



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

**Date: 16.03.2022**

**Eastern Regional Power Committee**

**14, Golf Club Road, Tollygunge**

**Kolkata: 700033**

## **EASTERN REGIONAL POWER COMMITTEE**

**AGENDA FOR 189<sup>TH</sup> OCC MEETING TO BE HELD ON 16.03.2022 (WEDNESDAY) AT 10:30 Hrs.**

### **PART – A**

**ITEM NO. A.1: Confirmation of Minutes of 188<sup>th</sup> OCC Meeting held on 18<sup>th</sup> February 2022 through MS Teams online platform.**

The minutes of 188<sup>th</sup> Operation Coordination sub-Committee meeting held on 18.02.2022 was circulated vide letter dated 10.03.2022.

**Members may confirm the minutes of 188<sup>th</sup> OCC meeting.**

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

**ITEM NO. B.1: Coal transportation bottlenecks**

As directed by MoP, CEA has to conduct a study to identify the coal transportation bottlenecks and suggest remedial measures for augmentation of the transport infrastructure for movement of coal.

It may be noted that Department for promotion of Industry and Internal Trade (DPIIT) has launched GATI SHAKTI mission to address the logistic issues. Accordingly, CEA may please propose the coal logistics improvement plan with suitable infrastructure interventions which may be proposed to DPIIT under GATI SHAKTI.

In this regard, it is requested that the issues/problems being faced by the thermal power plants in the Eastern Region with respect to transportation of coal may be intimated.

In the 188<sup>th</sup> OCC meeting, ERPC representative submitted that an e-mail addressing the above issue had already been sent to the respective generators, but no comments have been received till date.

NTPC representative informed that their coal rake movement in Farakka, Kahalgaon and Bongaigaon is being affected in Howrah division. Further, congestion in Danapur division is also affecting coal rake movement in Barh, Barauni and Kanti stations.

OCC advised NTPC generators to submit the plant-wise details of their coal source along with its logistics details to ERPC at the earliest.

OCC advised all the concerned generators to highlight the issues/problems faced by them regarding transportation of coal to ERPC Secretariat. A special meeting would be convened for further deliberation regarding this matter.

**Members may discuss.**

## **ITEM NO. B.2: Preparedness for meeting summer demand in 2022.**

This year, the mercury is expected to rise sharply from February end, which is a bit earlier than the previous year and indicative of the scorching summer that lies ahead. With India's reasonably well fight back against COVID-19 3<sup>rd</sup> wave, this summer is likely to be extremely challenging for system operators to ensure reliable power supply, particularly to the remote corners of the region.

Therefore very robust planning and preparedness are essential for meeting the system demand reliably. In view of this, dissemination of the following information and formulating action plans are extremely important:

### **Information:**

1. Realistic forecast of peak and off-peak load to be met by each state for the months of April-22 to June-22.
2. Proper projection of availability of state internal generation
3. Anticipated network congestion in STU systems
4. Areas likely to experience low voltage in each state
5. Identification of nodes (at 132kV level) by each state, where very high amount of Air conditioning load is anticipated.
6. Latest status of element under construction and which are likely to improve the reliability of the power supply in different congested areas.

### **Action plan:**

1. Submission of week ahead load forecast and resource adequacy by every Thursday.
2. Ensuring maximum VAR support from all state generators as per their capability curve.
3. Ensuring timely completion of all over hauling maintenance activity of all generators and transmission elements and maintaining maximum possible resource adequacy.
4. Strengthening of network by restoring elements under long outage on war footing before April-22, where ever it is possible.
5. Timely Switching off/on of Bus reactors as per real time voltage as well as under RLDC instruction.
6. Monitoring the compliance of proper reactive power support by RE resources, as per CEA connectivity standard.
7. With higher maximum temperature higher sag of overhead transmission lines is expected. So regular tree cutting activity and preventing encroachment of vegetation in the corridor is extremely important. SLDCs to inform all transmission licensees under their respective jurisdiction, accordingly.

In addition to the above, SLDCs too may share their comprehensive summer preparedness plan.

The above information may be sent via mail by 28<sup>th</sup> Feb-2022. A meeting will be convened by 10<sup>th</sup> March for preparing the complete regional plan for Summer-2022.

In the 188<sup>th</sup> OCC meeting, ERLDC representative gave a brief presentation on daily maximum, minimum and average demand forecast. He further submitted that the projected maximum demand of ER in the upcoming summer would be around 26200 MW and the maximum energy consumption is expected to be 605 MU.

Further, as intimated by ERLDC representative, an initiative of week ahead forecasting to account for any upcoming demand surge has been started by ERLDC and all the States were requested to follow the same and share their study/reports with ERPC and ERLDC.

SLDC West Bengal requested ERLDC to share the break-up of the forecasted maximum demand of 26200 MW.

OCC advised all the SLDCs to share their action plans with ERPC and ERLDC so that further deliberation could be done in the upcoming meeting on preparation of complete regional plan for Summer-2022 scheduled to be held on 10<sup>th</sup> March 2022.

**Respective SLDC's may update. Members may discuss.**

### **ITEM NO. B.3: Islanding Schemes in Eastern Region.**

#### **B3.1. 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 185<sup>th</sup> OCC meeting, BSPTCL representative mentioned that presently M/s Siemens is carrying out some tests for the preparation of DPR which is scheduled to be completed by last week of November'2021. As soon as the proposal from M/s Siemens is received, they would place the order.

OCC expressed serious concern over the issue and advised BSPTCL to expedite the matter with M/s Siemens at the earliest.

In the 186<sup>th</sup> OCC meeting, BSPTCL representative informed that approval from their higher Management is awaited and the work would be started on receipt of the approval.

In the 187<sup>th</sup> OCC meeting, BSPTCL representative informed that the tender has already been floated and the same would be opened on 16.02.2022.

In the 188<sup>th</sup> OCC meeting, BSPTCL representative informed that the tender opening date has been rescheduled to 26.02.2021.

**BSPTCL 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 184<sup>th</sup> OCC meeting, JUSNL representative submitted that they had requested for budgetary offer from GE, Siemens and ABB and after getting the same they would prepare the DPR.

OCC advised JUSNL to expedite the work and prepare the DPR within the stipulated time frame.

In the 185<sup>th</sup> OCC meeting, JUSNL informed that the tender for DPR would be opened on 25<sup>th</sup> Nov 2021.

In the 186<sup>th</sup> OCC meeting, JUSNL representative informed that the tender had been finalized and the DPR would be placed by 5<sup>th</sup> Jan 2022.  
OCC advised JUSNL to inform ERPC once DPR gets submitted.

In the 187<sup>th</sup> OCC meeting, JUSNL representative informed that the work order would be placed by 10<sup>th</sup> February 2022.

In the 188<sup>th</sup> OCC meeting, JUSNL representative submitted that the technical part was opened and the financial part is yet to be opened. He further requested ERPC to discuss the matter with JUSNL's higher authority.

OCC advised JUSNL to submit the detailed report to ERPC Secretariat without any delay for further communication with CEA and MoP.

**JUSNL 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.

**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.

**OPTCL may update.**



**ITEM NO. B.4: 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.

**Members may discuss.**



## **ITEM NO. B.5: Outage of Important Transmission System.**

### **B5.1. 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 188<sup>th</sup> OCC meeting, Sikkim representative was not present during the discussion.

**Sikkim may update.**

### **B5.2. 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.

**OPTCL may update.**

#### **B5.3. 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 187<sup>th</sup> OCC meeting, OPTCL representative informed that the required materials have been received and the work would be started after the arrival of OEM engineers.

In the 188<sup>th</sup> OCC meeting, OPTCL representative informed that the required materials have been received and arrival of OEM engineers is awaited.

**OPTCL may update.**

#### **B5.4. Outage of 400kV Main Bus-2 at Dikchu HEP.**

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

In the 185<sup>th</sup> OCC meeting, Dikchu representative was not available in the meeting.

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 3rd 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 188<sup>th</sup> OCC meeting, Dikchu representative was not available during the discussion.

**Dikchu may update.**

**B.6.1. Splitting of Budhipadar 220kV Bus due to high fault level.**

OPTCL vide mail dated 30.08.2021 submitted that the fault level at Budhipadar 220 kV bus during steady state is 42.79 kA which is beyond the breaker rating of 40 kA. OPTCL has conducted the system study and the study reveals that in the base case the fault level is 42.79 kA while during splitting the fault level at the two buses are 30.40kA and 12.72kA. ERPC may advise suitable scenario to mitigate the fault level at Budhipadar.

In the 183<sup>rd</sup> OCC meeting, OPTCL informed that the fault level at 220 kV Budhipadar S/s is found to be crossed more than 42 kA and there are multiple generating units connected to 220 kV buses. In order to reduce the fault level, they proposed to segregate the 220 kV bus & connected feeders by opening the bus coupler breaker. In this regard they had carried out a study.

ERLDC pointed out that the proposal of segregating the bus by opening of bus coupler breaker reduces the overall reliability of the system.

OPGC informed that in the given study all four evacuating lines from IB TPS is connected to same bus at Budhipadar thereby affecting the reliability of the evacuation of IB TPS generation in case of any bus fault at Budhipadar.

ERPC secretariat informed that as per the decision taken in the special meeting on “implementation of SPS at Budhipadar S/s” the 220 kV Vedanta-Budhipadar D/C is to be made off after commissioning of second 220/132 kV ATR at Budhipadar and as such Vedanta injection at Budhipadar shall not be considered in the study. Further on suggestion of proper bus split at Budhipadar by bus-sectionalizer, OPTCL submitted that it would take considerable time to implement the proper bus splitting scheme.

After detailed deliberation, OCC advised OPTCL to carry out revised study in consultation with OPGC & SLDC Odisha for different scenarios and submit the report to ERPC/ERLDC for further discussion in this regard.

**B.6.2. Splitting of Meramundali 220 kV Bus due to high fault level.**

OPTCL vide mail dated 15.09.2021 submitted that the fault level at Meramundali 220 kV bus during steady state is 40.89 kA which is beyond the breaker rating of 40 kA. OPTCL has already conducted the system study. However, ERPC may advise suitable scenario to mitigate the fault level at Meramundali.

In the 183<sup>rd</sup> OCC meeting, after detailed deliberation, OCC advised OPTCL to carry out revised study in consultation with OPGC & SLDC Odisha for different scenarios and submit the report to ERPC/ERLDC for further discussion in this regard

In the 184<sup>th</sup> OCC meeting, OPTCL representative submitted that due to the ongoing festive month, meeting with OPGC and SLDC Odisha could not be convened. He further intimated that a meeting would be convened by 1<sup>st</sup> week of November’2021 and the outcome of the meeting would be shared with ERPC & ERLDC.

In the 185<sup>th</sup> OCC meeting, OPTCL representative informed that the meeting with OPGC & SLDC Odisha is yet to be convened and is scheduled to be held by the end of November 2021. He further stressed on the fact that if all the four lines are connected to the same bus the issue of

power evacuation through IB TPS generation would persist. Therefore, in order to balance the load and generation the bus coupler is kept in open condition. He further submitted that the 2<sup>nd</sup> auto transformer is at the final stage of erection at Budhipadar S/s and after commissioning of the same, a joint discussion may be carried out to discuss the matter of bus splitting.

ERLDC representative mentioned that opening the bus coupler to reduce the fault level critically hampers the reliability aspect and OPTCL along with its beneficiaries may discuss upon formulating suitable plans like installation of bus sectionalizer, up gradation of circuit breakers, bus augmentation, etc. for the implementation of bus splitting scheme.

OCC opined that the fault level at Budhipadar is very high and action has to be taken to reduce the same. OCC further advised OPTCL to convene a joint meeting along with its beneficiaries to explore the possibilities of finding a permanent solution to the above problem.

In the 186<sup>th</sup> OCC meeting, OPTCL representative informed that the meeting would be convened after commissioning of the second auto transformer.

OCC advised OPTCL to convene the meeting with concerned parties at the earliest to work out a permanent solution for the problem.

In the 187<sup>th</sup> OCC meeting, SLDC Odisha representative informed that the meeting has not yet been convened.

OCC advised OPTCL to convene the meeting at the earliest and submit the details to ERPC/ERLDC.

In the 188<sup>th</sup> OCC meeting, OPTCL representative informed that a meeting was convened on 16<sup>th</sup> February 2022 along with SLDC Odisha, O&M and the respective stakeholders.

OCC advised OPTCL to share the minutes of the meeting to ERPC and ERLDC.

OPTCL vide mail dated 14.03.2022 submitted the MoM. (**Annexure-B.6**)

**Members may discuss.**

<b>ITEM NO. B.7: Reliable Power Supply to Lalmatia/Godda/Dumka areas of JUSNL</b>
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**B7.1. 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-Lamatia 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 185<sup>th</sup> OCC meeting, JUSNL representative informed that fund requisition to their energy department has been requested on 8<sup>th</sup> Nov 2021 and the work would be started upon receipt of funds.

It was highlighted by OCC that restoration of the line to be taken on priority basis, since it serves commercial interest of Jharkhand by drawing power directly from Farakka STPS. Besides, restoration of the line would also improve reliability of power supply.

In the 186<sup>th</sup> OCC meeting, JUSNL representative informed that a query regarding the proposal had been received from their Energy Department and the reply for the same had already been given. The work would be started after the receipt of funds from their Energy Department.

In the 187<sup>th</sup> OCC meeting, JUSNL representative informed that confirmation is yet to be received from their Energy Department. He further added that the tender is planned to be floated within 15 days.

OCC advised JUSNL to expedite the work at the earliest.

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.

**JUSNL may update.**

<b>ITEM NO. B.8: Restoration of PLCC for 220 kV Chandil-STPS S/C line</b>
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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-Santalidih 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.

**JUSNL may update.**

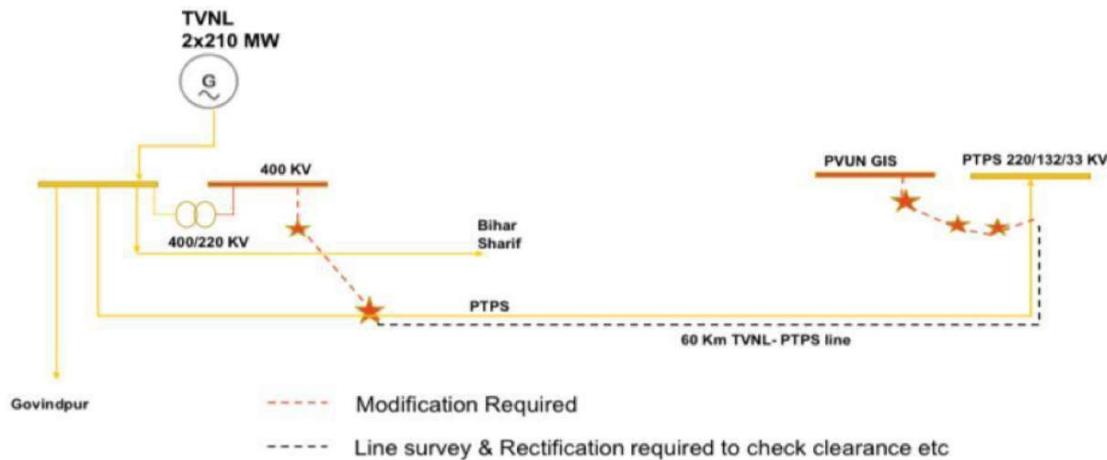
<b>ITEM NO. B.9: Agenda by JUSNL.</b>
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**B9.1. Start-up power to Patratu Vidyut Utpadan Nigam Limited (PVUNL) Phase-I, 3x800 MW units.**

Construction of PVUN Phase -1 units is in full swing and first unit is expected to be synchronized by Dec 23. Startup power is to be extended from newly charged 400 KV Patratu Grid through Patratu- Patratu 400 KV line of length around 7.5 KM. Due to delay in award of Patratu -Patratu 400 KV D/C Moose line, it is proposed to extend start up power by charging TVNL - PTPS line at 400 KV and diverting it to new PVUNL 400 KV GIS as an interim measure as per attached

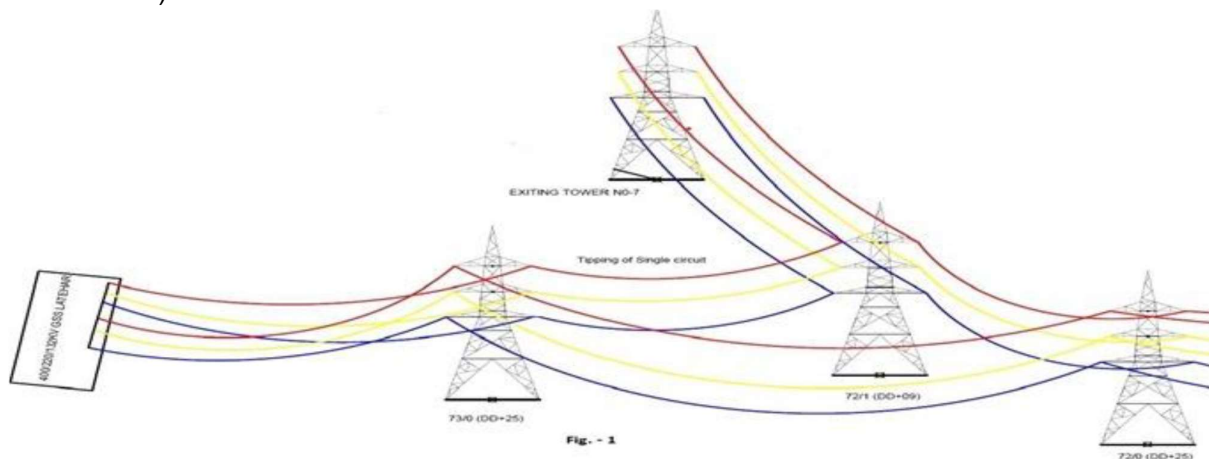


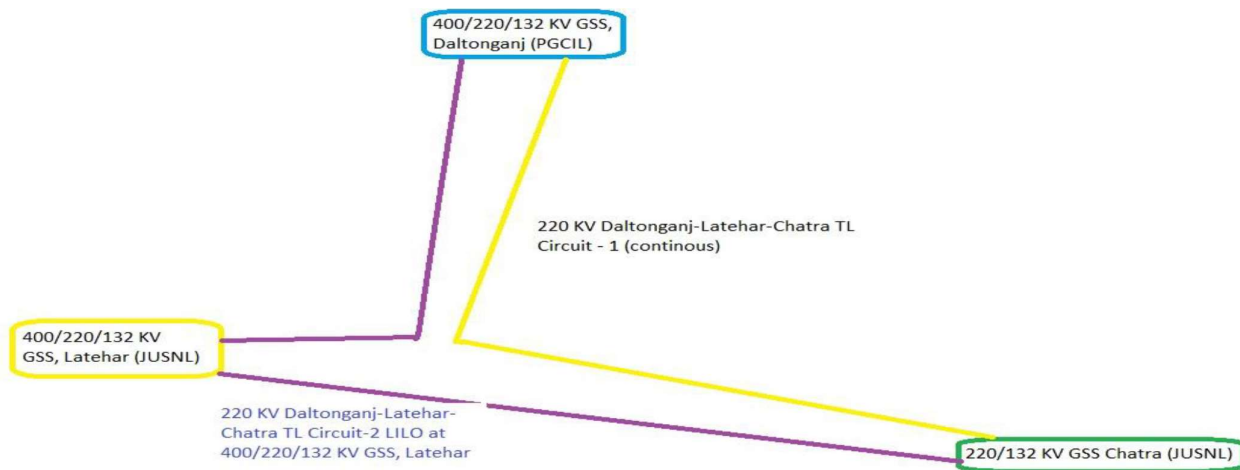
scheme. PVUN has requested to make startup power available by May 22 as commissioning activities are required to commence from Aug 22. Since delay in extending Start up power will impact project timeline adversely, it is requested to examine the proposal and provide concurrence for the extension of startup power to PVUNL from TVNL - PTPS line.



#### B9.2. Charging of 400/220/132 KV GSS Latehar on temporary basis by using LILO arrangement of circuit-2 of 220 KV D/C Daltonganj-Chatra transmission line.

Proposed arrangement related to charging of 400/220/132 kV GSS, Latehar through 220 kV Daltonganj (PG) – Latehar (JUSNL) line with certain consideration for the time being, so as to avail the power at the new 400/220/132 kV GSS, Latehar (JUSNL) and further to extend the power to our 132/33 kV Latehar GSS through link line between the aforesaid two GSS's. One no. tower location of this link line falling under the present 220 kV corridor would also be required to be completed, post the above proposed arrangement. Further, it is to mention that the above arrangement is proposed due to the reason that: - (i) 400 kV line from both Patratu & Chandwa (PG) would take long time to be completed as major extent of work is still required to be undertaken. (ii) While doing so 220 kV Lohardaga – Latehar line (presently 132 kV power is fed through it) can be put under shutdown and an existing tower location of the 220 kV link line between Lohardaga – Latehar (GSS) could be got completed for which the working agency M/s PGCIL has been requesting for its shutdown since long. In the meantime OPGW work between Daltonganj(PGCIL) to 400/220/132 kV Latehar GSS that has to be executed by M/s PGCIL shall also be undertaken as per their own schedule. This may kindly be treated as urgent as without taking any concrete decision in the meeting, we will not be able to undertake the aforesaid works and consequently seeing the situation of theft and ROW in the 400 kV line (under construction).





**Members may discuss.**

**ITEM NO. B.10: Signing of O&M agreement for maintenance of JUSNL owned bays of 400 KV New Ranchi-Patratu D/C lines at New Ranchi S/s - PowerGrid.**

400 KV bays (owned by JUSNL) for Patratu 1 & 2 owned by Transmission line at New Ranchi S/S are being maintained by PowerGrid since commissioning. Above mentioned bays are in service since 03.08.20217 (line charged as anti-theft) however the O&M agreement for these bays have not been finalized. The matter had been already taken up with M/s JUSNL that the agreement would be signed upon power flow through the New Ranchi-Patratu Transmission lines.

400 KV New Ranchi-Patratu D/C lines have been already terminated at Patratu S/s on 29.12.2021 and power flow also started. In view of the above, JUSNL is requested for signing of the O&M agreement for smooth O&M activities of these bays at New Ranchi S/s.

**PowerGrid may update. Members may discuss.**

**ITEM NO. B.11: Inadequate reactive power performance of generating units during the high voltage condition.**

Since 187<sup>th</sup> ER OCC meeting, ERLDC highlighted the issue of inadequate reactive power absorption by generating units during the high voltage condition. Due to inadequate reactive power absorption by generating units, voltage at various 400 kV and 765 kV remained high. As per ERLDC SCADA data, following regional generating units" (ISGS & IPP) reactive power absorption was inadequate during January 2022.

Name of generating units	Maximum MVAR absorption limit (as per capability curve)	MVAR absorption during maximum voltage (as per ERLDC SCADA data)	Maximum voltage during Jan-2022
Sagardighi	>150 MVAR	<50 MVAR	416 kV
DSTPS	>150 MVAR	Not absorbing VAR	422 kV
Mejia	>150 MVAR	<40 MVAR	421 kV
Barh	>200 MVAR	<110 MVAR	421 kV
NPGC	>250 MVAR	<110 MVAR for unit-1	418 kV

During January 2022, satisfactory MVAR performance has been observed at Kahalgaon STPS. MVAR performance of Nabinagar STPS improved after the deliberation of 188th OCC. Other generating stations may share action taken at their end to improve reactive power performance. NTPC Barh, NPGC, Mejia & DSTPS may update.

**Generators may update.**

**ITEM NO. B.12: Information sharing regarding shutdown of important elements around capital cities.**

For planned s/d at Interstate level, adequate care is taken at ERPC/RLDC/SLDC level, shutdowns are allowed only after a detailed deliberation, study, and consent from concerned utilities. It is expected that the same modus operandi is being followed in intrastate shutdowns availed by SLDC.

In addition, MOP is also emphasizing on uninterrupted and reliable power supply to metro and important cities. In order to secure metro cities from any kind of eventuality, it is requested that any kind of intrastate element outage affecting reliability and security of capital city/ critical loads may be brought to the notice of ERPC/ERLDC.

Further, it is required that a list of lines that are connecting state capital with the rest of the grid may be prepared and shared.

**Members may discuss.**

**ITEM NO. B.13: Sharing of information regarding the reason for load shedding.**

Every night post completion of the day SLDC shares hourly load shedding data (wherever available). However, only one reason for load shedding is provided, which may not reflect the correct reason for the whole day. As it may happen that in some hours load is shed due to resource inadequacy while in others it might have been shed for constraints in transmission or distribution network.

**SLDCs are requested to share the reason for load shedding for different hours wherever applicable.**

**ITEM NO. B.14: Repeated unit tripping's – Impacting resource adequacy**

In the past few months, 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. A list of all such repeated tripping in the last 11 months is shown below.

**Repeated Units Tripping Mar 2021-Feb 2022**

S.No	Element Name	No of tripping	Major reason	Owner	Impact States
1	TENUGHAT - UNIT 2 (210 Mw)	23	Rotor Earth fault, Tube leakage, loss of evacuation and other reasons	TVNL	Jharkhand

2	Sterlite - UNIT 3 (600 Mw)	17	PA fan problem, Ash handling problem, ID Fan problem	Vedanta-IPP	Orissa
3	BOKARO-A' - UNIT 1 (500 Mw)	19	BTL, Low drum level , turbine vibraion	DVC	DVC
4	JITPL - UNIT 1 (500 Mw)	19	High turbine vibration , turbine gov issue	JITPL-IPP	Orissa and Other
5	Sterlite - UNIT 1 (600 Mw)	12	PA fan problem, Ash handling problem, ID Fan problem	Vedanta-IPP	Orissa
6	Sterlite - UNIT 4 (600 Mw)	12	PA fan problem, Ash handling problem, ID Fan problem	Vedanta-IPP	Orissa
7	TENUGHAT - UNIT 1 (210 Mw)	15	Various tube leakages, Low drum level, Loss of fuel	TVNL	Jharkhand
8	KBUNL - UNIT 1 (195 Mw)	12	Various tube leakages, Flame failure, Electrical Fault	NTPC	Bihar
9	NABINAGAR(BRBCL) - UNIT 3 (250 Mw)	14	Flame failure, low vacuum	BRBCL	Railway
10	NABINAGAR(BRBCL) - UNIT 1 (250 Mw)	12	BTL, Low drum level	BRBCL	Railway
11	BANDEL TPS - UNIT 5 (210 Mw)	9	Tube leakage	WBPDCL	West Bengal
12	GMR - UNIT 1 (350 Mw)	11	Bottom ash ,ID fan trip, Various reasons	GMR-IPP	Orissa and Other
13	DPL - UNIT 8 (210 Mw)	9	Tube leakage	WBPDCL	West Bengal
14	SANTALDIH TPS - UNIT 5 (250 Mw)	9	Various reasons	WBPDCL	West Bengal
15	FSTPP - UNIT 2 (200 Mw)	8	Drum level high/low, High/low furnace pressure	NTPC	ER states
16	DPL - UNIT 7 (250 Mw)	8	BTL, coal feeding problem	WBPDCL	West Bengal
17	FSTPP - UNIT 5 (500 Mw)	11	LOSS OF VACCUM , CW pump tripping, low drum level	NTPC	ER states
18	FSTPP - UNIT 4 (500 Mw)	10	Drum level high/low, High/low furnace pressure	NTPC	ER states

**Respective plant owners are requested to look into this and share their observations and corrective actions taken to reduce such events in the future.**

**ITEM NO. B.15: Repeated tripping of 400 KV Alipurduar-Jigmeling line in the month of February 2022.**

400 kV Alipurduar-Jigmeling line had tripped four times in month of Feb 2022. The lines were from Alipurduar end on receipt of DT signal from remote end. The tripping details are given in the table below.

SI No.	Line	Tripping Date	Tripping Time	Restoration Time
1	400KV-ALIPURDUAR (PG)-JIGMELLING-1	08-02-2022	14:04	15:08

2	400KV-ALIPURDUAR (PG)-JIGMELLING-1	08-02-2022	16:36	17:06
3	400KV-ALIPURDUAR (PG)-JIGMELLING-2	16-02-2022	20:01	20:37
4	400KV-ALIPURDUAR (PG)-JIGMELLING-2	17-02-2022	12:59	15:55
5	400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	25-02-2022	07:31	08:41

The issue could not be discussed in 112<sup>th</sup> PCC meeting as Bhutan representative was not available in the meeting.

**Bhutan representative may explain.**

**ITEM NO. B.16: 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.

**PowerGrid and ERLDC may update.**

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

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

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month February-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>
406.4	425 23-02-2022	21218 MW, 23-02-2022 18:33 Hrs.	11676 MW, 04-02-2022 at 04:02 Hrs.	4194	4396

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 February 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>
<b>Event - 1: At 13:21 Hrs Dated 04th-Feb-2022, As reported multiple element tripping occurred in Rajasthan Solar complex of Northern Region at 765/400kV Fatehgarh2(PG) pooling station and led to solar generation loss of around 1882 MW</b>	<b>50.04Hz to 49.92 Hz.</b>	<b>17%</b>
<b>Event -2: 2286 MW solar generation loss at 765kV/400kV Fathegarh2(PG) pooling station at 11:45 Hrs On the 11th Feb 2022</b>	<b>50.00 Hz to 49.87 Hz.</b>	<b>23%</b>
<b>Event - 3: 2807 MW solar generation loss at 765kV/400kV Fathegarh2(PG) pooling station and Bhadla (PG) PS at 12:38 Hrs On the 11th Feb 2022</b>	<b>49.95 Hz to 49.75 Hz.</b>	<b>8.5%</b>

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.

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

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

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

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.

OCC advised all the members to provide the updated status of PFR testing, if any, to ERPC and ERLDC.

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.

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

\* 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:

S.NO	Description	UFRs-for load relief (A)	df/dt -for load relief (B)	Relay for Island creation(C)
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**

Utility Name & Location	Name	Designation	Organization	Email ID	Mobile No.

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 April-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 April-2022 are as follows:

SI No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	--	--	--	--	--	--	Pending
2	JUSNL	1620	--	50	--	1570	--	April-22
3	DVC	--	--	--	--	--	--	Pending
4	OPTCL	3433	1154	110	59	3323	1095	April-22
5	WBSETCL	5661	--	450	--	5211	--	Pending
6	Sikkim	--	--	--	--	--	--	Pending

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						
Apr-22	Pending	Submitted	Pending	Submitted	Submitted	Pending
May-22	Pending	Submitted	Pending	Submitted	Submitted	Submitted
June-22	Pending	Pending	Submitted	Submitted	Submitted	Pending
July-22	Pending	Pending	Pending	Pending	Pending	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/atcttcmenu.jsp#">https://application.dvc.gov.in/CLD/atcttcmenu.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.wbsldc.in/atc-ttc">http://www.wbsldc.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
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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.

**Members may update.**

#### 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 Week 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 April 2022**

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of April 2022 (enclosed at **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 April 2022**

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

<b>Proposed Maintenance Schedule of Thermal Generating Units of ER in the month of April' 2022</b>								
<b>Syst em</b>	<b>Station</b>	<b>Unit No.</b>	<b>Capacity (MW)</b>	<b>Period (as per LGBR 2022-23)</b>		<b>No. of Days</b>	<b>Reason</b>	<b>Remarks</b>
				<b>From</b>	<b>To</b>			
DVC	Chandrapura TPS	7	250	25.04.2022	30.05.2022	36	AOH	
IPP	APNRL	2	270	10.04.2022	30.04.2022	21	AOH/BOH	

**Members may update.**

### **ITEM NO. D.3: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 09.03.2022)**

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

<b>SL No</b>	<b>STATION</b>	<b>STATE</b>	<b>AGENCY</b>	<b>UN IT NO</b>	<b>CAPA CITY (MW)</b>	<b>REASON(S)</b>	<b>OUTAGE DATE</b>
1	BARAUNI TPS	BIHAR	NTPC	6	110	Generator seal oil system problem.	03-Mar- 2022
2	BARAUNI TPS	BIHAR	NTPC	7	110	Turbine problem	19-Feb- 2022
3	MUZAFFARP UR TPS	BIHAR	BSPHCL	1	110	Completion of tenure of PPA	08-Sep- 2021
4	MUZAFFARP UR TPS	BIHAR	BSPHCL	2	110	Completion of tenure of PPA	08-Sep- 2021
5	BARAUNI TPS	BIHAR	BSPHCL	8	250	Annual Overhauling	01-Mar- 2022
6	DPL	WEST BENGA L	WBDCL	7	300	Poor coal stock	02-Feb- 2022

7	Sterlite	ODISHA	SEL	2	600	Poor Coal Stock	20-Feb-2022
8	MPL	JHARKHAND	MPL	2	525	Annual Overhauling	19-Feb-2022
9	KHSTPP	BIHAR	NTPC	6	500	Abnormal sound in LP Turbine.	16-Feb-2022

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						

c) Hydro Unit Outage Report:

S. NO	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	BALIMELA HPS	ODISHA	OHPC	1	60	R & M work	05-Aug-2016
2	BALIMELA HPS	ODISHA	OHPC	5	60	Problem in excitation system	25-Jan-2022
3	RENGALI HPS	ODISHA	OHPC	4	50	Annual overhauling	29-Jan-2022
4	RENGALI HPS	ODISHA	OHPC	3	50	Bearing problem	26-Nov-2021
5	RONGNICHU	SIKKIM	MBPGCL	1	48	Annual overhauling	20-Jan-2022
6	RONGNICHU	SIKKIM	MBPGCL	2	48	Annual overhauling	20-Jan-2022

It is seen that about 220 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	400KV-BINAGURI-TALA-1	BHUTAN	12.11.2021	S/D TAKEN BY BHUTAN
10	400KV-BINAGURI-TALA-4	PGCIL	31.12.2021	S/D TAKEN BY BHUTAN AS TALA GENERATION IS GOING IN SHUTDOWN TILL END OF MARCH,2022 TO CARRY OUT RECTIFICATION WORK IN HRT
11	400KV-MAITHON-MAITHON RB-2	PGCIL	15.01.2022	RE-CONDUCTORING WORK
12	400KV-MAITHON-MAITHON RB-1	PGCIL	04.03.2022	RE-CONDUCTORING WORK
13	400KV-BARH-MOTIHARI-1	PGCIL/DMTCL	05.03.2022	FOR PROACTIVE MEASURES IN GANDAK EMBANKMENT FOR PROTECTION OF DMTCL MOTIHARI LILO LINE.
14	400KV-PATNA-BALIA-3	PGCIL	20.02.2022	POWERGRID WORK:DE-STRINGING, ERECTION AND RE STRINGING IN BETWEEN LOC NO 319 AND 321 FOR NHAI DIVERSION WORK. BSPTCL WORK: FOR LILO OF 400 KV PATNA BALIA CKT-3 & 4 AT UPCOMING SUBSTATION AT NAUBATPUR.
15	400KV-PATNA-BALIA-4	PGCIL	20.02.2022	

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 February-2022**

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

NEW ELEMENTS COMMISSIONED IN FEBRUARY-2022									
GENERATING UNITS									
REGIO N	SL. NO.	Location	OWNER/UNIT NAME	Capacity added (MW)	Total/In stalled Capacity (MW)	DATE	TIME	REMARKS	
NIL									
ICTs									
REGIO N	S.N O.	Agency/ Owner	SUB-STATION	ICT No	Voltage Level (kV)	CAPACIT Y (MVA)	DATE	TIME	REMARKS
ER	1	PGCIL	RANGPO	4	220/132	100	16-Feb-22	16:17	220KV Side charged on 16-FEB-2022. 132KV Bay Charged and first time ICT loaded at 12:32 Hours on 17-FEB-22.
	2	PGCIL	MALDA	5	400/220	500	18-Feb-22	19:04	400KV Side charged on 18-FEB-2022. 220KV Bay Charged and first time ICT loaded at 14:35 Hours on 19-FEB-2022.It may be noted that ICT-05 has been upgraded from 315 MVA to 500 MVA.
	3	JUSNL	PATRATU	1	400/220	315	24-Feb-22	15:51	400KV Side charged on 24-FEB-2022.
	4	PGCIL	BINAGURI	3	400/220	315	27-Feb-22	17:46	400KV Side charged on 27-FEB-2022 .220KV Bay Charged and first time ICT loaded at 18:59 Hours on 28-FEB-22.
TRANSMISSION LINES									
REGIO N	S.N O.	Agency/ Owner	LINE NAME	Length (KM)	Conduct or Type	DATE	TIME	REMARKS	
NIL									
LILO/Re-Arrangement OF TRANSMISSION LINES									
REGIO N	S.N O.	Agency/ Owner	LINE NAME/LILO at	Length (KM)	Conduct or Type	DATE	TIME	REMARKS	
ER	1	BSPTCL	LILO of 132 KV SONENAGAR-CHANDAUTI(BH)-I AT CHANDAUTI(PMTL) (132KV-CHANDAUTI (PMTL)-CHANDAUTI (BH)-1)	33	ACCC HTLS Panther	19-Feb-22	14:25	132KV-CHANDAUTI (PMTL)-CHANDAUTI (BH)-1 Section.	
	2	BSPTCL	LILO of 132 KV RAFIGUNJ-CHANDAUTI(BH)-I AT CHANDAUTI(PMTL) (132KV-CHANDAUTI (PMTL)-CHANDAUTI (BH)-2)	33	ACCC HTLS Panther	19-Feb-22	14:45	132KV-CHANDAUTI (PMTL)-CHANDAUTI (BH)-2 Section.	
	3	BSPTCL	LILO of 132 KV RAFIGUNJ-	52	ACCC	19-Feb-	18:04	132KV-CHANDAUTI	

			CHANDAUTI(BH)-I AT CHANDAUTI(PMTL) (132KV-CHANDAUTI (PMTL)-RAFIGANJ (BH)-1)		HTLS Panther	22		(PMTL)-RAFIGANJ (BH)-1 Section.
	4	PGCIL+ TPTL	LILO OF 400 KV TEESTA III-KISHANGANJ S/C AT RANGPO SS (400KV- KISHANGANJ(PG)-RANGPO-2)	187.356	Quad Moose+ TWIN HTLS	11-Feb- 22	19:18	Line owned by TPTL & PGCIL (175.556 km(QM) owned by TPTL & 11.80 km(HTLS) owned by PGCIL)
BUS/LINE REACTORS								
REGIO N	S.N O.	Agency/ Owner	Element Name	SUB- STATION	Voltage Level (kv)	DATE	TIME	REMARKS
NIL								
HVDC /AC Filter bank / FACTS DEVICE associated System								
REGIO N	S.N O.	Agency/ Owner	Element Name	SUB- STATION	Voltage Level (kv)	DATE	TIME	
NIL								
Bays of Line/ICT/Reactor associated System								
REGIO N	S.N O.	Agency/ Owner	Element Name	SUB- STATION	Voltage Level (kv)	DATE	TIME	REMARKS
ER	1	PGCIL	220KV MAIN BAY OF 220KV/132KV 100 MVA ICT 4 AT RANGPO	RANGPO	220	16-Feb- 22	16:17	220KV Side charged on 16-FEB-2022
	2	PGCIL	132KV MAIN BAY OF 220KV/132KV 100 MVA ICT 4 AT RANGPO	RANGPO	132	17-Feb- 22	12:32	.132KV Bay Charged and first time ICT loaded at 12:32 Hours on 17-FEB-22.
	3	PGCIL	400KV MAIN BAY OF 400KV/220KV 500 MVA ICT 5 AT MALDA(PG)	MALDA	400	18-Feb- 22	19:04	400KV Side charged on 18-FEB-2022
	4	PGCIL	220KV MAIN BAY OF 400KV/220KV 500 MVA ICT 5 AT MALDA(PG)	MALDA	220	19-FEB- 22.	14:35	.220KV Bay Charged and first time ICT loaded at 14:35 Hours on 19-FEB-22.
	5	PGCIL	400KV MAIN BAY OF 400KV/220KV 315 MVA ICT 3 AT BINAGURI	BINAGU RI	400	27-Feb- 22	17:46	400KV Side charged on 27-FEB-2022
	6	PGCIL	220KV MAIN BAY OF 400KV/220KV 315 MVA ICT 3 AT BINAGURI	BINAGU RI	220	28-FEB- 22.	18:59	.220KV Bay Charged and first time ICT loaded at 18:59 Hours on 28-FEB-22.
BUS								
REGIO N	S.N O.	Agency/ Owner	Element Name	SUB- STATION	Voltage Level (kv)	DATE	TIME	REMARKS
NIL								

## Bihar:

GSS/Utility Name	Description	DoC	ToC
Biharshariff	220KV BIHARSHARIF-ASTHAWAN CKT-1 BAY	23-02-2022	17:24
Biharshariff	220KV BIHARSHARIF-ASTHAWAN CKT-2 BAY	23-02-2022	17:26
Sonenagar (Old)	132 KV Chandauti (PMTL)- Sonenagar Transmission line	22-02-2022	14:41
BGCL	Bay no-108 HV side of 80 MVA @Naubatpur	21-02-2022	18:15
Rafiganj	132KV RAFIGANJ-CHANDAUTI (PMTL) TRANSMISSION LINE	19-02-2022	17:52
Chandauti	132kv Chandauti(PMTL) - Chandauti Ckt-02 Tx. line	19-02-2022	14:45
Chandauti	132kv Chandauti(PMTL) - Chandauti Ckt-01 Tx. Line	19-02-2022	14:25
BGCL	132 kV Main bus-02 at Naubatpur	17-02-2022	14:20
BGCL	132 kV Main bus-01 at Naubatpur	17-02-2022	14:19
BGCL	Bay no-103- 132 kV D/C Mashauri - Naubatpur ckt-02 Tx. Line	17-02-2022	14:20
BGCL	Bay no- 105- 132 kV D/C Mashauri - Naubatpur ckt-01 Tx. Line	17-02-2022	14:19
Begusarai	220KV BEGUSARAI-SAHARSA (NEW) PG CKT-II BAY-214	16-02-2022	15:20
Begusarai	220KV BEGUSARAI-SAHARSA (NEW) PG CKT-I BAY -213	16-02-2022	15:20
Paliganj	132/33 KV 50 MVA POWER TRANSFORMER NO.02	14-02-2022	18:26
Naugachia	132kv GSS Naugachia -TSS Naugachia transmission line	01-02-2022	16:51

## Odisha:

Elements charged for first time in February-2022				
Sl No.	Name of the element charged first time	FTC code	Date	Time
1	Synchronization of 18MW TG-2 at M/S Adhunik Metaliks Limited, Kuarmunda, Rourkela with OPTCL system	FTC-03/2022	2/2/2022	17:45HRS
2	Synchronization of 40MW Unit at M/S SMC Power Generation Limited, Jharsuguda with 220kv Budhipadar line of OPTCL system	FTC-04/2022	9/2/2022	13:00HRS
3	132kv feeder bay extension at 220/132/33kv Grid S/s, Jayanagar for 132kv Jayanagar-Sunabeda DC line.	FTC-05/2022	18/02/2022	19:26HRS



**Jharkhand: Nil**

**CESC:**

Sl. No.	Element Name	Date
1	Commissioning of 220kV WBSETCL Kasba to EM South ckt. 2	24-02-2022

**Members may update.**

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

Frequency profile for the month as follows:

Month	Max	Min	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
	(Date/Time)	(Date/Time)			
<b>Feb, 2022</b>	50.26 Hz on 06.02.2022 at 18:03 Hrs.	49.54 Hz on 22.02.2022 at 07:15 Hrs.	05.97	76.89	17.14

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

**Members may note.**

\*\*\*\*\*

**MoM held on dtd. 16.02.2022 through VC between OPTCL, SLDC, OPGC, Vedanta, Aditya Aluminium, SMC Power & Bhushan Steel Ltd. regarding 220kV Bus Splitting at Budhipadar Grid S/s of OPTCL due to high Fault MVA.**

**1. Appraisal by OPTCL:**

i) The 220 KV system at Budhipadar Grid S/S is of Two Main and Transfer Bus scheme. A no. of generators like OPGC, Bhushan, Vedanta, Aditya Alumina and SMC are connected with the 220 kV system. A system study conducted by OPTCL on Grid Substation revealed that, during steady state condition the fault level of 220kV system is 42.79KA, which is on the higher than the limit for the switchyard equipment and earthing system. However, the system study revealed that with the splitting of 220 kV Bus, the fault level of Bus-1 & 2 becomes 30.40kA & 12.72kA respectively. In order to reduce the fault level, OPTCL Proposed to segregate the connected Feeders/ Generators and split the 220kV Bus by opening the Bus-Coupler Circuit Breaker. This was put up as an agenda for discussion in the 183<sup>rd</sup> OCC Meeting of ERPC.

ii) In the said meeting ERLDC pointed out that the proposal of segregating the bus by opening of Bus-coupler Circuit Breaker will reduce the overall reliability of the system.

iii) OPGC informed that in the system study, all the four evacuating lines from IB TPS are connected to one 220kV Bus at Budhipadar thereby affecting the reliability of evacuation of IB TPS generation in case of any Bus fault at Budhipadar.

This issue was also discussed at subsequent OCC Meetings of ERPC. OCC forum suggested OPTCL to discuss the matter of Bus splitting with all the beneficiaries connected to 220kV Bus at Budhipadar GSS and share the views of them and outcome of the meeting with ERPC & ERLDC.

**2. Suggestions/ views of the Beneficiaries:**

**i) OPGC:-**

- a) For reliability of their 04 lines connected to 220kV Bus at Budhipadar for evacuation of IB TPS generation must be segregated in Two Buses in case of splitting of the Bus.
- b) Implementation of SPS for 149MW should be considered at Budhipadarend for successful islanding of units of IB TPS.

**i) M/s Vedanta Ltd.:-**

- a) All the CPPs of Vedanta are connected to 220kV Bus at Budhipadar through 2nos. 220kV feeders.
- b) When all the 2nos. 220kV feeders of Vedanta are connected to one bus, the reliability of their system decreases.
- c) In case of Bus split, the lines need to be distributed in both the Buses.
- d) Vedanta intimated that they are ready to switch over from 220kV to 400kV system. OPTCL clarified that Vedanta will be allowed to switch over from 220kV to 400kV system after approval from OPTCL management and for this there is a need for fresh system study.



e) Vedanta suggested to upgrade the switch yard equipment to sustain the high fault MVA.

OPTCL intimated that all the Circuit Breakers have been upgraded with breaking capacity of 50kA. But it is not possible to replace/upgrade all other equipment and earthing system at Budhipadar GSS.

f) Vedanta suggested OPTCL to conduct fresh system study considering the proposed migration of Vedanta from 220kV to 400kV.

**iii) M/s Bhusan Power & Steel Ltd.:-**

a) 02nos. 220 lines of BPSL are connected to 2 different buses at Budhipadar GSS.

b) If the 220kV Bus is split at Budhipadar, reliability of their system will be hampered.

c) Load should be distributed between the Buses matching with generation.

d) Failure of one line will restrict drawl of their load.

**iv) M/s Aditya Aluminium Ltd.:-**

a) Generally at AAL end the Bus-coupler Circuit Breaker remains in closed condition. When AAL draws power of 50MW in both lines, they do not face any problem. But when the Bus-coupler is opened at Budhipadar end, severe reliability issue may arise which may lead to several problems like import/export & commercial issues as power will flow through their Bus-coupler.

b) SLDC agreed with the view of AAL that in the above mentioned case, over drawl and commercial issues may arise.

c) If there is a sudden load throw of around 350MW/ all the loads are tripped when the Bus-coupler is in closed condition, they can survive.

d) The islanding of AAL has been successful several times during incidence of Blackout at Budhipadar GSS.

**v) M/s SMC Ltd.:-**

a) At present SMC is drawing power through 220kV S/C line from Budhipadar GSS and another line is coming up shortly for their system reliability.

**vi) SLDC Odisha:-**

a) SLDC was of the view that the splitting of 220kV Bus at Budhipadar will give rise to several issues like reliability for the connected beneficiaries, balancing of load & generation, system stability and commercial aspects for the beneficiaries.

**vii) OPTCL:-**

a) OPTCL informed that at present all the 220 KV Circuit Breakers at Budhipadar GSS are of 50 KA Breaking capacity. Further, M/s Bhushan and Aditya Alumina have already applied for switching over from 220 KV system at Budhipadar GSS to 400 KV system at Lapanga GSS. With this switching over the Fault level of Budhipadar GSS will be further reduced.

b) At present all the Stake Holders do not agree for 220 KV Bus segregation at Budhipadar GSS.

**3) Decision:-**

i) Considering the views & suggestions of all the beneficiaries, present load scenario & generation, switch over proposals from 220kV to 400kV by some of the beneficiaries, OPTCL agreed to conduct a fresh system study regarding determining the fault level in pre & post Bus- splitting conditions at 220kV Budhipadar GSS.

ii) Till further developments/ requirements OPTCL will maintain its status quo.

The meeting was conducted in a cordial atmosphere. The list of participants is enclosed in a separate sheet.

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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 substaions. (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 Integrated 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		WBPDCCL	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			Renovation and Modernization of switchyard and related protection system of different power stations (BTPS, BKTPS and KTPS) of WBPDCCL (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 replcement 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>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

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 <b>220kV Patna-Sipara T/c line</b>	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 <b>2x200 MVA 400/132kV ICTs at Motihari</b>	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 <b>2x315 MVA 400/220 kV ICTs</b> 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 <b>220 kV Maithon(PG)-Dumka D/C</b>	Intra State	LILO of 220kV Tenughat - Govindpur D/c line at Jainamore and Dhanbad	JUSNL	1 <sup>st</sup> 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 <b>220 kV Maithon(PG)-Kalyaneswari D/C and Maithon(PG)-Dhanbad D/C</b>	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 <b>2x315 MVA 400/220 kV ICTs</b> 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 <b>220 kV Waria(DVC)-Bidhannagar(WB) D/C</b>	Intra State	3rd 315 MVA ICT at Bidhannagar (WB)	WBSETCL	8th SSCM/4th ERPCTP	NA	Jun-22			

[illegible]

## Annexure D.1

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

1	BIHAR	Demand (MW)	Energy Requirement (MU)
	NET MAX DEMAND	6140	3466
	NET POWER AVAILABILITY- Own Sources	539	249
	Central Sector+Bi-Lateral	6666	3661
	SURPLUS(+)/DEFICIT(-)	1065	444
2	JHARKHAND		
	NET MAXIMUM DEMAND	1780	990
	NET POWER AVAILABILITY- Own Source	333	195
	Central Sector+Bi-Lateral+IPP	1189	730
	SURPLUS(+)/DEFICIT(-)	-258	-65
3	DVC		
	NET MAXIMUM DEMAND	3185	2030
	NET POWER AVAILABILITY- Own Source	5147	3393
	Central Sector+MPL	350	191
	Bi- lateral export by DVC	2194	1580
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	118	-26
4	ODISHA		
	NET MAXIMUM DEMAND (OWN)	4600	3200
	NET MAXIMUM DEMAND (In Case of CPP Drawal)	5650	2880
	NET POWER AVAILABILITY- Own Source	3678	1774
	Central Sector	1948	1299
	SURPLUS(+)/DEFICIT(-) (OWN)	1026	-127
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	-24	193
5	WEST BENGAL		
5.1	WBSEDCL		
	NET MAXIMUM DEMAND	7515	4650
	NET MAXIMUM DEMAND (Incl. Sikkim)	7520	4654
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	5335	2783
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2618	1284
	EXPORT (To SIKKIM)	5	4
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	433	-587
5.2	CESC		
	NET MAXIMUM DEMAND	2080	1035
	NET POWER AVAILABILITY- Own Source	830	460
	IMPORT FROM HEL	540	371
	TOTAL AVAILABILITY OF CESC	1370	831
	DEFICIT(-) for Import	-710	-204
	WEST BENGAL (WBSEDCL+CESC+IPCL)		
	(excluding DVC's supply to WBSEDCL's command area)		
	NET MAXIMUM DEMAND	9595	5685
	NET POWER AVAILABILITY- Own Source	6165	3243
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3158	1655
	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT	-272	-787
	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT	-277	-791
6	SIKKIM		
	NET MAXIMUM DEMAND	109	52
	NET POWER AVAILABILITY- Own Source	8	1
	Central Sector	203	111
	SURPLUS(+)/DEFICIT(-)	102	60
	EASTERN REGION		
	NET MAXIMUM DEMAND	24911	15423
	NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha)	25940	15103
	BILATERAL EXPORT BY DVC (Incl. Bangladesh)	2194	1580
	EXPORT BY WBSEDCL TO SIKKIM	5	4
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	462
	NET TOTAL POWER AVAILABILITY OF ER	27190	14922
	(INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)		
	SURPLUS(+)/DEFICIT(-)	2274	-505
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	1245	-185