MVA ICT#5 at Malda required emergency outage (hand tripped), as 400kV side CB lockout occurred. POWERGRID informed via mail that 315 MVA ICT - V cannot be charged through 400 kV TBC because, it was observed that B-ph 89 T PG Isolator spring has broken and is not operational, which compelled for forced manual tripping of ICT-5. On 14.03.2021 early morning, during emergency restoration of ICT-5 through 400kV TBC bay, some shorting arrangement at 89T isolator of ICT-5 was made to restore ICT-5 through TBC.

On 19.04.2021 at 13:15 hrs, 315MVA, 400/220kV ICT- V at Malda has been Emergency hand tripped due to sudden flash over at 89T isolator. ICT -V was restored through Main Bay.

In the 179th OCC meeting, Powergrid representative informed that problem in 89T isolator still persists, and for that they have already applied shutdown for normalization from TBC bay to Main Bay after isolating the faulty isolator.

Powergrid representative further added that as 89T is a line side Isolator, any maintenance of it would require shutdown of ICT 5. Upon query he mentioned that all the other isolators and breakers of the TBC have been replaced and there is no issue related to the operation. But the said bay isolator has problem due to ageing problem and it was planned to be replaced during the ICT augmentation work. However, Powergrid has planned for phase wise replacement of 89T and 89 M2 under O&M activity which will be done on daily basis shutdown and it would require 7-8 days in order to get the work done.

OCC advised Powergrid to submit the detailed replacement plan to ERPC/ERLDC for further action.

In the 180th OCC meeting, Powergrid representative informed that they had already given the schedule for shutdown details and the same has already been approved. He further added that the work is expected to be completed by July 2021 subject to weather conditions.

Powergrid may update.

ITEM NO. B.11: Difficulty in charging lines in between Generating Stations

There is a prevailing issue on the charging of transmission lines connecting two generating complex after its outage/tripping. It has been observed that sometimes either of the utility is not ready for charging of the line from their end after its tripping on fault/outage. This results in the delay in the restoration of line and thus affecting the reliability of both the generating station. In view of this, there is a need of guideline on charging of such transmission lines. In 150th OCC Meeting guidelines for the charging of Transmission line connecting two generating plants after tripping on fault or outage were outlined.

The following general guidelines were discussed for consideration:

- If voltage difference between two systems is more than 5 kV, systems which have lower voltage should charge the line.
- In case voltage difference is less than 5 kV, systems which have higher fault level should charge
- If only one end has line reactor than the end which is not having the line reactor should attempt to charge first.

However during real time operation same issue prevails leading to inordinate delay in charging of transmission lines.

Members may discuss.

ITEM NO. B.12: Sharing of SPS and load trimming scheme implemented in STU network under SLDC's jurisdiction.

It is observed that for managing STU network constraint and for avoiding cascading in STU network, sometimes state utilities are designing and implementing some SPS, load trimming or RAS scheme within the state network.

Operations of these SPS are sometimes changing the network topology and huge impact on the ISTS network as well. However due to lack of information regional system operators are unaware of the original cause of such huge flow pattern change and this creates problem managing the regional grid reliability and security. In view of the above mentioned concern of regional system operators all SLDCs are requested submit the following details:

1. All SPS, load trimming and RAS scheme already implement in the state system.
2. Sharing of information, prior to the implementing of New SPS or disabling of existing SPS.
3. Details of SPS operation on real time basis as and when SPS is operated.

SLDCs may update.

ITEM NO. B.13: Ensuring unit wise generation data availability from all CPP plant having capacity more than 100 MW for Online Inertia Monitoring.

High penetration of renewable is a big concern from reducing of grid inertia point of view. Sometimes grid inertia may become such low that it could threaten the grid stability. Therefore at all RLDC and NLDC level monitoring of synchronously connected generator inertia has started. Initially, CPP plant having units above 100 MW are also considered for monitoring, as they contribute good amount of inertia. Therefore maintaining unit wise data availability from these CPP is extremely important and SLDCs are requested to extend necessary support to the SCADA team of RLDC for data integration and other necessary action thereafter.

SLDCs may comply.

PART C: ITEMS FOR UPDATE

ITEM NO. C.1: ER Grid performance during June'2021

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month June-2021 were as follows:

Average Consumption (MU)	Maximum Consumption (MU)/ Date	Maximum Demand (MW) Date/Time	Minimum Demand(MW) Date/Time	Schedule Export (MU)	Actual Export (MU)
456	498 04-06-2021	23504 MW, 04-06-2021 00:01 Hrs.	14504 MW, 01-06-2021 17:57 Hrs.	3933	3841

ERLDC may present performance of Eastern Regional Grid.

ITEM NO. C.2: Performance of Primary frequency response of ER generating units

Frequency response characteristics (FRC) have been analyzed pan India for one event of sudden frequency change that occurred in June 2021. The details of this event and the overall response of the Eastern region have been summarized in following table.

Event	Frequency Change	ER FRC
Event 1: On 11th June 2021 at 16:02:42:120 Hrs, 1500 MW generation loss at Rajasthan in NR.	50.09 Hz to 49.92 Hz. Later stabilized at 50.00 Hz.	51 %

Summary of the response of regional generating stations/SLDCs are given in following table.

Generating Station/ SLDC	Response observed
NTPC Farakka	Satisfactory for Unit 6; Non satisfactory for other units (Response observed Unit 2: 0, Unit 3: 2MW, Unit 4,5: 6 MW)
NTPC Kahalgaon	Satisfactory
NTPC Talcher	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
NTPC Barh	Satisfactory (Around 70% of ideal response)
NTPC Darlipalli	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
BRBCL	Satisfactory for unit 2 & 3. Non-Satisfactory for unit 1.
NPGC Nabinagar	Satisfactory , But response withdrawn within 3 min at rate faster than 1% per min.
GMR	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
JITPL	Non-Satisfactory
MPL	Satisfactory
Adhunik	Non-Satisfactory
Teesta V HEP	Unit was not in service
Teesta III HEP	Satisfactory
Dikchu HEP	Unit under spillage condition. No margin was available.

Generating Station/ SLDC	Response observed
Bihar SLDC	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
Jharkhand SLDC	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
DVC SLDC	Satisfactory
GRIDCO SLDC	Non-Satisfactory
WB SLDC	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)

Detailed analysis is attached at **Annexure-C2**

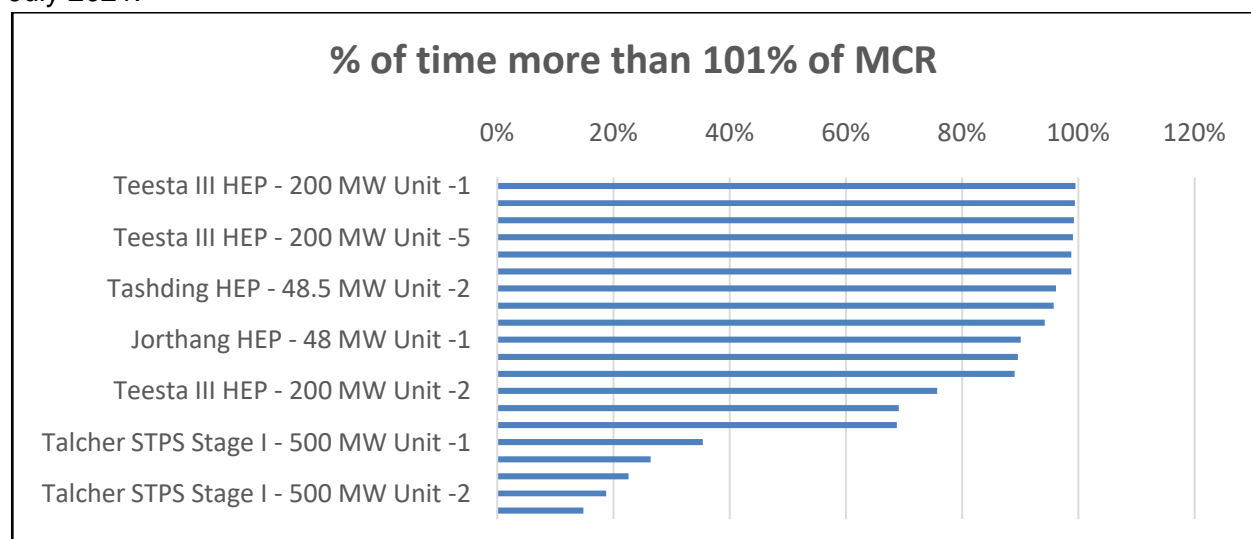
Generator end data/FRC is yet to be received from following generating stations/SLDCs

1. NTPC Talcher
2. NTPC Darlipalli
3. GMR
4. Bihar SLDC
5. Jharkhand SLDC
6. WB SLDC

Generators/SLDCs may respond.

ITEM NO. C.3: Running Generating units at more than MCR

During 180th OCC meeting of ERPC, ERLDC highlighted the issue of over injection by generating units at more than MCR. Due to running unit at more than MCR, margin for primary frequency response gets exhausted and machine cannot provide sufficient primary frequency response during the event of sudden frequency change. As per ERLDC SCADA data, following regional generating units (ISGS & IPP) generated at more than 101% of MCR (1% margin is considered to offset SCADA measurement error) for significant amount of time during 01st July 2021 to 12th July 2021.



Generation duration curve for GMR TPS Unit 1 & 2, Talcher STPS Unit 1 & 2 and Darlipalli STPS Unit 1 for 01st July to 12th July 2021 are provided at **Annexure C3**.

Talcher STPS, GMR TPS and Darlipalli STPS may share the reason for over injection.

ITEM NO. C.4: Primary Frequency Response Testing of ISGS Generating Units

In 176th OCC Meeting, ERLDC informed that as per preliminary report received for units where PFR have been completed, the primary frequency response observed during testing were satisfactory.

In 177th OCC Meeting, ERLDC informed that information regarding testing schedule of JITPL & GMR has not been received.

OCC advised GMR & JITPL to share their schedule for PFR testing to ERLDC.

In the 178th OCC meeting, GMR updated that the PFR testing for their units have been scheduled in the month of May'21 and the date of scheduling would be intimated shortly.

In the 179th OCC meeting, GMR updated that the PFR testing for their units have been scheduled in the month of May'21 but due to the prevailing pandemic situation and lockdown restriction it has been delayed. On query GMR further updated that, once confirmed, the next date would be intimated to the OCC forum.

In the 180th OCC meeting, ERLDC representative informed that as per communication received from GMR and JITPL PFR testing has been scheduled by Siemens in August'21.

MPL representative submitted that they would carry out the PFR testing in the month of July'21. The status of the testing schedule for the generators is enclosed at **Annexure-C4**.

Generators may update.

ITEM NO. C.5: Testing of Primary Frequency Response of State Generating units by third party agency.

In the 171st OCC Meeting, OCC advised all the SLDC's to prepare the action plan for their state generators and submit the details to ERPC and ERLDC at the earliest.

DVC vide-mail dated 6th Oct 2020 informed that the Primary Frequency Response Testing may be carried out for the following generating units:

Sl. No.	Name of the Units	Capacity (MW)
1	BTPS-A	500
2	CTPS Unit #7&8	2X250
3	DSTPS Unit#1&2	2X500
4	KTPS Unit # 1&2	2X500
5	MTPS Unit # 3 to 8	2 X 210 +2 X 250 + 2X 500
6	RTPS Unit # 1 & 2	2 X 600

DVC informed that both the agencies M/s Siemens & M/s Solvina have agreed to carry out the testing at pre-agreed rates, terms & conditions.

In the 176th OCC meeting, OPGC informed that they would finalize the order with Siemens by end of Feb'2021. SLDC, DVC informed that indent has been placed for PFR testing of their generating units. On request from WBPDC, OCC advised ERLDC to share all relevant documents related to selection of the vendor for PFR Testing along with contact details of the vendors to West Bengal SLDC for further sharing by them with their state generators.

In 177th OCC Meeting, SLDC, Bihar informed that PFR testing for Barauni TPS would be completed by April '2021. OHPC informed that PFR testing is being planned to be carried out for units of Indravati & Rengali. OCC advised OHPC to submit a schedule for testing to ERLDC/ERPC secretariat.

OCC advised SLDC DVC, SLDC West Bengal & SLDC Jharkhand to coordinate with their generators and submit the schedule of PFR testing.

In the 178th OCC meeting, WBPDC informed that they have received some of the relevant documents from SLDC West Bengal. Further they informed that they are collecting some other information to finalize the scope and purchase order for PFR testing.

DVC informed that the indent has been placed for PFR testing of generating units and the order would be placed tentatively in October'21.

In the 179th OCC meeting, WBPDC submitted that they are in contact with Siemens in this regard and once they get any update, they would intimate the same in the next OCC meeting.

In the 180th OCC meeting, WBPDC representative submitted that they are consulting with DVC Mejia and NTPC Farakka regarding this and informed that they would share the further update to ERPC and ERLDC.

SLDC Jharkhand representative informed that they had communicated with Tenughat, but yet to get any update from them.

DVC representative informed that they had already placed the indent in the month of April'21. OCC advised DVC to give the update to ERPC and ERLDC.

OHPC representative submitted that PFR testing has been proposed for Rengali and Upper Indravati Stage-I. Accordingly, they have contacted M/s Solvina and are in process of placing order to them. He further informed that the work is expected to be completed by July'21.

Members may update.

ITEM NO. C.6: PSS tuning of Generators in Eastern Region.

The PSS tuning activity is mandatory in line with IEGC and CEA regulations. The Procedure of PSS tuning for helping utilities in getting this activity carried out has been approved in 171st OCC Meeting and shared with all concerned utilities.

In 177th OCC Meeting, DVC informed that PSS tuning of Unit#1 of Bokaro-A TPS had been completed.

WBSEDCL stated that the status of PSS tuning in PPSP units would be submitted shortly.

In the 178th OCC meeting, ERLDC informed that PSS tuning for APNRL units were carried out however it was not successful due to some technical issue at APNRL end. It was informed that PSS tuning of Unit#4 of Mejia TPS of DVC had been completed on 07.04.2021.

In the 179th OCC meeting, on query ERLDC submitted that they are yet to receive update from APNRL and JITPL.

In the 180th OCC meeting, ERLDC submitted that they are yet to receive any update from APNRL and JITPL.

The updated schedule for PSS tuning of the units is attached at **Annexure-C6**.

Members may update.

ITEM NO. C.7: Status of UFRs healthiness installed in Eastern Region.

UFRs' healthiness status has been received from West Bengal,DVC and Bihar.

Members may update.

ITEM NO. C.8: Status of Islanding Schemes healthiness installed in Eastern Region.

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

Details received from the constituents are as follows:

Sl. No	Name of Islanding Scheme	Confirmation from Generator Utility end	Confirmation from Transmission Utility end
1	CESC as a whole Islanding	Healthy	Healthy
2	BkTPS Islanding Scheme	Healthy	Healthy
3	Tata Power Islanding Scheme Haldia		Healthy
4	Chandrapura TPS Islanding Scheme, DVC	Not in service	
5	Farakka Islanding Scheme, NTPC	Not in service	
6	Bandel Islanding Scheme, WBPDC	Healthy	Healthy

Members may update.

ITEM NO. C.9: Transfer capability determination by the states.

Latest status of State ATC/TTC declared by states during the month of Sept -2021

Sl No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	6400	--	128	--	6278	--	Aug-21
2	JUSNL	1421	--	51	--	1370	--	Sep-21
3	DVC	1483	3322	63	49	1420	3273	Sep-21
4	OPTCL	2372	1059	88	62	2284	997	Sep-21
5	WBSETCL	5490	--	400	--	5090	--	Aug-21
6	Sikkim	199	--	2.04	--	196.96	--	Sep-21

Declaration of TTC/ATC on SLDC Website:

Sl. No	SLDC	Declared on Website	Website Link	Constraint Available on Website	Type of Website Link
1	BSPTCL	Yes	http://www.bsptcl.in/ViewATCTTCWeb.aspx?GL=12&PL=10	Yes	Static Link-Table
2	JUSNL	Yes	http://www.jusnl.in/pdf/download/ttc_atc_nov_2020.pdf	Yes	Static link –pdf file
3	DVC	Yes	https://application.dvc.gov.in/CLD/atcttcmenu.jsp#	Yes	Static Link-Word file
4	OPTCL	Yes	https://www.sldcorissa.org.in/TTC_ATC.aspx	Yes	Static Link-pdf file
5	WBSETCL	Yes	http://www.wbsldc.in/atc-ttc	No (Not updating)	Static Link-Table
6	Sikkim	No	https://power.sikkim.gov.in/atc-and-ttc	No (Not updating)	Static Link-Excel file

It is necessary to highlight that the ATC/TTC declaration on website need to be updated in timely manner. It is suggested that along with PDF copies, a tabular format may also kindly be provided so that it can be utilized for preparing ERLDC portal on State ATC/TTC. In addition, ATC/TTC may be declared three months in advance and periodically reviewed based on any shutdown causing leading to any constraint.

Members may update.

ITEM NO. C.10: Mock Black start exercises in Eastern Region

Mock black start date for financial year 2021-22 is as follows:

SI. No	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U. Kolab	Last week of Oct 2021		Second Week of Feb 2022	
2	Balimela	Second week of Nov 2021		First Week of March 2022	
3	Rengali	Second week of Nov 2021		First 2eek of March 2022	
4	Burla	Second week of Nov 2021		First Week of March 2022	
5	U. Indravati	Last week of Oct 2021		Second Week of Feb 2022	
6	Maithon	Third Week of Nov 2021		First Week of March 2022	
7	TLDP-III	Second week of Nov 2021		Second Week of Feb 2022	
8	TLDP-IV	Third Week of Nov 2021		First Week of March 2022	
9	Subarnarekha	Second week of Nov 2021		Second Week of Feb 2022	
10	Teesta-V	Third Week of Nov 2020		Third Week of March 2022	
11	Chuzachen	Second week of Nov 2021		First Week of March 2022	
12	Teesta-III	Third Week of Nov 2021		First Week of March 2022	
13	Jorethang	Third Week of Nov 2021		First Week of March 2022	
14	Tasheding	Second week of Nov 2021		First Week of March 2022	
15	Dikchu	Second week of Nov 2021		Second Week of Feb 2022	

In the 179th OCC meeting, ERLDC submitted that Chuzachen had done the Mock Black Start on 9th April 2021.

In the 180th OCC meeting, ERLDC representative informed that they have not received any further update on Mock Black Start.

Odisha representative submitted that they have not started the Mock Black Start due to ongoing Covid-19 Vaccination drive.

Members may update.

ITEM NO. C.11: Submission of Renewable Purchase Obligation (RPO) Data & Nomination.

Ministry of Power (MoP), Govt. of India vide order dated 29.01.2021 (enclosed at **Annexure-C11.1**), notified RPO Trajectory till FY 2021-22, which includes long term trajectory for Hydro Power Obligation (HPO) also. In addition, Para No. (17) of MoP Order dated 29.01.2021, stipulates POSOCO to maintain data related to compliance of RPOs. The matter of monitoring of RPO compliance has taken a high priority and regularly monitored by the MoP and MNRE.

Obligated entities for RPO compliance are Distribution Licensees, Open Access Consumers, Captive Power Plants etc. which are intra-State entities. Further, in order to comply with above MoP order, POSOCO initiated several communications to all the State Nodal Agencies (SNAs) during the month of Feb'21 to Jun'21 and requested to provide the details relevant to compliance of RPO. However, POSOCO is yet to receive the RPO Compliance details at your end.

In order to facilitate compilation of details related to RPO compliance, it is hereby requested to nominate a nodal person from each State Nodal Agencies (SNAs) and advise the concerned to timely (within one month from the end of quarter) provide the details as per **Annexure-C11.2** for FY 2020-21 and quarterly RPO compliance status of Obligated Entities for FY 2021-22 to following nodal persons from POSOCO for RPO compliance monitoring in an effective manner for onward submission of information to MOP and MNRE.

- Shri Manas Das, Chief Manager, ERLDC (Email: manasd@posoco.in, Mob: 09007070925)
- Shri Kailash Chand Saini, Chief Manager, NLDC (Email: kcsaini@posoco.in, Mob: 08800690951)

States may nominate the Nodal person and submit the relevant data in the prescribed format.

ITEM NO. C.12: List of Important Elements in ER

In compliance with IEGC 5.2 (c) List of Important Grid Elements of Eastern regional Grid has been prepared and draft version of the same was circulated via mail on 12-May-2021. Constituents were requested to review and give input by 25thMay so that it can be finalized by month end.

Subsequently the list of important elements of ER is finalized, based on comments received. The updated list is available on the ERLDC website and can be directly accessed through the following link:

https://app.erlhc.in/Content/Upload/System%20Study/Important%20Elements%20in%20ER/List%20of%20Important%20Element_2021.pdf

In the 180th OCC meeting, ERLDC representative informed that they had received comments from Bihar regarding addition of 03 nos. of 132kV S/s in the list and the same is being updated by them.

He further added that DVC's comments, as received, have also been updated in the list.

However, no comments have been received from Odisha, West Bengal & Jharkhand.

Odisha representative informed that they would submit the comments to ERLDC by 30th June'21.

OCC advised the remaining concerned utilities to submit their comments positively by 30th June'21 so that the list can be finalized.

ERLDC may update.

ITEM NO. C.13: Monthly Data on Category-wise consumption of electricity in states.

The data of category-wise consumption of electricity in the states/UTs are being frequently referred to by CEA and Ministry of Power. In this regard, as advised by Member (GO &D), GM division of CEA has advised the following:

- The monthly data of category-wise consumption of electricity in the states/UTs may be discussed in the OCC meeting on regular basis with comparative analysis of the same for corresponding monthly data of previous years.
- In case the utilities have reservations on submitting unaudited data then the same may be mentioned in the data itself that these data are unaudited. In that case the data so received would be used only for the purpose of trend analysis and would not be used in any report of CEA.

In 177th OCC Meeting, OCC advised all SLDCs to take up the issue with their DISCOM(s) and submit the required data on monthly basis to ERPC secretariat.

In the 179th OCC meeting, Odisha informed that they had submitted the data. Jharkhand and DVC submitted that they would update the data after getting it from their commercial team. West Bengal informed that they would submit the status by 24th May 2021.

In the 180th OCC meeting:

WBSETCL: Submitted that the data is related to the Discoms (WBSEDCL) since the data is of LT and HT lines. OCC advised WBSETCL to co-ordinate with the Discoms and submit the data to ERPC at the earliest.

Jharkhand: Informed that they have not yet received the data from Discom and would update the same by last week of this June'2021.

DVC: Informed that their commercial wing has not yet provided the data.

Bihar: Submitted the data for the month of May'21.

Odisha: Informed that up to March'21 they had submitted all the requisite data and for the month of April'21 partial data was submitted. Odisha representative further informed that they are facing problems in gathering the data from the Discoms and requested the forum to instruct the Discoms for complying the same.

Members may update.

ITEM NO. C.14: Activation of Transient data record facility in the AVR, if available and sharing the information with RLDC whenever required.

Monitoring of response of all dynamic elements of the grid is extremely important for analyzing various events in the grid and validating dynamic models of the elements.

Modern AVR are having transient data recording facility and can record very high-resolution data. Therefore all generating station must activate the facility for understanding the dynamics of the grid in a much better way. Therefore all generators are requested to submit the following details:

Generator Name	AVR manufacturer	Transient Data recording facility available (Yes/No)	IS the data recording facility activated (Yes/No)

In the 179th OCC meeting, ERLDC submitted that they had received the data from some of the constituents.

ERLDC further suggested that all the generators having the transient data record facility in the AVR should activate the same facility at their end. Also in the upcoming new generators or in the generators where R& M work is going on, possibility of incorporating this feature should be explored.

OCC advised all the concerned utilities to submit the data at the earliest.

Information is yet to be received from following plants

- **Central Sector**
 - Rangit
 - Barh
 - Darlipalli
 - NPGC
 - BRBCL
 - MPTS St- II
- **West Bengal**
 - Kolaghat
 - Sagardighi
 - TLDP-4
 - PPSP
- **Odisha**
 - Hirakud
 - Chiplima
 - Balimela
 - Upper Kolab
 - Indravati
 - Rengali
 - Sterlite
- **Jharkhand**
 - Tenughat
 - Subarnarekah
- **DVC**
 - Bokaro-B
 - DSTPS
 - Mejia-A
 - Waria
 - Raghunathpur
 - Mejia-B
 - Chandrapura
 - Bokaro-A
 - Koderma
 -
- **Bihar**
 - MTPS St- I
 - Barauni TPS

It is further suggested that all generating station must activate the facility where ever available for understanding the dynamics of the grid in a much better way. Data for the same may be shared

with ERLDC when need for analysis arises.

In the 180th OCC meeting, ERLDC representative informed that till date no further status in this regard has been received. He further added that they had already informed the concerned generators to activate the transient data recording facility in AVR at their end, if available, and inform to ERLDC.

NTPC Kahalgaon representative informed that the transient data facility in AVR is available at their end but due to shortage of memory they are not in a position to activate the same. He further informed that they would share their views after consulting the concerned department.

OCC advised all the concerned generators to activate the facility at their end, if available, and share the latest status to ERPC and ERLDC at the earliest.

Members may update.

PART D: OPERATIONAL PLANNING

ITEM NO. D.1: Anticipated power supply position during August 2021

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of June 2021 were prepared by ERPC Secretariat on the basis of LGBR for 2021-22 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 update.

ITEM NO. D.2: Shutdown proposal of generating units for the month of August' 2021.

Generator unit shutdown schedule for August' 2021 is given in the table.

Proposed Maintenance Schedule of Thermal Generating Units of ER during 2020-21 in the month of August'2021 (as finalised in LGBR meeting for 2020-21)							
System	Station	Unit	Capacity (MW)	Period (as per LGBR 2020-21)		No.of Days	Reason
				From	To		
WBPDC	Kolaghat TPS	6	210	02.08.2021	26.08.2021	25	AOH/BOH
	Bakreswar TPS	4	210	06.08.2021	30.08.2021	25	AOH/BOH
	Sagardighi TPS	2	300	01.08.2021	10.08.2021	10	PG Test
TVNL	Tenughat TPS	2	210	10.08.2021	31.08.2021	22	R&M + OH
OPGC	IB TPS	2	210	01.08.2021	30.08.2021	30	AOH
	IB TPS	4	660	01.08.2021	25.08.2021	25	AOH
CESC	Southern TPS	1	67.5	06.08.2021	20.08.2021	15	BOH
	Southern TPS	2	67.5	22.08.2021	31.08.2021	10	BOH
DPL	DPPS	7	300	01.08.2021	31.08.2021	31	AOH
IPP	JITPL	1	600	01.08.2021	30.09.2021	61	COH
KBUNL	MTPS	3	195	01.07.2021	04.08.2021	35	AOH

Members may update.

ITEM NO. D.3: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 11.06.2021)

a) Thermal Generating Stations outage report:

Sl. No	Station	State	Agency	Unit No.	Capacity in Mw	Reason(s)	Outage Date
1	FSTPP	WEST BENGAL	NTPC	1	200	ANNUAL OVERHAULING.	11-Jul-2021
2	KHSTPP	BIHAR	NTPC	3	210	ANNUAL OVERHAULING	02-Jul-2021

3	IB.TPS	ODISHA	OPGC	1	210	ANNUAL OVERHAULING	21-Jun-2021
4	INDRAVATI	ODISHA	OHPC	1	150	ANNUAL MAINTENANCE	16-Jun-2021
5	KOLAGHAT	WEST BENGAL	WBPDC	1	210	ESP R & M	07-Jun-2018
6	KOLAGHAT	WEST BENGAL	WBPDC	6	210	POOR COAL STOCK	07-Jul-2021
7	SAGARDIGHI	WEST BENGAL	WBPDC	4	500	ANNUAL OVERHAULING	29-Jun-2021
8	NABINAGAR	BIHAR	NPGC	1	660	OIL LEAKAGE IN CONTROL VALVE	12-Jul-2021
9	BANDEL TPS	WEST BENGAL	WBPDC	1	82.5	FURNACE WALL TUBE LEAKAGE	20-Apr-2021
10	BARAUNI TPS	BIHAR	BSPHCL	6	110	ABNORMAL TSI PARAMETER	17-Mar-2021
11	BARAUNI TPS	BIHAR	BSPHCL	9	250	PROBLEM IN GT	17-Jun-2021
12	BOKARO'B'	DVC	DVC	3	210	INITIALLY OUT DUE TO ASH PONDAGE PROBLEM UPTO 31/12/21. LATER OUT DUE TO POLLUTION CLERANCE ISSUE	21-Oct-2020
13	HEL HIRANMAYEE	WEST BENGAL	WBPDC	2	150	HEAVY STEAM LEAKAGE FROM IP-LP TURBINE PARTING PLATE.	06-Jul-2021
14	KOLAGHAT	WEST BENGAL	WBPDC	2	210	ESP & ASH HANDLING & R & M	26-Jun-2021
15	MEJIA TPS	DVC	DVC	2	210	STATOR EARTH FAULT	13-Jul-2021
16	MUZAFFARPUR TPS	BIHAR	BSPHCL	1	110	BOILER TUBE LEAKAGE	08-Jul-2021
17	MUZAFFARPUR TPS	BIHAR	BSPHCL	2	110	EXCITATION TRANSFORMER FAILURE.	03-Jul-2021
18	RTPS	DVC	DVC	1	600	SCANNER FAN AIR PRESSURE LOW	13-Jul-2021
19	TENUGHAT	JHARKHAND	TVNL	1	210	BTL	08-Jul-2021
20	WARIA TPS	DVC	DVC	4	210	FLAME FAILURE	06-Jul-2021

All Generating stations are requested to update expected restoration time and reason outage to ERLDC/ERPC on weekly basis in case of any change at their end.

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

b) Major Generating stations Out on Reserve Shutdown due to low system demand:

S.No	Station	State	Agency	Unit No.	Capacity in Mw	Reason(s)	Outage Date
1	DSTPS	DVC	DVC	1	500	RSD / LOW SYSTEM DEMAND	02-Jul-2021
2	MEJIA TPS	DVC	DVC	1	210	INITIALLY OUT ON FLAME FAILURE LATER ON PUT ON LOW SYSTEM DEMAND FROM 09:30HRS	14-Jun-2021

c) Hydro Unit Outage Report:

Sl. No.	Station	State	Agency	Unit No	Capacity	Reason(s)	Outage
1	BALIMELA HPS	ODISHA	OHPC	1	60	R & M WORK	05-Aug-2016
2	BALIMELA HPS	ODISHA	OHPC	2	60	R & M WORK	20-Nov-2017
3	BURLA HPS/HIRAKUDI	ODISHA	OHPC	5	37.5	R & M WORK	25-Oct-2016
4	BURLA HPS/HIRAKUDI	ODISHA	OHPC	6	37.5	R & M WORK	16-Oct-2015
5	BURLA HPS/HIRAKUDI	ODISHA	OHPC	7	37.5	ANNUAL MAINTENANCE	20-Jan-2020
6	BALIMELA HPS	ODISHA	OHPC	5	60	STATOR EARTH FAULT	13-Dec-2020
7	RENGALI HPS	ODISHA	OHPC	4	50	OIL LEAKAGE IN UPPER GUIDE VANE	20-Jun-2021
8	U.KOLAB	ODISHA	OHPC	2	80	TGB PAD VIBRATION HIGH	19-Mar-2021
9	INDRAVATI	ODISHA	OHPC	1	150	ANNUAL MAINTENANCE	16-Jun-2021

It is seen that about 572.5 MW hydro capacities in Odisha is under forced outage / planned outage and therefore not available for providing the much needed peaking support during evening peak.

SLDC / OHPC may please indicate restoration plan of the units.

d) Long outage report of transmission lines:

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.	220/132 KV 100 MVA ICT 1 AT LALMATIA	FSTPP/JUSNL	22-01-2019	FAILURE OF HV SIDE BREAKER
3.	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.PRESENTLY CHARGED FROM PANDIABILLI END (LOC 156) TO LOC 58
4.	220kV Barauni-Hajipur Ckt-1	BSPTCL	28-09-2019	TOWER COLLAPSE AT LOCATION 38 & 39. CKT-2 IS ON ERS SINCE 13.01.2020.
5.	220/132 KV 100 MVA ICT 3 at Chandil	JUSNL	30-04-2020	ICT BURST AND DAMAGED AFTER FIRE REPORTED
6.	220KV/132 KV 100 MVA ICT 4 AT RANGPO	PGCIL	08-04-2021	HAND TRIPPED AFTER TRIPPING OF ALL 400/220 ICTS AT RANGPO ON 8.4.21 AFTER DISTURBANCE AND THERAFTER DEVELOPED RELAY RESET PROBLEM
7.	400KV/220KV 315 MVA ICT 2 AT Meeramandali	OPTCL	21-02-2021	FIRE HAZARD
8.	400KV/220KV 315 MVA ICT 4 AT JEERAT	WBSETCL	09-04-2021	TRIPPED ON DIFFERENTIAL AND PRD PROTECTION PROTECTION OPTD
9.	220 KV GODDA-LALMATIA D/C	JUSNL	21-04-2021	TOWER COLLAPSED AT LOC. NO. 4
10.	220KV-FSTPP-LALMATIA-1	JUSNL	21-04-2021	THREE TOWER COLLAPSED NEAR LALMATIA
11.	400KV-BINAGURI-TALA-1	PGCIL	04-06-2021	BINAGURI: B-N, FC- 2.035 KA, FD- 174.7 KM; TALA: B-N, FC- 1.12 KA, FD- 85.4 KM; LATER TAKEN EMERGENCY S/D ON 07-06-21 10:07HRS TO ATTEND BURNT MARKS OBSERVED IN THE XLPE

				CABLE TERMINATIONS
12.	400KV-PATNA-KISHANGANJ-2	PGCIL	17-06-2021	1. FOR TERMINATION OF LILO OF 400 KV PATNA-KISAHNGANJ LINE AT LOOP IN AND LOOP OUT POINT 2. DIVERSION OF EXSITING LINE TO NEW FOUNDATION,ERECTION,AND STRINGNING NEAR KANKAI REVER UPTO 30/06/21
13.	400KV-ALIPURDUAR (PG)-PUNATSANGCHUN-2	PGCIL /Bhutan	04-07-2020	VOLTAGE REGULATION
14.	220KV-NEW MELLI-TASHIDING-1	THEP	25-06-2021	CONDUCTOR SNAP AT TOWER NO 22
15.	765KV-ANGUL-JHARSUGUDA-3	PGCIL	04-07-2021	VOLTAGE REGULATION
16.	132KV RANGPO-GANGTOK-1	SIKKIM	09-07-2021	Reconditioning/Retrofitting of damaged Tower No. 79 of 132KV Chuzachen_Phongla Transmission line at Samardung
17.	132KV RANGPO-MELLI-1	SIKKIM	09-07-2021	

Transmission licensees/ Utilities are requested to update expected restoration date & work progress regarding restoration regularly to ERLDC/ERPC on monthly basis by 5th of each month so that status of restoration can be reviewed in OCC. Utilities are also requested to update outage of any elements within their substation premises like isolator/breaker to ERLDC/ERPC regularly. (Reported as per Clause 5.2(e) of IEGC)

ITEM NO. D.4: Commissioning of new units and transmission elements in Eastern Grid in the month of June-2021

The details of new units/transmission elements commissioned in the month of June -2021 based on the inputs received from beneficiaries:

Monthly commissioning List of Transmission element and generators: June 2021					
SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400KV JEERAT - SAGARDIGHI- 2	PGCIL	21/06/21	20:27	LILO of 400 kV Subhasgram - Sagardighi S/C at Jeerat Substation
2	400KV JEERAT - SUBHASGRAM- 2	PGCIL	20/06/21	21:28	
3	132KV SITAMARHI - RUNNISAIDPUR- 2	BSPTCL	17/06/21	13:52	Bay at Sitamarhi end was charged on 11.04.21.
4	132KV SITAMARHI - RUNNISAIDPUR- 1	BSPTCL	17/06/21	13:50	Bay at Sitamarhi end was charged on 11.04.21.
5	400KV BHRAMPUR - BHERAMERA- 3	PGCIL	14/06/21	18:02	Power flow of the line was 280 MW.
6	220KV MAIN BAY OF JAYNAGAR -3 AT JEYPORE	OPTCL	25/06/21	16:53	OPTCL owned bay at PGCIL Jeypore SS
7	220KV MAIN BAY OF JAYNAGAR -4 AT JEYPORE	OPTCL	25/06/21	16:58	OPTCL owned bay at PGCIL Jeypore SS

8	400kV MAIN BAY OF 315MVA ICT-III AT SUBHASGRAM(PG)	PGCIL	27/06/21	16:45	Bay Upgradation Works
9	400kV MAIN BAY OF 315MVA ICT-IV AT SUBHASGRAM(PG)	PGCIL	27/06/21	16:35	Bay Upgradation Works
10	400kV ALIPURDUAR - JIGMELLING 1	PGCIL	22/06/21	12:19	Link is direct circuit besides the alternative circuit through Punatsangchhu.
11	400kV ALIPURDUAR - JIGMELLING 2	PGCIL	18/06/21	18:06	Link is direct circuit besides the alternative circuit through Punatsangchhu.

Members may update.

ITEM NO. D.5: UFR operation during the month of June 2021

Frequency profile for the month as follows:

Month	Max	Min	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
	(Date/Time)	(Date/Time)			
June, 2021	50.27 Hz, 04-06-2021 18:03 Hrs.	49.64 Hz , 03-06-2021 19:48Hrs& 24-06-2021 ,14:22 Hrs	6.10	74.53	19.37

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

Members may note.



ଓଡ଼ିଶା ବିଦ୍ୟୁତ ଶକ୍ତି ସଂଚାରଣ ନିଗମ ଲିଡ.

ODISHA POWER TRANSMISSION CORPORATION LIMITED

(A Government of Odisha Undertaking)

Regd. Office: Janpath: Bhubaneswar

CORPORATE IDENTITY NUMBER (CIN) U40102OR2004GC007553

Telephone: 0674-2541168

Fax:

Connect us Facebook/optcl.odisha - Twitter/optcl_odisha

No. : Dir (O) - *Lead flow study-2/2021-80* Date : *29.06.2021*

To

The Member Secretary,
Eastern Regional Power Committee,
14 Golf Club Road, Tollygung, Kolkatta-700033.

Sub:- Transmission Planning for Intrastate constraints in Odisha System.

Ref:- Your Letter No. ERPC/OPERATION/2021/264 dt. 25.05.2021.

Sir,

Inviting reference to the above OPTCL has conducted an in-house system study for Long Term planning to mitigate the constraints at power evacuation from Budhipadar Grid substation. The brief report on transmission planning for intrastate constraints in Odisha system in Budhipadar command area is enclosed for kind reference.

Yours faithfully,

Encl: As above.

[Signature]
29/6/2021
Director (Operation)

C.C.

1. Director (SLDC) for information.
2. PS to MD OPTCL for kind information of MD.

BRIEF REPORT ON TRANSMISSION PLANNING FOR INTRASTATE CONSTRAINTS IN ODISHA SYSTEM

System study has been conducted to see the power flow in transmission lines in Budhipadar and Tarkera command area during the steady state and in contingency conditions.

Assumptions.

Vedanta export has been shown as 150 MW/ckt & 90 mw/ckt.

Bhushan drawl has been taken as 90 MW.

RSP drawl has been taken as 100 MW.

The flows are tabulated below.

Condition	Bisra-Tarkera	Budhipadar-Tarkera	Vedanta-Budhipadar	Budhipadar-Lapanga	BudhipadarAuto	Bhushan drawl
Base Case	106MW/Ckt	74 MW/Ckt	150 MW/Ckt	155 MW/Ckt	106 MW each	90 MW
Bisra-Tarkera S/C out	188 MW	78 MW/Ckt	150 MW/Ckt	151.8 MW/Ckt	106 MW each	90 MW
Budhipadar-Tarkera S/C out	125 MW/Ckt	90 MW	150 MW/Ckt	171 MW/Ckt	110 MW each	90 MW
Vedanta-Budhipadar S/C out	106 MW/Ckt	73 MW/Ckt	296 MW	155 MW/Ckt	106 MW each	90 MW
Outage of Tarkera-Bonei & Tarkera-Chandiposh	81 MW/Ckt	66.8 MW/Ckt	150 MW/Ckt	160 MW/Ckt	106 MW each	90 MW
Vedanta export 180 MW	117 MW/Ckt	62 MW/Ckt	90 MW/Ckt	130 MW/Ckt	102 Mw each	90 MW
Vedant export 180 MW+Tarkera-Bonei & Tarkera-Chandiposh out	94 MW/Ckt	56 MW/Ckt	90 MW/Ckt	135 MW/Ckt	102 MW each	90 MW
Vedanta export 180 MW+Tarkera-Bonei& Tarkera-Chandiposh	55 MW/Ckt	96 MW/Ckt	90 MW/Ckt	0	145 MW each	90 MW

out+Budhipadar-Lapanga D/C out						
Vedanta-Budhipadar D/C out	135 MW/Ckt	46 MW/Ckt	0	92 MW/Ckt	96 MW each	90 MW
Vedanta-Budhipadar D/C out & Bisra-Tarkera 4 ckts	71.5 MW	42 MW/ckt	0	95 MW/ckt	96 MW each	90 MW

Conclusion

With Unified Vedanta i.e. getting disconnected from Budhipadar and connected through ICT to 400 kV Sterlite, the Bisra-Tarkera 220 kV DC line is loaded 135 MW each thus violating the n-1 criteria.

When Vedanta export is limited to 180 MW, the Budhipadar-Lapanga & Bisra-Tarkera line loading violates n-1 criteria.

As a short term measure when the Bisra-Tarkera Ckt drawl increases beyond thermal limit, Barkote, Bonei and Chandiposh may be disconnected from Tarkera end allowing it to draw from Rengali end thus relieving Bisra-Tarkera line loading.

At present Budhipadar is having one 160 MVA transformer. The second Auto transformer of 160 MVA will be commissioned by the end of Aug'2021.

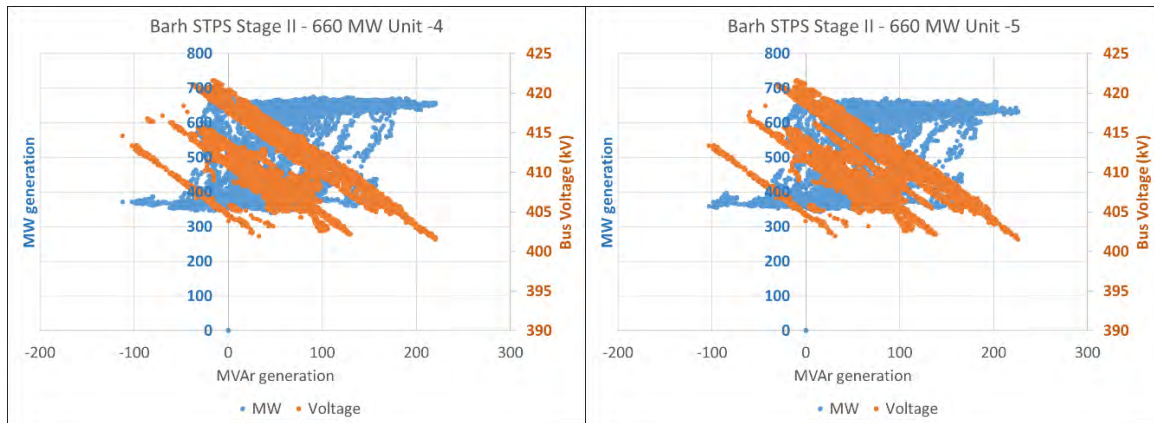
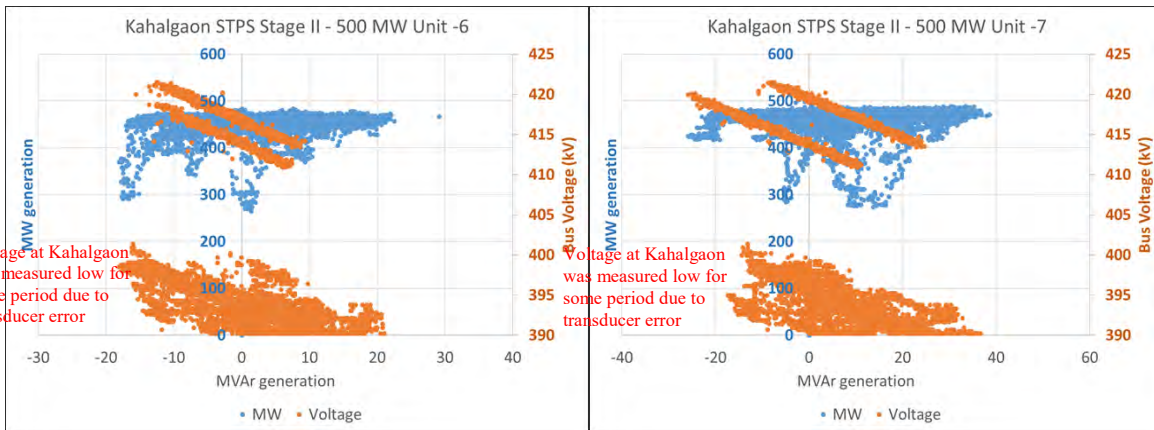
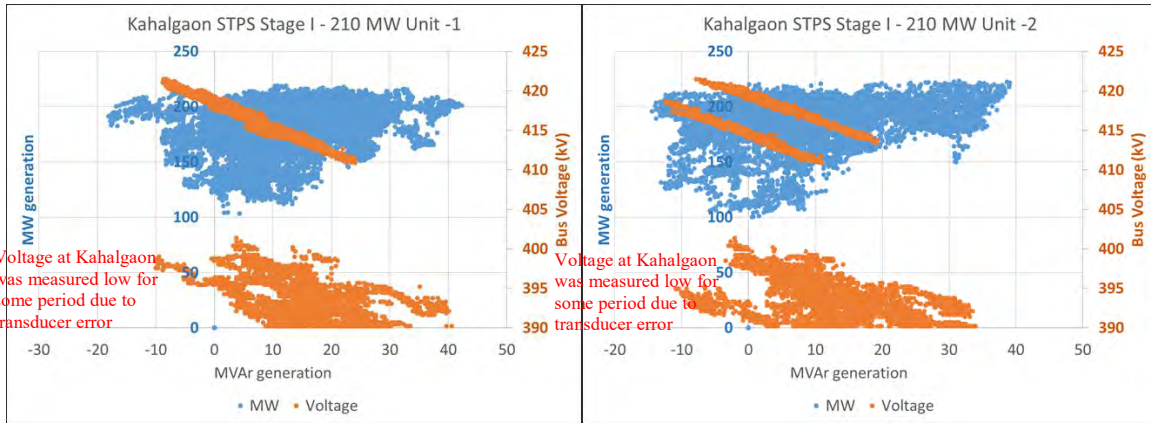
In a futuristic scenario i.e. during 2022-23 condition, the Bisra-Tarkera DC line is loaded 152 MW each. Hence another DC line from Bisra-Tarkera will mitigate the loading condition.

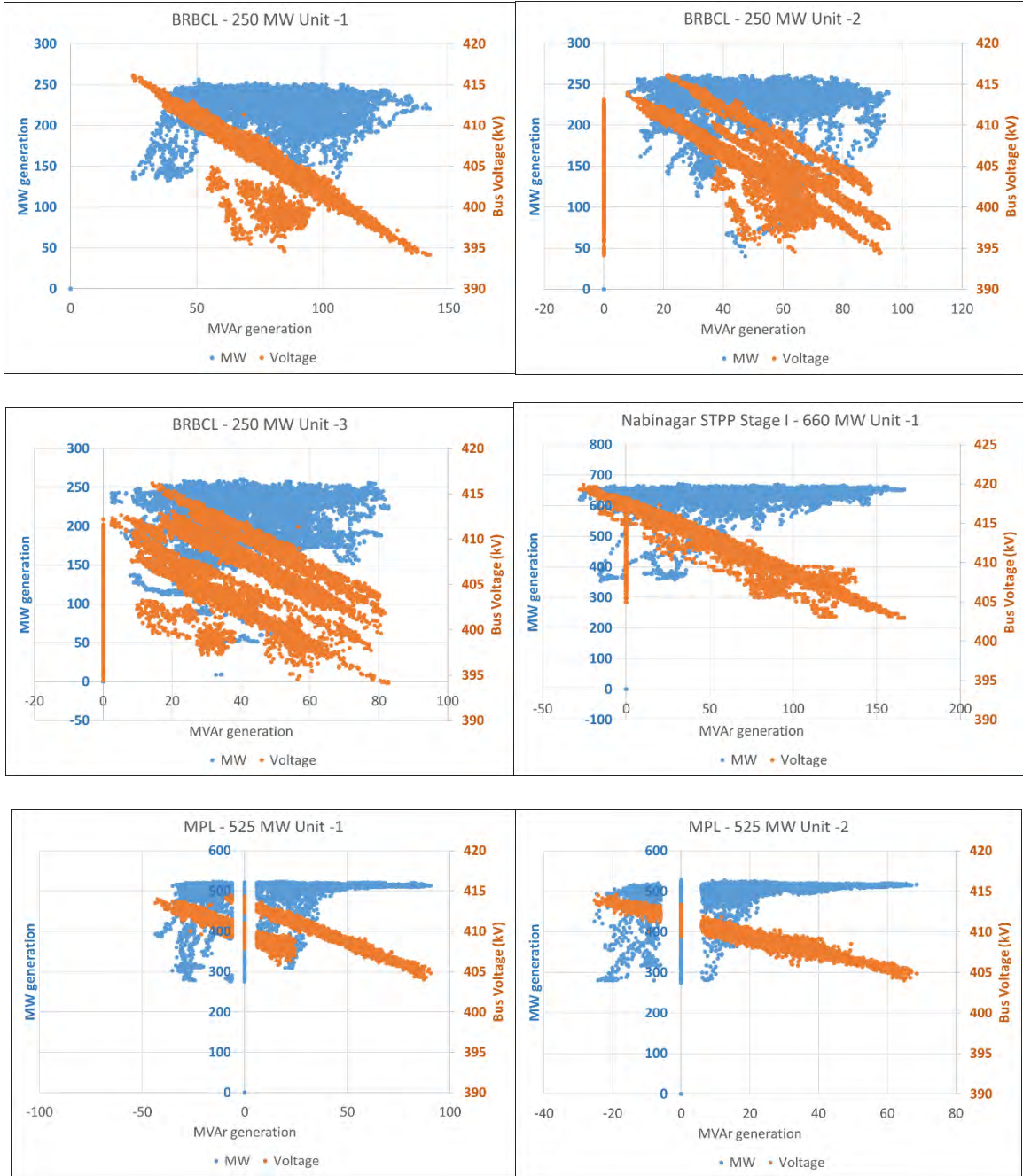
Vedanta will be allowed to be disconnected from Budhipadar thus facilitating unification only when Bisra-Tarkera will be augmented with another DC line. Loading of all the lines emanating from Budhipadar and Tarkera will be n-1 compliant. The preliminary survey for another two Ckts from Bisra to Tarkera has started.

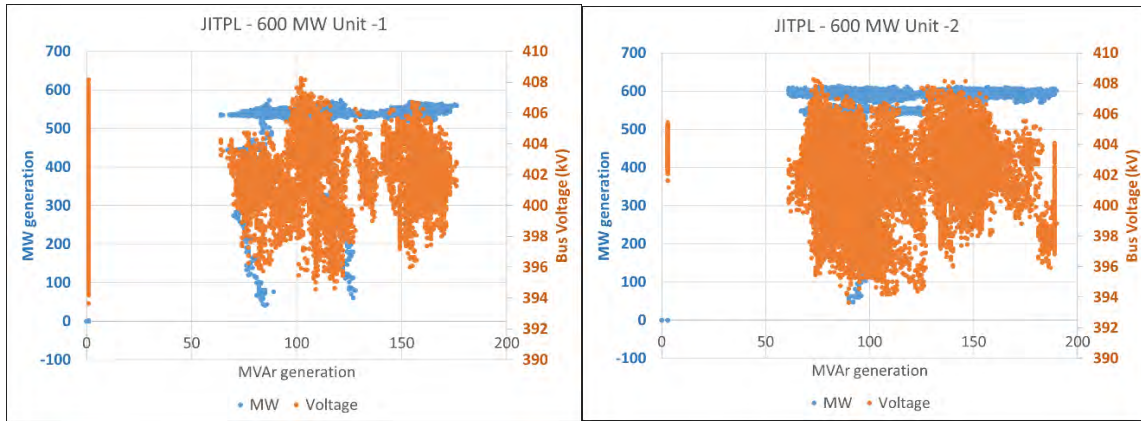
POWER SYSTEM DEVELOPMENT FUND												
Status of the Projects in Eastern Region												
Sl No	State	Entity	Name of the scheme	Grant Approved	Grant sanctioned on	1st Installment grant released on	Completion Schedule	Completion schedule w.r.t date of 1st instalment	Grant aviled so far	Under process of release	Total awards amount of placed of till date	Latest status
1	Bihar	BSPTCL	Renovation and Upgradation of protection system of substations. (18)	64.22	42135	42506	24	43236	56.04		69.195	90% grant availed on award cost.
2			Installation of Capacitor bank in 20 Nos of Grid Sub Station. (74)	18.882	42618	43550	24	44281	16.99		21.55	
			Total	83.10					73.03		90.745	
5	Jharkhand	JUSNL	Renovation & Upgradation of protection system of Jharkhad. (161)	138.13	15-Nov-17	28-Mar-19	16	28-Jul-20	114.68	1.01	145.674	90% grant availed on award cost. Project closure is expected by Q-2 of 2021-22.
6			Reliable Communication & data acquisition system upto 132kV Substations ER. (177)	22.36	24-May-19		24					
			Total	160.49					114.68		145.674	
7	Odisha	OPTCL	Renovation and Upgradation of protection system of substations. (08)	162.50	11-May-15	22-Mar-16	24	22-Mar-18	46.04		63.31	Project Completed on Dec-20. Request for release of final 10 % fund has been placed.
8			Implementation of OPGW based reliable communication at 132 kv and above substations. (128)	25.61	15-Nov-17	29-Mar-19	36	29-Mar-22	23.04		51.22	90% grant availed on award cost.
9			Installation of 125 MVAR Bus Reactor along with construction of associated by each at 400kV Grid S/S of Mendhasal, Meramundali & New Duburi for VAR control & stabilisation of system voltage. (179)	27.23	27-Jul-18	1-Apr-19	18	1-Oct-20	8.17		8.166	30% grant availed
10			Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha. (196)	2.93	24-May-19	19-Feb-20	10	19-Dec-20	0.29		0.29	10% grant availed
11			Protection Upgradation and installation os Substation Automatic System (SAS) for seven nos of 220/132/33kV Substations (Balasore, Bidanasi, Budhipadar, Katapali, Narendrapur, New-Bolangir & Paradeep). (209)	36.63	24-May-19	13-Feb-20	18	13-Aug-21	8.87		8.87	30% grant availed
12		OHPCL	Renovation and Upgradation of protection and control system of OHPC. (109)	22.35	22-May-17	25-May-18	24	25-May-20	14.94		21.25	90% grant availed on award cost.
			Total	277.25					101.35		153.106	
14		WBSETCL	Installation of switchable reactor & shunt capacitor for voltage improvement. (88)	43.37	22-May-17	22-Jun-18	19	22-Jan-20	33.07		40.83	90% grant availed on award cost.
15			Renovation & Modernisation of Transmission System. (87)	70.13	22-May-17	25-Jun-18	25	25-Jul-20	63.12		96.44	
16			Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid. (210)	71.74	24-May-19	23-Oct-19	19	23-May-21	39.3		45.62	30% grant availed on award cost.
17			Project for establishment of reliable communication and data acquisition at different substations at WBSWTCL. (222)	31.19	24-May-19	23-Oct-19	25	23-Nov-21	3.12			Expected to be completed by Jul'22.
18			Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal. (197)	10.08	43910		12					10% grant not yet requested
19		WBPDCL	Renovation and Modernization of 220/ 132 kV STPS switch yard and implementation of Substaion Automation System. (72)	23.48	5-Sep-16	18-May-17	18	18-Nov-18	21.13		32.09	Target date for completion of project is Sept., 21 subject to availability of S/D & Covid scenario. Request for release for final 10% grant has been placed.
21		WBPDCL	Renovation and Modernization of switchyard and related protection system of different power stations (BTPS, BKTPS and KTPS) of WBPDCL (155)	45.16	27-Jul-18	27-Mar-19	12	27-Mar-20	34.52		41.68	Target date for completion of project is Oct., 21 subject to availability of S/D & Covid scenario. 90% grant availed on award cost.
			Total	295.15					194.26		256.661	

POWER SYSTEM DEVELOPMENT FUND												
Status of the Projects in Eastern Region												
Sl No	State	Entity	Name of the scheme	Grant Approved	Grant sanctioned on	1st Installment grant released on	Completion Schedule	Completion schedule w.r.t date of 1st instalment	Grant aviled so far	Under process of release	Total awards amount of placed of till date	Latest status
22			Renovation and Upgradation of the protection and control system of Ramgarh Sub Station. (81)	25.96	2-Jan-17	31-May-17	24	31-May-19	22.95	2.57	28.603	90% grant availed on award cost.
23	DVC	DVC	Renovation and Modernization of control and protection system and replcement of equipment at Parulia, Durgapur, Kalyanewari, Giridhi Jamsedpur, Barjora, Burrupur, Dhanbad and Bundwan substation. (106)	140.50	16-May-17	14-Dec-17	24	14-Dec-19	102.34	3.29	126.87	
			Total	166.46					125.29		155.473	
24	Sikkim	ENPD, Sikkim	Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim. (173)	10.00	24-May-19		18		3.00		20	30% grant availed on award cost
			Total	10.00					3.00		20.00	
26			Creation and Maintenance of web based protection database management. (67)	20.00	17-Mar-16	28-Jun-16	18	28-Dec-17	14.83		16.48	Project Completed
27			Study Programme on power trading at NORD POOL Academy for Power System Engineers of Eastern Region. (122)	5.46	27-Jul-18	27-Mar-19	13	27-Apr-20	4.61		5.37	
28			Traning Program for Power system Engineers of various constituents of Eastern Region. (117)	0.61	27-Jul-18	11-Apr-19	24	11-Apr-21	0.54		0.60888	90% grant availed on award cost.
			Total	26.07					19.98		22.45888	
			Grand Total	1,018.53					631.59		844.12	

MVar injection/absorption by generating units with inadequate reactive power support during 01st July to 12th July 2021







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 फ़ैक्स : 033-24235809/5029 Website: www.erldc.org, Email ID- erldc@posoco.in

Date: 14-07-2020

Report on primary frequency response observed in the generating units of Eastern Region for June 2021 (June 2021 के लिए पूर्वी क्षेत्र के विधुत इकाइयों पर प्राथमिक आवृत्ति प्रतिक्रिया पर रिपोर्ट)

Frequency response characteristics (FRC) have been analyzed pan India for the event of sudden frequency change that occurred in the month of June 2021. The details of these events and the overall response of the Eastern region have been summarized in Table 1.

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

Event	Frequency Change	ER FRC
Event 1: On 11 th June 2021 at 16:02:42:120 Hrs, 1500 MW generation loss at Rajasthan in NR.	50.09 Hz to 49.92 Hz. Later stabilized at 50.00 Hz.	51 %

Analysis of Frequency Events is provided below and covers the following aspects :

1. Non Sharing of **generation end data (generation output in MW and frequency/speed measured at generator end) and FRCs** despite of repeated reminders to generating stations and **SLDCs**. List of regional generating stations/SLDCs from which generation end data/FRC yet to be received is shown in table 2.
2. Based on data received from generating stations & SLDCs and SCADA data archived at ERLDC, regional generating stations and state control areas performance have been analyzed and summarized in table 3. **As per Regulation 30(2)-(ii) of CERC Terms and conditions of Tariff regulation 2019, rate of return of equity is to be reduced by 1% in case of non-availability of RGMO or FGMO at existing generating stations.**
3. Based on data received from generating stations & SLDCs, the performance of state generating stations has been analyzed and summarized in table 4.

Table 2: List of regional generating stations/SLDCs from which generation end data/FRC yet to be received (as per status on 13th July 2021)

1. NTPC Talcher
2. NTPC Darlipalli
3. GMR
4. Bihar SLDC
5. Jharkhand SLDC
6. WB SLDC

Table 3: performance of regional generating stations and state control areas for the events in June - 2021*

Generating Station/ SLDC	Event 1
NTPC Farakka	Satisfactory for Unit 6; Non satisfactory for other units (Response observed Unit 2: 0, Unit 3: 2MW, Unit 4,5: 6 MW)
NTPC Kahalgaon	Satisfactory
NTPC Talcher	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
NTPC Barh	Satisfactory (Around 70% of ideal response)
NTPC Darlipalli	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
BRBCL	Satisfactory for unit 2 & 3. Non-Satisfactory for unit 1.
NPGC Nabinagar	Satisfactory , But response withdrawn within 3 min at rate faster than 1% per min.
GMR	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
JITPL	Non-Satisfactory
MPL	Satisfactory
Adhunik	Non-Satisfactory
Teesta V HEP	Unit was not in service
Teesta III HEP	Satisfactory
Dikchu HEP	Unit under spillage condition. No margin was available.
Bihar SLDC	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
Jharkhand SLDC	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)
DVC SLDC	Satisfactory
GRIDCO SLDC	Non-Satisfactory
WB SLDC	Non-Satisfactory (As per FRC calculated based on ERLDC SCADA data)

*Response of the generating stations are shown in Annexure 1

Table 4: performance of state generating stations for the events in June - 2021 (Based on data received from SLDC/generating stations) **

Generating Station	Event 1
Koderma	Satisfactory
RTPS	Non-satisfactory
DSTPS (Andal)	Satisfactory
Mejia B	Satisfactory
Mejia	Satisfactory
Bokaro A	Non-satisfactory (Around 60 % of Ideal response)
HEL	Satisfactory (Around 70% of ideal response)
BBGS	Satisfactory for unit 1 & 2, Unsatisfactory for unit 3 , it was informed that due to poor quality sufficient pressure could not be maintained.

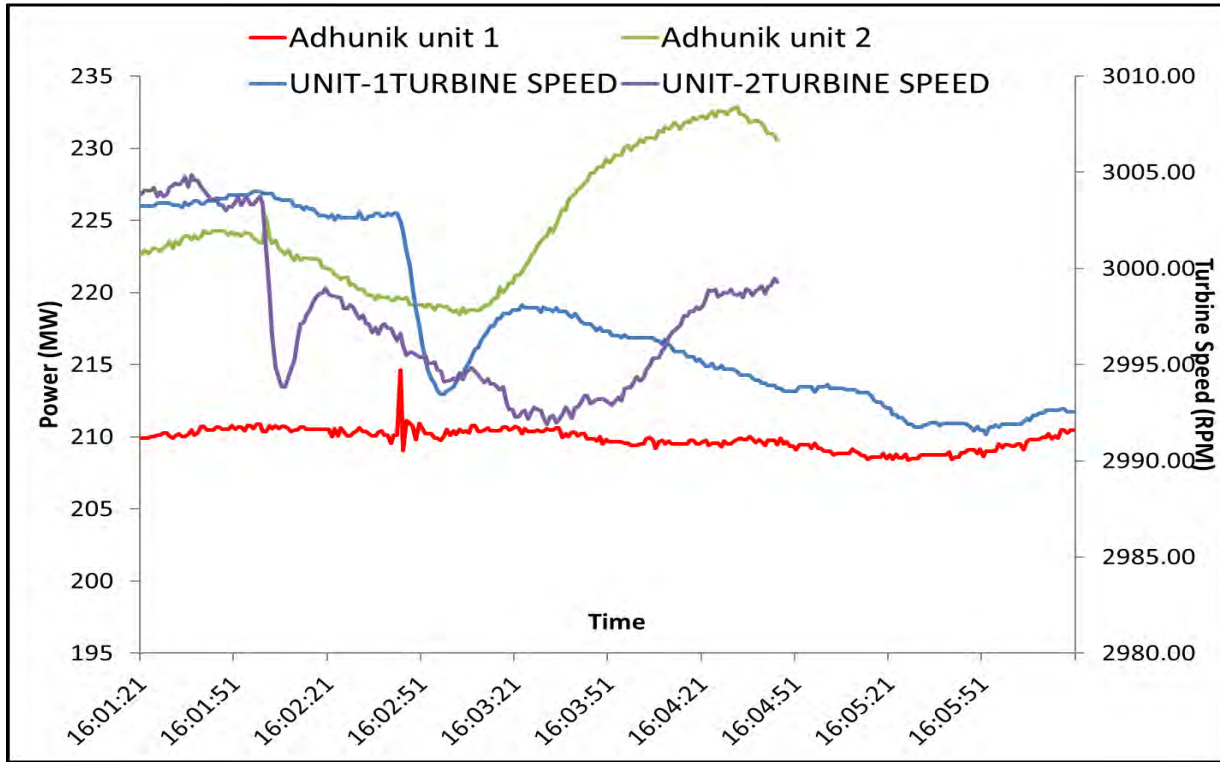
**Response of these generating stations are shown in Annexure 2

Remarks on the governor response observed at generating stations:

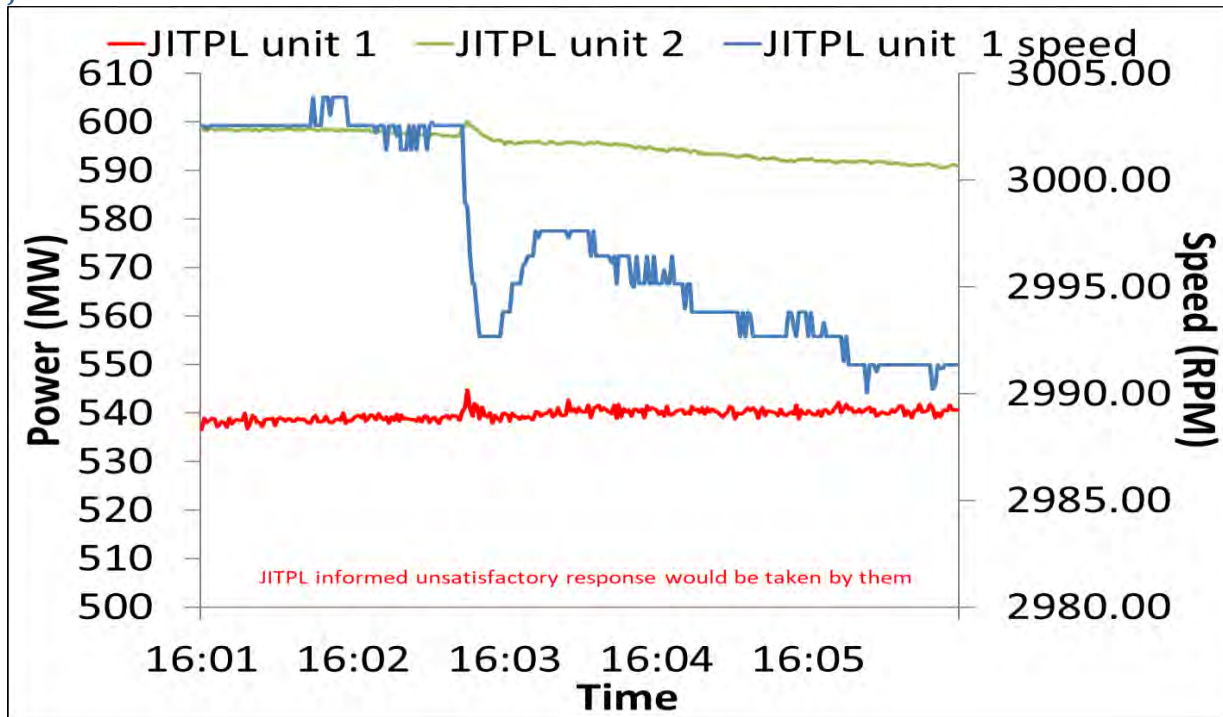
- **NTPC Farakka:** Governor may be tuned so that response can be sustained for at least 3-5 minutes.
- **NTPC Barh:** Governor may be tuned so that amount of response can be increased and response can be sustained for at least 3-5 minutes.
- **BRBCL:** Governor may be tuned for unit 2 & 3 so that response can be sustained for at least 3-5 minutes.
- **NPGC Nabinagar:** Governor may be tuned so that response can be sustained for at least 3-5 minutes. In case of withdrawal of response, generation should be reduced to pre disturbance level at rate less than 1% per min.
- **HEL:** Governor may be tuned so that amount of response can be increased and response can be sustained for at least 3-5 minutes.
- **Mejia B, DSTPS and Koderma:** Governor may be tuned so that amount of response can be increased and response can be sustained for at least 3-5 minutes.

Annexure 1: Variation of generation of regional generating units during frequency change

Adhunik



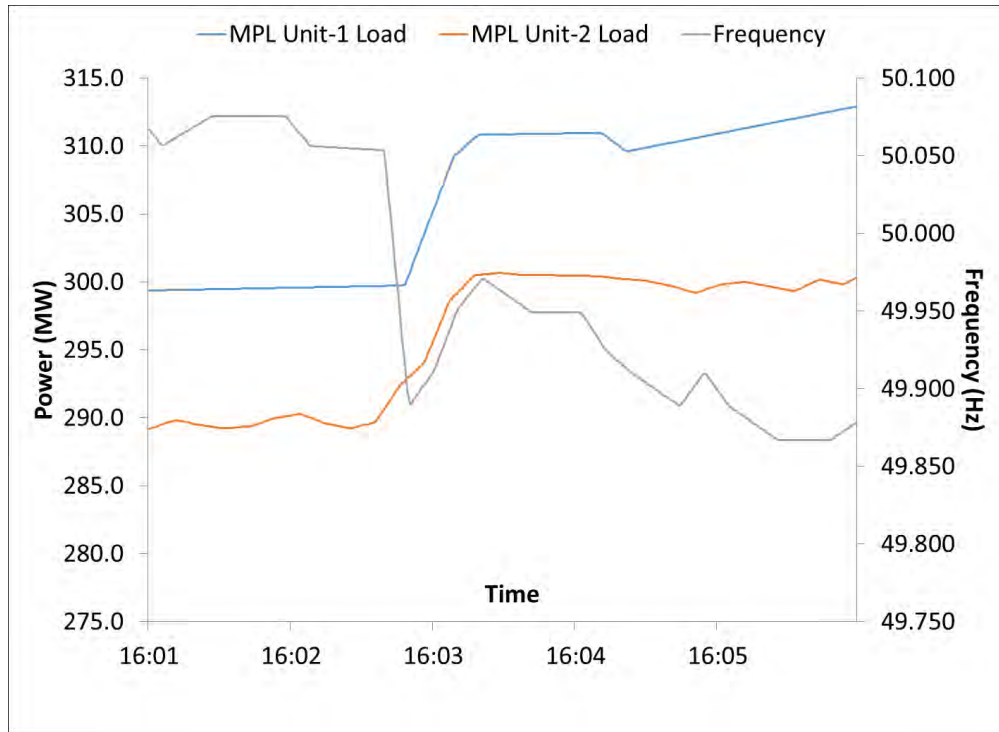
JITPL



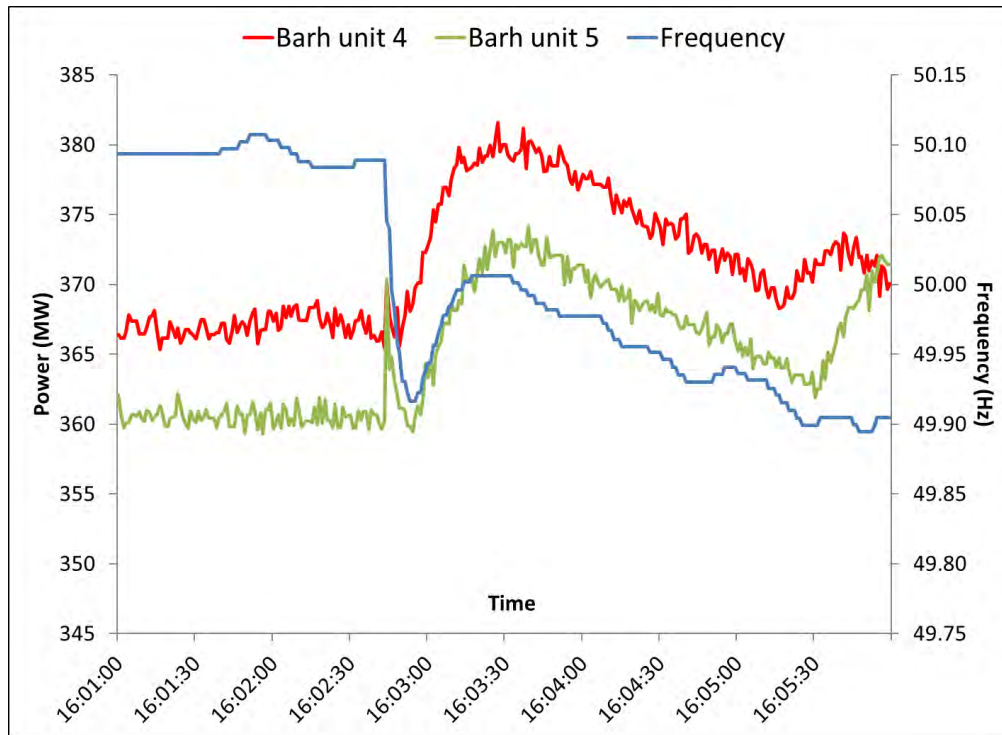
NTPC Farakka



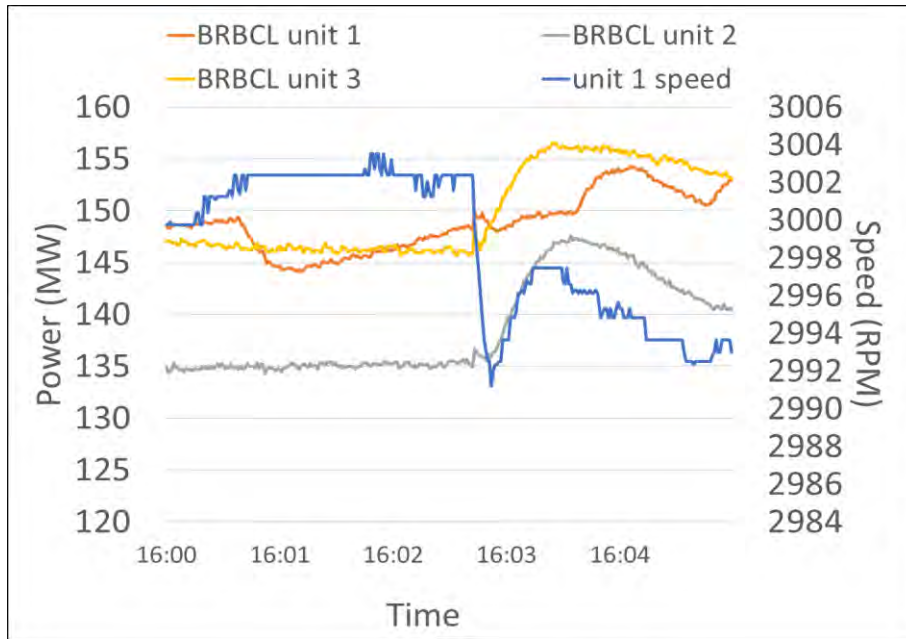
MPL



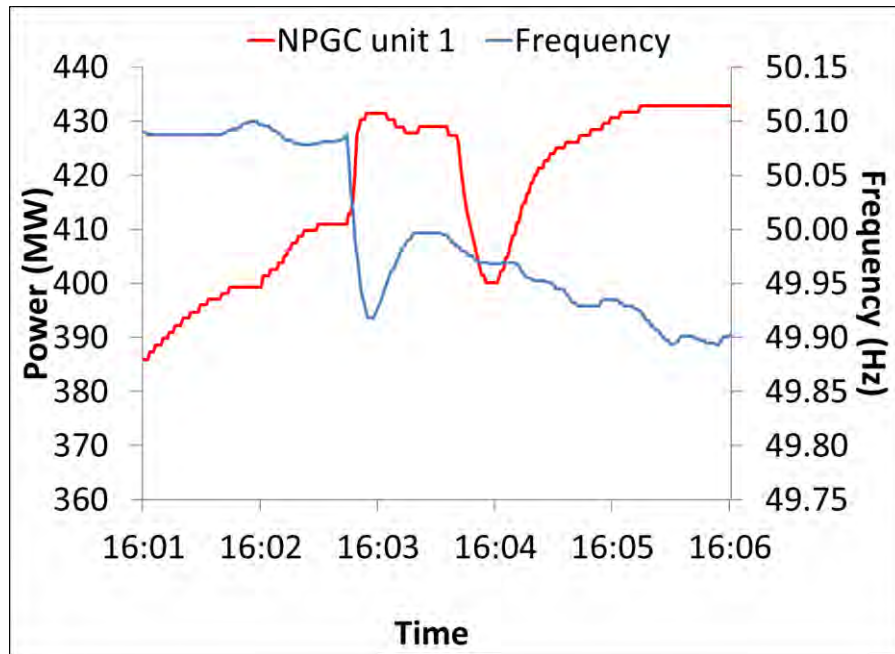
NTPC Barh



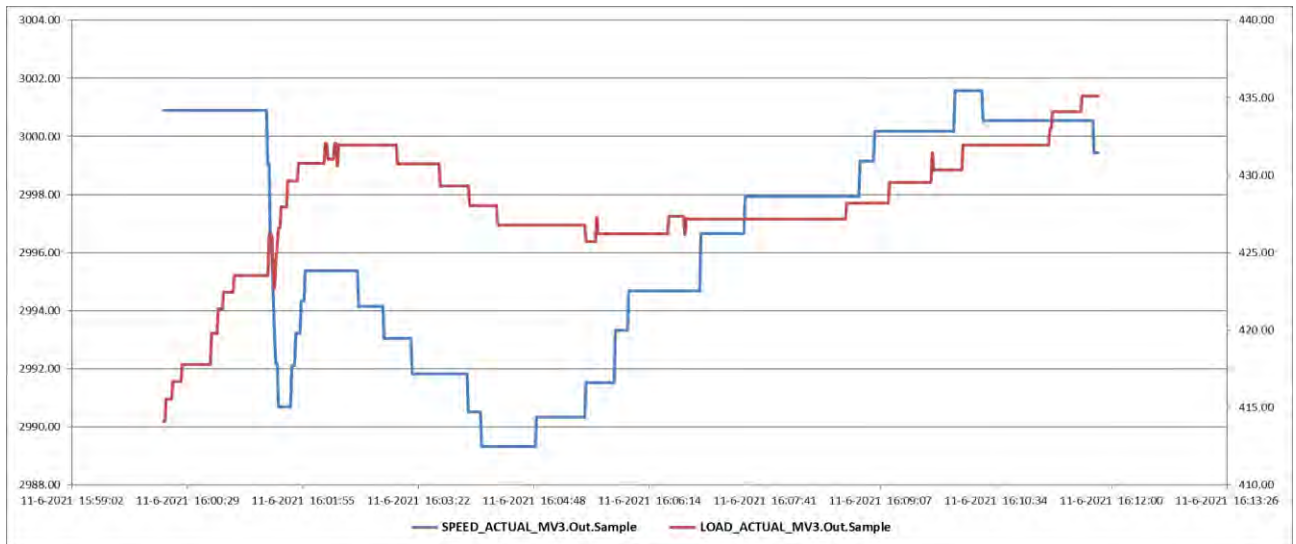
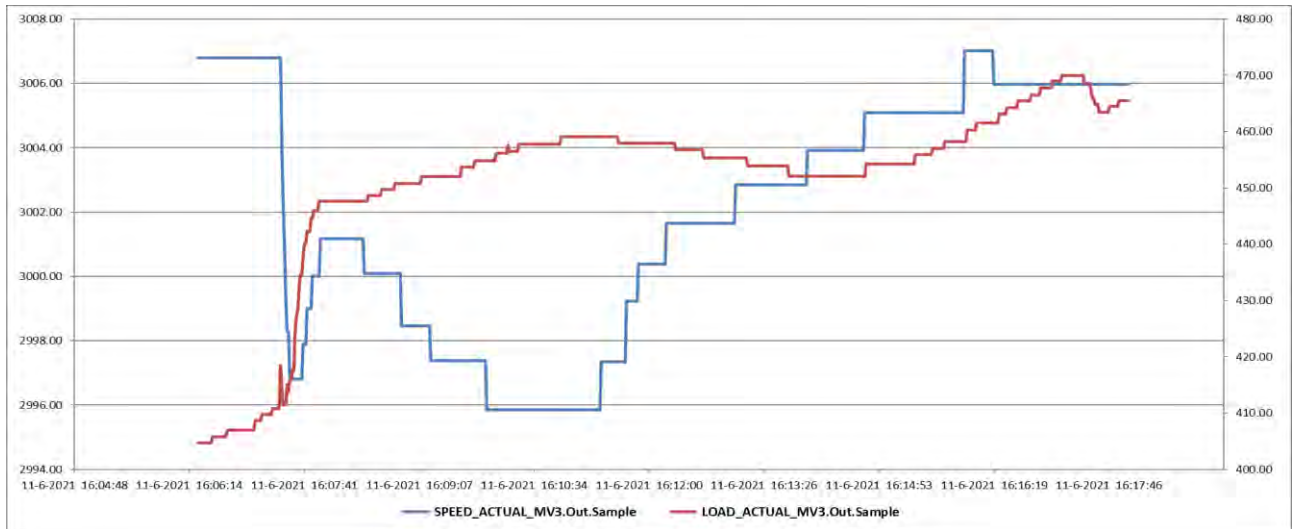
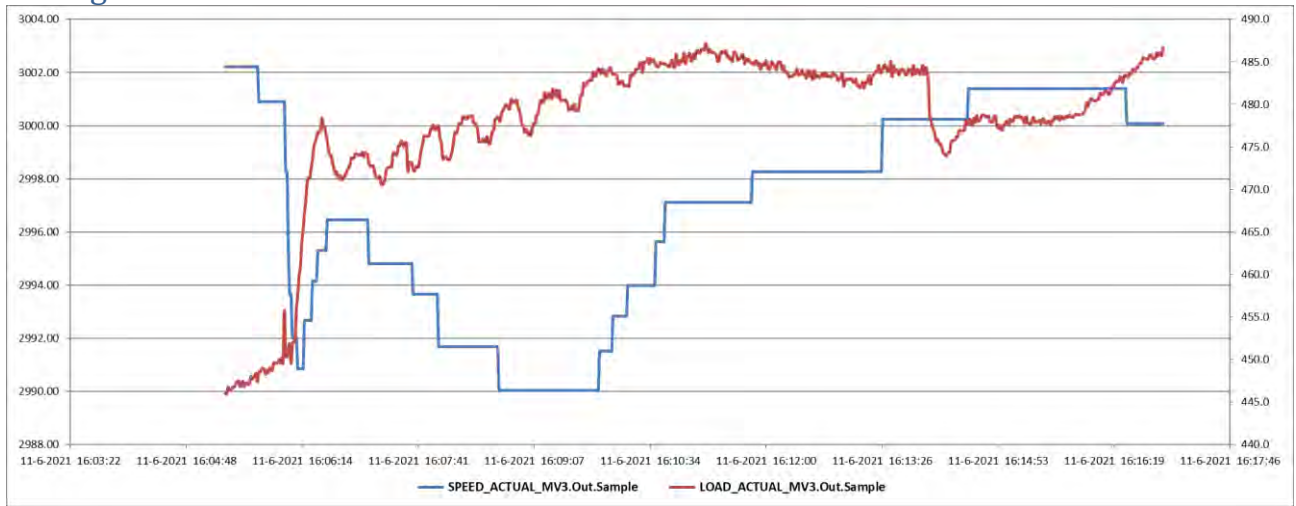
BRBCL



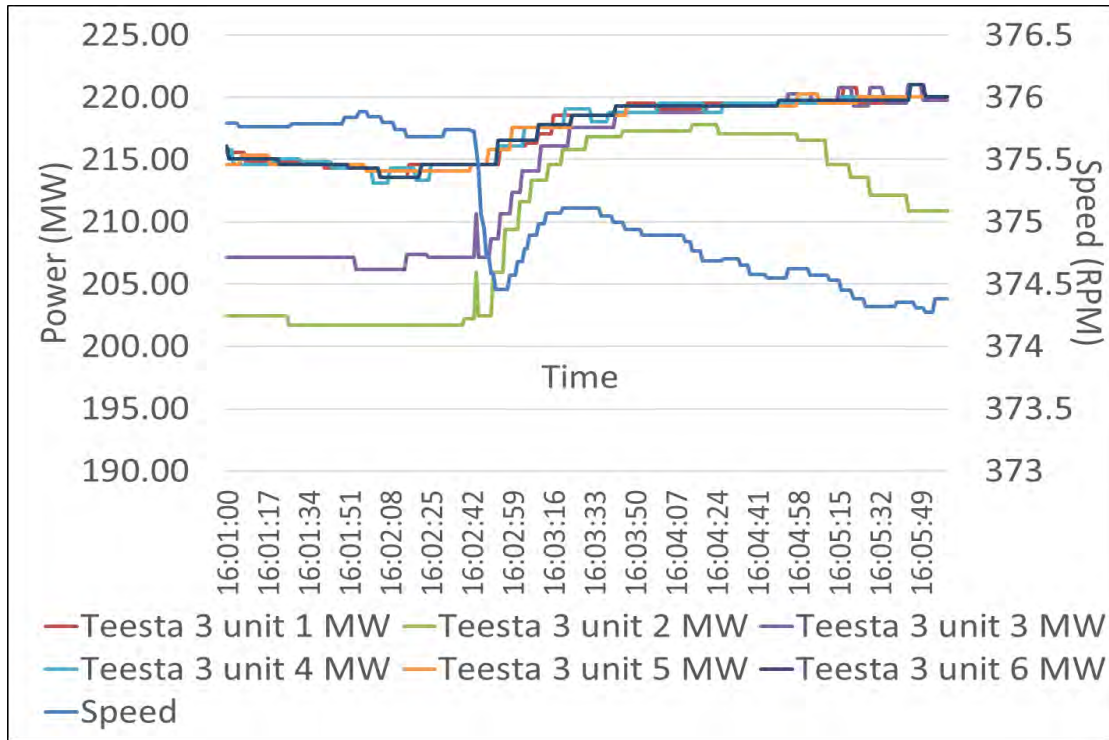
NPGC



Kahalgao:

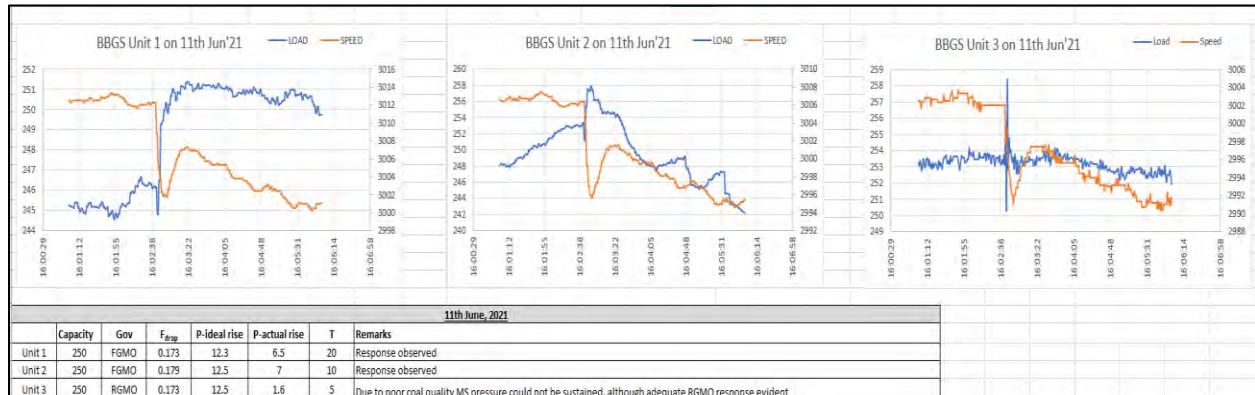


Teesta III:

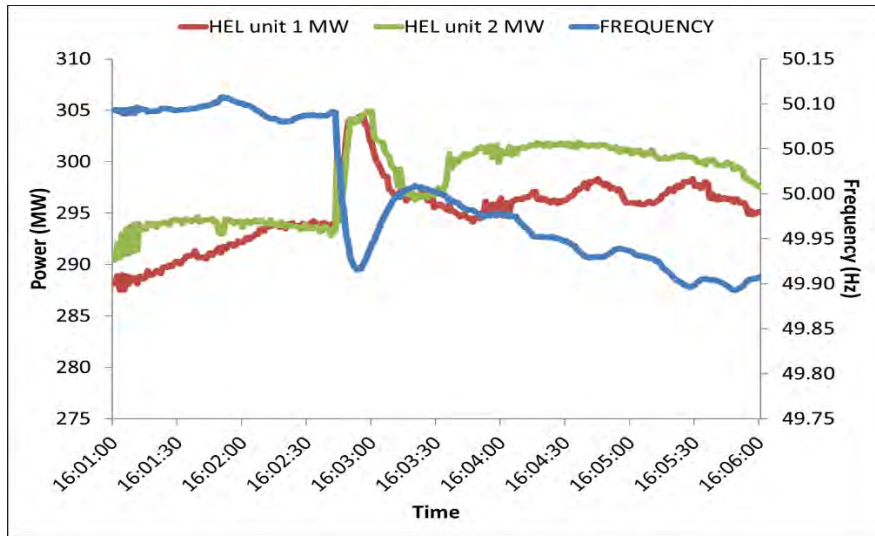


Annexure 2: Variation of generation of state generating units during frequency change

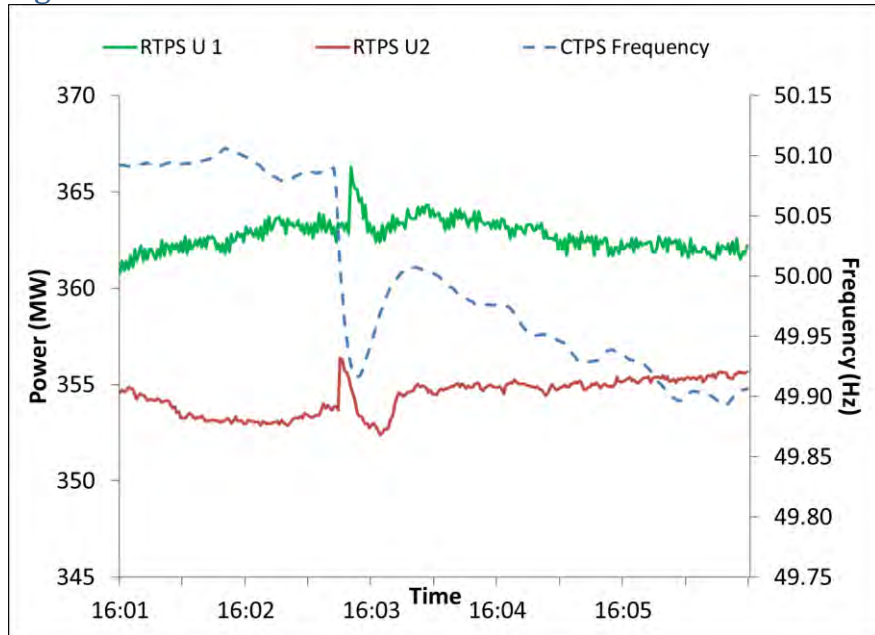
BBGS:

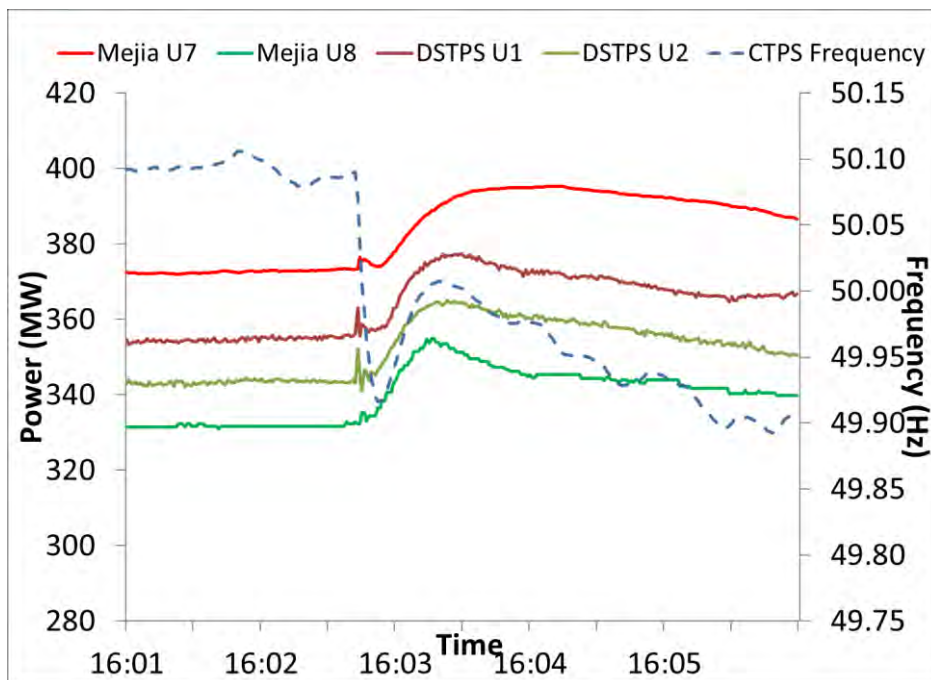
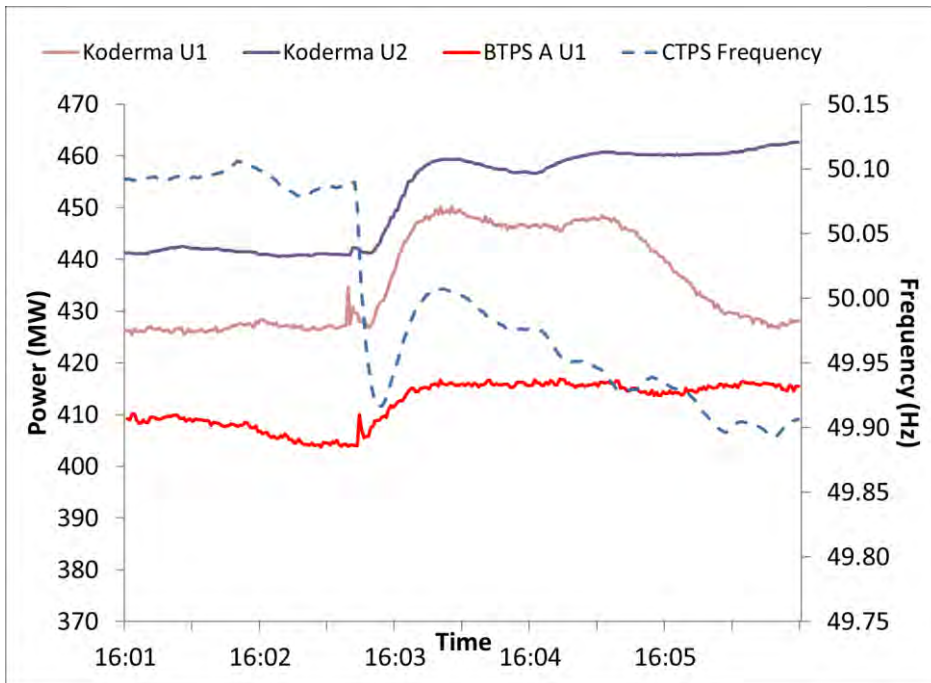


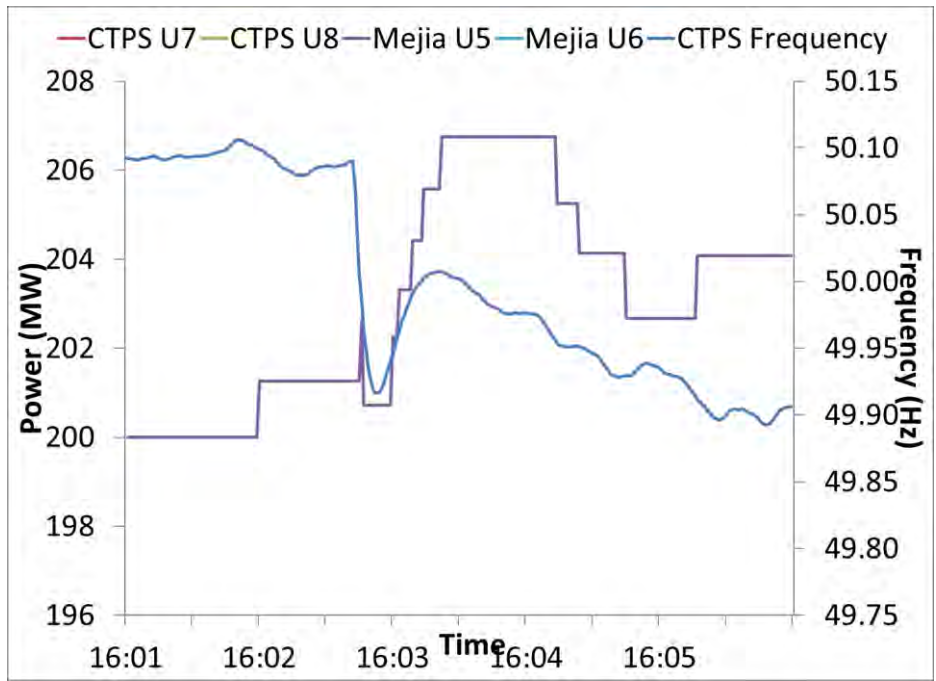
HEL:



DVC generating units:







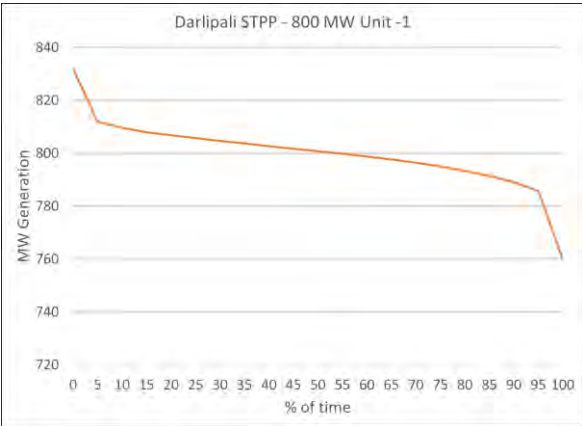
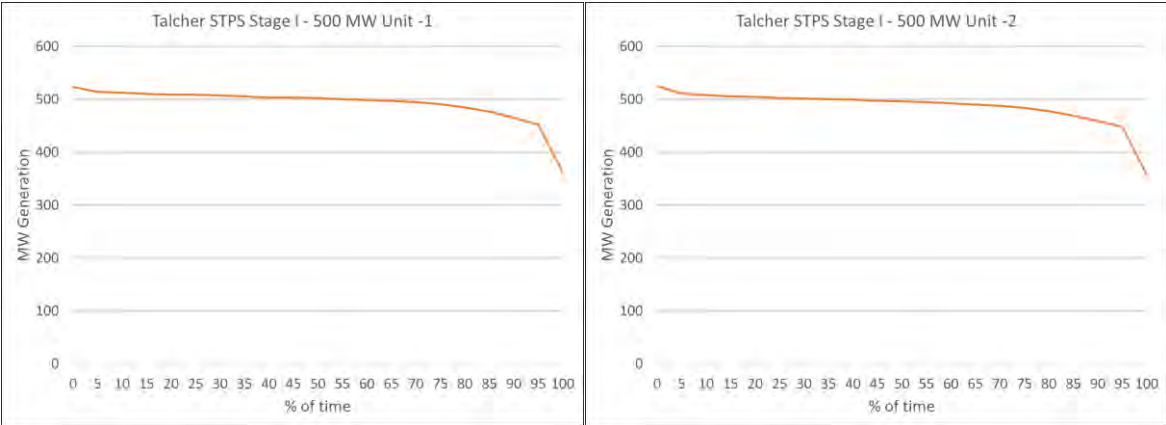
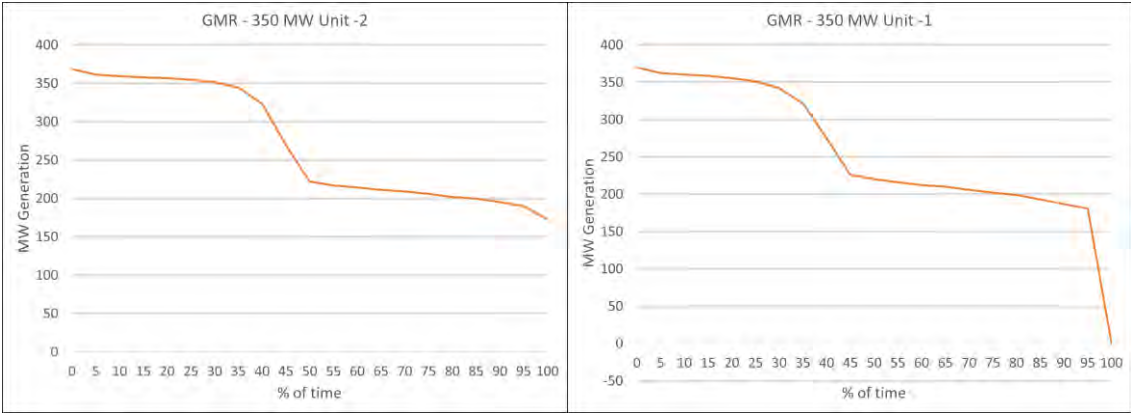
Annexure 3: FRC shared by DVC SLDC

Frequency Response Characteristic Calculation in Eastern Region			
On 11th June 2021 at 16:02:42:120 hrs, RE generation loss of around 1500 MW occurred at AKAL & Jaisalmir S/S. It led to the frequency drop from 50.09 Hz to 49.92 Hz at nadir point			
S No	Particulars	Dimension	DVC Interchange
1	Actual Net Interchange before the Event (16:02:50)	MW	-1664
2	Actual Net Interchange before the Event (16:04:00)	MW	-1831
3	Change in Net Interchange (2 - 1)	MW	-166.9
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0
5	Control Area Response (3 - 4)	MW	-166.9
6	Frequency before the Event	HZ	50.05
7	Frequency after the Event	HZ	49.96
8a	Change in Frequency (7 - 6)	HZ	-0.099
8	Effective change in Frequency considering RGMO *	HZ	-0.099
9	Frequency Response Characteristic (5 / 8)	MW/HZ	1692
10	Net System Demand met before the Event	MW	2653
11	Internal Generation before the Event (10 - 1)	MW	4317
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	106.1
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	1727.0
14	Composite ideal response (12 + 13)	MW/Hz	1833.1
15	Percentage of ideal response {(9/14)x100}	%	92.3%
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 4: FRC shared by GRIDCO SLDC

Frequency Response Characteristic Calculation in GRIDCO control			
On 11th June 2021 at 16:02:42:120 hrs, RE generation loss of around 1500 MW occurred at AKAL & Jaisalmir S/S. It led to the frequency drop from 50.09 Hz to 49.92 Hz at nadir point. Later it stabilized at 50.00 Hz.			
S No	Particulars	Dimension	GRIDCO Interchange
1	Actual Net Interchange before the Event (16:02:42)	MW	1675
2	Actual Net Interchange after the Event (16:03:12)	MW	1632
3	Change in Net Interchange (2 - 1)	MW	-42.9
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0
5	Control Area Response (3 - 4)	MW	-42.9
6	Frequency before the Event	HZ	50.09
7	Frequency after the Event	HZ	50.00
8a	Change in Frequency (7 - 6)	HZ	-0.091
8	Effective change in Frequency considering RGMO *	HZ	-0.091
9	Frequency Response Characteristic (5 / 8)	MW/HZ	469
10	Net System Demand met before the Event	MW	4124
11	Internal Generation before the Event (10 - 1)	MW	2449
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	165.0
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	979.7
14	Composite ideal response (12 + 13)	MW/Hz	1144.6
15	Percentage of ideal response {(9/14)x100}	%	41.0%

Generation duration curve of thermal generating units with injection more than MCR during 01st July to 12th July 2021



Date of PFR testing scheduled /completed for generating stations in
ER

Sr. No	Station	Generating Unit	Test schedule	Remarks
1	TALCHER STAGE 2	3	Unit 3 - 5: 23-11-2020 to 28-11-2020	Testing for unit 6 yet to be conducted
2		4		
3		5		
4		6		
5	Farakka	2	01-02-2021 to 10-01-2021	Testing completed
6		3		
7		4		
8		5		
9		6		
10	Kahalgaon	1	23-02-2021 to 02-03-2021	Scheduled
11		5		
12		6		
13		7		
14	Barh	4	18-02-2021 to 21-02-2021	Scheduled
15		5		
16	Teesta V	1	07-01-2021 - 08-01-2021	Testing completed
17	Teesta III	1	30-01-2021 - 10-02-2021	Testing completed
18		2		
19		3		
20		4		
21		5		
22		6		
23	Dikchu	1	Unit#1: 6th & 7th April' 21 Unit#2: 8th & 9th April' 21	Scheduled
24		2		
25	MPL	1		Scheduled
26		2		
27	GMR	1	August'21	Scheduled
28		2		
29		3		
30	JITPL	1	August'21	Scheduled
31		2		
32		3		

Power Plant	Unit No	PSS tuned (Yes/No)	PSS in Service (Yes/No)	Last PSS Tuning Date	Whether Done in Last 3 Years	Whether Next to be planned	Planned Next PSS Tuning
West Bengal							
Kolaghat-WBPDCL	1	No	Yes	Long Back	No	Yes	Under retirement
Kolaghat-WBPDCL	2	No	Yes	Long Back	No	Yes	Under retirement
Kolaghat-WBPDCL	3	No	Yes	Long Back	No	Yes	When Unit will be on Bar
Sagardighi-WBPDCL	2	No	No	Long Back	No	Yes	When Unit will be on Bar
Bakreshwar-WBPDCL	2	Yes	Yes	2019	Yes	Yes	Retuning to be done as from plot response is not good
Bakreshwar-WBPDCL	3	Yes	Yes	2019	Yes	Yes	Retuning to be done as from plot response is not good
Bakreshwar-WBPDCL	4	Yes	Yes	2019	Yes	Yes	Retuning to be done as from plot response is not good
Bakreshwar-WBPDCL	5	Yes	Yes	2019	Yes	Yes	Retuning to be done as from plot response is not good
DPL	7	No	No	N.A	No	Yes	Planned in March 2021
DPL	8	No	Yes	No	No Detail	Yes	To be updated by WBPDCL/DPL
PPSP	1	No	Yes	2009	No	Yes	To be updated by WBSEDCL
PPSP	2	No	Yes	2009	No	Yes	To be updated by WBSEDCL
PPSP	3	No	Yes	2009	No	Yes	To be updated by WBSEDCL
PPSP	4	No	Yes	2009	No	Yes	To be updated by WBSEDCL
TLDP III	4 x 33			No Detail	No Detail	Yes	To be updated by WBSEDCL
TLDP IV	4 X 44			No Detail	No Detail	Yes	To be updated by WBSEDCL
CESC							
Budge Budge-CESC	1	Yes	Yes	2015	No	Yes	2021-22
Budge Budge-CESC	2	Yes	Yes	2015	No	Yes	2021-22
DVC							
Bokaro B 210 MW	3				No Detail	Yes	Unit Is out of Service
Mejia-DVC	4	Yes	Yes	2009	No	Yes	Jun-21
Raghunathpur-DVC	1	No	No		No Detail	Yes	Will be done after AOH
Raghunathpur-DVC	2	No	No		No Detail	Yes	Jun-21
Koderma-DVC	1	Yes	Yes	2013	No	Yes	Sep-21
Waria	4	Yes	Yes	2008	No	Yes	Unit Is out of Service
ISGS							
Kahalgaon NTPC	1	Yes	Yes	2017	Yes	Yes	Apr-21
Kahalgaon NTPC	2	Yes	Yes	2018	Yes	Yes	April 2021 (During AOH)
Kahalgaon NTPC	3	Yes	Yes	2016	Yes	Yes	Jul-21
Kahalgaon NTPC	4	Yes	Yes	2015	No	Yes	Mar-21
Kahalgaon NTPC	6	Yes	Yes	2009	No	Yes	Mar-21
Talcher Stage 2	3	Yes	Yes	2016	Yes	Yes	July 2021 (As per SRPC decision)

Talcher Stage 2	4	Yes	Yes	No Details	No Details	Yes	July 2021 (As per SRPC decision)
Talcher Stage 2	5	Yes	Yes	No Details	No Details	Yes	July 2021 (As per SRPC decision)
Talcher Stage 2	6	Yes	Yes	2016	Yes	Yes	July 2021 (As per SRPC decision)
Barh NTPC	4			2015		Yes	In Next AOH
Barh NTPC	5			During Unit commissioning		Yes	June 2021 (AOH)
Teesta V	1	Yes	Yes	2008	No	Yes	Jun-21
Teesta V	2	Yes	Yes	2008	No	Yes	Jun-21
Teesta V	3	Yes	Yes	2008	No	Yes	Jun-21
BRBCL	1	No	Yes	Vendor to Do	No	Yes	Jun-21
BRBCL	2	Yes	Yes	2019	Yes	Yes	Jun-21
BRBCL	3	No	Yes	Vendor to Do	No	Yes	Jun-21
KBUNL	1	Yes	Yes	2014	No	Yes	2021-22
KBUNL	2	Yes	Yes	2014	No	Yes	2021-22
KBUNL	3	Yes	Yes	Not Available	No	Yes	2021-22
KBUNL	4	Yes	Yes	Not Available	No	Yes	2021-22
Rangit	3 x 20			Not Available	No	Yes	To be updated by NHPC
IPP							
Jorethang	1	Yes	Yes	2015	No	Yes	Apr-21
Jorethang	2	Yes	Yes	2015	No	Yes	Apr-21
ADHUNIK	1	Yes	YES	2013	No	Yes	Mar-21
ADHUNIK	2	Yes	YES	2013	No	Yes	Mar-21
JITPL	1	Yes	Yes	2016	Yes	Yes	Jul-21
JITPL	2	Yes	Yes	2016	Yes	Yes	Jul-21
GMR	1	Yes	Yes	2013	No	Yes	May-21
GMR	2	Yes	Yes	2013	No	Yes	May-21
GMR	3	Yes	Yes	2013	No	Yes	May-21
Orissa							
IB TPS	1	Yes	Yes	2011	No	Yes	Mar'2021
IB TPS	2	Yes	Yes	2012	No	Yes	Mar'2021
Upper Indravati	1	Yes	No	2015	No	Yes	To be updated by OHPC
Upper Indravati	2	Yes	No	2015	No	Yes	To be updated by OHPC
Upper Indravati	3	Yes	No	2000	No	Yes	To be updated by OHPC
Upper Indravati	4	Yes	No	2001	No	Yes	To be updated by OHPC
Balimela	1 (60 MW)			No detail		Yes	To be updated by OHPC
Balimela	2 (60 MW)			No detail		Yes	To be updated by OHPC
Balimela	3 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	4 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	5 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	6 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	7 (75 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC

Balimela	8 (75 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Upper Kolab	1	Yes	Yes	2007	No	Yes	To be updated by OHPC
Upper Kolab	2	Yes	Yes	2007	No	Yes	To be updated by OHPC
Upper Kolab	3	Yes	Yes	2007	No	Yes	To be updated by OHPC
Upper Kolab	4	Yes	Yes	2007	No	Yes	To be updated by OHPC
Rengali	1	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	2	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	3	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	4	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	5	No	Yes	Not tuned	No	Yes	To be updated by OHPC
Sterlite	4 X 600			No detail		Yes	To be updated by SLDC Orissa
Jharkhand							
Tenughat	1	Yes	Yes	2017	Yes	Yes	No report has been submitted. So tuning to be planned
Tenughat	2	Yes	Yes	2017	Yes	Yes	No report has been submitted. So tuning to be planned
Subarnrekha	2 X 65					Yes	To be updated
Bihar							
BTPS	6 (110)					Yes	To be updated by BSPGCL
BTPS	7 (110)					Yes	To be updated by BSPGCL
BTPS	8					Yes	To be updated by BSPGCL
BTPS	9					Yes	To be updated by BSPGCL
Bhutan							
Tala	1	No	Yes			Yes	To be updated by BPC
Tala	2	No	Yes			Yes	To be updated by BPC
Tala	3	No	Yes			Yes	To be updated by BPC
Tala	4	No	Yes			Yes	To be updated by BPC
Tala	5	No	Yes			Yes	To be updated by BPC
Tala	6	No	Yes			Yes	To be updated by BPC
Chukha	1	No	Yes	2005	No	Yes	To be updated by BPC
Chukha	2	No	Yes	2005	No	Yes	To be updated by BPC
Chukha	3	No	Yes	2005	No	Yes	To be updated by BPC
Chukha	4	No	Yes	2005	No	Yes	To be updated by BPC
Mangdechu	1	No	Yes			Yes	To be updated by BPC
Mangdechu	2	No	Yes			Yes	To be updated by BPC
Mangdechu	3	No	Yes			Yes	To be updated by BPC
Mangdechu	4	No	Yes			Yes	To be updated by BPC

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A Govt. of India Enterprise)



केन्द्रीय कार्यालय : 61, आई एफ सी आई टावर, 8 एवं 9वीं मंजिल, नेहरू प्लेस, नई दिल्ली - 110019
Corporate Office : 61, IFCI Tower, 8 & 9th Floor, Nehru Place, New Delhi - 110019
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 40234672

संदर्भ/Ref: पोसोको/आरपीओ POSOCO/RPO/

दिनांक/Date: 02.06.2021

सेवा मे/To,

To

As per distribution list

विषय/Subject: Request for details regarding Compliance of Renewable Purchase Obligation (RPO)

Sir,

This is for your kind information that Ministry of Power (MoP), Govt. of India vide order dated 29.01.2021 (copy enclosed), notified RPO Trajectory till FY 2021-22, which includes long term trajectory for Hydro Power Obligation (HPO) also. In addition, Para No. (17) of MoP Order dated 29.01.2021, stipulates POSOCO to maintain data related to compliance of RPOs. The matter of monitoring of RPO compliance has taken a high priority and regularly monitored by the MoP and MNRE.

As you are aware the Obligated entities for RPO compliance are Distribution Licensees, Open Access Consumers, Captive Power Plants etc. are intra-State entities. As per Electricity Act 2003, State Load Despatch Centres are the Apex body for ensuring integrated grid operation within the State and have the statutory responsibility for keeping energy account in regard to intra-State entities.

Therefore, in order to facilitate compilation of details related to RPO compliance, it is hereby requested to advise the concerned officers in your SLDCs to provide the following details pertaining to RPO Compliance:

- List of Obligated Entities viz.
 - Distribution Licensees (DISCOMs)
 - Open Access (OA) consumers
 - Captive Power Plant (CPP)
 - Any other consumer opting for both OA & CPP and it is not covered above
- Energy Consumption details (with breakup of own generation, central sector scheduled requisition, import and export from other states) of aforementioned Obligated Entities viz.
 - Total Energy Consumption (MU)
 - Energy Consumption (MU) using large hydro projects (Capacity above 25MW and commissioned before 08.03.2019)
 - Energy Consumption (MU) using solar projects
 - Energy Consumption (MU) using non-solar projects including Small Hydro

-2/--

- Energy Consumption (MU) using large hydro projects (Capacity above 25MW and commissioned after 08.03.2019)

It is requested to advise the concerned to provide the RPO compliance status of Obligated Entities for complete FY 2020-21 at the earliest, in the enclosed format (this is in line with the format exercised by MNRE presently except for minor modification in line with MoP order dated 29.01.2021 to include HPO).

Along with the aforementioned details, please advise the concerned to timely (within one month from the end of quarter) provide the quarterly RPO compliance status of Obligated Entities for FY 2021-22 to following nodal persons from POSOCO for RPO compliance monitoring in an effective manner and onward submission of information to MOP and MNRE.

The Energy Consumption details and RPO compliance status is to be sent to following nodal persons from POSOCO:

- Shri Manas Das, Chief Manager, ERLDC (Email: manasdas@posoco.in, Mob.: 09007070925)
- Shri Kailash Chand Saini, Chief Manager, NLDC (Email: kcsaini@posoco.in, Mob:08800690951)

We request your kind co-operation and this regard and once again request to advise the concerned for timely submission of RPO compliance report.

This is for kind information and perusal, please.

सादर धन्यवाद / Thanking you,

भवदीय / Yours faithfully



(मीनाक्षी गर्ग / Minaxi Garg)

Executive Director (RE, CP, C&M), CC, POSOCO

संलग्न/ Enclosed: उपरोक्त / As above

Copy to: Shri D. K. Jain, Executive Director, Eastern Regional Load Despatch Centre, 14, Golf Club Road, Tollygunge, Kolkata -700 033

Distribution List (SLDC)

- (1) Shri Arun Kumar Chaudhary**
GM-cum-CE
State Load Despatch Centre
Bihar State Electricity Board, Vidyut Bhawan,
Bailey Road, Patna, Bihar – 800001
- (2) Shri Vidya Sagar Singh**
General Manager,
State Load Despatch Centre
Jharkhand Urja Sancharan Nigam Ltd., Kushai Colony, Doranda,
Ranchi, Jharkhand – 834002
- (3) Er. Prasanta Kumar Satpathy**
Senior General Manager,
State Load despatch Centre
OPTCL, Gridco Colony, P.O- Mancheswar Railway Colony,
BBSR, Bhubaneshwar, Odisha – 751070
- (4) Shri Dinesh Kharel**
Chief Engineer
State Load despatch Centre
Energy and Power Department, Govt. of Sikkim,
Kazi Road, Gangtok, Sikkim – 737201
- (5) Shri P. K. Kundu**
Chief Engineer
West Bengal State Load Despatch Centre
P.O. Danesh Seikh Lane, Andul Road,
Howrah, West Bengal – 711109
- (6) Chief Engineer**
SLDC, Damodar Valley Corporation (DVC), Howrah
31/1 Andul road, P.O: Danish Seikh lane,
Howrah, West Bengal – 711109

No. 23/03/2016-R&R
Government of India
Ministry of Power

Shram Shakti Bhawan, New Delhi,
Dated, the 29th January, 2021

ORDER

Subject: Renewable Purchase Obligation (RPO) trajectory - regarding.

1. In exercise of the powers conferred under section 3(3) of Electricity Act, 2003, the Central Government had notified the revised Tariff Policy, which was published in Gazette of India, Extraordinary, Part-I, Section-1 dated 28.01.2016.

2. Para 6.4(1) of the Tariff Policy 2016 provides as follows:

"Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE.

Provided that cogeneration from sources other than renewable sources shall not be excluded from the applicability of RPOs."

3. In light of para 6.4(1) of the Tariff Policy 2016, and with the objective of creating renewable power capacity of 175 GW by March, 2022; the Ministry of Power, after consultation with Ministry of New and Renewable Energy, had notified the long term trajectory of Renewable Purchase Obligations (RPOs) for solar and non-solar power vide its orders dated 22nd July 2016 and 14th June 2018.

4. On 8th March 2019, the Government had issued an order detailing various policy measures to promote hydropower sector in India inter-alia declaring large hydropower projects including pumped storage projects having capacity of more than 25 MW (LHPs) which come into commercial operation after 8.3.2019 as renewable energy source and to specify Hydropower Purchase Obligation (HPO) within Non-Solar Renewable Purchase Obligation (RPO).

5. In compliance of the above decision and with the objective to add 30,000 MW of hydropower capacity by the year 2029-2030, Ministry of Power has prepared a revised trajectory of RPO including long term trajectory for HPO considering the LHPs commissioned after 8th March, 2019.

6. In super-session of orders dated 22nd July 2016 and 14th June 2018, the Ministry of Power hereby specifies the following RPO Trajectory-



Year	Solar RPO	Non-Solar RPO			Total RPO
		HPO	Other Non-Solar RPO	Total Non-Solar RPO	
2019-20	7.25%	-	10.25%	10.25%	17.50%
2020-21	8.75%	-	10.25%	10.25%	19%
2021-22	10.50%	0.18%	10.50%	10.68%	21.18%
2022-23	To be specified later	0.35%	To be specified later	To be specified later	To be specified later
2023-24		0.66%			
2024-25		1.08%			
2025-26		1.48%			
2026-27		1.80%			
2027-28		2.15%			
2028-29		2.51%			
2029-30		2.82%			

7. RPO shall be calculated in energy terms as a percentage of total consumption of electricity excluding consumption met from hydro sources (LHPs).

8. Solar RPO may be met by power produced from solar power plants – solar photo voltaic or solar-thermal.

9. Other Non-Solar RPO (excluding HPO), may be met from any renewable source other than solar and LHPs.

10. HPO benefits may be met from the power procured from eligible LHPs commissioned on and after 8.3.2019 and upto 31.03.2030 in respect of 70% of the total generated capacity for a period of 12 years from the date of commissioning. Free power is to be provided as per agreement with the State Government and that provided for Local Area Development Fund(LADF), shall not be included within this limit of 70% of the total generated capacity.

11. HPO liability of the State/ Discom could be met out of the free power being provided to the State from LHPs commissioned after 08.03.2019 as per agreement at that point of time excluding the contribution towards LADF if consumed within the State/Discom. Free power (not that contributed for Local Area Development) only to extent of HPO liability of the State/Discom, shall be eligible for HPO benefit.

12. In case the free power, as above, is insufficient to meet the HPO obligations, then the State would have to buy the additional hydro power to meet its HPO obligations or may

have to buy the corresponding amount of Hydro Energy Certificate to meet the non-solar hydro renewable purchase obligations.

13. The Hydro Energy Certificate mechanism under Regulation to be developed by CERC to facilitate compliance of HPO Obligation, would have a capping price of Rs.5.50/Unit of electrical energy w.e.f 8th March 2019 to 31st March, 2021 and with annual escalation @5% thereafter for purposes of ensuring HPO compliance.

14. The above HPO Trajectory shall be tried up on an annual basis depending on the revised commissioning schedule of Hydro projects. The HPO Trajectory for the period between 2030-31 and 2039-40 shall be notified subsequently.

15. Hydro power imported from outside India shall not be considered for meeting HPO.

16. On achievement of Solar RPO compliance to the extent of 85% and above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of Other Non-Solar RPO compliance to the extent of 85% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO or HPO for that particular year. Further, on achievement of HPO compliance to the extent of 85% and above, remaining shortfall, if any, can be met by excess solar or other non-solar energy consumed beyond specified Solar RPO or Other Non-Solar RPO for that particular year.

17. POSOCO will maintain data related to compliance of RPOs.

18. Further the SERCs may consider to notify RPO trajectory including HPO for their respective States in line with aforesaid RPO trajectory. Moreover CERC may consider to devise suitable mechanism similar to Renewable Energy Certificate (REC) mechanism to facilitate fulfillment of HPO.

19. This issues with the approval of Minister of State (I/C) for Power.



(Ghanshyam Prasad)

Joint Secretary to the Government of India

Tele No. 23710389

To

1. Principal Secretary/Secretary (Power / Energy), State Governments/UTs.
2. Secretary, CERC/FOR, Chanderlok Building, Janpath, New Delhi
3. Secretary, State Electricity Regulatory Commissions/Joint Electricity Regulatory Commissions

Copy to:

1. Secretary, MNRE, CGO Complex, New Delhi
2. Chairperson, CEA, Sewa Bhawan, RK Puram, New Delhi

Copy also for information to:

1. All Joint Secretaries, Ministry of Power
2. PS to MOS (I/C) for Power & NRE and MoS for SDE.
3. Sr. PPS to Secretary (Power), PPS to AS(SKGR), PPS to AS(VKD), Sr.PPS to Sr. Advisor, Sr. PPS to JS (R&R), PS to DS(R&R)

Anticipated Peak Demand (in MW) of ER & its constituents
Aug-21

Annexure-D1

1	BIHAR	Demand (MW)	Energy Requirement (MU)
	NET MAX DEMAND	6400	3950
	NET POWER AVAILABILITY- Own Sources	690	190
	Central Sector+Bi-Lateral	5728	3175
	SURPLUS(+)/DEFICIT(-)	18	-585
2	JHARKHAND		
	NET MAXIMUM DEMAND	1660	965
	NET POWER AVAILABILITY- Own Source	292	146
	Central Sector+Bi-Lateral+IPP	1161	715
	SURPLUS(+)/DEFICIT(-)	-207	-104
3	DVC		
	NET MAXIMUM DEMAND	3100	1970
	NET POWER AVAILABILITY- Own Source	5257	3035
	Central Sector+MPL	464	348
	Bi- lateral export by DVC	1998	1486
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	623	-73
4	ODISHA		
	NET MAXIMUM DEMAND (OWN)	4500	2723
	NET MAXIMUM DEMAND (In Case,600 MW CPP Drawal)	5100	2795
	NET POWER AVAILABILITY- Own Source	3857	2232
	Central Sector	1958	985
	SURPLUS(+)/DEFICIT(-) (OWN)	1315	494
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	715	422
5	WEST BENGAL		
5.1	WBSEDCL		
	NET MAXIMUM DEMAND	7410	4470
	NET MAXIMUM DEMAND (Incl. B'Desh+Sikkim)	7420	4561
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	4749	2173
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2660	1705
	EXPORT (TO B'DESH & SIKKIM)	10	7
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	-11	-683
5.2	IPCL		
	IPCL Demand	130	84
	IPCL Import	130	84
	SURPLUS(+)/DEFICIT(-)	0	0
5.3	CESC		
	NET MAXIMUM DEMAND	1900	1020
	NET POWER AVAILABILITY- Own Source	770	500
	FROM OTHER SOURCE (INCL. IPP/CPP-29-30 MU/M)	590	130
	IMPORT FROM HEL	540	390
	TOTAL AVAILABILITY OF CESC	1900	1020
	SURPLUS(+)/DEFICIT(-)	0	0
	WEST BENGAL (WBSEDCL+CESC+IPCL) (excluding DVC's supply to WBSEDCL's command area)		
	NET MAXIMUM DEMAND	9440	5574
	NET POWER AVAILABILITY- Own Source	5519	2673
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3790	2225
	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT	-131	-676
	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT	-141	-683
6	SIKKIM		
	NET MAXIMUM DEMAND	102	46
	NET POWER AVAILABILITY- Own Source	8	3
	Central Sector	200	123
	SURPLUS(+)/DEFICIT(-)	106	80
	EASTERN REGION		
	NET MAXIMUM DEMAND	24708	15227
	NET MAXIMUM DEMAND (In Case, 600 MW CPP Drawal of Odisha)	25296	15299
	BILATERAL EXPORT BY DVC	1998	1486
	EXPORT BY WBSEDCL TO SIKKIM & B'desh	10	7
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	546
	NET TOTAL POWER AVAILABILITY OF ER (INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)	28924	15850
	SURPLUS(+)/DEFICIT(-)	1566	-1416
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	978	-1488