



**AGENDA  
FOR  
190<sup>th</sup> OCC MEETING**

**Date: 21.04.2022**

**Eastern Regional Power Committee**

**14, Golf Club Road, Tollygunge**

**Kolkata: 700033**

## **EASTERN REGIONAL POWER COMMITTEE**

**AGENDA FOR 190<sup>TH</sup> OCC MEETING TO BE HELD ON 21.04.2022 (THURSDAY) AT 10:30 HRS**

### **PART – A**

**ITEM NO. A.1: Confirmation of Minutes of 189<sup>th</sup> OCC Meeting held on 16<sup>th</sup> March 2022 through MS Teams online platform.**

The minutes of 189<sup>th</sup> Operation Coordination sub-Committee meeting held on 16.03.2022 was circulated vide letter dated 04.04.2022.

**Members may confirm the minutes of 189<sup>th</sup> OCC meeting.**

### **PART B: ITEMS FOR DISCUSSION**

**ITEM NO. B.1: Presentation on Technical Minimum Software by NTPC.**

As per the scheme approved in 45<sup>th</sup> ERPC meeting held on 26.03.2022, NTPC has developed the Technical Minimum Software for Eastern Region- URJA [ URS Re-Scheduling and Jacking-Up Assistant] in co-ordination with ERLDC and ERPC. The URL link for easy accessibility of URS software- <http://www.urspatna.in>.

A special meeting was held on 15.04.2022 at 04.00 PM through MS Team Platform to go-live the URJA software for Eastern Region.

**NTPC may give a brief presentation on Technical Minimum Software.**

**ITEM NO. B.2: Islanding Schemes in Eastern Region.**

#### **B2.1. Implementation of Islanding Schemes in Eastern Region**

In the meeting held on 28<sup>th</sup> December 2020 and chaired by the Hon'ble Minister of State (IC) it was directed that islanding schemes should be implemented for all major cities of the country considering all the strategic and essential loads. Subsequently, in line with the direction given in the meeting, the subject matter was discussed in PCC meeting of ERPC and it was finalized that new islanding scheme would be implemented for capital city of Patna & Ranchi.

##### **I. Patna Islanding Scheme:**

In the special meeting held on 06.08.2021, it was decided that Patna islanding scheme would be designed considering two unit of Nabinagar STPP (2\*660 MW) of NPGCL as participating generator and loads of in and around Patna city. The provision of island formation with one unit of NPGC with corresponding load is also to be included in the island logic.

The islanding frequency & logic will be finalized based on the result of dynamic study to be carried out by SLDC Bihar/ERLDC.

The following timelines were decided:

1. Submission of requisite information by SLDC, Bihar: 2nd week of Aug' 2021.
2. Completion of Islanding simulation study by ERLDC: 4th Week of Aug' 2021
3. Review of islanding study & designing of the logic: By September'2021
4. Implementation & Operationalization of the Islanding Schemes: By March'2022

In 106<sup>th</sup> PCC meeting held on 16.09.2021 it was informed that the requisite information had already been shared by SLDC Bihar and the study is under progress by ERLDC. Further SLDC Bihar was advised to prepare the DPR by September'2021 for PSDF funding, if required.

In the 44<sup>th</sup> TCC Meeting, BSPTCL updated that preparation of DPR for PSDF funding is under process and the same would be completed within 15 days.

TCC stressed on the fact that this issue is being regularly monitored by MoP and advised BSPTCL for timely implementation of the Islanding Scheme.

OCC advised BSPTCL to expedite the matter with Siemens and prepare the DPR as per the said schedule without any further delay.

In the 189<sup>th</sup> OCC Meeting, Bihar representative submitted that the tender was cancelled due to no participation of vendors.

In the 45<sup>th</sup> TCC Meeting, following was decided:

- a) A Technical Committee comprising of the members from BSPTCL, SLDC Bihar, and participating generator, Powergrid, ERLDC and ERPC may be constituted for finalizing the Islanding Scheme.
- b) CESC may also be included in the Committee for any technical expertise.
- c) The Committee may consult OEM/Vendor as and when required for any inputs.
- d) The Committee may submit its report by 15th May'2022. TCC advised the concerned constituents to give their nominations latest by 31st March'2022.

In this regard, ERPC vide letter no. ERPC/Operation/IS/2022/97 dated 18.04.2022 (**Annexure B.2.1**) constituted a Technical Committee based on the nominations received for finalizing Patna Islanding Scheme.

**Committee may update.**

## **II. Ranchi Islanding Scheme:**

In the special meeting held on 06.08.2021, it was decided that Ranchi islanding scheme would be formed with one unit of Tenughat TPS (150-160 MW average generation) & Inland IPP (50-55 MW average generation) as participating generator & essential/critical loads of Ranchi to the tune of 180 MW. The islanding frequency & logic will be finalized based on the result of dynamic study to be carried out by SLDC Jharkhand/ERLDC.

The following timelines were decided:

1. Submission of requisite information by SLDC, Jharkhand: 2nd week of Aug' 2021.
2. Completion of Islanding simulation study by ERLDC: 4th Week of Aug' 2021

3. Review of islanding study & designing of the logic: By September'2021
4. Implementation & Operationalization of the Islanding Schemes: By February'2022

In 106<sup>th</sup> PCC meeting held on 16.09.2021 it was informed that the requisite information had already been shared by SLDC Jharkhand and the study is under progress by ERLDC. Further

SLDC Jharkhand was advised to prepare the DPR by September'2021 for PSDF funding, if required.

In the 44<sup>th</sup> TCC Meeting, JUSNL updated that preparation of DPR for PSDF funding is under process and the same would be completed within 15 days.

TCC stressed on the fact that this issue is being regularly monitored by MoP and advised JUSNL for timely implementation of the Islanding Scheme.

In the 189<sup>th</sup> OCC Meeting, Jharkhand representative submitted that the tender was cancelled as only one bidder qualified among the 3 participants.

In the 45<sup>th</sup> TCC Meeting, following was decided:

a) A Technical Committee comprising of the members from JUSNL, SLDC Jharkhand, and participating generator, Powergrid, ERLDC and ERPC may be constituted for finalizing the Islanding Scheme.

b) CESC may also be included in the Committee for any technical expertise.

c) The Committee may consult OEM/Vendor as and when required for any inputs.

d) The Committee may submit its report by 15th May'2022. TCC advised the concerned constituents to give their nominations latest by 31st March'2022.

In this regard, ERPC vide letter no. ERPC/Operation/IS/2022/97 dated 18.04.2022 (**Annexure B.2.1**) constituted a Technical Committee based on the nominations received for finalizing Ranchi Islanding Scheme.

**Committee may update.**

**In addition to above new islanding schemes, the following schemes have already been finalized and under different stage of implementation:**

### **III. Chandrapura Islanding Scheme:**

The scheme detail in brief is as follows:

➤ The CTPS-B islanding scheme is to be designed with two units of CTPS-B (2x250 MW) generating station as participating generator and connected loads at CTPS, Putki, Biada, Nimiaghata & Patherdih. The estimated off-peak and peak load in the proposed islanding system is 280 MW & 420 MW respectively.

➤ The islanding frequency for CTPS-B islanding system was decided as 48.4 Hz.

In special meeting held on 06.08.2021, following deliberations took place:

Representative of SPE wing of DVC updated that necessary discussion for implementation of the scheme at CTPS-B is going on with M/s GE for finalization of the scope of work & other modalities. He submitted that the tender process for implementation of islanding scheme would be initiated within two weeks.

In the 44<sup>th</sup> TCC Meeting, DVC representative informed that the work order for implementation of Chandrapura Islanding Scheme would be placed by March-2022 and the same would be implemented within 6 months.

In the 185<sup>th</sup> OCC meeting, DVC representative informed that the scope of work and scheme for the islanding of CTPS unit # 7 & 8 has been prepared and the budgetary offer from M/s Siemens & M/s GE has also been collected. The scheme would be finalized within 2-3 months and subsequently the tendering process would be initiated.

OCC advised DVC to complete the work within the stipulated time period.

In the 186<sup>th</sup> OCC meeting, DVC representative informed that the project is in the process of approval and the NIT would be floated within a month.

In the 187<sup>th</sup> OCC meeting, DVC representative informed that the order placement would be done by February 2022 and the work would be completed within 6 months.

In the 188<sup>th</sup> OCC meeting, DVC representative informed that the NIT was floated on 25<sup>th</sup> January 2022 and the bid would be opened on 25<sup>th</sup> February 2022.

In the 189<sup>th</sup> OCC Meeting, DVC representative submitted that the bid opening date has been extended to 22<sup>nd</sup> March 2022.

**DVC may update.**

#### **IV. IB-TPS Islanding Scheme:**

The scheme was finalized in the special Meeting on Islanding Scheme of IB-TPS held at ERPC, Kolkata on 12th December 2018.

In special meeting held on 06.08.2021, OPGC representative informed that work order had been placed on OEM (M/s BHEL) for implementation of the Islanding scheme at IB TPS units.

OPGC was also advised to take up the issue with their highest authority as well as with the OEM for expediting the implementation of islanding scheme.

In the 44<sup>th</sup> TCC Meeting, OPGC representative informed that IB TPS Islanding Scheme would be implemented as per the given timeline i.e., April-22.

In the 184<sup>th</sup> OCC meeting, OPGC representative informed that the erection and testing work has been completed. He further submitted that the islanding scheme would be implemented after consultation with OPTCL regarding the load details (144 MW).

OCC advised OPGC to update the status of their meeting with OPTCL regarding this to ERPC and ERLDC.

In the 185<sup>th</sup> OCC meeting, OPGC representative submitted that a meeting with OPTCL has been

conducted on 11.11.2021 regarding erection and commissioning of DTPC at OPGC and Tarkera ends. The work has already been started at the Tarkera end and the whole work is scheduled to be completed by the end of December 2021.

OCC advised OPGC to complete the commissioning work of DTPC coupler at the earliest.

In the 186<sup>th</sup> OCC meeting, OPTCL representative informed that the installation and commissioning work of DTPC at both Budhipadar and IB TPS end are in progress and would be completed shortly. Further, co-ordination with M/s ABB regarding the commissioning work had also been done and the work is expected to be completed by the end of January 2022.

In the 187<sup>th</sup> OCC meeting, OPTCL representative informed that installation of DTPC and cable laying at both the ends i.e., Budhipadar and IB-TPS are completed. The commissioning and testing work would be started after the arrival of ABB engineers and the whole work is expected to be completed by the end of February 2022.

In the 188<sup>th</sup> OCC meeting, OPTCL representative informed that the ABB engineers had arrived and the pre-commissioning work had started. The commissioning and testing works are expected to be completed by 2<sup>nd</sup> week of March 2022.

In the 189<sup>th</sup> OCC Meeting, OPTCL representative submitted that the ABB engineers would arrive by 27<sup>th</sup> March 2022 and the work is expected to be completed by the end of March 2022.

**OPTCL may update.**

**ITEM NO. B.3: Declaration of Peak seasons for Hydro-Generating Stations for calculation of Regional Transmission Deviation Accounts.**

Clause No. 12 (1) (a) of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations'2020 states that,

***“For a generating station, net metered ex-bus injection, in a time block in excess of the sum of Long-Term Access, Medium Term Open Access and Short-Term Open Access: Provided that for a hydro-generating station, overload capacity of 10% during peak season shall be taken into account.”***

Point No. 43.3.10 of SoR issued by Hon'ble CERC vide No. L-1/250/2019/CERC dated 10th August'2020 states that:

***“Regarding hydro generating stations' overload capacity of 10%, the Regulation has been modified to include that such exemption/ consideration shall be applicable only during high inflow period.”***

The above clause of the Sharing Regulation'2020 and Statements of Reason reveals that for hydro-generating stations, an overload capacity of 10% can be considered during peak season for the calculation of RTDA accounts. As per the CERC Tariff Regulations 2019-24, the peak season for hydro-generating stations should be considered based on the high inflow season. In this regard, the high inflow season may vary depending upon the geographical location of the hydro generators.

In this context, proper guidelines and Nodal Agency are required for declaring the peak seasons for each hydro generating station.

In the 3<sup>rd</sup> Meeting of the Hon'ble CERC with Chairperson and Member Secretary of RPCs dated 17.10.2021, the following decision was taken after detailed deliberation:

a) ERPC has raised the issue regarding special dispensation to hydro generating stations where,

in RTDA (regional transmission deviation account), the capacity of hydro station during peak season is calculated at over and above 10% of such generating station's capacity. ERPC has requested that there should be proper guidelines for declaration of peak season (in respect of hydro-generating stations) by the Implementing Agency (NLDC) for the purpose of the Sharing Regulations.

b) Member Secretary (ERPC) stated that RPCs decide the peak demand season and communicate the same to the Commission as per the 2019 Tariff Regulations. But in this case, the Implementing Agency (NLDC) is required to make such declaration. Sh. Kejriwal SE(ERPC) stated that under the 2019 Tariff Regulations, ERPC is finalizing high demand season and low demand season for thermal power generating stations after discussing in the RPC and the same is communicated to all.

c) Member (ISJ) observed that RPC is the agency that may be entrusted with declaration of peak season for hydro-generating stations too. Chairperson, CERC observed that same formulation, as provided in the 2019 Tariff Regulations, can be extended for declaration of peak season for the purpose of the Sharing Regulations for the hydro-generating stations also i.e., RLDC in consultation with RPC.

In light of the above decision, Peak season for Hydro Generating stations shall be decided in the OCC forum of ERPC.

In the 189<sup>th</sup> OCC Meeting, ERPC representative gave an overview of the agenda item and submitted that as directed in the 3<sup>rd</sup> meeting of CERC with RPCs and further in line with the discussions of the 45<sup>th</sup> CCM meetings, the high inflow season for hydro generating stations may be concluded in the OCC meetings as per the formulations provided in the 2019 Tariff Regulations.

NHPC representative submitted that high inflow and spillage for the hydro stations in the Teesta basin is generally observed from 15<sup>th</sup> May till 10<sup>th</sup> October. Therefore, May to October could be considered as peak seasons.

Member Secretary, ERPC was of the view that the peak season should be specific to respective hydro stations and should be defined on monthly basis.

OCC advised all the regional hydro generators whose RTDA is being calculated by ERPC Secretariat to furnish relevant data in consideration of high inflow seasons and the reasons thereof so that it could be finalized in the upcoming OCC meetings.

ED, ERLDC highlighted that the declaration of peak seasons should only be considered for the calculation of RTDA. However, the NOC would be given as per the prevailing procedure considering the actual spillage.

NHPC representative further requested to withhold the RTDA payment raised by CTU during the period from March 21 to June 21 until any final decision is taken regarding finalizing of high inflow seasons.

OCC advised NHPC to release the RTDA payment at the earliest. Further, after the finalization of high inflow season for respective hydro generators, necessary revisions of the RTDA accounts pertaining to those months would be done by ERPC Secretariat.

**Respective hydro-stations may update. Members may discuss.**



## **ITEM NO. B.4: Outage of Important Transmission System.**

### **B4.1. 132kV Sagbari–Melli.**

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 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 181<sup>st</sup> OCC meeting, Sikkim representative submitted that for the rest 20% work, they are yet to get clearance from the Forest Department. He further informed that there are also some RoW issues in that portion of the line. Further, ERLDC representative stressed over the fact that being a very important line, the restoration of the 132kV Sagbari–Melli linemay be done at the earliest.

OCC advised Sikkim to take up the matter with Forest Department for obtaining necessary clearance and also to resolve the ROW issues without any further delay.

In the 187<sup>th</sup> OCC meeting, Sikkim representative informed that clearance from the Forest Department is yet to be received.

OCC expressed serious concern over the issue and advised Sikkim to be in regular touch with the Forest Department for obtaining the clearance.

In the 45<sup>th</sup> TCC Meeting, Sikkim representative informed that efforts have been made to restore the line at the earliest.

### **Sikkim may update.**

### **B4.2. 220kV Pandiabili - Samangara D/C**

220kV Pandiabili-Samangara D/C line tripped on 03-02-2019 during the event of Fani due to Tower collapse. 48 no towers got fully damaged and 12 no towers got partially damaged. Presently the line is charged from Pandiabili end up to location no 58. It is a very important line for supplying power to Puri area. The line is under outage more than 2 years.



In the 184<sup>th</sup> OCC meeting, OPTCL representative submitted that the restoration work has been undertaken by PowerGrid.

He added that DA & DD type tower design has already been tested and passed by CPRI, however, the prototypes of DB & DC type tower are under testing. Once the testing of the same is successfully completed, the action plan of the restoration work would be submitted by PowerGrid.

OCC advised OPTCL to share the action plan to ERPC & ERLDC.

In the 185<sup>th</sup> OCC meeting, OPTCL representative informed that permission for testing of type DB & DC towers has been taken from CPRI but the tentative timelines for completion of test are yet to be received from CPRI.

In the 186<sup>th</sup> OCC meeting, OPTCL representative informed that the type testing of DB & DC towers is under progress at CPRI. Type testing of DB & DC type tower is expected to be completed by 22<sup>nd</sup> and 28<sup>th</sup> December 2021 respectively. Further, the foundation work of towers has also started and is under progress.

In the 187<sup>th</sup> OCC meeting, OPTCL representative informed that the type-testing for all the towers had been completed at CPRI. The foundation work has been started at three places and the tower materials would be procured shortly.

In the 188<sup>th</sup> OCC meeting, OPTCL representative informed that type testing of all towers had been completed and procurement and pile foundation works are in progress.

In the 189<sup>th</sup> OCC Meeting, OPTCL representative submitted that the pile foundation works are in progress and work would be completed by June 2023.

#### **OPTCL may update.**

#### **B4.3. 440/220kV 315 MVA ICT 2 at Meramundali:**

400KV/220KV 315 MVA ICT 2 at Meramundali tripped on 21-02-2021 due to fire hazard at Meramundali SS. The ICT is under outage since then. Meramundali S/S is serving the important load of the Odisha. Long outage of an ICT at such crucial S/S may hamper the reliability of the Grid.

In the 182<sup>nd</sup> OCC meeting, OPTCL representative submitted that the old ICT, which was completely damaged, would be replaced by a new one. The new 315 MVA ICT of BHEL make has already arrived at site and the foundation modification work is going on. OPTCL representative stated that the replacement work is expected to be completed by 30<sup>th</sup> Nov'21.

OCC advised OPTCL to expedite the work and also to share the work schedule of the same to ERPC & ERLDC for effective monitoring of the same.

In the 183<sup>rd</sup> OCC meeting, OPTCL representative submitted that the foundation work has been completed and the remaining work is expected to be completed by Nov'21.

In the 184<sup>th</sup> OCC meeting, OPTCL representative submitted that the work would be completed by December'21. He further mentioned that representative of BHEL (OEM) is yet to visit the site, however, the civil construction work has been completed and the said transformer is on the plinth.

OCC advised OPTCL to expedite the work and complete it by 31<sup>st</sup> Dec'21.

In the 185<sup>th</sup> OCC meeting, OPTCL representative informed that they are in constant touch with the OEM and after receipt of some of the materials at the site the erection work is expected to be completed by the end of December 2021.

In the 186<sup>th</sup> OCC meeting, OPTCL representative informed that some materials are yet to be received for which the order has already been placed. After receipt of materials and arrival of OEM representatives, work would be started and would be completed in another 2 months.

OCC advised OPTCL to co-ordinate with their OEM and complete the work without any further delay.

In the 189<sup>th</sup> OCC Meeting, OPTCL representative submitted that OEM engineers had arrived and the erection works are in progress and would be completed by 2<sup>nd</sup> week of April 2022.

**OPTCL may update.**

#### **B4.4. Outage of 400kV Main Bus-2 at Dikchu HEP.**

400kV Main Bus-2 at Dikchu HEP has been out since 05.05.2021.

Dikchu vide mail dated 27.11.2021 informed that, on 07.09.2021 a test had been conducted by them to pin point the fault location. Subsequently, the fault was found in the B phase Circuit Breaker Compartment of 400 KV Dikchu-Teesta 3-line bay 403.

So as suggested by the OEM, there was a need to replace the CB compartment.

In this regard, the offer for new CB compartment from OEM GE(T&D) had already been received on 15<sup>th</sup> Nov' 21. The procurement process is in progress & the works are being planned to be carried out in 3<sup>rd</sup> week of Jan' 22.

In the 186<sup>th</sup> OCC meeting, Dikchu representative informed that OEM M/s GE had given a lead time of 8 months for the supply of new CB compartment, but considering the seriousness of the issue, M/s GE has now agreed to provide the same in 3 months. The work is expected to be completed by the end of March 2022.

Considering the importance of Dikchu-Teesta-III line, OCC advised Dikchu to expedite the work at the earliest in consultation with their OEM.

In the 187<sup>th</sup> OCC meeting, Dikchu representative informed that the work would be completed by the end of June 2022.

OCC advised Dikchu to expedite the work before the arrival of peak hydro season.

In the 189<sup>th</sup> OCC Meeting, Dikchu representative submitted that the procurement of CB compartment is under process.

OCC advised Dikchu to coordinate with OEM to expedite the supply of CB compartment.

**Dikchu may update.**

**B5.1. Restoration of 220kV Farraka-Lalmatia S/C line**

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 181<sup>st</sup> OCC Meeting, JUSNL representative submitted that they had got a letter from NTPC on 19<sup>th</sup> July '21 regarding anti-theft charging of the 220kV Farraka-Lalmatia S/C line at 33kV level. Earlier the antitheft charging of the line was done at 11kV level but incidents of thefts have been reported in some portion of the conductor.

Further, Jharkhand representative requested NTPC to submit the details of the 33kV lines passing below 220kV Farakka-Lalmatia T/L. He added that as per information obtained from their JUSNL Discom part, the 33kV lines are mostly connected with 11kV feeders and due to this it would be difficult to charge the Farakka-Lalmatia line at 33kV level in Pakur area.

NTPC representative informed that they had charged the line up to loc no.241 but in between loc no.76-82 only the top conductor was in charged condition and the bottom rest were not; because of this theft might have happened in that portion. He further added that they had already isolated the section from loc no.76-82, whereas up to loc no.76 the line is in charged Condition and from loc no.82-241 the line needs to be charged.

ERPC advised NTPC and Jharkhand to explore the possibility of antitheft charging at 33kV level first and if that is not feasible then charging at 11kV can be assessed.

In the meeting held on 10<sup>th</sup> August 2021 by the Hon'ble Secretary, Ministry of Power, Government of India, ECL was directed to handover the FLTS assets on "as is where is basis" to

JUSNL, the Operation and Maintenance whereof as was with the NTPC is also to be transferred

to the JUSNL without any further delay and latest by 20<sup>th</sup> August 2021. Further JUSNL was directed to comply with all other directions of the CERC's order dated 21.07.2020, after the transfer of the FLTS from ECL.

In the 182<sup>nd</sup> OCC meeting, JUSNL representative submitted that the tripartite agreement for

taking over of FLTS as well as O&M of FLTS is in process and the same would be done after getting the consent from the competent authority by 4<sup>th</sup> week of August'2021.

ERLDC representative advised JUSNL for putting 220kV Lamatia-Godda line into service. JUSNL representative informed that they had tried to charge the line once but due to voltage rise at Lalmatia end, they had to open the line.

OCC advised JUSNL to re-check the possibility of charging the 220kV Lamatia-Godda line for reliable power supply to Lalmatia.

ERLDC representative opined that restoration of the 10 nos. of collapsed towers may be done first on priority basis.

JUSNL representative stated that the estimate for restoration of the lines has already been approved by their BoD and Govt. of Jharkhand has been approached for fund requisition. In the meantime, the tendering process would be finalized and after getting the necessary fund approval the work order for the same would be placed.

On query, JUSNL representative ensured that the line would be restored by June'22.

In the 188<sup>th</sup> OCC meeting, JUSNL representative informed that the BOQ has been revised due to the incident of conductor theft. The tender would be placed within 15 days and the restoration work is expected to be completed in 3 months.

In the 189<sup>th</sup> OCC Meeting, JUSNL representative submitted that the tender had been floated and the due date is 21<sup>st</sup> March 2022.

In the 45<sup>th</sup> TCC Meeting, JUSNL representative informed that re-tendering work is under process and the expected timeline for restoration of the said line is July'2022.

**JUSNL may update.**

**ITEM NO. B.6: Restoration of PLCC for 220 kV Chandil-STPS S/C line**

In 101<sup>st</sup> PCC meeting held on 13.04.2021, it was come to notice that both the channels of PLCC of 220 kV Chandil-Santaldih S/C line is unhealthy at Chandil end since May-2020. PCC advised JUSNL to rectify the PLCC issue at Chandil end at the earliest.

In 108<sup>th</sup> PCC meeting held on 16.11.2021, JUSNL representative informed that the PLCC rectification work could not be carried out as they are yet to receive the financial approval for the said work from their higher authority.

220 kV Chandil-STPS being an inter-state line and connected to generating station, healthiness of PLCC/line shall be ensured for overall reliability & security of the grid.

In the 185<sup>th</sup> OCC meeting, OCC expressed serious concern over the issue and advised JUSNL to update the status at the earliest.

In the 186<sup>th</sup> OCC meeting, JUSNL representative informed that the technical part of the tender has been opened and PLCC rectification work would be carried out after finalization of the tender.

In the 187<sup>th</sup> OCC meeting, JUSNL representative informed that the work order would be placed by the end of January 2022 and the work would be completed by February 2022.

In the 188<sup>th</sup> OCC meeting, JUSNL representative informed that as the price of L1 bidder was much higher than the estimation, further negotiation with the vendor was done. The work order would be placed by 1<sup>st</sup> week of March 2022.

In the 189<sup>th</sup> OCC Meeting, JUSNL representative submitted that the work order has been awarded. The PLCC rectification work would be started during the shutdown planned in the last week of March' 2022.

**JUSNL may update.**

**ITEM NO. B.7: Power assistance of 40 MW at 132 KV Manique (JUSNL) from Manique (DVC) and 30 MW additional power from 132 KV Joda-Kendposi T/L.**

With reference to the above captioned subject, it is to inform that, overhauling 220/132 KV 100 MVA Transformer No. – 01 at Chandil GSS has to be done on the basis of test report submitted by Transmission Division, Jamshedpur (JUSNL). They have applied for shutdown of this Transformer from 10:00 hrs. of 22.04.2022 to 17:00 hrs. of 17.05.2022 (on continuous basis) for overhauling of transformer. A load flow plan has been attached herewith considering availability of only two transformer of rating 100 MVA each. Due to outage of 01 transformer of rating 100 MVA around 70 MW load will be shifted to other GSS of JUSNL.

As such sufficient power assistance will be required throughout the above period to provide uninterrupted, unrestricted quality power to Manique and Kendposi GSS. Accordingly, it is requested to kindly ensure availability of power as follows:

- 1) 40-45 MW power assistance through 132 KV Manique (JUSNL) – Manique (DVC) tie with DVC.
- 2) 30-35 MW additional power assistance through 132 KV Joda (OPTCL) – Kendposi (JUSNL) tie with OPTCL.

**JUSNL may update. Members may discuss.**

**ITEM NO. B.8: Continuous high loading of 220 KV Lapanga-Katapalli D/C line.**

Load of Katapalli, Bolangir, and Keshinga area is met through two sources. One is from 400/220 kV Lapanga and the other is from 400/220 kV Bolangir. Further, around 225 MW of solar plant is installed in the area. It is observed that during late evening hours, when the demand is at its peak while generation from solar is almost zero, Loading of 220 kV Lapanga-Katapalli D/C remains very high and the system remains N-1 insecure during the period and any outage of the line may lead to a widespread blackout.

In view of the above OPTCL is requested to share any upcoming plan for making the system N-1 Secure. Further, till the new lines are constructed, designing of suitable SPS for making system N-1 secure is being taken up with Odisha.

**OPTCL may update.**

**ITEM NO. B.9: Ensuring N-1 reliability in West Bengal system.**

At present only one 315 MVA ICT is installed at 400/220 kV Sagardighi power station and the same is continuously loaded close to its limit during the peak hours. Further, any outage of this ICT will increase the loading of 2 x 315 MVA 400/220 kV ICTs at Gokarno which itself is not N-1 complied.

**WBSETCL is requested to share their plan for mitigating these contingencies and making system N-1 secure.**

**ITEM NO. B.10: Ensuring Grid security in case of extreme Low-Frequency System.**

The Indian power system is passing through a very rough phase, where low frequency is observed almost on daily basis. In line with IEGC 5.4.2(e)

Quote

In order to maintain the frequency within the stipulated band and maintaining the network security, the interruptible loads shall be arranged in four groups of loads, for scheduled power cuts/load shedding, loads for unscheduled load shedding, loads to be shed through under frequency relays/ df/dt relays and loads to be shed under any System Protection Scheme identified at the RPC level. These loads shall be grouped in such a manner, that there is no overlapping between different Groups of loads. In case of certain contingencies and/or threat to system security, the RLDC may direct any SLDC/ SEB/distribution licensee or bulk consumer connected to the ISTS to decrease drawl of its control area by a certain quantum. Such directions shall immediately be acted upon. SLDC shall send a compliance report immediately after compliance of these directions to RLDC.

Unquote

A list of feeders has already been decided and agreed upon in earlier OCC meetings which can be opened as physical measures for demand disconnection as per ERLDC and SLDC.

Further UFRs are installed as a defense mechanism to restore the frequency whenever it falls below 49.4 Hz. However, it may happen that even after an operation of the first stage of UFR frequency again remains/dips below 49.4 Hz and become a threat to grid stability. As per section 29(1) of the Electricity Act

In line with the same to enhance the grid stability a list of feeder have been identified which ERLDC will open for the constituent which is overdrawing and when the frequency is below 49.4 Hz. The same list is attached in **Annexure-B.10**.

**ERLDC may update.**

**ITEM NO. B.11: Ensuring healthiness of ADMS.**

Automatic demand management scheme (ADMS) is already commissioned in West Bengal, DVC and Jharkhand. Logic for ADMS is as implemented in these state is as follows.

Sl No	State/Utility	Logic for ADMS operation	Implementation Date	Total Load connected in ADMS logic
1	Jharkhand	System Frequency  < 49.9 Hz AND  Deviation > 12 % or 25/50/75 MW. Block I, II & III feeders will be selected for load shedding depending on the O/D.	In service from 21st August 2019.	Total 90 MW
2	DVC	F <49.9 Hz AND deviation > 12 % or 150 MW	In service from 17.06.2016.	Total 281 MW

3	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	In service from 25.11.16.	Total 225 MW
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In the month of April 2022 frequency remained on lower side for major amount of time. Further on some occasion the above criteria for operation of ADMS was satisfied for all the three constituents. However, only West Bengal has reported a successful operation of ADMS, even in West Bengal full quantum relief is not observed on all occasions.

**DVC and Jharkhand are requested to share the reason behind non operation of ADMS and action taken for rectification of same. West Bengal is requested to share the reason behind less relief on some occasions.**

**ITEM NO. B.12: Commissioning status of ADMS.**

Automatic demand management scheme (ADMS) is already commissioned in West Bengal, DVC and Jharkhand. However for Bihar and Odisha it is yet to be implemented, the last status as confirmed in the earlier meeting is as follows.

SI No	State/Utility	Logic for ADMS operation	Implementation status/target
1	Bihar	F <49.7 AND deviation > 12 % or 150 MW	Under testing.
2	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. Discom over-drawl > 40 MW	Work order placed to M/s Kirititel to be complemented April 2022.

**Bihar and Odisha may share the present status of implementation and share the reason for delay in implementation if any.**

**ITEM NO. B.13: Simultaneous shutdown of both 400 KV Subhashgram Jeerat & 400 KV Subhashgram Rajarhat for shield wire replacement.**

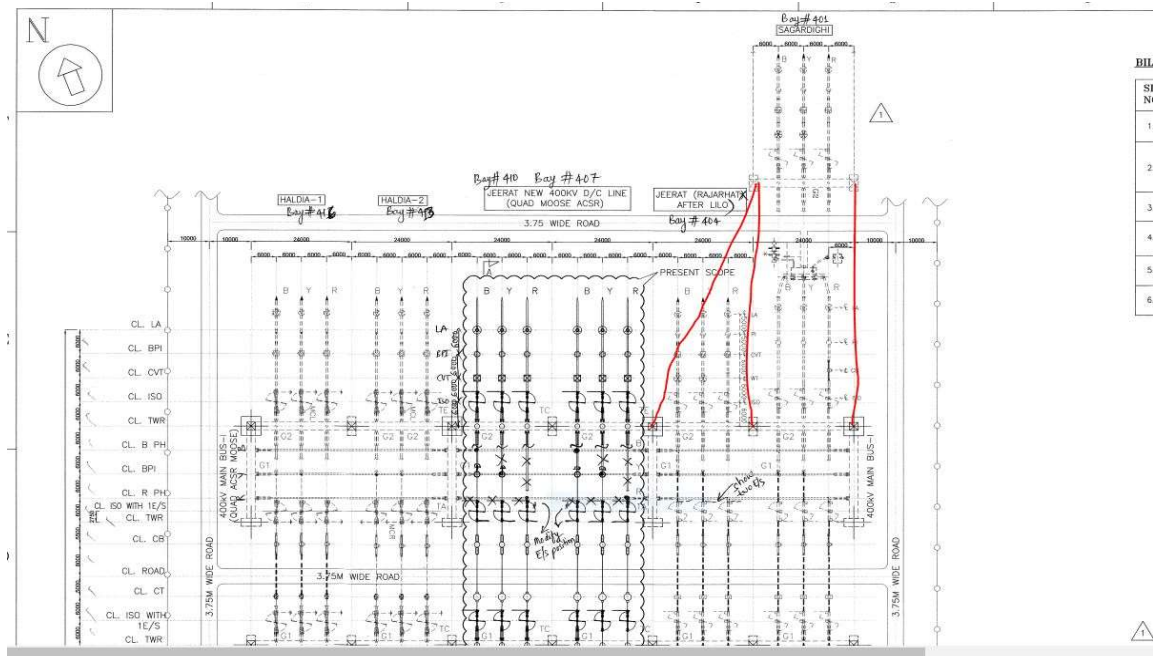
A. POWERGRID Subhasgram S/S is located in cyclone zone and every year the sub-station have to encounter very high wind in the Month of May & June. On 20.01.2022 at 05:41 Hrs all 400KV Main Bus-II Busbar operated at Subhasgram SS as overhead shield wire connected between the peak of common Jack Bus gantry of ICT-I & II had snapped which subsequently fell on 400KV Main Bus-II leading to the outage.







- B. Based on above analysis it can be concluded that the tripping of 400KV Bus-II took place due to snapping of Old rusted shield wires during high wind condition.
- C. As a precautionary measure new shield wire has been fixed between the peaks. Additionally almost all the shield wires of same lot/batch used had been replaced during Shutdown pertaining to Retrofitting of Busbar Protection Panel.
- D. However, the earthwire of same above lot from Dead End D/C Tower of 400KV Subhasgram-Jeerat & Subhasgram-Rajarhat to Gantry peaks could not be replaced due to proximity with adjoining charged circuits.

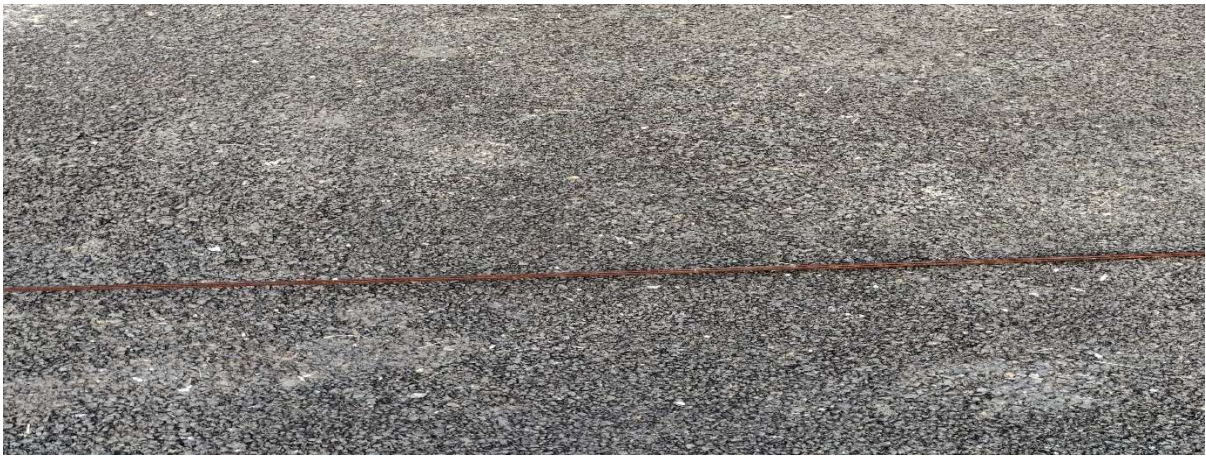


- E. The span for earth-wire required to be replaced is shown above. Both the lines from D/C Towers form a conical shape on termination upon the gantry. Hence replacing the earth-wire under charged condition involves risk and safety issue. In view of above simultaneous Shutdown of both circuits as per following are proposed to complete the replacement of old rusted shield wires of above lots.

SI No.	Name of TL	Proposed Date	Time	Remarks
1	400KV Subhasgram-Jeerat TL	28.04.2022	From 07:00 Hrs to 15:00 Hours	ODB
2	400kV Subhasgram-Rajarhat TL	28.04.2022	From 07:00 Hrs to 15:00 Hours	ODB



F. Condition of old Rusted Shield wire replaced earlier are provided as below:



**Powergrid may explain. Members may discuss.**

**ITEM NO. B.14: LAN Integration for various S/S for AMR Data Transmission to ERLDC.**

This is in continuation with the agenda discussed in last CCM where in a list of locations for AMR data transmission through LAN was deliberated.

At present the AMR data connectivity status are as follows:-

TOTAL NO OF DCU- 190

TOTAL NO OF DCU COMMUNICATED OVER LAN- 118

TOTAL NO OF DCU COMMUNICATED OVER GPRS- 72

A. NO OF DCU AT KIOSK/DISTANT LOCATIONS- 22.

LOCATION DETAILS ARE AS FOLLOWS:-

ALIPURDUAR
ANGUL
BERHAMPORE(BMP)
CHANDAUTI

	DUMKA(DUM)
	GAYA(GYA)
	JEERAT(JRT)
	KEONJHAR(KJR)
	MEDINIPUR
	MELLI (MEL)
	PATNA (PAT)
	PURNEA (PRN)
	PUSAULI
B.	RANCHI NEW
C.	GAYA(GYA)
D.	NEW JEERAT

MOSTLY POWERGRID LOCATIONS. NOW THE ISSUE IS RESOLVED AND CAN BE INTEGRATED OVER LAN SUBJECTED TO ADDITIONAL FINANCIAL IMPLICATION OF AMOUNT RS. 23,11,208/- + GST. BREAK UP PROVIDED IN ANNEXURE.

- B. LAN PRESENT AND ONLY PORT OPENING REQUIRED FOR INTEGRATION WITH AMR: -  
**14.** COST IMPLICATION FOR THE SAME STANDS AT RS. 2, 17, 896/- + GST.

CHANDIL(CHN)
CHUZACHEN(CZN)
DALTONGANJ
DARBHANGA
DARBHANGA
EMSS(EMS)
HALDIA(HAL)
INDRAVATI(IND)
KAHALGAON(KAH)
MENDHASAL(MEN)
MOTIHARI
MOTIHARI
PATRATU(PTJ)
SADEIPALI

- C. LOCATIONS WHERE FIBER RECENTLY LAID OR UNDER PROGRESS:-

36 No's. Respective constituents may update please. However as gathered Highlighted stations are already having fiber connectivity.

ADHUNIK(APNRL)	NAGARUNTARI
ADHUNIK(APNRL)	PURNEA(PUR)
BANGRIPOSHI	RAVANGLA(RAV)
DARLIPALLI	RAXAUL
DEOGARH (DEO)	SANTALDIH(SNT)
DIKCHU	TISCO (TIS)
DIKCHU	JINDAL
GARWA (GAR)	KURSEONG(KSG)
GMR(GMR)	NEW PUSAULI (NPS)
JAMTARA (JMT)	OPGC
JAPLA (JAP)	RAMMAM(RMM)
JINDAL (JIN)	SAGARDIGHI(SAG)
JORTHANG	STERLITE(SEL)
KALIMPONG(KLM)	STERLITE(SEL)

KENDOPOS (KEN)	STERLITE(SEL)
KHIZIRSARAI	TALCHER SOLAR(TLS)
LAUKAHI	TALCHER SOLAR(TLS)
MAITHON POWER LTD (MRB)	
MAITHON POWER LTD (MRB)	
MOTIPUR	
NABINAGAR	

All constituents are requested to prioritize the port opening preferably within 01 month such that entire AMR communication could be migrated to LAN based data transfer within next 06 months' time period.

**ITEM NO. B.15: Technical overview of AMR Data Center hardware and application refreshment program for Eastern Region**

AMR Hardware and Software/ Application installed and running since 2013 at ERLDC for all the constituents of ER. All the Hardware equipment installed in the system has already elapsed almost 08 Years and being IT equipment, as per present CERC regulation already usable life is consumed.

Accordingly for running the system smoothly, with latest Cyber security aspects/compliances, both, Hardware and Software refreshment is required. New Hardware will be installed as per the CEA/CERC guideline for IT Network equipment along with New AMR application will be developed, with latest JAVA version and new features.

In view of above, M/S. TCS shall deliver a presentation on above for better understanding. Further, after finalization of technical aspects/features, necessary commercial offer shall be submitted.

In the 184<sup>th</sup> OCC meeting, PowerGrid representative submitted that AMR Hardware and Software/ Application which have been running since 2013 at ERLDC for all the constituents of ER became old and have already consumed its usable life. He also added that as per CERC guidelines regarding Cyber security aspects/compliances both the Hardware & Software need to be updated.

M/s TCS representative gave a brief presentation on the same.

OCC agreed to give go ahead to PowerGrid for finalizing the technical aspects so that financial cost assessment can be done. PowerGrid representative informed that they would provide the cost estimate for the up-gradation project within 10 days.

Further, OCC advised PowerGrid to co-ordinate with ERLDC for finalization of the technical aspects.

In the 185<sup>th</sup> OCC meeting, PowerGrid representative informed that after having several meetings with M/s TCS a preliminary offer for both software and hardware part has been received amounting to Rs. 1 Crores 14 Lakhs. He added that for the detailed technical study another 1-week time would be required.

In the 187<sup>th</sup> OCC meeting, PowerGrid representative informed that the comments had already been sent to ERLDC. Barring two/three points related to cyber security and meter manufacturer

all other points are envisaged in the current proposal.

ERLDC representative informed that another comment has been received from PowerGrid on 22.01.2022 and the reply for the same would be given by 24.01.2022.

In the 188<sup>th</sup> OCC meeting, ERLDC representative informed that the comments have been forwarded to PowerGrid and all the proposed points have been accepted except for one pertaining to the communication link for AMR. Upon enquiring PowerGrid about providing of communication channel for AMR, PowerGrid representative submitted that their corporate guidelines don't permit them to disclose the AMR link elsewhere.

OCC advised PowerGrid and ERLDC to resolve the issue related to cyber security bilaterally by convening a separate meeting.

It was deliberated that the in-principal approval would be given only after the bilateral meeting to discuss the cyber security issues is convened.

In the 189<sup>th</sup> OCC Meeting, It was informed that the issue regarding providing of communication link was resolved which would be provided by ERLDC.

Further, discussion regarding ensuring firewall for the links due to cyber security issues would be carried out between the representatives of PowerGrid, ERLDC and TCS to reach a consensus.

PowerGrid representative submitted that port opening details are not being provided for 54 locations and requested all constituents to provide the same.

PowerGrid representative further raised a query of TCS representatives not being allowed in NTPC Talcher and Sterlite for AMC related works.

OCC advised NTPC and SLDC Odisha to take up the matter with Talcher and Sterlite respectively.

PowerGrid informed that M/S TCS gave the offer in Nov-2021 and the subject matter was discussed since 185<sup>th</sup> OCC meeting. However, due to certain issues the unanimity could not be achieved and M/S. TCs had intimated that the offer price is not valid at present and new offer shall be provided by TCS.

Meanwhile it is requested to take the AMR H/W refreshment programme on first track basis for ensuring continuous reliability.

**Members may discuss.**

**ITEM NO. B.16: PLCC issue in Baripada-Kharagpur T/L.**

In reference to the MOM of 184<sup>th</sup> OCC under SI no (6) of item B9, PLCC related issues were discussed in reference to the Kharagpur-Baripada 400 kV line. SLDC, WB urged for following the all over India trend to settle the issue of who will rectify / replace the PLCC panels in respect to the mentioned line. PowerGrid Orissa urged for following precedence for rectification / changing of PLCC panels at both ends by WBSETCL. The same was reflected in the minutes.

However, on careful scrutiny for other tie lines, it was noticed that normally the maintenance, fault rectification, panel replacement types of jobs for PLCC panel etc. are done by the utilities at their respective ends. For example, in case of STPS-Chandil line, JSEB is maintaining their end PLCC portion and WB for STPS end part.

Hence, continuing the same logic of SLDC, WB as was mentioned in 184<sup>th</sup> OCC, that different



rules for different tie lines are not desired. So, the all-India trend should be maintained for the Kharagpur-Baripada line also. Hence for changing the panels at Baripada end, Power Grid may please take up the matter, and WB will take care of the Kharagpur end panel replacement work to make both channels available and reliable.

In the 185<sup>th</sup> OCC meeting, West Bengal representative pointed out that different practice of maintenance for different tie lines is not desirable and there is a need for streamlining the procedure for all the tie lines. He further submitted that irrespective of the ownership of the PLCC, the maintenance work may be carried out by the utilities at their respective ends.

Powergrid Odisha representative stressed upon the fact that the maintenance work of both ends may be carried out by the respective owners of the PLCCs.

OCC opined that a uniform methodology has to be implemented for the maintenance of all the tie lines. OCC advised Powergrid representative to take up the matter with their higher management and share their views with ERPC for further deliberation on the issue. Powergrid Odisha vide mail dated 25.11.2021 informed that the said PLCC panels at baripada are WBSETCL's property. Further the following details mentioned below were also furnished by Powergrid Odisha.

#### **PART-I**

1. 400 kV Rengali-Kolaghat line was pre-existing before LILO of the same at Baripada in 2005. During this LILO, PLCC panels at Rengali were diverted to Baripada Ss for PLCC link of Baripada-Kolaghat Line.
2. These panels were maintained by Gridco at Rengali S/s before diversion to Baripada Ss and were supposed to be maintained by GRIDCO at Baripada Ss after the said diversion.
3. These were old ABB make PLCC Panels.
4. IOM dtd 05.09.2009 by CM (O&M) Baripada to CM (OS), ER-II, Kolkata and Fax dtd 25.04.2005 from DGM Baripada to GM (Telecom), GRIDCO are relevant references for above mentioned details. Scan copy attached for reference.

#### **PART-II**

1. WBSETCL commissioned 400 kV Kharagpur Substation in 2012 by making LILO of the existing 400 kV S/C Baripada-Kolaghat line at Kharagpur.
2. During the above LILO, existing ABB PLCC panels meant for earlier Baripada-Kolaghat line was replaced by BPL Make PLCC Panels.
3. Fresh PLCC arrangement at Baripada Ss for above 400 kV Baripada-Kharagpur line was taken up by WBSETCL through their vendor M/s Alstom. Letter from M/s WBSETCL to POWERGRID vide letter no. TR. PROJ. /T-181/20 dtd 11.04.2012 is attached for reference.
4. The frequencies to be set for above PLCC link were communicated to Baripada Ss by M/s WBSETCL through Letter No. C/ED/PLCC/PGCIL/Kharagpur dtd 30.08.2010. Scan copy attached.

Further, it has also been learnt from previous employees posted at Baripada Ss that revenue bifurcation for maintenance of PLCC at Baripada Ss by POWERGRID has not been done and that the response from Kharagpur end for any rectification of PLCC panels for subject line was poor.

In the 186<sup>th</sup> OCC Meeting, Powergrid Odisha representative informed as the asset does not belong to them; the maintenance work shall not be carried out by Powergrid.

West Bengal representative stressed upon the fact that different practices of maintenance for different tie lines are not desirable and there is a need for streamlining the procedure for all the tie lines. He added that irrespective of the ownership of the PLCC, the maintenance activities should be carried out by the utilities at their respective ends.

MS, ERPC was of the view that in case of interstate tie lines having two different owners, the selection of the equipment should be on the basis of mutual consensus and cost sharing between the involved parties. Thereafter, the erection, commissioning and maintenance of PLCC could be taken up individually at respective utilities' ends. The above methodology may be taken up and finalized in the upcoming TCC & ERPC meetings and would be used as a reference for all such future cases.

In the 45<sup>th</sup> TCC Meeting, after detailed discussion TCC referred the issue back to OCC for further deliberation and consensus.

**Members may discuss.**

**ITEM NO. B.17: Agenda by Rangit HEP**

**1) Request for maintenance of 20 MVA, 132 KV/66 KV power transformer of Sikkim State Electricity Board installed at Rangit Power Station.**

It was observed that the oil level of the above transformer is found very low, even the conservator tank was almost empty. It requires to be topped up immediately by Sikkim State Electricity Board.

**2) Shutdown required for replacement of 132 KV old breaker.**

It was also observed that 132 KV SF6 gas circuit breaker installed at primary side of transformer is not working properly and it may result to breakdown someday. It requires urgent replacement with new one for which shutdown of above line is required. In this regard, shutdown of the said bay for 5 working days continuously had been requested vide letter no. NH/RPS/PHE/2020-21/1295 Dtd. 18.10.2021 & NH/RPS/PHE/2021-22/1904 Dtd. 10/01/2022. The same was not permitted by Sikkim SLDC due to non-availability of alternate power supply at Ravangala.

**3) Shutdown required for implementation of SCADA of 132 KV Rangit – Sagbari Line.**

For implementation of SCADA and to bring the RTU data through SCADA, line shut down is required on continuous basis for 5 days.

**Rangit may update.**

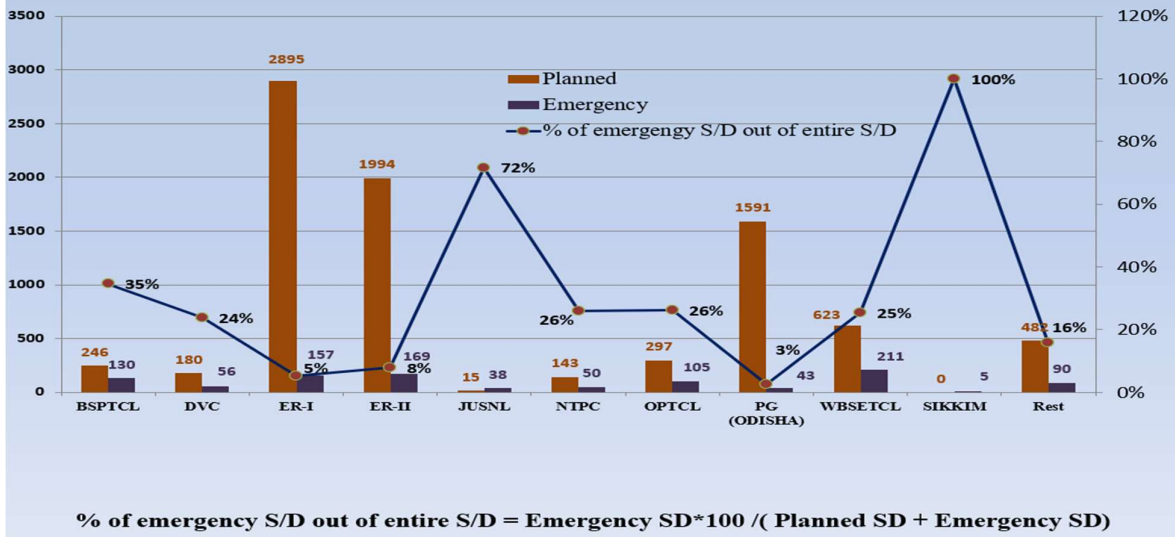
**ITEM NO. B.18: Shutdown related issues.**

**B.18.1. Increased number of emergency shutdowns.**

Emergency and planned, shutdown taken by different utilities during the last financial year is shown below.



## Planned vs emergency S/D during 21-22

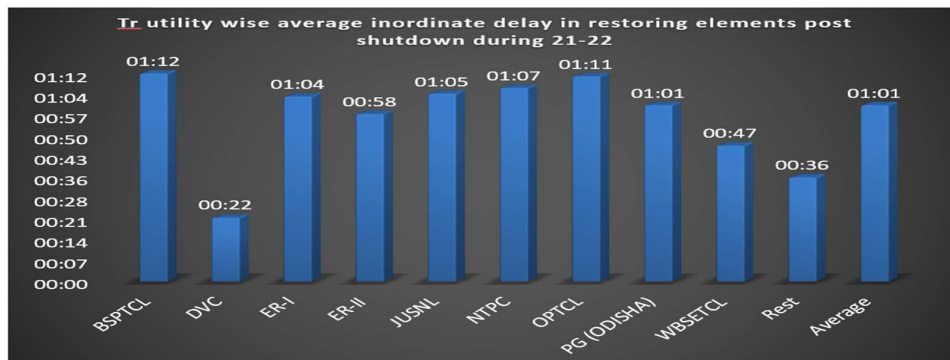


It can be seen that for Jharkhand and Sikkim percentage of the emergency shutdown is very high 72% and 100% respectively. The emergency condition normally arises in the case when maintenance work is not taken up on time. Further it is also observed that shutdown is sought on emergency grounds even when work doesn't fall under emergency.

### B.18.2. Delay in returning of the shutdown on time.

Delay in returning of, shutdown taken by different utilities during the last financial year is shown below.

## Delay in returning S/D

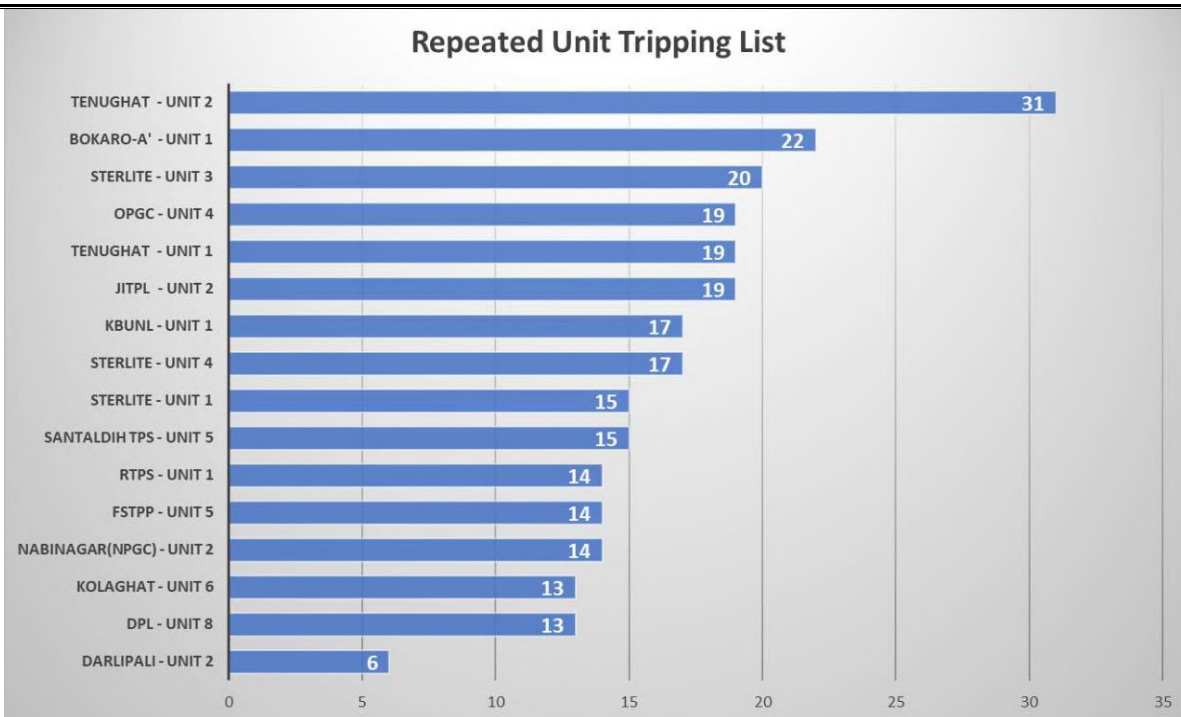


On an average 1-hour delay in returning from the shutdown is observed, which needs to be reduced.

Respective utilities may update.

### ITEM NO. B.19: Repeated unit tripping's – Impacting resource adequacy

In the past one year, it was observed that many units are tripping repeatedly on account of some similar nature of fault/events. This in turn impacts the resource adequacy and availability of units which will be critical as summer load. Units that have tripped multiple time is shown below.



Following observations are found.

- Tenughat units have tripped mostly due to Loss of evacuation or on external through fault and on BTL .
- More than 60% tripping's of Sterlite plants unit are due to Ash handling problem.
- JITPL -U2 more than 50% tripping's on High turbine vibration.
- Bokaro -Unit 1 more than 40% tripping's on Boiler tube leakage
- OPGC, NPGC-1, KBUNL-1, DPL-8, RTPS-1 are mostly tripping with Boiler Tube Leakage.

Detailed analysis is attached in **Annexure-B.19**.

**Generators may update. Members may discuss.**

**ITEM NO. B.20: Resource adequacy and ensuring Grid discipline under present Grid condition.**

As summer has already set in a sharp rise in all India demand is witness from late March. With rise in mercury demand is expected to rise further in upcoming days. During the last few days a very low frequency condition is observed in the grid, with it remaining below IEGC band for a significant amount of time as well as frequency going below 49.7 Hz almost on daily basis.

Date	Minimum Frequency	% of time below IEGC band
01-April-22	49.82	1.12
02-April-22	49.65	9.70
03-April-22	49.75	11.86
04-April-22	49.58	25.56
05-April-22	49.52	41.33
06-April-22	49.58	47.95
07-April-22	49.51	62.67

08-April-22	49.58	34.99
09-April-22	49.50	39.16
10-April-22	49.55	9.42
11-April-22	49.47	30.1

**Constituents are requested to ensure that its interchange remains within approved scheduled. Any Physical regulatory measure initiated by ERLDC for ensuring grid security need to be complied at the earliest. Further healthiness of UFR also needs to be checked regularly.**

**ITEM NO. B.21: Agenda on Environmental norms.**

As CEA is monitoring the compliance of Environment Emission norms, it is requested that the requisite information in the attached format (**Annexure B.21**) may kindly be furnished to email ID: [cetprm-cea@gov.in](mailto:cetprm-cea@gov.in) with a copy to [ereb\\_cea@yahoo.co.in](mailto:ereb_cea@yahoo.co.in) on monthly basis.

**Members may note.**

### **PART C: ITEMS FOR UPDATE**

#### **ITEM NO. C.1: ER Grid performance during March 2022**

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month March-2022 were as follows:

<b>Average Consumption (MU)</b>	<b>Maximum Consumption (MU)/ Date</b>	<b>Maximum Demand (MW) Date/Time</b>	<b>Minimum Demand (MW) Date/Time</b>	<b>Schedule Export (MU)</b>	<b>Actual Export (MU)</b>
469.38	523.2 MU 29-03-2022	24951 MW, 28-03-2022 19:58 Hrs.	15114 MW, 02-03-2022 at 04:23 Hrs.	4638	4689

ERLDC may highlight the performance of the ER 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 the month of March 2022. The details of these events and the overall response of the Eastern region have been summarized in Table below.

<b>Event</b>	<b>Frequency Change</b>	<b>ER FRC</b>
Event - 1 : At 12:47 Hrs. Dated 27th-March-2022,As reported due to multiple element tripping at 400kV Lapanga station 562 MW(Unit-3) Generation loss at OPGC and 1900 MW load loss at 400kV Sterlite(Vedanta) occurred .Effective Load loss of around 1338 MW has been considered in the event for FRC Calculation.	49.99 Hz to 50.03 Hz.	56%
Event - 2 : At 15:30 Hrs. Dated 15th-March-2022,As reported bus bar protection operated at 220 KV Raigarh CG S/S of Western Region and resulted in tripping of all elements at 220 KV Raigarh CG S/S. Load loss of around 936 MW reported in the event.	49.92 Hz to 49.99 Hz.	-4.5%

Members may note.

**ITEM NO. C.3: Review of implementation of PSDF approved projects of ER.**

In 10<sup>th</sup> 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-C.3**.

187<sup>th</sup> OCC advised all the utilities to update the status of project to the ERPC Secretariat.

**Members may update.**

**ITEM NO. C.4: Status of implementation of AGC as a pilot project in States.**

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

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

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

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

In the 183<sup>rd</sup> OCC meeting, OPGC representative informed that work order has been issued to M/s Siemens for implementation of AGC. The work would be carried out during the unit shutdown which is scheduled from 18.10.2021.

State	Station/Unit	Deliberation in 184 <sup>th</sup> OCC Meeting
DVC	Mejia unit#7 &8	DVC representative informed that NIT is to be floated.
Odisha	Unit#3 of OPGC	OPGC vide email dated 25 <sup>th</sup> Oct'21 informed that some additional data is needed from SLDC Odisha and after getting the same AGC would be implemented.

In the 185<sup>th</sup> OCC meeting, DVC representative informed that the NIT for implementation of AGC will be floated by 9<sup>th</sup> December 2021.

OPGC representative was not present during the discussion.

In the 186<sup>th</sup> OCC meeting, DVC representative informed that the NIT would be floated by 31<sup>st</sup> December 2021.

In the 187<sup>th</sup> OCC meeting, OPGC and DVC representative were not present during the discussion.

In the 188<sup>th</sup> OCC meeting, DVC representative informed that NIT was floated on 29<sup>th</sup> December 2021 and the bid opening would be done on 19<sup>th</sup> February 2022.

OPGC representative was not present during the discussion.

**Members may update.**

**ITEM NO. C.5: Primary Frequency Response Testing of ISGS Generating Units**

In the 180<sup>th</sup> 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.

In the 181<sup>st</sup> OCC meeting, ERLDC representative informed that PFR testing of MPL got postponed due to some technical issue. He further informed that PFR testing is going on in APNRL and that of NPGC and BRBCL is scheduled in the last week of July'21 and 1<sup>st</sup> week of August'21 respectively.

In the 182<sup>nd</sup> OCC meeting, ERLDC representative submitted that During July – August 2021, PFR testing has been conducted at the following generating units:

1. Adhunik TPS Unit 1 & 2
2. BRBCL TPS Unit 2 & 3
3. Nabinagar STPS Unit 1
4. Kahalgaon STPS Unit 1

In the 183<sup>rd</sup> OCC meeting, ERLDC representative updated that PFR testing for Unit# 1 & 2 of GMR had been completed.

In the 185<sup>th</sup> OCC meeting, ERLDC representative informed that PFR testing of Dikchu is being carried out.

In the 187<sup>th</sup> OCC Meeting, OCC advised all the members to provide the updated status of PFR testing, if any, to ERPC and ERLDC.

In the 188<sup>th</sup> OCC meeting, ERLDC representative informed that updated status of PFR testing was received from MPL.

The updated status is enclosed at **Annexure-C.5**.

**Members may update the status of PFR testing, if any, to ERPC and ERLDC.**

**ITEM NO. C.6: Testing of Primary Frequency Response of State Generating units by third party agency.**

In the 171<sup>st</sup> 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 6<sup>th</sup> 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

In the 185<sup>th</sup> OCC meeting, OHPC representative informed that testing of Primary Frequency Response of all the units of Rengali and Indravati will be done by the end of December 2021.

WBPDC representative informed that they will place the order in the month of December 2021.

In the 186<sup>th</sup> OCC Meeting, OHPC representative informed that the testing of Primary Frequency Response of all the units of Rengali and Indravati would be done by the 2<sup>nd</sup> week of January 2022.

DVC representative informed that the bid opening had been done on 22<sup>nd</sup> December 2021.

In the 187<sup>th</sup> OCC meeting, OHPC and DVC representatives were not present during the discussion.

In the 188<sup>th</sup> OCC meeting, It was informed that PFR testing of all the 3 units of Budge-Budge are scheduled from 26<sup>th</sup> Feb 2022 to 3<sup>rd</sup> March 2022.

OHPC representative submitted that PFR testing of all the units of Rengali (5 units) and Indravati (4 units) would be carried out by M/s Solvina from 20<sup>th</sup> March 2022 onwards.

DVC representative informed that the work order for PFR testing has been placed.

**Members may update.**

**ITEM NO. C.7: 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 171<sup>st</sup> OCC Meeting and shared with all concerned utilities.



In the 186<sup>th</sup> OCC Meeting, Teesta –V representative informed that the PSS tuning would be conducted in the last week of January 2022.

It was informed in the OCC that PSS tuning of Rongnichu and Chuzachen had been completed.

DVC representative informed that PSS tuning of RTPS unit-1 & 2 would be done in the month of March 2022.

BRBCL representative informed that PSS tuning of BRBCL unit-1 has also been completed.

In the 187<sup>th</sup> OCC meeting, OCC advised ERLDC to send the updated status of PSS tuning to ERPC.

The updated schedule for PSS tuning of the units is attached at **Annexure-C.7**.

**Members may update.**

**ITEM NO. C.8: Status of UFRs healthiness installed in Eastern Region.**

Members may update the status of UFR healthiness installed in Eastern Region.

**Members may update.**

**ITEM NO. C.9: Status of Islanding Schemes healthiness installed in Eastern Region.**

As per the decision taken in the meeting held on 8<sup>th</sup> July 2021 and chaired by member (GO&D), CEA, data in prescribed formats may be submitted by concerned utilities to RPCs on monthly basis to certify the healthiness of the Islanding Schemes.

**a. Format - I for RLDC/SLDCs**

S.NO	Name of Islanding Scheme	Healthiness of Communication channel

**b. Format - II for Generating Station**

S.NO	Name of Islanding Scheme	Healthiness of Islanding Relay	Healthiness of Communication channel

**c. Format - III for Transmission Utility/DISCOMs**

S.NO	Name of Islanding Scheme	Elements considered for tripping to from Island	For communication-based tripping logic Of feeders	For UFR based tripping logic of feeders

			<b>Healthiness of Communication channel</b>	<b>Healthiness of PT Fuse and status of DC supply to UFR relay*</b>
				<b>Healthiness of Relay#</b>

\* Where dedicated UFR relay have been installed for tripping of the feeders under Islanding scheme

# Where UFR functions have been enabled within backup protection relay of the line.

**d. Format - IV for collecting Relay details of the Islanding scheme.**

The following format may be used to get Relay details of the Islanding scheme:

<b>S.NO</b>	<b>Description</b>	<b>UFRs-for load relief (A)</b>	<b>df/dt -for load relief (B)</b>	<b>Relay for Island creation(C)</b>
1	Relay location (S/s name)			
2	Relay make & model			
3	Frequency setting of the relay (at which load shedding is envisaged)			
4	Feeder name (voltage level and source-destination name) signaled by the Islanding Relay for separation /load shedding/separation from outside grid			
5	Quantum of load relief due to tripping of feeder (as per state's peak of previous year)			
6	Quantum of load (Min, Avg, Max in MW) on the feeder (as per state's peak of previous year)			

**e. Format - V for Contact details of all Nodal Officer**

<b>Utility Name &amp; Location</b>	<b>Name</b>	<b>Designation</b>	<b>Organization</b>	<b>Email ID</b>	<b>Mobile No.</b>

It was deliberated in the 186<sup>th</sup> OCC meeting that except West Bengal all the entities are sending the report as per the new format.

In the 187<sup>th</sup> OCC meeting, it was informed that except for West Bengal all entities are sending the report as per the new format.

**Members may update.**

**ITEM NO. C.10: Latest Status of States ATC/TTC declared by States for the month of May-2022.**

To harmonise the ATC/TTC calculation methodology and timeline One to one meeting and hands on training with each SLDC was conducted in the month of Sep-21 and Oct-21. As per the common agreed procedure and timeline ATC/TTC calculation in three-month advance and reconciliation of the TTC/ATC figure for the upcoming month between RLDC and SLDC has started from month Dec-21. Reconciled ATC/TTC figures for May-2022 are as follows:

SI No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	6876	--	138	--	6738	--	May-22
2	JUSNL	1685	--	60	--	1625	--	May-22
3	DVC	2040	3644	65	51	1975	3593	May-22
4	OPTCL	3356	1723	121	71	3235	1652	May-22
5	WBSETCL	5660	--	450	--	5210	--	May-22
6	Sikkim	170	--	2.18	--	167.82	--	May-22

As per the agreed philosophy the status of month wise ATC/TTC submission is as follows:

State	Bihar	Jharkhand	DVC	Odisha	West Bengal	Sikkim
Month						
May-22	Submitted	Submitted	Submitted	Submitted	Submitted	Submitted
June-22	Submitted	Submitted	Submitted	Pending	Submitted	Pending
July-22	Submitted	Pending	Submitted	Pending	Submitted	Pending
Aug-22	Pending	Pending	Pending	Pending	Submitted	Pending

**Declaration of TTC/ATC on SLDC Website:**

SI No	SLDC	Declared on Website	Website Link	Constraint Available on Website	Type of Website Link
1	BSPTCL	Yes	<a href="http://www.bsptcl.in/ViewATCTTCWeb.aspx?GL=12&amp;PL=10">http://www.bsptcl.in/ViewATCTTCWeb.aspx?GL=12&amp;PL=10</a>	Yes	Static Link-Table
2	JUSNL	Yes	<a href="http://www.jusnl.in/pdf/download/ttc_atc_nov_2020.pdf">http://www.jusnl.in/pdf/download/ttc_atc_nov_2020.pdf</a>	Yes	Static link - pdf file
3	DVC	Yes	<a href="https://application.dvc.gov.in/CLD/atctcmenu.jsp#">https://application.dvc.gov.in/CLD/atctcmenu.jsp#</a>	Yes	Static Link-Word file

4	OPTCL	Yes	<a href="https://www.sldcorissa.org.in/TTC_ATC.aspx">https://www.sldcorissa.org.in/TTC_ATC.aspx</a>	Yes	Static Link-pdf file
5	WBSETCL	Yes	<a href="http://www.wbslc.in/atc-ttc">http://www.wbslc.in/atc-ttc</a>	No (Not updating)	Static Link-Table
6	Sikkim	No	<a href="https://power.sikkim.gov.in/atc-and-ttc">https://power.sikkim.gov.in/atc-and-ttc</a>	No (Not updating)	Static Link-Excel file

All the states having net export schedule should declare their export TTC. In view of the same West Bengal is once again requested to share export TTC.

**It is observed that from Bihar, DVC and Sikkim submission of ATC/TTC and base case are not regular. All the states are once again requested to share ATC/TTC in timely manner.**

#### ITEM NO. C.11: Mock Black start exercises in Eastern Region

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

Sl. No	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U. Kolab	Last week of 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 2week 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	Done on 9 <sup>th</sup> April'21		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	

SLDC, Odisha representative informed that they would go for Mock Black Start of Balimela in the 2<sup>nd</sup> week of August '21.

In the 182<sup>nd</sup> OCC meeting, OHPC representative submitted that Mock Black Start had been done for Rengali on 18<sup>th</sup> August'21 and they would go for Mock Black Start of Balimela in Sept'21.

OCC advised the concerned utilities to give prior intimation to ERLDC and ERPC regarding Mock Black Start.

In the 183<sup>rd</sup> OCC meeting, SLDC Odisha representative informed that mock black start for Balimela has been scheduled in Nov-21.

Teesta III HEP representative submitted that mock black would be carried out for their plant in Nov'21 as per the schedule.

In the 185<sup>th</sup> OCC meeting, SLDC Odisha representative was not present in the discussion.

JUSNL vide letter dated 25.11.2021 informed that the Mock Black Start exercise at Subarnarekha Hydel Power, Sikidiri is scheduled on 03.12.2021 (Friday) from 11:00 hrs. to 13:00 hrs.

In the 186<sup>th</sup> OCC meeting, ERLDC representative informed that Mock Black Start of unit-7 of Burla and TLDP unit-4 were successfully completed on 15<sup>th</sup> & 16<sup>th</sup> December 2021 respectively.

Teesta-III representative informed that Mock Black Start would be done after completion of LILO work of Teesta-III Kishanganj.

Jharkhand representative informed that Mock Black Start at Subarnarekha was completed on 3<sup>rd</sup> December 2021.

Odisha representative informed that the Mock Black Start of Balimela is planned in the 2<sup>nd</sup> week of January 2022.

In the 187<sup>th</sup> OCC meeting, ERLDC representative informed that the mock black start of Teesta-V would be conducted shortly.

In the 188<sup>th</sup> OCC meeting, SLDC Odisha representative informed that Black Start of Burla has been completed and Black Start of Balimela is scheduled in the month of March 2022.

Teesta-III representative informed that Black Start testing would be conducted after the Committee Report on Teesta-V incident.

**Members may update.**

**ITEM NO. C.12: Status update on transmission constraint from the respective state.**

In the meeting Chaired by Joint Secretary (OM & RR) dated 12.01.2022, transmission constraints for drawl of power by states were discussed.

In line with same it is required to update on approved plan, prospective schedule of the project completion and reasons for delay in commissioning if any. List of the lines is given in **Annexure-C.12.**

187<sup>th</sup> OCC advised all the concerned utilities to update the status of their approved plan and prospective schedule.

In the 188<sup>th</sup> OCC meeting, It was informed that comments are still awaited from all the constituents.

OCC advised all the constituents to review the annexure thoroughly and update the status of their approved plan and prospective schedule.

**Members may update.**

## PART D: OPERATIONAL PLANNING

### ITEM NO. D.1: Anticipated power supply position during May 2022

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of May 2022 (**Annexure D.1**) 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.

**Members may update.**

### ITEM NO. D.2: Shutdown proposal of generating units for the month of May 2022

Generator unit shutdown schedule for May' 2022 is given in the table:

Proposed Maintenance Schedule of Thermal Generating Units of ER in the month of May' 2022								
System	Station	Unit No.	Capacity (MW)	Period (as per LGBR 2022-23)		No. of Days	Reason	Remarks
				From	To			
No any Thermal Unit is scheduled to be taken up for Planned Maintenance in this month								

#### Additional:

- GMR Kamalanga Energy Limited vide Letter dated 04.04.2022 has intimated that Capital Overhauling of Unit-1 (350 MW) will be conducted from **15.06.2022 to 24.07.2022 (40 Days)**. However, as per the LGBR 2022-23, the maintenance of said unit is scheduled from 01.11.2022 to 15.12.2022 (45 Days).
- NTPC vide letter dated 13.04.2022, proposed to carry out overhauling of Unit#1, Stage 1 of Barh (660 MW) from 1<sup>st</sup> July 2022 to 4<sup>th</sup> August 2022 (35 days) for mandatory generator inspection as per OES, M/s Power Machines, Russia, in view of generator failure at NTPC – Sipat of same supplier, from 28.10.2021 to till date.

**Members may update.**

### ITEM NO. D.3: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 17.04.2022)

#### a) Thermal Generating Stations outage report:

SL No	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	BARAUNI TPS	BIHAR	NTPC	7	110	Turbine problem	19-Feb-22



2	BARAUNI TPS	BIHAR	NTPC	8	250	Boiler Tube Leakage	17-Apr-22
3	DPL	WEST BENGAL	WBPDCCL	7	300	Due to coal shortage	09-Apr-22
4	FSTPP	WEST BENGAL	NTPC	2	200	Boiler Tube Leakage	16-Apr-22
5	FSTPP	WEST BENGAL	NTPC	5	500	Bottom Ash Buildup.	17-Mar-22
6	KOLAGHAT	WEST BENGAL	WBPDCCL	4	210	Poor Coal Stock	08-Apr-22
7	KOLAGHAT	WEST BENGAL	WBPDCCL	5	210	Boiler Tube Leakage	17-Apr-22
8	RTPS	JHARKHAND	DVC	1	600	Boiler Tube Leakage	15-Apr-22
9	OPGC	ODISHA	ODISHA	4	660	Annual Overhauling	26-Mar-22

**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 are requested 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 (MW)	REASON(S)	OUTAGE DATE
1	NIL						

**b) Hydro Unit Outage Report:**

S. NO	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	BALIMELA HPS	ODISHA	OHPC	4	60	SPARKING AT PMG	04-Apr - 2022
2	BALIMELA HPS	ODISHA	OHPC	5	60	Problem in excitation system	25-Jan-2022
3	RENGALI HPS	ODISHA	OHPC	3	50	Bearing problem	26-Nov-2021

**It is seen that about 170 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 II 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	400KV/220KV 315 MVA ICT 2 AT MEERAMUNDALI	OPTCL	21.02.2021	FIRE HAZARD
7	400KV/220KV 315 MVA ICT 4 AT JEERAT	WBSETCL	09.04.2021	VERBALLY CONFIRMED BY WB THAT NEW TRANSFORMER PROCUREMENT UNDER PIPELINE AND SHALL BE REPLACED IN THE NEAR FUTURE.
8	220KV-FSTPP-LALMATIA	JUSNL	21.04.2021	THREE TOWER COLLAPSED NEAR LALMATIA
9	220KV-GAYA-CHANDAUTI (PMTL)-DC	BSPTCL	25.05.2021	FOR DISMANTLING OF TOWER NO 51 UNDER LILO WORK AT BODHGAYA.
10	400KV-BINAGURI-TALA-1	BHUTAN	12.11.2021	S/D TAKEN BY BHUTAN
11	400KV-BINAGURI-TALA-2	BHUTAN	17.03.2022	FIRE ON THE GIS TERMINATION OF THE B-PHASE
12	400KV-MAITHON-MAITHON RB-1	PGCIL	15.04.2022	RE-CONDUCTORING WORK
13	400KV/220KV 315 MVA ICT 4 AT RANGPO	PGCIL	14.03.2022	HIGH C2H2 CONTENT ( 8.7 PPM) HAS BEEN OBSERVED IN PHASE
14	400KV-DARBHANGA (DMTCL)-KISHANGANJ(PG)-1&2	PGCIL	24.03.2022	TERMINATION OF LOOP IN AND LOOP OUT LINE AT SAHARSA
15	400KV-NABINAGAR(NPGC)-PATNA-1&2	BSPTCL	26.03.2022	FOR MAKING LILO OF 400 KV NPGC - PATNA TRANSMISSION LINE AT JAKKANPUR (NEW) GIS S/S.
16	400KV-GORAKHPUR-MOTIHARI-1&2	PGCIL	03.04.2022	DMTCL HAS PROPOSED TO SHIFT 4 TOWERS WHICH ARE ON OPEN CAST FOUNDATION (27/4,27/5 OF MOTIHARI – GORAKHPUR LINE AND 26/4 & 26/5 OF MOTIHARI – BARH LINE)

Transmission licensees/ Utilities are requested to update expected restoration date & work progress regarding restoration regularly to ERLDC/ERPC on monthly basis by 5<sup>th</sup> 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)

**Members may update.**

**ITEM NO. D.4: Commissioning of new units and transmission elements in Eastern Grid in the month of March-2022**

The details of new units/transmission elements commissioned in the month of March-2022 based on the inputs received from beneficiaries:

NEW ELEMENTS COMMISSIONED DURING MARCH-2022							
GENERATING UNITS							
SL. NO.	Location	OWNER/UNIT NAME	Capacity added (MW)	Total/Installed Capacity (MW)	DATE	REMARKS	
NIL							
ICTs/GTs/STs							
SL. NO.	Agency/Owner	SUB-STATION	ICT NO	Voltage Level (kV)	CAPACITY (MVA)	DATE	REMARKS
1	JUSNL	PATRATU	1	400/220	315	3-Mar-22	400KV Side charged on 24-FEB-2022.220KV Bay Charged and first time ICT loaded at 17:32 Hours on 03-MAR-22.
2	OPTCL	MEERAMUNDALI-B	1	400/220	500	23-Mar-22	Idle charged from 220 kV side dated 23-MAR-2022,
3	BIHAR/BGCL	NAUBATPUR	2	400/220	500	17-Mar-22	
TRANSMISSION LINES							
SL. NO.	Agency/Owner	LINE NAME	Length (KM)	Conductor Type	DATE	REMARKS	
1	OPTCL	220KV-BOLANGIR (PG)-KESINGA-1	80.596	ACSR Zebra	9-Mar-22		
2	BSPTCL	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1	73	ACSR Zebra	9-Mar-22		
LILO/Re-Arrangement OF TRANSMISSION LINES							
SL. NO.	Agency/Owner	LINE NAME/LILO at	Length (KM)	Conductor Type	DATE	REMARKS	
1	BIHAR/BGCL	LILO of 400 KV PATNA-BALIA-3 AT NAUBATPUR(BGCL) (400KV-NAUBATPUR(BH)-BALIA-1)	155.818	QUAD Moose	17-Mar-22	400KV-NAUBATPUR (BH)-BALIA-1 Section.	
2	BIHAR/BGCL	LILO of 400 KV PATNA-BALIA-3 AT NAUBATPUR(BGCL) (400KV-PATNA-NAUBATPUR(BH)-1)	25.452	QUAD Moose	17-Mar-22	400KV-PATNA-NAUBATPUR (BH)-1 Section.	
3	BIHAR/BGCL	LILO of 400 KV PATNA-BALIA-4 AT NAUBATPUR(BGCL) (400KV-NAUBATPUR(BH)-BALIA-2)	155.818	QUAD Moose	17-Mar-22	400KV-NAUBATPUR (BH)-BALIA-2 Section.	
4	BIHAR/BGCL	LILO of 400 KV PATNA-BALIA-4 AT NAUBATPUR(BGCL) (400KV-PATNA-NAUBATPUR(BH)-2)	25.452	QUAD Moose	17-Mar-22	400KV-PATNA-NAUBATPUR (BH)-2 Section.	
5	Sikkim	220KV-NEW MELLI-TASHIDING-2	18.8	ACSR Zebra + ACSR Twin Moose	25-Mar-22	220KV Tashiding-Legship including Jumpering Section 8.33 km(ACSR Zebra). 220KV New Melli-Legship jumpering section end 9.773 km(ACSR Twin Moose).	
BUS/LINE REACTORS							
SL. NO.	Agency/Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	REMARKS	
NIL							
HVDC /AC Filter bank / FACTS DEVICE associated System							
SL. NO.	Agency/Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	REMARKS	
NIL							

Bays of Line/ICT/Reactor associated System						
SL. NO.	Agency/Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	REMARKS
1	PGCIL	220KV MAIN BAY OF 400KV/220KV 315 MVA ICT 1 AT PATRATU	PATRATU	220	3-Mar-22	400KV Side charged on 24-FEB-2022.220KV Bay Charged and first time ICT loaded at 17:32 Hours on 03-MAR-2022.
2	BIHAR/BGCL	400KV MAIN BAY OF PATNA -1 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
3	BIHAR/BGCL	400KV MAIN BAY OF PATNA -2 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
4	BIHAR/BGCL	400KV MAIN BAY OF BALIA-1 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
5	BIHAR/BGCL	400KV TIE BAY OF BALIA-1 AND PATNA-2 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
6	BIHAR/BGCL	400KV MAIN BAY OF BALIA-2 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
7	BIHAR/BGCL	400KV MAIN BAY OF 500 MVA ICT-2 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
8	BIHAR/BGCL	400KV TIE BAY OF BALIA -2 AND 500 MVA ICT-2 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
9	OPTCL	220KV MAIN BAY OF 400KV/220KV 500 MVA ICT 1 AT MERAMUNDALI B	MERAMUNDALI-B	220	23-Mar-22	
10	OPTCL	400KV MAIN BAY OF 400KV/220KV 500 MVA ICT 1 AT MERAMUNDALI B	MERAMUNDALI-B	400	28-Mar-22	
BUS						
SL. NO.	Agency/Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	REMARKS
1	BIHAR/BGCL	400KV MAIN BUS - 2 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	
2	BIHAR/BGCL	400KV MAIN BUS - 1 AT NAUBATPUR(BH)	NAUBATPUR	400	17-Mar-22	

Members may update.

**ITEM NO. D.5: UFR operation during the month of March 2022.**

Frequency profile for the month as follows:

Month	Max	Min	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
	(Date/Time)	(Date/Time)			
March, 2022	50.30 Hz on 03.03.2022 at 06:01 Hrs.	49.54 Hz on 22.03.2022 at 22:21 Hrs.	14.50	73.41	12.09

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

Members may note.

\*\*\*\*\*



**Eastern Regional Power Committee**

14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033

Tel. No.: 033-24239651,24239659 FAX No.:033-24239652, 24239653 Web: [www.erpc.gov.in](http://www.erpc.gov.in)

ERPC/Operation/IS/2022/ 97

Date: 18.04.2022

To

As per Distribution List

**Sub: Constitution of "Technical Committee for finalizing Patna & Ranchi Islanding Scheme"-reg**

Sir,

In the 45<sup>th</sup> TCC/ERPC meeting held on 25.03.2022 & 26.03.2022 respectively, it was decided that technical committees are to be formed for finalizing Patna & Ranchi Islanding Scheme. For Patna Islanding scheme, the committee members will be from BSPTCL, SLDC Bihar, NPGCL(NTPC), Powergrid, ERLDC and ERPC whereas for Ranchi Islanding Scheme the members will be from JUSNL, SLDC Jharkhand, TVNL, Powergrid, ERLDC and ERPC. Based on the receipt of nominations from the concerned utilities, the composition of the technical committees are as follows:

Organization	Name	Member
ERPC	S Kejriwal, SE	Member (For Both Patna & Ranchi Islanding Scheme)
	P. P. Jena, EE---Convenor	
ERLDC	A.P. Singh, Manager	
Bihar	A K Choudhury, CE(SO)	Member (For Patna Islanding Scheme)
	S. N. Kumar. CE (O &M)	
NTPC	B K Pandey, AGM(EM)	
	Bipin Kumar, Manager(EM)	
Powergrid	H C Gupta, Chief Manager, Patna S/s	
Powergrid	R K Srivastava, Chief Manager, N. Ranchi S/s	Member (For Ranchi Islanding Scheme)
Jharkhand	Ajeet Kumar, DGM(STU)	
	Rimil Topno, Sr Manager(SLDC)	
TVNL	Sarvesh Prasad, HOD (Electrical)	
	Bhaskar Kumar, HOD(C&I)	
	Ashish Kr. sharma, ESE(Electrical)	
	Imroz Alam, ESE(Turbine division)	

(Cont.)



The committee may co-opt/associate any other expert in the field as they feel necessary. The Committee may also consult OEM/Vendor as and when required for any inputs.

The committee may submit the report by 15<sup>th</sup> May'2022.

This issues with approval of Member Secretary, ERPC.

Yours faithfully,

*P.P. Jena*  
*18-04-2022*

(P. P. Jena)  
Executive Engineer(PS)

Distribution List:

- All Members of the Technical Committee for Patna & Ranchi Islanding Scheme
- Member Secretary, ERPC-for kind information

<b>ISTS feeders to be disconnected at 49.4 Hz and OD</b>
<b>Odisha Feeder list for Disconnection</b>
132 kV Baripada-Bangriposi D/C
132 kV Baripada-Bhogarai/Jaleswar D/C
220 kV Bolangir-New Bolangir D/C
<b>West Bengal Feeder list for Disconnection</b>
220 kV Dalkohla (PG)-Dalkohla(WB) D/C
132 kV Malda (PG)-Malda(WB) D/C
132 kV Birpara(PG)-Birpara(WB) D/C
<b>DVC Feeder list for Disconnection</b>
220 kV Maithon-Dhanbad D/C
220 kV Maithon-Kalyaneswari D/C
220 kV Parulia-Parulia D/C
<b>Jharkhand Feeder list for Disconnection</b>
220 kV Daltonganj- Gardwa D/C
220 kV Daltonganj- Chatra D/C
220 kV Maithon-Dumka D/C
<b>Bihar Feeder list for Disconnection</b>
132 kV Sitamarhi (PG)-Runnisaidpur D/C
132 kV Banka (PG)-Sultanganj D/C
132 kV Banka (PG)-Banka D/C

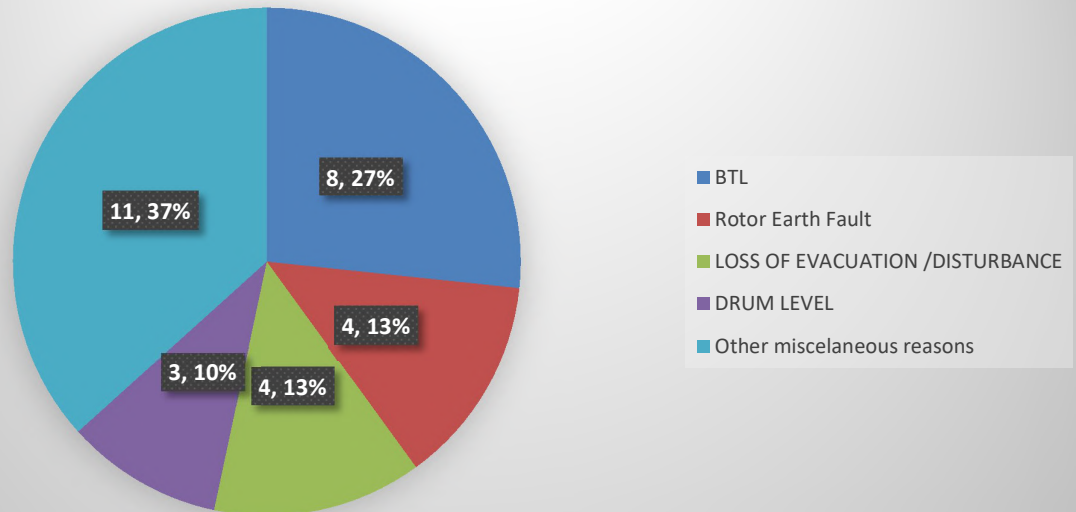
## Annexure-B.19

## Multiple Units Tripping Mar2021-March 2022

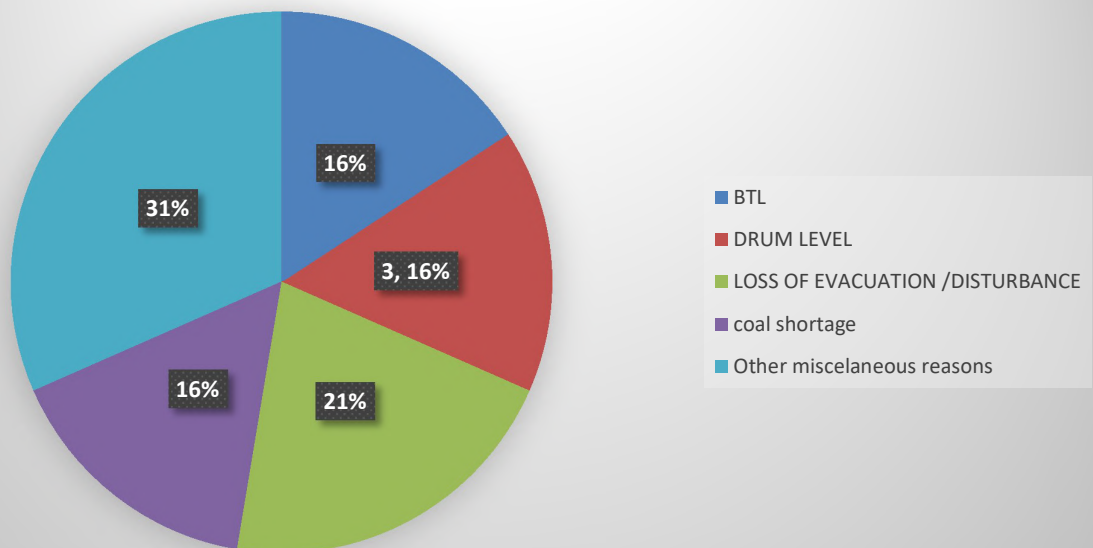
Sr.No	Element Name	No of tripping	Major reason	Owner	Impact States
1	TENUGHAT - UNIT 2 (210 Mw)	31	Rotor Earth fault, Tube leakage, loss of evacuation and other reasons	TVNL	Jharkhand
2	BOKARO-A' - UNIT 1 (500 Mw)	22	BTL, Low drum level, turbine vibration	DVC	DVC
3	Sterlite - UNIT 3 (600 Mw)	20	PA fan problem, Ash handling problem, ID Fan problem	Vedanta-IPP	Orissa
4	JITPL - UNIT 1 (500 Mw)	19	High turbine vibration, turbine governor issue	JITPL-IPP	Orissa and Other
5	TENUGHAT - UNIT 1 (210 Mw)	19	Various tube leakages, Low drum level, Loss of fuel	TVNL	Jharkhand
6	OPGC - UNIT 4	19	BTL, Generator protection		Orissa and Other
7	KBUNL - UNIT 1 (195 Mw)	17	Various tube leakages, Flame failure, Electrical Fault	NTPC	Bihar
8	Sterlite - UNIT 4 (600 Mw)	17	PA fan problem, Ash handling problem, ID Fan problem	Vedanta-IPP	Orissa
9	Sterlite - UNIT 1 (600 Mw)	15	PA fan problem, Ash handling problem, ID Fan problem	Vedanta-IPP	Orissa
10	SANTALDIH TPS - UNIT 5 (250 Mw)	15	BTL, Various reasons	WBPDCCL	West Bengal
11	NABINAGAR(BRBCL) - UNIT 3 (250 Mw)	14	Flame failure, low vacuum	BRBCL	Railway
12	DPL - UNIT 8 (210 Mw)	13	Tube leakage	WBPDCCL	West Bengal
13	DPL - UNIT 7 (250 Mw)	13	BTL, coal feeding problem	WBPDCCL	West Bengal
14	NABINAGAR(BRBCL) - UNIT 1 (250 Mw)	12	BTL, Low drum level	BRBCL	Railway
15	GMR - UNIT 1 (350 Mw)	11	Bottom ash, ID fan trip, Various reasons	GMR-IPP	Orissa and Other
16	FSTPP - UNIT 5 (500 Mw)	11	LOSS OF VACCUUM, CW pump tripping, low drum level	NTPC	ER states

## Unit wise Reasons for Repeated Tripping

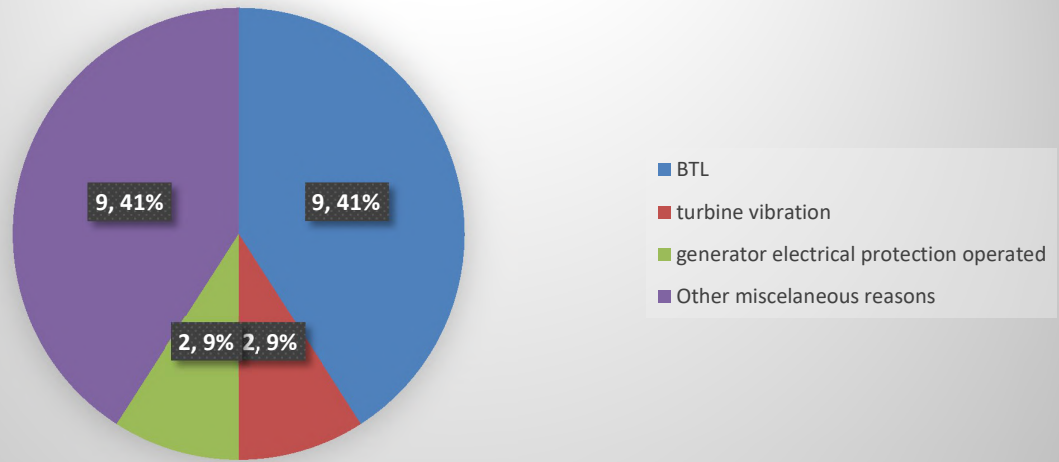
### TENUGHAT - UNIT 2



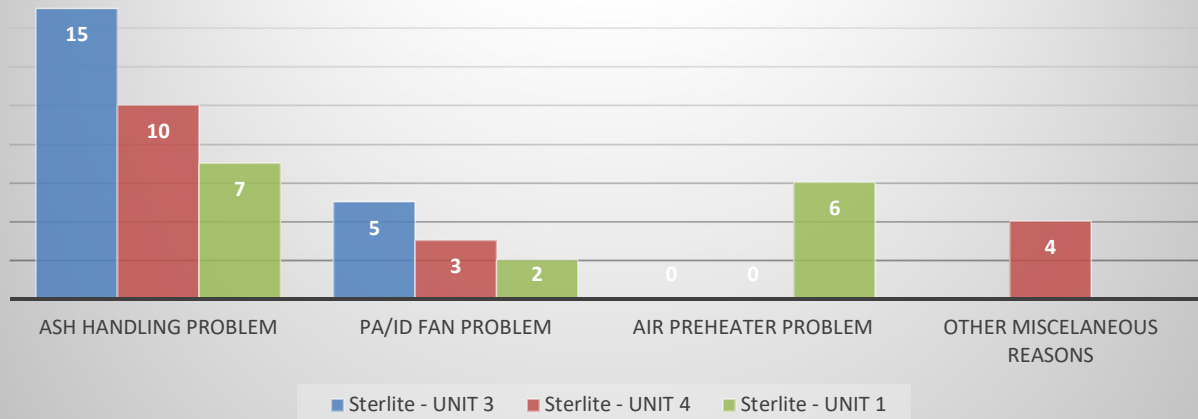
### TENUGHAT - UNIT 1



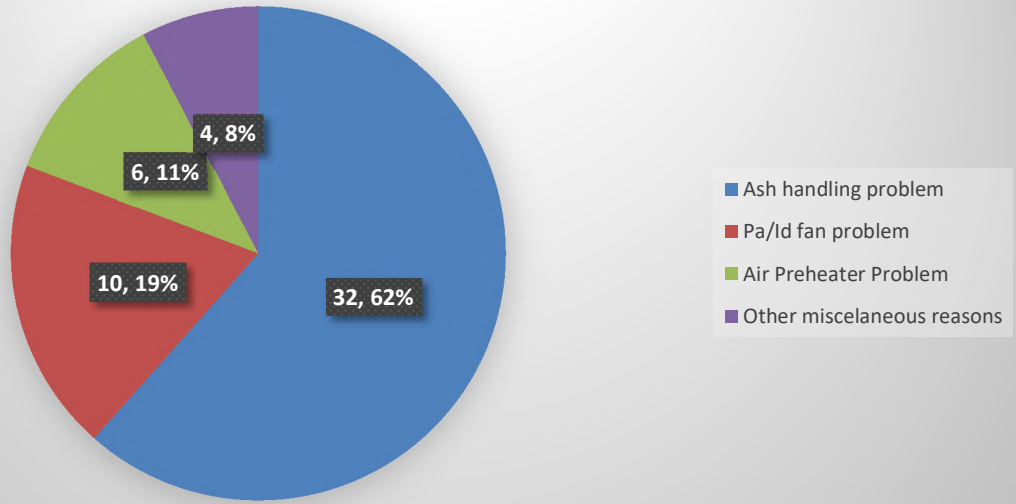
## BOKARO-A' - UNIT 1



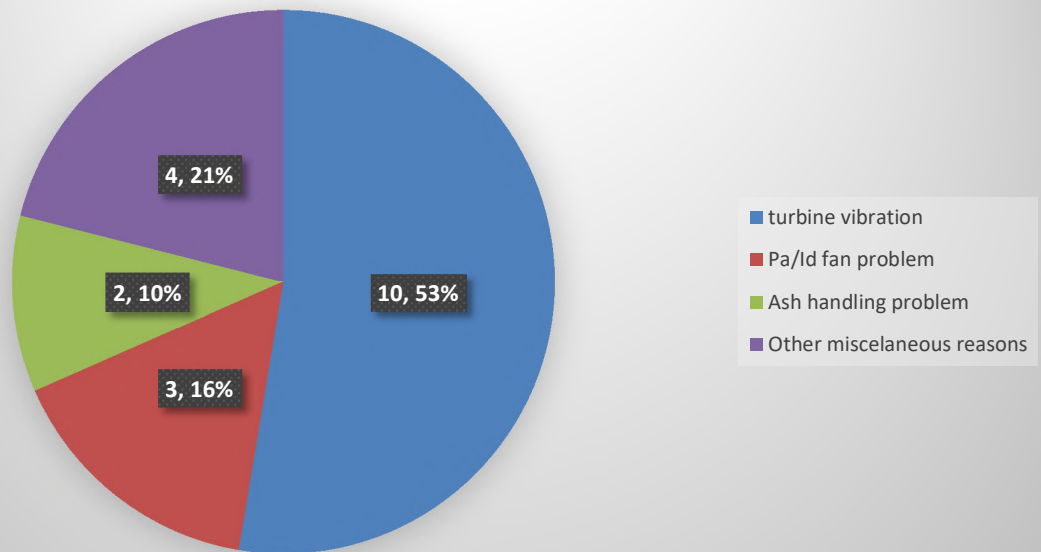
## Sterlite unit wise



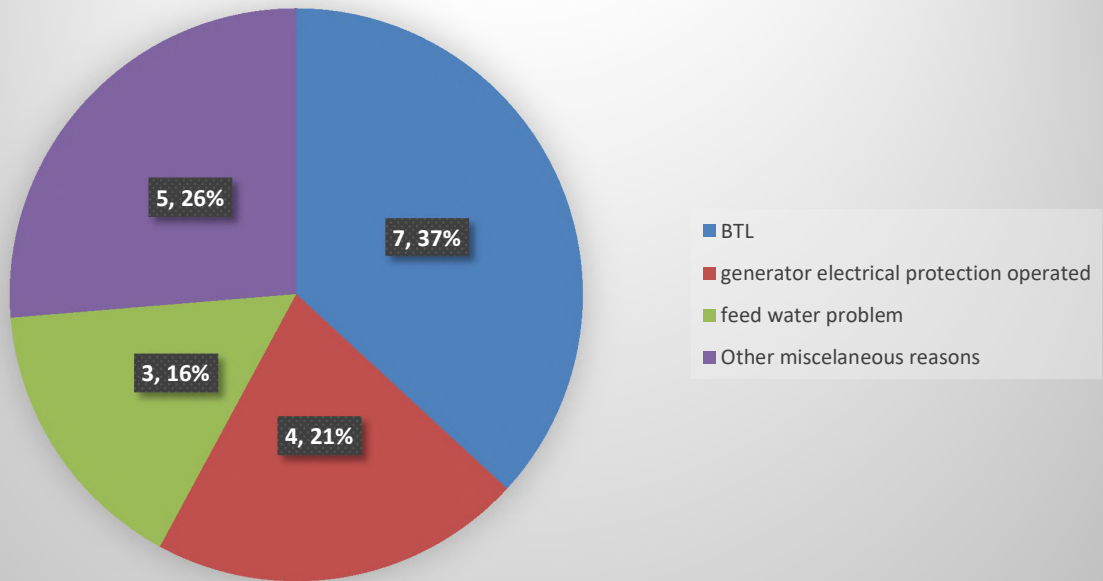
## Sterlite plant



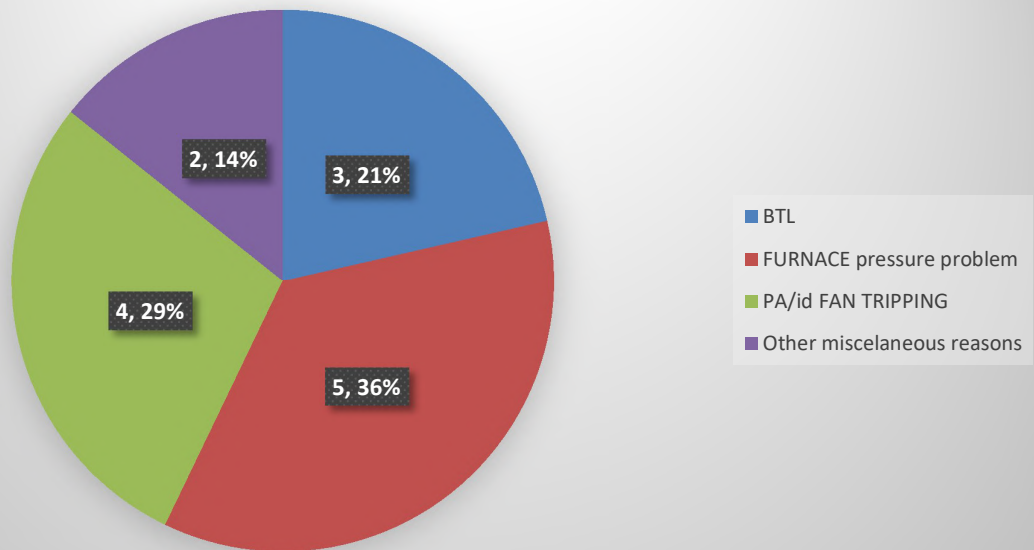
## JITPL unit-2



### OPGC - UNIT 4

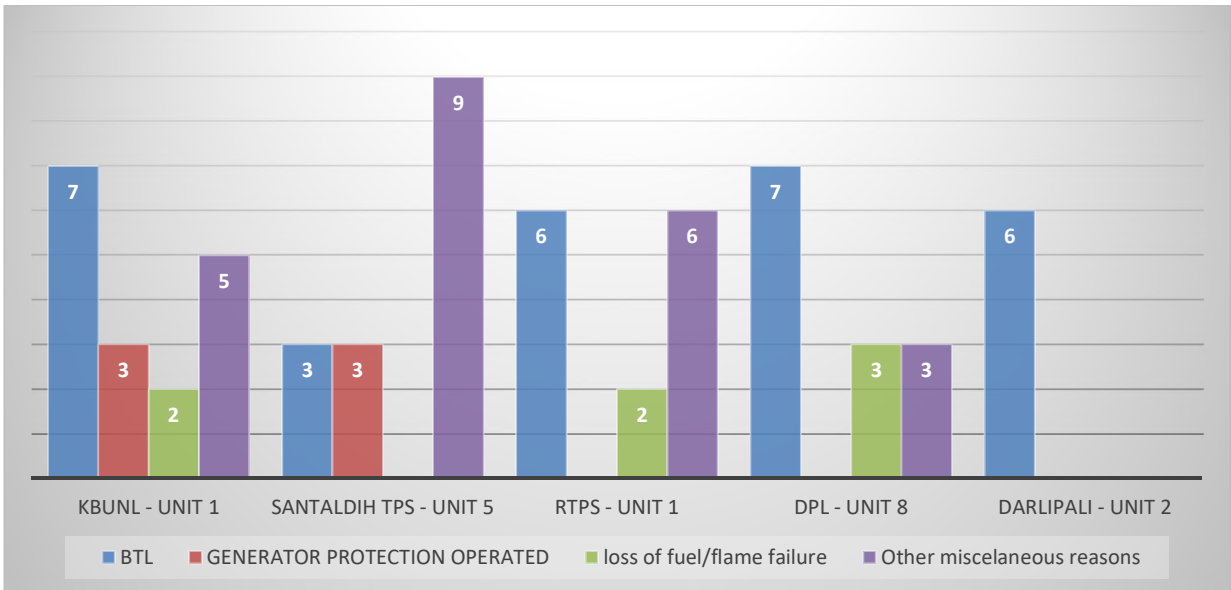


### NABINAGAR(NPGC) - UNIT 2





## Rest Unit tripping Reasons



## Annexure B.21

	<b>Add units in this direction -----&gt;</b>	1	2	3
	<b>Power Station Details</b>			

Under 'A', please provide the general details of each unit of the power station.

A	Details of the thermal power unit	Value	Value	Value
A1	Developer			
A2	Name of Project			
A3	Sector (State / Central /Private)			
A4	District			
A5	State			
A6	Region (NR, ER, NER, SR, WR)			
A7	Unit No	1	2	3
A8	Unit Capacity (MW)			
A9	Date of Commissioning (DD-MM-YYYY)			

	<b>Add units in this direction -----&gt;</b>	1	2	3
	<b>SOx</b>			

**Under 'A', please provide the details regarding De-SOx technology.**

<b>A</b>	<b>Details of De-SOx technology (FGD)</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
A1	Current level of SOx emission (mg/Nm3)			
A2	Applicable SOx norms (100, 200 or 600 mg/Nm3)			
A3	Whether FGD Installed (Y/N)			
A4	Whether FGD planned (Y/N)			
A5	De-Sulphurisation Technology Used / proposed (use Annexure if required)			
A6	FGD Phasing Plan for Implementation (DD/MM/YYYY)			

**Under 'B', please provide the dates of De-SOx equipment installation milestones**

If the milestone has been achieved, right Y for Yes and provide date of achievement.

If the milestone has not been achieved yet, right N for No and provide the target date.

<b>B</b>	<b>De-SOx equipment installation milestones - dates</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>
B1	Feasibility Study Started			
B2	Feasibility Study Completed			
B3	Tender Specifications Made			
B4	NIT Issued			
B5	Bids Opened			
B6	Bids Awarded			
B7	% Progress of FGD Installation			
B8	FGD Commissioned			

**Under 'C', please offer any comments/ remarks you may have.**

<b>C</b>	<b>Current Status &amp; Remarks</b>			
----------	-------------------------------------	--	--	--

	<b>Add units in this direction -----&gt;</b>	1	2	3
	<b>SPM</b>			

**Under 'A', please provide the details regarding ESP technology.**

<b>A</b>	<b>Details of ESP upgradation technology</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
A1	Current level of Suspended Particulate Matter (SPM) (mg/Nm <sup>3</sup> )			
A2	Applicable SPM norms (30, 50 or 100 mg/Nm <sup>3</sup> )			
A3	Whether ESP upgradation planned (Y/N)			
A5	ESP Technology Used / proposed (use Annexure if required)			
A6	ESP Phasing Plan for Implementation (DD/MM/YYYY)			

**Under 'B', please provide the target dates of ESP equipment installation milestones**

If the milestone has been achieved, right Y for Yes and provide date of achievement.

If the milestone has not been achieved yet, right N for No and provide the target date.

<b>B</b>	<b>ESP equipment installation milestones - dates</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>
B1	Feasibility Study Started			
B2	Feasibility Study Completed			
B3	Tender Specifications Made			
B4	NIT Issued			
B5	Bids Opened			
B6	Bids Awarded			
B7	% Progress of upgraded ESP Installation			
B8	Whether upgraded ESP Commissioned			

**Under 'C', please offer any comments/ remarks you may have.**

<b>C</b>	<b>Current Status &amp; Remarks</b>			
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	<b>Add units in this direction -----&gt;</b>	1	2	3
	<b>NOx</b>			

**Under 'A', please provide the details regarding De-Nox technology.**

<b>A</b>	<b>Details of De-NOx Equipment</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
A1	Current level of Nox emissions (mg/Nm3)			
A2	Applicable NOx norms (100, 300 or 600 mg/Nm3)			
A3	Whether SCR planned (Y/N)			
A5	Details of Nox control technology and other measures planned (use Annexure if required)			
A6	DeNOx Phasing Plan for Implementation (DD/MM/YYYY)			

**Under 'B', please provide the target dates of De-NOx equipment installation milestones**

If the milestone has been achieved, right Y for Yes and provide date of achievement.

If the milestone has not been achieved yet, right N for No and provide the target date.

<b>B</b>	<b>De-Nox equipment installation milestones - dates</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>	<b>(Y/N) Date (DD-MM-YYYY)</b>
B1	Feasibility Study Started			
B2	Feasibility Study Completed			
B3	Tender Specifications Made			
B4	NIT Issued			
B5	Bids Opened			
B6	Bids Awarded			
B7	% Progress of De-NOx equipment Installation			
B8	De-Nox equipment commissioned			

**Under 'C', please offer any comments/ remarks you may have.**

<b>C</b>	<b>Current Status &amp; Remarks</b>			

## Annexure-C.3

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		
			<b>Total</b>	<b>83.10</b>					<b>73.03</b>		<b>90.745</b>		
5	Jharkhand	JUSNL	Renovation & Upgradation of protection system of Jharkhnad. (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						Price bid has been opened. Tender on awarding stage.
			<b>Total</b>	<b>160.49</b>					<b>114.68</b>		<b>145.674</b>		
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. Work In Progress
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			24.5	90% grant availed . Rest work in progress
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)	29.56	24-May-19	13-Feb-20	18	13-Aug-21	8.87			32.85	30% grant availed. Work in Progress.
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.
			<b>Total</b>	<b>270.18</b>					<b>101.35</b>		<b>193.42</b>		
14	West Bengal	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. Will get completed by Oct'21	
15			Renovation & Modernisation of Transmission System. (87)	70.13	22-May-17	25-Jun-18	25	25-Jul-20	63.12			96.44	90% grant availed on award cost. Will get completed by Mar'22
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. 04 Nos. of Reactors will be commissioned by December 2021. LoA of the 5th Reactor is yet to be placed.
17			Project for establishment of reliable communication and data acquisition at different substation at WBSWTCL. (222)	31.19	24-May-19	23-Oct-19	25	23-Nov-21	3.12				The tender has been been cancelled for OPGW. Re-tendering has to be done.
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.	
			<b>Total</b>	<b>295.15</b>					<b>194.26</b>		<b>256.661</b>		

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	DVC	DVC	Renovation and Upgradatn 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			Renovation and Modernization of control and protection system and replACEMENT of equipment at Parulia, Durgapur, Kalyanewari, Giridhi Jamsedpur, Barjora, Burnpur, Dhanbad and Bundwan substation. (106)	140.50	16-May-17	14-Dec-17	24	14-Dec-19	102.43	0.98	127.684	
<b>Total</b>				<b>166.46</b>					<b>125.38</b>		<b>156.287</b>	
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
<b>Total</b>				<b>10.00</b>					<b>3.00</b>		<b>20.00</b>	
26	ERPC	ERPC	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.
<b>Total</b>				<b>26.07</b>					<b>19.98</b>		<b>22.45888</b>	
<b>GrandTotal</b>				<b>1,011.46</b>					<b>631.68</b>		<b>885.25</b>	



## Annexure-C.5

## 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	August'21	Testing completed for Unit 1
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	-	Postponed due to some technical issue
26		2		
27	GMR	1	August'21	Testing Completed
28		2		
29		3		
30	JITPL	1	August'21	Scheduled
31		2		
32		3		
33	NPGCL	1	August'21	Testing Completed

34	BRBCL		1 <sup>st</sup> Week of August'21	Testing Completed
35	APNRL	1&2	July'21-August-21	Testing Completed
36	BBGS	1,2&3	26th Feb 22 - 3rd Mar 22	Scheduled

## Annexure C.7

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
<b>West Bengal</b>							
Kolaghat-WBPDCL	1	No	Yes	Long Back	No	Yes	Under retirement
Kolaghat-WBPDCL	2	No	Yes	Long Back	No	Yes	Under retirement
<b>Kolaghat-WBPDCL</b>	<b>3</b>	No	Yes	Long Back	No	Yes	To be done within Jan./Feb. 2022 after DAVR replacement.
<b>Bakreshwar-WBPDCL</b>	<b>2</b>	Yes	Yes	2019	Yes	Yes	PSS tuning to be done during Unit O/H in the month of November-December, 2021
<b>Bakreshwar-WBPDCL</b>	<b>4</b>	Yes	Yes	2019	Yes	Yes	BHEL offer received. PSS tuning to be done within Dec , 2021
<b>Bakreshwar-WBPDCL</b>	<b>5</b>	Yes	Yes	2019	Yes	Yes	BHEL offer received. PSS tuning to be done within Dec , 2021
DPL	8	No	Yes	No	No Detail	Yes	To be updated by WBPDCL/DPL
PPSP	1	No	Yes	2009	No	Yes	Dec-21
PPSP	2	No	Yes	2009	No	Yes	Dec-21
PPSP	3	No	Yes	2009	No	Yes	Dec-21
PPSP	4	No	Yes	2009	No	Yes	Dec-21
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
<b>DVC</b>							
Bokaro B 210 MW	3				No Detail	Yes	Unit Is out of Service
Raghunathpur-DVC	1	No	No		No Detail	Yes	Will be done after AOH
Raghunathpur-DVC	2	No	No		No Detail	Yes	Jun-21
Waria	4	Yes	Yes	2008	No	Yes	Unit Is out of Service
<b>ISGS</b>							
Kahalgaon NTPC	1	Yes	Yes	2017	Yes	Yes	Apr-21
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	Nov-21
Talcher Stage 2	4	Yes	Yes	No Details	No Details	Yes	Nov-21

Talcher Stage 2	5	Yes	Yes	No Details	No Details	Yes	Nov-21
Talcher Stage 2	6	Yes	Yes	2016	Yes	Yes	Nov-21
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	Oct-21
Teesta V	2	Yes	Yes	2008	No	Yes	Oct-21
Teesta V	3	Yes	Yes	2008	No	Yes	Oct-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
<b>IPP</b>							
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	Dec-21
GMR	2	Yes	Yes	2013	No	Yes	Dec-21
GMR	3	Yes	Yes	2013	No	Yes	Dec-21
<b>Orissa</b>							
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
<b>Jharkhand</b>							
Tenughat	1	Yes	Yes	2017	Yes	Yes	Dec-21
Tenughat	2	Yes	Yes	2017	Yes	Yes	Dec-21
Subarnrekha	2 X 65					Yes	To be updated
<b>Bihar</b>							
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
<b>Bhutan</b>							
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	Sep-21
Mangdechu	2	No	Yes			Yes	Sep-21

## Annexure C.12

Statewise transmission adequacy											
Sl.NO.	Name of the state	Antecedent condition	Likely constraints	Future element to relieve constraints	Executing agency	Details of SCM/plan /forum	Date of approval	Expected date of commissioning	if delayed from SCOD, Reason	Revised expected date of commissioning	Other reason
1	Bihar	High drawal at Sipara (to meet the demand of City of Patna) by Bihar	N-1 non-compliant of 220kV Patna-Sipara T/c line	Intra State	Creation of 400/220 kV Jakkanpur Substation by LILO of NPGC-Patna D/C Line at Jakkanpur	BSPTCL/B GCL	18th SCEM	13-Jun-16	Mar-22		
				Intra State	220 kV Down stream of Jakkanpur	BSPTCL/B GCL	2nd ERPCTP	30-Sep-20	NA		To be taken after commissioning of Jakkanpur Substation
				Intra State	LILO of 400 kV Patna-Balia DC at Naubatpur		2nd ERPCTP	30-Sep-20	NA		
				Intra State	220 kV Down stream of Naubatpur		2nd ERPCTP	30-Sep-20	NA		
				Intra State	Reconductoring of Patna-Sipara with HTLS Conductor		2nd ERPCTP	30-Sep-20	NA		
2	Bihar	During Peak demands of Bihar and Nepal	N-1 non-compliant of 2x200 MVA 400/132kV ICTs at Motihari	ISTS	1x 315 MVA ICT at Motihari	PMTL	18th SCEM	13-Jun-16	Apr-22		Third 315 MVA ICT was being charged through 132 kV GIS Bus at Motihari on 21-04-2021. Just after charging of new ICT, 132kV Main bus-1 at Motihari tripped due to problem at Bus extension module. After this ICT could not be charged yet
3	Jharkhand	During Peak demand of Jharkhand	N-1 non-compliant of 2x315 MVA 400/220 kV ICTs at Ranchi	ISTS	3rd 500 MVA ICT at Ranchi	Not yet allocated	3rd ERPCTP	09-Feb-21	Not available		
4	Jharkhand	During Peak demand of Jharkhand	N-1 non-compliant of 220 kV Maithon(PG)-Dumka D/C	Intra State	LILO of 220kV Tenughat - Govindpur D/c line at Jainamore and Dhanbad	JUSNL	1st Consultation Meeting	27-Dec-21	Dec-23		Dec 2023(for 02 bays at Dhanbad) Under administrative approval of State Government Level
5	DVC	1. Less generation at CTPS 2. Less generation at Koderma	N-1 non-compliant of 220 kV Maithon(PG)-Kalyaneswari D/C and Maithon(PG)-Dhanbad D/C	Intra State	1. Construction of 400/220 kV Substation at RaghunatpurTPS	DVC	4th ERPCTP	09-Sep-21	Mar-23		
					2. LILO of 220 kV Kalyaneswari-CTPS D/C at RaghunatpurTPS			09-Sep-21	Mar-23		
					3. Construction of 400/220 kV Substation at Mejia-B TPS			09-Sep-21	Mar-23		
					4. LILO of 220 kV Mejia-A TPS-Barjora D/C at Mejia-B TPS			09-Sep-21	Mar-23		
6	DVC	Decommissioning of generators at Bokaro B	N-1 non-compliant of 2x315 MVA 400/220 kV ICTs at Bokaro	Intra State	1. Construction of 400/220 kV Substation at RaghunatpurTPS 2. LILO of 220 kV Kalyaneswari-CTPS D/C at RaghunatpurTPS	DVC	4th ERPCTP	09-Sep-21	Mar-23		
7	DVC and WB	High Demand of WB and less generation at DPL	N-1 non-compliant of 220 kV Waria(DVC)-Bidhannagar(WB) D/C	Intra State	3rd 315 MVA ICT at Bidhannagar (WB)	WBSETCL	8th SSCM/4th ERPCTP	NA	Jun-22		



8	WB	High Demand of West Bengal	N-1 non-compliant of 220 kV Rajarhat-Newtown AA3 D/C, 220 kV Jeerat Barasat D/C and 220 kV Subhasgram-EMSS D/C	Intra State	1. Commissioning of Rajarhat (POWERGRID) –New Town AA2 220 kV D/c,	WBSETCL	18th SCEM	13-Jun-16	Dec-21 (ROW)	ROW	Rajarhat-Barasat 220kV DC May-22,	Due to ROW New town AA2 could not complied	
					2. Rajarhat (PGCIL) –Barasat/Jeerat 220 kV D/c			13-Jun-16	Dec-21 (ROW)	ROW			
					3. Subashgram (PGCIL) –Baraipur 220 kV D/c.			13-Jun-16	Dec-21 (ROW)	ROW			
					4. Reconductoring of 220 kV Rajarhat-Newtown AA3 D/C			13-Jun-16	Dec-21 (ROW)	ROW			
9	WB	High Demand of West Bengal	N-1 non-compliant of 220 kV Subhasgram (WB)-Lakshmikantpur D/C	Intra State	Commissioning of 220 kV Subhasgram Baraipur D/C	WBSETCL	18th SCEM	13-Jun-16	Dec-21 (ROW)	ROW	Apr-22	Baraipur substation is under-construction which is supposed to be completed by Dec, 2021 (SPS is available to take care of contingency for the time being)	
10	WB	High Demand of West Bengal	N-1 non-compliant of 220 kV Subhasgram (PG) –Subhasgram (WB) D/C	Intra State	Commissioning of 220 kV Subhasgram Baraipur D/C	WBSETCL	18th SCEM	13-Jun-16	Dec-21 (ROW)	ROW	Apr-22	Baraipur substation is under-construction which is supposed to be completed by Dec, 2021 (SPS is available to take care of contingency for the time being)	
11	Odisha	High Drawl by Odisha at Rourkela	N-1 non-compliant of 220 kV Rourkela(PG)-Tarkera D/C	Intra State	Construction of second 220 kV Rourkela(PG)-Tarkera D/C	OPTCL	1st Consultation	27-Dec-21	Not available				
12	Improvement of Reliability of System	Good generation of MPL and high import from WR and High Export to NR	N-1 non-compliant of 400 kV MPL-Maithon D/C	Inter State	Reconductoring of MPL-Maithon D/C with HTLS conductor	PGCIL	17th SCEM	25-May-15	Feb-22				

## Annexure D.1

## Anticipated Peak Demand (in MW) of ER &amp; its constituents For May 2022

1	BIHAR	Demand (MW)	Energy Requirement (MU)
	NET MAX DEMAND	6275	3586
	NET POWER AVAILABILITY- Own Sources	553	212
	Central Sector+Bi-Lateral	6663	3713
	SURPLUS(+)/DEFICIT(-)	941	339
2	<b>JHARKHAND</b>		
	NET MAXIMUM DEMAND	1800	990
	NET POWER AVAILABILITY- Own Source	462	181
	Central Sector+Bi-Lateral+IPP	1199	770
	SURPLUS(+)/DEFICIT(-)	-139	-39
3	<b>DVC</b>		
	NET MAXIMUM DEMAND	3075	2110
	NET POWER AVAILABILITY- Own Source	5115	3222
	Central Sector+MPL	419	275
	Bi- lateral export by DVC	2189	1629
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	270	-242
4	<b>ODISHA</b>		
	NET MAXIMUM DEMAND (OWN)	4600	3021
	NET MAXIMUM DEMAND (In Case of CPP Drawal)	5700	3300
	NET POWER AVAILABILITY- Own Source	3808	2039
	Central Sector	1996	1379
	SURPLUS(+)/DEFICIT(-) (OWN)	1204	397
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	104	118
5	<b>WEST BENGAL</b>		
5.1	<b>WBSIEDCL</b>		
	NET MAXIMUM DEMAND	7575	4560
	NET MAXIMUM DEMAND (Incl. Sikkim)	7580	4564
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	5360	2760
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2594	1480
	EXPORT (To SIKKIM)	5	4
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	374	-324
5.2	<b>CESC</b>		
	NET MAXIMUM DEMAND	2260	1110
	NET POWER AVAILABILITY- Own Source	830	477
	IMPORT FROM HEL	540	383
	TOTAL AVAILABILITY OF CESC	1370	860
	DEFICIT(-) for Import	-890	-250
	<b>WEST BENGAL (WBSIEDCL+CESC+IPCL)</b>		
	(excluding DVC's supply to WBSIEDCL's command area)		
	NET MAXIMUM DEMAND	9835	5670
	NET POWER AVAILABILITY- Own Source	6190	3237
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3134	1863
	SURPLUS(+)/DEFICIT(-) BEFORE WBSIEDCL'S EXPORT	-511	-570
	SURPLUS(+)/DEFICIT(-) AFTER WBSIEDCL'S EXPORT	-516	-574
6	<b>SIKKIM</b>		
	NET MAXIMUM DEMAND	109	48
	NET POWER AVAILABILITY- Own Source	8	1
	Central Sector	205	128
	SURPLUS(+)/DEFICIT(-)	104	81
	<b>EASTERN REGION</b>		
	NET MAXIMUM DEMAND	25190	15425
	NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha)	26269	15704
	BILATERAL EXPORT BY DVC (Incl. Bangladesh)	2189	1629
	EXPORT BY WBSIEDCL TO SIKKIM	5	4
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	478
	NET TOTAL POWER AVAILABILITY OF ER	27563	15391
	(INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)		
	SURPLUS(+)/DEFICIT(-)	2368	-38
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	1289	-317

