भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
Tel. No.: 033-24239651, 24239658 FAX No.:033-24239652, 24239653 Web: **www.erpc.gov.in**

NO. ERPC/EE/OPERATION/2022/ 1614. **DATE: 10.03.2022**

To

As per list enclosed.

Sub: Minutes of 188th OCC Meeting held on 18.02.2022 through MS Teams Platform- reg.

Sir,

Please find enclosed minutes of 188th OCC Meeting held on 18.02.2022 through MS Teams Platform for your kind information and necessary action. The same is also available at ERPC website (www.erpc.gov.in).

Observations, if any, may please be forwarded to this office at the earliest.

This issues with the approval of Member Secretary.

Regards,

Yours faithfully,

10.III.22

(A. De)
EE(Opération)

LIST OF ADDRESSES:

1. CHIEF ENGINEER (TRANS., O&M), BSPTCL, PATNA, (FAX NO.0612-2504557/2504937)
2. CHIEF ENGINEER (System Operation), BSPTCL, PATNA, (FAX NO.0612-2504557/2504937)
3. CHIEF ENGINEER, TRANSMISSION (O&M), JUSNL, RANCHI (FAX NO.-0651-2490486/2490863)
4. CHIEF ENGINEER, TVNL, DORANDA, RANCHI - 834102 (FAX NO.06544-225414)
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CC:

Chief Engineer, OPM, CEA	Chief Engineer, NPC, CEA	ASSISTANT SECRETARY, ERPC

MINUTES
OF
188th OCC MEETING

Date: 18.02.2022

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700033

EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 188TH OCC MEETING HELD ON 18.02.2022 (FRIDAY) AT 10:30 HRS

Member Secretary, ERPC chaired the 188th OCC meeting. Welcoming all the participants to the meeting, he outlined the performance of ER Grid during January-2022 in brief. He highlighted the following points:

- *In January-2022, energy consumption of ER was 12,660 MU which was 5.9 % more than January -2021.*
- *In January-2022, Peak demand of ER was 21,003 MW which was 2.5 % more than January-2021.*
- *In the month of January-2022, following Thermal stations achieved more than 90% PLF: WBPDCL: Bakareshwar TPS = 99.5%, Sagardighi TPS = 100%, DVC: Chandrapura TPS = 93%.*
- *During January -2022, 75.66 % of time, grid frequency was in IEGC Band (49.90Hz-50.05Hz).*
- *As per LGBR 2021-22, a thermal capacity of 250 MW (Barauni TPS U#8) is scheduled for planned maintenance in March, 2022.*
- *During month of January-2022, 400 kV Patratu (JUSNL) – Bero (New Ranchi) D/C Transmission line, LILO of 200 kV Sasaram -Sahupuri at Karmnasa (New), 220 kV Patratu-Ratu (Burmu) D/C Transmission line were commissioned.*
- *As far as coal stock position (As on 15.02.2022) is concerned, still many of the power stations of Eastern Region are reeling under coal shortage.*

PART – A

ITEM NO. A.1: Confirmation of Minutes of 187th OCC Meeting held on 21st January 2022 through MS Teams online platform.

The minutes of 187th Operation Coordination sub-Committee meeting held on 21.01.2022 was circulated vide letter dated 09.02.2022.

Members may confirm the minutes of 187th OCC meeting.

Deliberation in the meeting

The following modification was agreed as per request of ERLDC vide mail dated 10th February 2022:

ITEM NO. B.20.1: Suspected opening of Rangpo B/R-2 without intimation to ERLDC leading to high voltage at Rangpo S/s.

……Based on analysis it was observed that Rangpo B/R-2 was not available from 10:08 hrs. of 31st December 2021 to 17:30 hrs. of 5th January 2022.

……

PART B: ITEMS FOR DISCUSSION

ITEM NO. B.1: Issues related to coal linkage

As per the minutes **(Annexure-B.1)** of the review meeting taken by Hon'ble MoP on 31.01.2022, it has been observed that excess power generated using coal linkage is being sold to power exchange. This power should have been scheduled to DISCOMS. The generator should sell power to the exchange utilizing coal purchased against coal auction.

Members may discuss.

Deliberation in the meeting

Member Secretary, ERPC, apprised the forum of the philosophy behind the objective of ministry to restrict the usage of linkage coal for distribution of power to the DISCOMS only, rather than selling in the power exchange. He further submitted that selling of power in the exchange is permitted only if it comes under un-requisitioned power or is generated through auctioned coal.

OCC advised all the constituents to take a note of the above.

ITEM NO. B.2: 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.

Members may discuss.

Deliberation in the 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.

ITEM NO. B.3: 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 3rd 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 28th Feb-2022. A meeting will be convened by 10th March for preparing the complete regional plan for Summer-2022.

Members may discuss.

Deliberation in the 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 10th March 2022.

ITEM NO. B.4: Ensuring resource adequacy to meet high electricity demand during forthcoming summer.

It is to mention that, highest all India electricity demand more than 200GW was met on 7th July 2021 with energy consumption of 4508 MU. It is expected that all India electricity demand may touch 215GW and 130BU/month in terms of energy during upcoming summer months based on estimate at our end. Generally, thermal based generation contributes around 75-82% of the total generation to meet the all-India demand. Hence, availability of thermal machines and fuel adequacy at plant level is vital to meet the forecasted demand of 215GW.

At present, generation from imported coal and gas-based plants is very low due to high market prices of gas and imported coal. Generally, generation at imported coal-based plants was about 300MU/day however it is around 120MU/day currently. This has put additional stress on domestic coal-based generation plants. As per resource adequacy, it is envisaged that around 86% capacity of coal based installed capacity would be required during the peak demand period.

Therefore, it is important that availability of units and coal/fuel stock is monitored closely and regularly at all plants and it may be discussed among all stake holders in Operation coordination meeting (OCC). Some of the points/suggestions have also been listed in the note given as annexure B.1. This would help in meeting the demand in secure manner.

In the 187th OCC meeting, ERPC representative gave an overview of the agenda and stressed upon the fact that due to increase in expected electricity demand during forthcoming summer, availability of coal-based plants have to be ensured along with proper monitoring of the coal/fuel stock.

ERLDC representative submitted that the maximum demand in the forthcoming summer may rise to 26000 MW and advised all the concerned generators to maintain resource adequacy and availability of machines post March 2022 to meet the same.

SLDC Odisha representative raised concern over frequent tripping of newly commissioned Darlipalli unit of NTPC. He further requested NTPC to plan the maintenance and shutdown

activities keeping in mind that Odisha is a major beneficiary of NTPC Darlipalli and long outage of Darlipalli units can causes serious issues to Odisha.

SLDC West Bengal representative requested WBPDCL to forecast their month wise expected generation for the forthcoming summer. WBPDCL representative submitted that the data would be provided within a week.

OCC advised WBPDCL to submit the detailed plan of generation data and long-term plans to enhance the coal stock position to the tune of prescribed normative capacity to meet the demand for the upcoming months within a week. Further, all the NTPC generators were also advised to enhance their coal stock position.

SLDC Jharkhand representative informed that sufficient power is available with them for the forthcoming summer as purchase of 200MW of RE power had been done.

SLDC Bihar representative informed that majority portion of power demand would be met through the Central Sector ISGS units. He further requested CSGs to ensure their availability during the forthcoming summer season.

DVC representative informed that sufficient steps have already been taken to enhance the coal stock position. An order of imported coal had already been placed and another is in progress. Further, an MoU has also been signed with Singareni Coalfields Limited for the procurement of coal. OCC advised DVC to send a detailed report on coal stock position for its various generating units on weekly basis to ERPC/ERLDC.

NPGC representative requested for immediate disbursement of outstanding payments from its beneficiaries to avoid any shortfall in maintaining the coal stock position.

OCC advised all the SLDCs to co-ordinate a separate meeting with their respective stakeholders on monthly basis regarding power demand and coal stock position and update the same in the subsequent OCC meetings.

Members may update.

Deliberation in the meeting

SLDC West Bengal representative informed that a meeting would be convened in the 2nd week of March 2022 to discuss the issues pertaining to coal availability and power demand for the upcoming summer season. Detailed report regarding coal stock position, power availability would be sent to ERPC and ERLDC thereafter. Views regarding summer preparedness would be sent by 25th February 2022.

Upon enquiring about the month-wise power demand forecast and coal stock position, WBPDCL representative informed that the detailed report would be submitted by the end of February 2022.

SLDC Odisha representative informed that the detailed report would be submitted by 25th February 2022.

SLDC Jharkhand representative informed that detailed report would be sent by 25th February 2022. Upon enquiring about the frequent shortfall of power during the peak hours, Jharkhand representative submitted that they are facing power deficit of 5-10% even after full entitlement. He further submitted that according to the internal reports of DISCOM, the AT&C loss is around

50%. For the upcoming summer season the projected power demand in the peak and off-peak hours are 1700 MW and 1100 MW respectively. Considering the full generation of 1500 MW, a shortfall of 200 MW would be there which could be compensated by purchase from exchange, available URS power or load shedding.

It was also informed that the North Karanpura unit of NTPC is planned to be synchronized by March 2022 and Patratu unit is scheduled to be commissioned in March 2024.

SLDC Bihar representative informed that the details of coal stock position along with summer preparedness plan would be submitted by the end of February 2022.

DVC representative submitted that the coal stock position details would be shared shortly. Regarding summer preparedness, a meeting is planned be convened with their OS&U department.

OCC advised DVC to share the data of coal stock position with ERPC and ERLDC on daily basis.

ITEM NO. B.5: Islanding Schemes in Eastern Region.

B5.1. Implementation of Islanding Schemes in Eastern Region

In the meeting held on 28th 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. <u>Patna Islanding Scheme:</u>

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 106th 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 44th 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 185th 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 186th 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 187th OCC meeting, BSPTCL representative informed that the tender has already been floated and the same would be opened on 16.02.2022.

BSPTCL may update.

Deliberation in the meeting

BSPTCL representative informed that the tender opening date has been rescheduled to 26.02.2021.

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 106th 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 44th 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 184th 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 185th OCC meeting, JUSNL informed that the tender for DPR would be opened on 25th Nov 2021.

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

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

JUSNL may update.

Deliberation in the 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.

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 de 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 44th 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 184th OCC meeting, DVC representative submitted that the scope of work has already been finalized but the budgetary offer is yet to be received from GE & Siemens. He further intimated that after getting necessary details from GE and Siemens, approval from their

appropriate authority would be taken.

On query, he submitted that they are following up the matter with Siemens and GE on daily basis and stated that they would resolve the issue within one week.

OCC advised DVC to update the status to ERPC and ERLDC.

In the 185th 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 186th 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 187th OCC meeting, DVC representative informed that the order placement would be done by February 2022 and the work would be completed within 6 months.

DVC may update.

Deliberation in the meeting

DVC representative informed that the NIT was floated on 25th January 2022 and the bid would be opened on 25th February 2022.

IV. KBUNL Islanding Scheme:

In special meeting held on 08.06.2021, following deliberations were made:

1. KBUNL Islanding scheme would be designed considering both units of KBUNL stage-II

2. (2x195 MW) as participating generator and connected radial loads at Gopalganj along with in-house load of KBUNL.
3. The islanding frequency will be at 48.6 Hz and this is subject to revision based on the suggestion received from KBUNL/OEM on under frequency settings of the generator units.
4. KBUNL would expedite the construction work related to implementation of Islanding scheme in switchyard. They would also take up with concerned OEM for testing and commissioning of islanding relay panel at their end.

In 106th PCC Meeting following deliberations were took place -
Regarding bay construction work at KBUNL switchyard, NTPC informed that civil work would be completed by October-21 & further testing & commissioning would be completed by January-21.

ERPC secretariat informed that time line for implementation of KBUNL islanding scheme had been decided as December-21 and advised NTPC to complete the bay construction work as well as other pending works related to implementation of the islanding scheme at the earliest.

In the 44th TCC Meeting, NTPC representative informed that the Islanding Scheme would be implemented by February-2022.

TCC advised NTPC representative to share the detailed timelines for completion of the remaining

work to ERPC.

TCC further advised NTPC to implement the KBUNL Islanding Scheme as per the timeline.

In the 184th OCC meeting, KBUNL representative submitted that 4 nos. of bays are under erection, however, the civil work for construction of Bus-sectionalizer is under progress and after completion of the same erection work would be started.

Further, KBUNL representative expressed that the islanding frequency i.e., 48.4Hz, as proposed by ERLDC, needs to be reviewed as they have their low frequency tripping command at 48.5Hz. ERLDC representative advised KBUNL to consult with their OEM and OS and thereafter getting the inputs from OEM and OS the matter may be further discussed for finalization of the frequency.

In the 185th OCC meeting, KBUNL representative informed that the matter of islanding frequency has been taken up with their OS & OEM. Further, a meeting with ERLDC was also held wherein some issues were highlighted. After the receipt of final simulation study from ERLDC, the approval from their OS & OEM would be taken.

ERLDC submitted that KBUNL is a unit of less capacity (less than 200MW) and does not have either RGMO or FGMO mode of frequency response. Further, without any mode of governor response it is very difficult for the Islanding scheme to sustain. KBUNL has some mechanical form of governor response for which detailed modeling is not possible at ERLDC side. In view of the above ERLDC suggested KBUNL to carry out the simulation study through some other agencies.

On query, KBUNL representative informed that the bus sectionalizer bay is still under the process of erection because of hamper in civil works due to heavy rainfall. The work has been started since 1st Nov 2021 and would be completed in another 3-4 months.

In the 186th OCC meeting, KBUNL representative informed that the details of simulation study for the Islanding Scheme have been received from ERLDC, wherein they have been advised to incorporate some changes in the under-frequency settings for the successful implementation of the Islanding Scheme. He further informed that, in order to take up the matter with their OS & OEM, some documentary confirmation from ERLDC side would be required.

OCC advised KBUNL to bilaterally resolve the issue with ERLDC at the earliest.

Regarding bay construction work at KBUNL, it was informed that the bus sectionalizer erection work is under progress and would be completed in another 3-4 months.

OCC expressed serious concern over the issue and advised KBUNL to complete the erection, commissioning & testing works by the end of March 2022.

In the 187th OCC meeting, KBUNL representative informed that a meeting was conducted on 30.12.2021 with the ERLDC representatives. He further submitted that out of 4, construction work of 3 bays had been completed and the remaining work is under progress and would be completed by the end of April 2022.

ERLDC representative informed that the governing characteristics of KBUNL generator would not respond during frequency dips, thereby leading to minimal chances of survival of Islanding scheme. Further, capacity being less than 200MW, RGMO and FGMO are not mandatory for

KBUNL generators. Also, necessary settings for the above-mentioned governing characteristics would require a restudy. Therefore, KBUNL may approach a third-party agency for the above study.

KBUNL representative also submitted that as confirmed by their OEM, speed control at lower frequency is not possible. He further deliberated that load shedding may be done from the Gopalganj side during low frequencies for successful Islanding.

OCC advised KBUNL to carry out a revised study considering the Barauni units.

KBUNL may update.

Deliberation in the meeting

After detailed deliberation, OCC was of the view of aborting the KBUNL Islanding scheme. Further, possibilities may be explored to study of Islanding scheme considering the Barauni units. The hardware procured for KBUNL Islanding scheme may be used for the same.

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

In the 184th 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 185th 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 186th 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 187th 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.

OPTCL may update.

Deliberation in the 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 2nd week of March 2022.

B5.2. Separate Display of Islanding Schemes (IS) on SCADA of respective states LDCs/Sub SLDs and RLDCs

Hon'ble Minister for Power and New & Renewable Energy had taken a meeting to review the Islanding Schemes in Indian Power system on 28th December 2020. Further, on 19th August 2021 Secretary, Ministry of Power had taken another meeting (MoM enclosed) in this regard wherein it was decided that for real time monitoring of participating generators & critical loads of Islanding schemes, a separate display of Islanding Schemes on SCADA of respective states LDCs/Sub SLDs and RLDCs may be prepared. Delhi SLDC and NAPS IS had already prepared the display page on their SCADA.

Separate displays of the Islanding Schemes on SCADA may be set up in the SLDCs/Sub SLDs and RLDCs.

In the 184th OCC meeting, OCC advised all the concerned state SLDCs to set up a separate SCADA display at their control room end so that the same can be extended to ERLDC. The display needs to be set up for both the existing and the proposed Islanding schemes.

OCC advised ERLDC SCADA representative to co-ordinate with the concerned utilities regarding the same.

In the 185th OCC meeting, ERLDC SCADA team informed that separate display for CESC islanding scheme has already been prepared. Necessary details of Farakka islanding scheme have also been received. Upon receipt of details from other concerned utilities, the separate display of SCADA for the respective islanding schemes would be set up.

OCC advised ERLDC SCADA team to implement the displays for the islanding schemes by December'2021.

In the 186th OCC meeting, ERLDC representative informed that the SCADA display of Farakka Islanding Scheme had been implemented on ERLDC side.

He further informed that, the Bandel and Haldia Islanding Scheme displays would be completed by the end of December 2021. For the Bakreshwar Islanding scheme display, some clarifications are required and update regarding its implementation would be shared in upcoming OCC meeting.

It was further deliberated that the displays of the Islanding Schemes had to be implemented on the SLDC level which would be further extended to the ERLDC level.

SLDC West Bengal representative informed that the implementation of Islanding Scheme displays had already been completed for Bandel, Bakreshwar and Tata Power. The same for CESC is also in process and would be completed shortly.

In the 187th OCC meeting, ERLDC representative informed that the displays for all the available Islanding Schemes of ER are available at the ERLDC end.

SLDC West Bengal representative informed that display for CESC Islanding Scheme would be implemented shortly.

SLDC West Bengal may update.

Deliberation in the meeting

SLDC West Bengal representative informed that the display for CESC Islanding scheme had been implemented and confirmation for the same had been taken from ERLDC.

ITEM NO. B.6: Reliable Power Supply to Lalmatia/Godda/Dumka areas of JUSNL

B6.1. 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 181st OCC Meeting, JUSNL representative submitted that they had got a letter from NTPC on 19th July '21 regarding anti-theft charging of the220kV 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 10th 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 20th 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 182nd 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 4th 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 185th OCC meeting, JUSNL representative informed that fund requisition to their energy department has been requested on 8th 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 186th 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 187th 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.

JUSNL may update.

Deliberation in the 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.

ITEM NO. B.7: Restoration of PLCC for 220 kV Chandil-STPS S/C line

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

In 108th 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 185th OCC meeting, OCC expressed serious concern over the issue and advised JUSNL to update the status at the earliest.

In the 186th 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 187th 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.

JUSNL may update.

Deliberation in the 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 1st week of March 2022.

ITEM NO. B.8: Outage of Important Transmission System.

B8.1. 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 181st 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 187th 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.

Sikkim may update.

Deliberation in the meeting

Sikkim representative was not present during the discussion.

B8.2. 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 Pandiabilli 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 182nd OCC meeting, OPTCL representative submitted that the restoration work for 220kV Pandiabili - Samangara D/C line has been assigned to PowerGrid. He further added that redesigning of tower in view of change of wind zone from Zone 4 to Zone 6 has also been taken up by PowerGrid.

On query, OPTCL representative informed that the line is expected to be restored by March'2022.

ERLDC representative expressed that as 220kV Pandiabili - Samangara D/C line is of utmost important; thus, the restoration of the said line may be expedited.

OCC advised OPTCL to expedite the work and also advised OPTCL to submit the work schedule mentioning the timelines for completion of designing, procurement and erection activities to ERPC and ERLDC.

In the 183rd OCC meeting, OPTCL representative informed that design of all the tower foundations of subjected line has been changed from open cast to pile foundation-based tower. Therefore, the restoration of the line would take considerable time. He submitted that restoration of the line is expected by June'23.

In the 184th 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 185th 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 186th 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 22nd and 28th December 2021 respectively. Further, the foundation work of towers has also started and is under progress.

In the 187th 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.

OPTCL may update.

Deliberation in the meeting

OPTCL representative informed that type testing of all towers had been completed and procurement and pile foundation works are in progress.

B8.3. 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 182nd 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 30th 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 183rd 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 184th 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 31st Dec'21.
In the 185th 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 186th 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 187th OCC meeting, OPTCL representative informed that the required materials have been received and the work would be started after the arrival of OEM engineers.

OPTCL may update.

Deliberation in the meeting

OPTCL representative informed that the required materials have been received and arrival of OEM engineers is awaited.

B8.4. 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 185th 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 15th 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 186th 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 187th 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.

Dikchu HEP may update.

Deliberation in the meeting

Dikchu representative was not available during the discussion.

B8.5. Prolonged outage of Bus-2 at Rangit HEP.

During providing shutdown of different elements around Rangit complex, ERLDC came to know that one bus of Rangit (Bus-2) is out since long. Such prolonged outage of one bus at important ISGS power station is an issue of concern for grid security. NHPC is requested to provide the details of outage and restoration plan for same.

In the 186th OCC meeting, it was deliberated that separate communication shall be done with NHPC regarding this issue.

In the 187th OCC meeting, NHPC representative was not available during the meeting.

NHPC may update.

Deliberation in the meeting

NHPC representative submitted that the electromagnetic relays of Bus-2 are being replaced due to frequent malfunctioning. Further, replacement of panel, control and protection system would also be done. The work would be completed and the bus would be charged by 2nd week of May 2022.

Upon enquiring about the status of the equipment, NHPC representative submitted that the CT's, CVT's are in healthy condition and only issues related to protection were persisting.

ERLDC representative submitted that difficulties are being faced in shutdown planning due to unavailability of bus-2.

OCC advised NHPC to submit the complete details along with the outage date of bus-2 to ERPC and ERLDC at the earliest. Further, NHPC was also advised to submit information regarding any incidences of future outage to ERLDC without any fail.

ITEM NO. B.9: Agenda by OPTCL

B.9.1. 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 183rd 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.9.2. 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 183rd 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 184th 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 1st week of November'2021 and the outcome of the meeting would be shared with ERPC & ERLDC.

In the 185th 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 2nd 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 186th 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 187th 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.

OPTCL may update.

Deliberation in the meeting

OPTCL representative informed that a meeting was convened on 16th 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.

ITEM NO. B.10: Event of Smelter Load tripping at Sterlite CPP on 20th & 28th September 2021

Smelter load tripping of 400 kV Sterlite CPP was observed on two occasions i.e., on 20 & 28th September 2021 due to electrical disturbance in the downstream side which resulted into Smelter load reduction of more than 1000 MW.

- This has caused under drawl of Odisha by more than 1000 MW. Subsequently with SPS action at Sterlite, injection to grid was limited up to 800 MW.
- Intimation of such events is necessary in real time as grid flow pattern gets affected considerably and also this is important for frequency response assessment purpose.

Report by ERLDC is attached at **Annexure-B.10.**

In the 184th OCC meeting, ERLDC representative submitted that due to the Smelter load tripping at Sterlite CPP, there was huge under drawl on that day. Odisha tried to mitigate the problem by reducing their hydro but the under drawl persisted for more than one hour.

Odisha representative mentioned that they had taken remedial actions like reducing the hydro generation but still the issue of under drawl persisted. He further added that the matter would be discussed with their higher authority and the details of the same would be shared with ERPC and ERLDC by 10th November'21.

OCC advised Odisha to send their action plan regarding mitigating the above-mentioned issue so that it can be discussed further in next OCC.

In the 185th OCC meeting, SLDC Odisha representative informed that a meeting with OPTCL would be convened to discuss the issue and based on the discussion of the meeting; necessary action plan regarding the issue would be shared to ERPC/ERLDC.

OCC advised SLDC Odisha to take up the matter with OPTCL at the earliest and send the detailed report so that it can be discussed in the upcoming OCC meeting.

In the 187th OCC meeting, OCC advised SLDC Odisha to discuss the matter with OPTCL and

Sterlite and submit a detailed report to ERPC and ERLDC.

SLDC Odisha may update.

Deliberation in the meeting

SLDC Odisha representative submitted that the above issue could be mitigated by switching off one unit of Sterlite. The remaining under drawl can be managed by reduction of their own hydro generation and SPS.

OCC advised SLDC Odisha to coordinate with Sterlite for implementation of the above methodology.

ITEM NO. B.11:	**Modification of metering arrangements for recording of auxiliary consumption of PGCIL stations in Odisha in line with the Odisha Electricity Regulatory Commission Distribution (Conditions of Supply) Code, 2019.**

Difficulties are being faced by GRIDCO and the DISCOMs of Odisha in billing PowerGrid towards the auxiliary consumption by their substations:

a) In line with the decision of ERPC and orders of Hon'ble OERC in Case No. 57 of 2020 and 79 of 2021, PGCIL substations have become consumers of the respective DISCOMs for accounting of their auxiliary consumptions . GRIDCO is billing the above energy to DISCOMs on the basis of the energy accounting of SLDC computed from the meter data available in the ERPC /ERLDC website. However , the meter data available in the said websites contain weekly data only and also does not contain the maximum demand indicator (MDI). As per Clause 97(iv) of Odisha Electricity Regulatory Commission Distribution (Conditions of Supply) Code, 2019, the meters shall have Maximum Demand Indicator (MDI) and shall have storage facility of at least 45 days. Further, as per the above Code and Retail Tariff order of DISCOMs, DISCOMs in Odisha have to bill their consumers on the basis of two part tariff method i.e. Monthly Energy and Monthly Maximum Demand (MD). In absence of the MDI, DISCOM are unable to bill PGCTL in accordance with the OERC Distribution (Conditions of Supply) Code, 2019, as confirmed from the letters of DISCOMs (copy enclosed).

   Therefore, the DISCOMs have requested to install their ABT compliant meters in PGCIL substations having provision of MDI and having data storage capacity of 45 days for accounting of the above energy in compliance to the various regulatory provisions.

   Deliberation in the meeting

   Keeping in view the OERC guidelines, OCC opined that since the issue is pertaining to a consumer and its DISCOM, it may be resolved mutually.

b) It is to mention that the GRIDCO is already bearing the ICT losses as the meters are installed on the HV side of ICTs per the CEA metering Regulations, 2006 amended from time to time. Presently, meters for recording the auxiliary energy consumption of PGCIL stations are installed on the LV side of the auxiliary transformer instead of the HV side causing further losses to GRIDCO on account of the Auxiliary Transformers. Since, the metering arrangement is a special arrangement, PGCIL may be advised to allow GRIDCO/DISCOMs to install the meters on the tertiary side of the ICTs.

GRIDCO may explain. PowerGrid may update.

Deliberation in the meeting

TPCODL representative submitted that at present the billing is done by the meters installed at the LV side of the station transformer and requested PowerGrid to allow them to shift the meters to the HV side of the station transformer in order to reduce the transformer losses.

ERLDC representative deliberated that out of the 52 meters of Odisha project which are installed in the tertiary transformer, 37 meters have been installed in the HV side (33 KV) and 15 meters have been installed in the LV side (415 KV).

OCC advised PowerGrid to coordinate with SLDC Odisha and GRIDCO to shift the 7 meters (out of total 15) which are under Odisha project to HV side from LV side.

ITEM NO. B.12: 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 184th 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 185th 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 187th 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.

PowerGrid and ERLDC may update.

Deliberation in the 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.

ITEM NO. B.13: Finalizing schedule for Mock Black Start, Reactive Power Testing, PSS Tuning and PFR Testing for financial year 2022-23.

Every year a schedule for mock black start exercise is prepared and finalized before starting of the financial year for monitoring and better coordination. In line with same it is proposed that a schedule for Reactive capability testing, PSS tuning and PFR testing of states units may also be prepared so that same can be monitored.

In the 187th OCC meeting, it was deliberated that a list for Mock Black Start, Reactive Power Testing, PSS Tuning and PFR Testing for financial year 2022-23 may be prepared by ERLDC and the same would be circulated among the generators. The proposed testing schedule is attached in **Annexure-B.13**.

Generators may update.

In addition to the above, testing schedule for STATCOM, TCSC and SPS is also needed to be finalized.

Deliberation in the meeting

OCC advised all the generators to go through the proposed testing schedule and submit their comments to ERLDC so that it could be finalized.

MPL representative informed that PFR testing of both the unit-2 has been completed and testing of unit-1 would be completed by 18.02.2022.

NTPC representative informed that contract for PFR testing has been awarded. NTPC was advised to share the details at the earliest.

CESC vide mail dated 18.02.2022 intimated that PFR testing of BBGS units is scheduled from

26.02.2022 to 03.03.2022.

ITEM NO. B.14:	Failure of Black Start Mock exercise of 3x170 MW Teesta-V Power Station.

ERLDC has finalized Black Start Mock Exercise to be conducted by 3X170 MW Teesta-V Power Station NHPC Limited East Sikkim involving PGCIL Pooling Substation Rangpo East Sikkim on 08.02.2022. Initially Black Start Exercise was decided to be carried out on isolated load up to 30 to 40 MW. Later stage ERLDC has confirmed that islanding load of 30 to 40 MW is not possible to be made available for the same and asked PGCIL to synchronize Teesta-V Power Station Generating Units at Rangpo PGCIL Substation. While synchronization of the Generating Units of Teesta-V at Rangpo Substation with the Grid, generating unit was tripped on instantaneous over current and overall differential protection. Later on while finding out the preliminary reasons of tripping, it was found that unit was synchronized at PGCIL Rangpo Substation at 140^0 Phasor difference. Such type of synchronization could be disastrous not only for the respective generating units but also for the whole hydro power plant.

Teesta-V Power Station has proposed to constitute a committee for finding out detailed cause of failure of black start exercise/out of phase synchronization.

Teesta-V may explain. Members may discuss.

Deliberation in the meeting

NHPC representative submitted that on 8th February 2022, the mandate for Black Start exercise from Teesta-V power station was received from ERLDC. Initially the testing was planned to be conducted on Isolator mode with a load of 30-40 MW which was subsequently revised to synchronization of unit at Rangpo-PowerGrid S/s. While synchronizing, flow of 46 KA current through the Generating Transformer and Generators was observed which led to the tripping of units. He further submitted that, upon preliminary inspection it was found that unit was synchronized at PGCIL Rangpo Substation with 140^0 Phasor difference.

PowerGrid representative informed that command was executed in a timely manner at their side.

In order to avoid such future incidences during black start exercises, NHPC representative requested for charging of a dead bus at Rangpo S/s and power to be extended instead of synchronization of the grid.

ERLDC representative stressed upon the fact that Black Start exercise cannot be completed by charging of a dead bus and instead synchronization with the grid is necessary.

OCC opined that a committee comprising of representatives from ERPC, ERLDC, NHPC and PowerGrid may be constituted to undergo a detailed study in this regard.

ITEM NO. B.15:	Inadequate reactive power performance of generating units during the high voltage condition.

Since 187th 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	<85 MVAR	417 kV
Farakka	>150 MVAR	Unit 5 and 6 not going in absorption mode. Unit-4 <30 MVAR	416 kV
DSPTPS	>150 MVAR	Not absorbing VAR	422 kV
Mejia	>150 MVAR	<32 MVAR	420 kV
Barh	>200 MVAR	<110 MVAR	422 kV
NPGC	>250 MVAR	<95 MVAR for unit-1	421 kV

During January 2022, satisfactory MVAr performance has been observed at Kahalgaon STPS. MVAr performance of Sagardighi STPS improved after the deliberation of 187th OCC.

Sagardighi may update the action taken. Other generating stations may share action taken at their end to improve reactive power performance. NTPC Barh, NPGC, Mejia & DSTPS may update.

Deliberation in the meeting

WBPDCL representative submitted that the improvement in the performance of MVAr absorption is attributed to the minimal limiter operation. Further, the under-excitation limit settings optimization would be carried out at the earliest opportunity. The detailed report would be submitted to ERPC and ERLDC within 7 days.

ERLDC representative informed that the Farakka unit-5 & 6 are unable to go to the absorption mode. OCC advised NTPC to submit a detailed report.

Performance of Mejia and DSTPS units were also found to be unsatisfactory. DVC was advised to submit a detailed report regarding the same.

Performance of Barh units were unsatisfactory during full load operation. Barh was advised to improve their absorption capacity.

Absorption capacity of NPGC was also not satisfactory.

ITEM NO. B.16: Additional Agenda - PowerGrid.

There are certain transmission lines under ownership of PowerGrid ER-I which are not connected with ISTS network viz. 220 KV Nadokar-Dumraon D/C (new), 132 KV Pusauli-Mohalia S/C, 132 KV Pusauli-Kudra S/C, 132 KV Kudra-Dehri S/C, 132 KV Mohania-Karamnasa S/C and associated bays at Kudra, Dehri and Karamnasa.

Switching codes for the above elements and bays is being provided by SLDC Bihar and no

permission is being required at RLDC level as per current practice.

Accordingly, it is proposed to be discussed whether there is requirement of deliberation of outage of the above in monthly OCC shutdown meeting. Further, the methodology for certification of the outage an availability of the above elements may also be discussed.

Deliberation in the meeting

PowerGrid was advised to take the outage approval from SLDC Bihar and submit the relevant outage data in the OCC shutdown meetings. Further, verification of outage would also be done by SLDC Bihar with subsequent submission to ERLDC.

PART C: ITEMS FOR UPDATE

ITEM NO. C.1: ER Grid performance during January 2022

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

Average Consumption (MU)	Maximum Consumption (MU)/ Date	Maximum Demand (MW) Date/Time	Minimum Demand (MW) Date/Time	Schedule Export (MU)	Actual Export (MU)
396.4	421 20-01-2022	21220 MW, 31-01-2022 19:09 Hrs.	13139 MW, 05-01-2022 at 03:16 Hrs.	4560	4618

ERLDC may highlight the performance of the ER grid.

Deliberation in the meeting

Members noted.

ITEM NO. C.2: Performance of Primary Frequency Response of ER Generating Units.

Frequency response characteristics (FRC) have been analysed pan India for the event of sudden frequency change that occurred in the month of January 2022. The details of this event and the overall response of the Eastern region have been summarized below.

Summary of the events and Frequency Response Characteristic (FRC) of the Eastern Region for the events.

Event	Frequency Change	ER FRC
Event 1: On 23rd January 2022 at 14:16 hrs, 1100 MW generation loss at Bhadla and Fatehgarh in NR	Frequency drop from 50.05 Hz to 49.95 Hz. Later stabilized at 50.03 Hz.	99.1%
Event 1: On 30th January 2022 at 11:27 hrs, 2038 MW generation loss at Fatehgarh in NR	Frequency drop from 50.025 Hz to 49.825 Hz. Later stabilized at 49.925 Hz.	6%

List of regional generating stations/SLDCs from which generation end data/FRC yet to be received (as per status on 10th Feb 2022):

Generating Station/ SLDC	Event-1	Event-2
Barh	--	Yet to be received
Darlipalli	Yet to be received	Yet to be received

Kahalgaon	Yet to be received	Yet to be received
SLDC Bihar	Yet to be received	Yet to be received
SLDC Odisha	Yet to be received	Yet to be received
SLDC Jharkhand	Yet to be received	Yet to be received
SLDC WB	Yet to be received	Yet to be received

Reason for non-sharing of generator end data/FRC may be shared.

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

Generating Station/ SLDC	Event 1		Event 2	
	Peak response	Sustainability	Peak response	Sustainability
NTPC Farakka		<100 sec		withdrawn immediately
NTPC Kahalgaon		withdrawn immediately		AGC took over before withdrawal of primary response
NTPC Talcher		--		--
NTPC Barh		Sustained more than 3 min		Sustained more than 3 min
NTPC Darlipalli		--		--
BRBCL		--		withdrawn immediately
NPGC Nabinagar		withdrawn immediately		Sustained more than 3 min
GMR		Sustained more than 3 min		Sustained more than 3 min
JITPL		--		--
MPL		Sustained up to 2 min		AGC took over before withdrawal of primary response
Adhunik		Slow pick up but Sustained more than 3 min.		--

Deliberation in the meeting

ERLDC representative informed that frequent events of operation beyond the MCR limit was observed for some generators which resulted in inadequate response and clear violation of IEGC Code. Moreover, most of the units of Talcher were found operating beyond MCR limit.

Upon enquiring about Darlipalli unit-1, it was informed that some issues were observed in the governor logic which would be resolved shortly.

OCC advised all the generators were advised to keep the operation of their units within the MCR limit.

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

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

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

Concerned utilities may update the present status of the project as given in the **Annexure-C.3**.

187th OCC advised all the utilities to update the status of project to the ERPC Secretariat.

Members may update.

Deliberation in the meeting

OCC advised all the concerned utilities to update the status of PSDF projects.

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

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

WBPDCL informed that they have already collected offer from Siemens for implementation of

AGC and they are awaiting the concurrence from SLDC.

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

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

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

In the 183rd 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 184th 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 25th Oct'21 informed that some additional data is needed from SLDC Odisha and after getting the same AGC would be implemented.

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

OPGC representative was not present during the discussion.

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

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

Members may update.

Deliberation in the meeting

DVC representative informed that NIT was floated on 29th December 2021 and the bid opening would be done on 19th February 2022.

OPGC representative was not present during the discussion.

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

In the 180th OCC meeting, ERLDC representative informed that as per communication received form 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 181st 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 1st week of August'21 respectively.

In the 182nd 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 183rd OCC meeting, ERLDC representative updated that PFR testing for Unit# 1 & 2 of GMR had been completed.

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

In the 187th OCC Meeting, 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.

Deliberation in the 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.

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

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

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

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

In the 182nd OCC meeting, WBPDCL representative submitted that they had taken the budgetary offer form Siemens and Solvina and the same is in process for administrative approval. PO would be issued to the selected party after getting the necessary approval.

Jharkhand representative submitted that no update has been obtained from Tenughat in this regard.

DVC representative submitted that the Indent for this work had been placed in April'21 and they are in the process for floating the NIT.OHPC representative submitted that the order would be issued to M/s Solvina by 1st week of September'2021.

In the 183rd OCC meeting, OHPC representative submitted that work order has been placed on M/s Solvina and they are planning to conduct the test in the month of Nov'21 for unit#5 of Rengali & Unit #4 of Indravati HEP.

TVNL representative submitted that due to coal shortage issue, the PFR testing of Unit #1 could not be planned. The same would be taken up once the coal supply gets improved.

WBPDCL representative submitted that they are yet to receive the administrative approval. The work order would be placed after getting the approval.

In the 184th OCC meeting, OHPC representative submitted that the order has been placed to M/s Solvina on 3rd Sept'21 and the testing of unit#5 of Rengali & Unit #4 of Indravati HEP are

scheduled to be conducted in the month of Nov'21.

TVNL representative was not available in the meeting.

WBPDCL representative submitted that the tender has been floated and the bid opening is scheduled in the 1st week of Nov'21. He further informed that the order would be placed by 3rd week of November'21.

In the 185th 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.

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

In the 186th 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 2nd week of January 2022.

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

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

Members may update.

Deliberation in the meeting

It was informed that PFR testing of all the 3 units of Budge-Budge are scheduled from 26th Feb 2022 to 3rd 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 20th March 2022 onwards.

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

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 171st OCC Meeting and shared with all concerned utilities.

CESC representative submitted that PSS tuning for Budge Budge unit#1 & 2 was done on 16th& 17th Aug'21 respectively.

ERLDC representative informed that PSS tuning for Mejia unit#4, Mangdechhu unit#3 & 4, DPL unit#7 and Kahalgaon unit#2 was done satisfactorily. However, PSS tuning for APNRL was not successful.

DGPC Bhutan representative submitted that for Chuka, Tala and Mangdechhu they had shared their report to ERPC.

In the 183rd OCC meeting, DVC representative informed that for PSS tuning for Unit#1 of Koderma TPS was carried out on 07/09/2021.

OCC advised DVC to submit the test report to ERLDC/ERPC.

In the 184th OCC meeting, ERLDC representative submitted that PSS tuning for Teesta-III is scheduled on 17th Nov'21. However, update from Bhutan is still pending.

OHPC representative mentioned that PSS tuning for all the units of Rengali was carried out from 10th to 13th Oct'21 and was tuned properly. He further added that the report would be shared to ERPC and ERLDC.

In the 186th 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 187th 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.

Deliberation in the meeting

OCC advised all the generators to update the status of PSS tuning, if any, to ERPC and ERLDC.

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.

Deliberation in the meeting

Members noted.

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

As per the decision taken in the meeting held on 8th 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 186th OCC meeting that except West Bengal all the entities are sending the report as per the new format.

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

Members may update.

Deliberation in the meeting

Members updated the status.

ITEM NO. C.10: Transfer capability determination by the states.

Latest status of State ATC/TTC declared by states during the month of March-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 months 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 figure are as follows:

Sl No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	5500	--	110	--	5390	--	March-22
2	JUSNL	1620	--	50	--	1570	--	March-22
3	DVC	1911	2098	65	51	1846	2047	March-22
4	OPTCL	3433	1154	110	59	3323	1095	March-22
5	WBSETCL	5634	--	450	--	5184	--	March-22
6	Sikkim	--	--	--	--	--	--	March-22

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

State / Month	Bihar	Jharkhand	DVC	Odisha	West Bengal	Sikkim
Feb-22	Submitted	Submitted	Submitted	Submitted	Submitted	Submitted
Mar-22	Submitted	Submitted	Submitted	Submitted	Submitted	Pending
Apr-22	Pending	Submitted	Pending	Submitted	Submitted	Pending
May-22	Pending	Submitted	Pending	Submitted	Submitted	Submitted
June-22	Pending	Pending	Pending	Pending	Pending	Pending

Declaration of TTC/ATC on SLDC Website:

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

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.

Members may update.

Deliberation in the meeting

Members updated the status. Export TTC details are awaited from SLDC West Bengal.

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 2eek of March 2022	
4	Burla	Second week of Nov 2021		First Week of March 2022	
5	U. Indravati	Last week of Oct 2021		Second Week of Feb 2022	
6	Maithon	Third Week of Nov 2021		First Week of March 2022	
7	TLDP-III	Second week of Nov 2021		Second Week of Feb 2022	
8	TLDP-IV	Third Week of Nov 2021		First Week of March 2022	
9	Subarnarekha	Second week of Nov 2021		Second Week of Feb 2022	
10	Teesta-V	Third Week of Nov 2020		Third Week of March 2022	
11	Chuzachen	Done on 9th 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 2nd week of August '21.

In the 182nd OCC meeting, OHPC representative submitted that Mock Black Start had been done for Rengali on 18th 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 183rd 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 185th 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 186th OCC meeting, ERLDC representative informed that Mock Black Start of unit-7 of Burla and TLDP unit-4 were successfully completed on 15th & 16th 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 3rd December 2021.

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

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

Members may update.

Deliberation in the 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.

ITEM NO. C.12: Updation of Black Start and Restoration procedure of Eastern Region

As per clause IEGC 5.8(a)

"Detailed plans and procedures for restoration of the regional grid under partial/total blackout shall be developed by RLDC in consultation with NLDC, all Users, STU, SLDC, CTU and RPC Secretariat and shall be reviewed / updated annually."

The restoration procedure of Eastern Region was last updated in the month of Jan-2021 and same can be accessed through following link

https://app.erldc.in/Content/Upload/System%20Study/System_Reliability%20report/ER%20Restoration%20procedure%20Jan%202021.pdf

ERLDC is in the process of updating Black Start and Restoration Procedure for Year 2022. All utilities are requested to go through the last updated restoration procedure and provide the input for changes if any. Further all the SLDCs are requested to share updated restoration procedure of their respective state so that information from same can be appropriately included in Eastern

Regional Restoration Procedure.

Till date comments/information received from Bihar, Jharkhand, DVC, Railways, BRBCL, Odisha and Jorethang. Others are requested to give the information at the earliest. Based on the comment received the Black Start and Restoration procedure of Eastern Region will be finalized by 31st Jan 2022.

In the 187th OCC meeting, ERLDC representative informed that comments from all the utilities had been received and a draft procedure had been prepared and circulated.

OCC advised all the utilities to send their comments, if any, to ERLDC at the earliest.

ERLDC informed that based on comments received from the constituents Black start and restoration procedure for the Eastern region for the Year 2022 is updated and circulated to all on 31st Jan 2022.

Members may note.

Deliberation in the meeting

Members noted.

ITEM NO. C.13: 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.13.**

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

Members may update.

Deliberation in the 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.

ITEM NO. C.14: Monitoring of Commissioning of upcoming elements and bus reactor and capacitor bank.

Many 400kV substations have been agreed upon in the previous meetings of planning meetings under strengthening schemes in ER. Further downstream network of various commissioned and under-construction ISTS substations in ER is being implemented by STUs.

List updated in the 4th meeting of Eastern Region Power Committee Transmission Planning (ERPCTP) held on 23rd July is attached in **Annexure – C.14.**

All Constituents are requested to update the list.

Deliberation in the meeting

OCC advised all the concerned utilities to update the list.

PART D: OPERATIONAL PLANNING

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

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of March 2022 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.

Deliberation in the meeting

*The updated anticipated power supply position is provided at **Annexure D.1**.*

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

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

Proposed Maintenance Schedule of Thermal Generating Units of ER during 2021-22 in the month of March' 2022

System	Station	Unit No.	Capacity (MW)	Period (As per LGBR 2021-22)		No. of Days	Reason	Remarks
				From	To			
NTPC	Barauni TPS	8	250	01.03.2022	25.03.2022	25	Boiler + LPT + Gen. OH	

Members may update.

Deliberation in the meeting

*The approved maintenance schedule of thermal generating units of ER during 2021-22 for the month of March-2022 is given at **Annexure D.2**.*

ITEM NO. D.3: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 13.02.2022)

a) Thermal Generating Stations outage report:

SL No	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	KOLAGHAT	WEST BENGAL	WBPDCL	1	210	Initially taken under ESP R & M. Presently Under consideration for De-commissioning.	07-Jun-2018
2	KOLAGHAT	WEST BENGAL	WBPDCL	3	210	For unit overhauling and boiler license	27-Jan-2022

						renewal	
3	MEJIA TPS	DVC	DVC	7	500	ANNUAL OVERHAULING	29-Jan-2022
4	MUZAFFARPUR TPS	BIHAR	BSPHCL	1	110	Completion of tenure of PPA	08-Sep-2021
5	MUZAFFARPUR TPS	BIHAR	BSPHCL	2	110	Completion of tenure of PPA	08-Sep-2021
6	BARAUNI TPS	BIHAR	BSPHCL	6	110	Abnormal TSI parameter	17-Mar-2021
7	DPL	WEST BENGAL	WBPDCL	7	300	Poor coal stock	02-Feb-2022
8	KOLAGHAT	WEST BENGAL	WBPDCL	2	210	Initially taken under ESP & Ash Handling R & M. Presently Under consideration for De-commissioning.	26-Jun-2021
9	Sterlite	ODISHA	SEL	3	600	Ash handling problem	08-Dec-2021
10	WARIA TPS	DVC	DVC	4	210	Boiler Tube Leakage	10-Feb-2022
11	BARH	BIHAR	NTPC	1	660	Boiler Tube Leakage	12-Feb-2022
12	DARLIPALI	ODISHA	NTPC	2	800	Boiler Tube Leakage	07-Feb-2022
13	FSTPP	WEST BENGAL	NTPC	6	500	Problem in secondary air preheaters & Condenser passes	13-Feb-2022
14	NABINAGAR(BRBCL)	BIHAR	NTPC	4	250	GT replacement work	28-Jan-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	6	60	R & M WORK	17-Jan-2022
3	BALIMELA HPS	ODISHA	OHPC	5	60	VIBRATION IN PERMANENT MAGNET GENERATOR	25-Jan-2022
4	BALIMELA HPS	ODISHA	OHPC	7	75	BREAKING OF SHEAR PIN	08-Feb-2022
5	RENGALI HPS	ODISHA	OHPC	4	50	ANNUAL OVERHAULING	29-Jan-2022
6	RENGALI HPS	ODISHA	OHPC	3	50	BEARING PROBLEM	26-Nov-2021
7	RONGNICHU	SIKKIM	MBPGCL	1	48	ANNUAL OVERHAULING	20-Jan-2022
8	RONGNICHU	SIKKIM	MBPGCL	2	48	ANNUAL OVERHAULING	20-Jan-2022

It is seen that about 355 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	220KV/132 KV 100 MVA ICT 4 AT RANGPO	PGCIL	08.04.2021	HAND TRIPPED AFTER TRIPPING OF ALL 400/220 ICTS AT RANGPO ON 08/04/21 AFTER DISTURBANCE AND THERAFTER DEVELOPED RELAY RESET PROBLEM, NOT COMMISIONED.
7	400KV/220KV 315 MVA ICT 2 AT MEERAMUNDALI	OPTCL	21.02.2021	FIRE HAZARD
8	400KV/220KV 315 MVA ICT 4 AT JEERAT	WBSETCL	09.04.2021	VERBALLY CONFIRMED BY WB THAT NEW TRANSFROMER PROCUREMENT UNDER PIPELINE AND SHALL BE REPLACED IN THE NEAR FUTURE.
9	220KV-FSTPP-LALMATIA	JUSNL	21.04.2021	THREE TOWER COLLAPSED NEAR LALMATIA
10	400KV-ALIPURDUAR (PG)-JIGMELLING-1	PGCIL	08.02.2021	EMERGENCY SHUTDOWN TAKEN BY BHUTAN TO INVESTIGATE DOUBLE SUCCESSIVE TRIPPING AT THEIR END.
11	400KV-BINAGURI-TALA-1	BHUTAN	12.11.2021	S/D TAKEN BY BHUTAN
12	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
13	400KV-MAITHON-MAITHON RB-1	PGCIL	23.01.2022	RE-CONDUCTORING WORK
14	400KV BIHARSHARIF-MUZAFFARPUR-1 and 2	PGCIL	01.02.2022	S/D TAKEN FOR DIVERSION WORKS FOR CONSTRUCTION OF FOUR LANE FROM BAKHTIYARPUR TO MOKAMA BY NHAI BETWEEN LOC NO 119 AND 122 TILL 15.02.2022
15	220KV-BUDHIPADAR-KORBA-2	PGCIL	01.02.2022	FOR MODIFICATION OF 220 KV KORBA-RAIGARH-BUDHIPADAR LINE BEWEEN LOC. NO 251-255 AND 280-283 FOR CONSTRUCTION OF NH-200 (NEW NH-49).

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

Members may update.

Deliberation in the meeting

OCC advised all the Transmission Licensees/Utilities to update the expected restoration date and work progress regarding restoration regularly to ERPC/ERLDC on monthly basis.

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

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

NEW ELEMENTS COMMISSIONED IN January-2022									
ICTs									
REGION	SL. NO.	Agency/ Owner	SUB-STATION	ICT NO	Voltage Level (kV)	CAPACITY (MVA)	DATE	TIME	REMARKS
ER	1	PGCIL	MEERAMUNDALI-B	2	400/220	500	11-Jan-2022	17:15	Idle charged from 220 kV side
TRANSMISSION LINES									
REGION	SL. NO.	Agency/ Owner	LINE NAME		Length (KM)	Conductor Type	DATE	TIME	REMARKS
ER	1	BSPTCL	220KV-RAXAUL-SITAMARHI-1		87.591	ACSR Twin Moose	29-Jan-2022	16:25	First time antitheft charged from 220 kV Sitamarhi(PMTL) up to dead end tower of 220 kV Raxaul(New).Total line length 88.65 kM but anti-theft charged 87.591 kM
	2	BSPTCL	220KV-RAXAUL-SITAMARHI-2		87.591	ACSR TWIN MOOSE	29-Jan-2022	16:28	
LILO/Re-Arrangement OF TRANSMISSION LINES									
REGION	SL. NO.	Agency/ Owner	LINE NAME/LILO at		Length (KM)	Conductor Type	DATE	TIME	REMARKS
ER	1	BSPTCL	LILO of 220 KV PUSAULI-SAHUPURI-I AT KARAMNASHA(NEW) (220KV-KARAMNASHA (NEW)-SAHUPURI-1)		45.7	ACSR Zebra	24-Jan-2022	17:46	
	2	BSPTCL	LILO of 220 KV PUSAULI-SAHUPURI-I AT KARAMNASHA(NEW) (220KV-KARAMNASHA (NEW)-PUSAULI-1)		29	ACSR Zebra	24-Jan-2022	18:58	
	3	BSPTCL	'LILO of 220 KV Gaya Chandauti D/C LILO at Bodhgaya(220KV-CHANDAUTI (PMTL)-BODHGAYA-1)		24	ACSR Zebra	21-Jan-2022	17:23	First time anti-theft charged from Chandauti (PMTL) up to dead end tower of 220 kV Bodhgaya GSS.
	4	BSPTCL	'LILO of 220 KV Gaya Chandauti D/C LILO at Bodhgaya(220KV-CHANDAUTI (PMTL)-BODHGAYA-2)		24	ACSR Zebra	21-Jan-2022	17:24	
	5	PGCIL+TPTL	'LILO of 400 kV Teesta III-Kishanganj S/C at Rangpo SS (400KV-RANGPO-TEESTA- III-1)		55.34	Quad Moose+TWIN HTLS	30-Jan-2022	11:24	Line owned by TPTL & PGCIL (45.34 kM owned by TPTL & 10 kM owned by PGCIL)

BUS/LINE REACTORS								
REGION	SL. NO.	Agency/ Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	TIME	REMARKS
ER	1	OPTCL	125MVAR 400KV B/R-1 AT MEERAMUNDALI	MEERAMUNDALI	400	07-Jan-2022	19:23	

Bays of Line/ICT/Reactor associated System								
REGION	SL. NO.	Agency/ Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	TIME	REMARKS
ER	1	JUSNL	400KV TIE BAY OF NEW RANCHI -1 AND FUTURE AT PATRATU	PATRATU	400	03-Jan-2022	17:07	
	2	NKTL	400KV MAIN BAY OF 400KV/220KV 500 MVA ICT 2 AT MERAMUNDALI B	MEERAMUNDALI-B	400	13-Jan-2022	19:27	

BUS								
REGION	SL. NO.	Agency/ Owner	Element Name	SUB-STATION	Voltage Level (kV)	DATE	TIME	REMARKS
ER	1	OPTCL	400KV MAIN BUS - 1 AT MERAMUNDALI B	MEERAMUNDALI-B	400	13-Jan-22	19:27	

Jharkhand:

01	220 KV Tenughat-Govindpur Ckt-1	18:57	20.10.21
02	50 MVA Transformer no.03 at Garhwa New(Meral)GSS	18:46	22.12.2021
03	220 KV Main BUS-I at Patratu	17:46	03.01.22
04	220 KV Tie Bay at Patratu	17:07	03.01.22
05	220 KV Patratu-Ratu Ckt-1	15:30	05.01.22
06	220 KV Patratu-Ratu Ckt-II	15:44	05.01.22
07	50 MVA Transformer no.03 at Garhwa Old GSS	22:20	05.01.22
08	132 KV 2phase S/C Rajmahal-Dhadhamia(TSS) T/L	18.05	10.01.22
09	220 KV Tenughat-Govindpur Ckt-II	13:29	12.01.22
10	220 KV Main BUS-I at Ratu GSS	16:26	12.01.22
11	220 KV Main BUS-II at Ratu GSS	17:15	12.01.22
12	150 MVA transformer-I from HV side at Ratu GSS	15:56	20.01.22
13	150 MVA transformer-II from HV side at Ratu GSS	15:56	20.01.22
14	132 KV Main Bus-I at Ratu GSS	17:04	21.01.22
15	50 MVA Transformer no.04 at Ratu GSS	16:58	21.01.22
16	132 KV Ratu-Kanke Ckt-I	17:04	21.01.22
17	132 KV Ratu Kanke Ckt-II	17:06	21.01.22
18	50 MVA Transformer no.03 at Ratu GSS	16:45	27.01.22
19	220 KV Bus Coupler at Ratu GSS	16:42	27.01.22

Odisha:

Sl No.	Name of the element charged first time	FTC code	Date	Time
1	Synchronization of 250MW Generator at CPP of M/S Rourkela Steel Plant, NSPCL with OPTCL system.	FTC-01/2022	7/1/2022	23:20HRS
2	400/220/33kV 500MVA ICT-II at Meramundali-B GIS S/S (Idle charged from 220kV side only).	-	8/1/2022	20:36HRS
3	125MVAR 400kV Bus reactor at 400/220/132kV Meramundali-A Grid S/s	-	7/1/2022	19:23HRS
4	400kV Main Bus-I & II at Meramundali-B GIS S/S through 400/220/33kV 500MVA ICT-II	-	13/1/2022	19:27HRS & 19:28HRS
5	220/132kV 160MVA Auto Transformer No-II at Budhipadar Grid S/s	FTC-02/2022	30/1/2022 & 31/1/2022	17:22HRS(on 220kV side) & 18:20HRS(on 132kV side)

Members may update.

Deliberation in the meeting

Members noted.

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

Frequency profile for the month as follows:

Month	Max (Date/Time)	Min (Date/Time)	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
Jan, 2022	50.28 Hz on 16.01.2022 at 22:00 Hrs.	49.65 Hz on 15.01.2022 at 09:09 Hrs.	05.84	75.66	18.51

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

Members may note.

Deliberation in the meeting

Members noted.

****

Email **Vivek Kumar**

Forwarding the minutes of the review meeting taken by Hon'ble MoP held on 31.01.2022 – Reg.

From : PrakashHalder Assistant <coordination-mop@gov.in> Thu, Feb 03, 2022 03:00 PM

Subject : Forwarding the minutes of the review meeting taken by Hon'ble MoP held on 31.01.2022 – Reg. 1 attachment

To : S.K.G Rahate Additional Secretary <as-power@nic.in>, Vivek Kumar <as1-power@gov.in>, Mr. Ashish Upadhyaya <ashish.upadhyay@nic.in>, Raghuraj Rajendran <raghurajmr@ias.nic.in>, Vishal Kapoor <vishal.kapoor@gov.in>, Mr Ghanshyam Prasad <g.prasad67@nic.in>, Jithesh John <jithesh@gov.in>, Mr Sanjeev Kassi <sanjeev_kassi@nic.in>

Cc : Ravindra Nath Singh DS <ravindranath.singh@nic.in>, Shri Alok Kumar <secy-power@nic.in>

Sir,

I am directed to forward herewith OM dated 03.02.2022 along with approved minutes of review meeting taken by HMOP on 31.01.2022 for necessary action.

--
Regards,
Coord. Section, MoP.

OM dt 03-02-2022.pdf
985 KB

MOST IMMEDIATE

No. 8-28/33/2021-COORDINATION (MoP)
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi – 110001
Dated, the 3rd February, 2022

OFFICE MEMORANDUM

Sub: Forwarding the minutes of the review meeting taken by Hon'ble MoP held on 31.01.2022 – Reg.

The undersigned is directed to forward herewith the approved minutes of the review meeting taken by Hon'ble MoP on 31.01.2022 for information and necessary action.

Encl: as above.

(R. N. Singh)
Deputy Secretary to the Govt. of India
Telefax: 011 2371 1712

To
All ASs/JSs/EA/CE, MoP.

Copy to:
Sr. PPS to Secy(P)

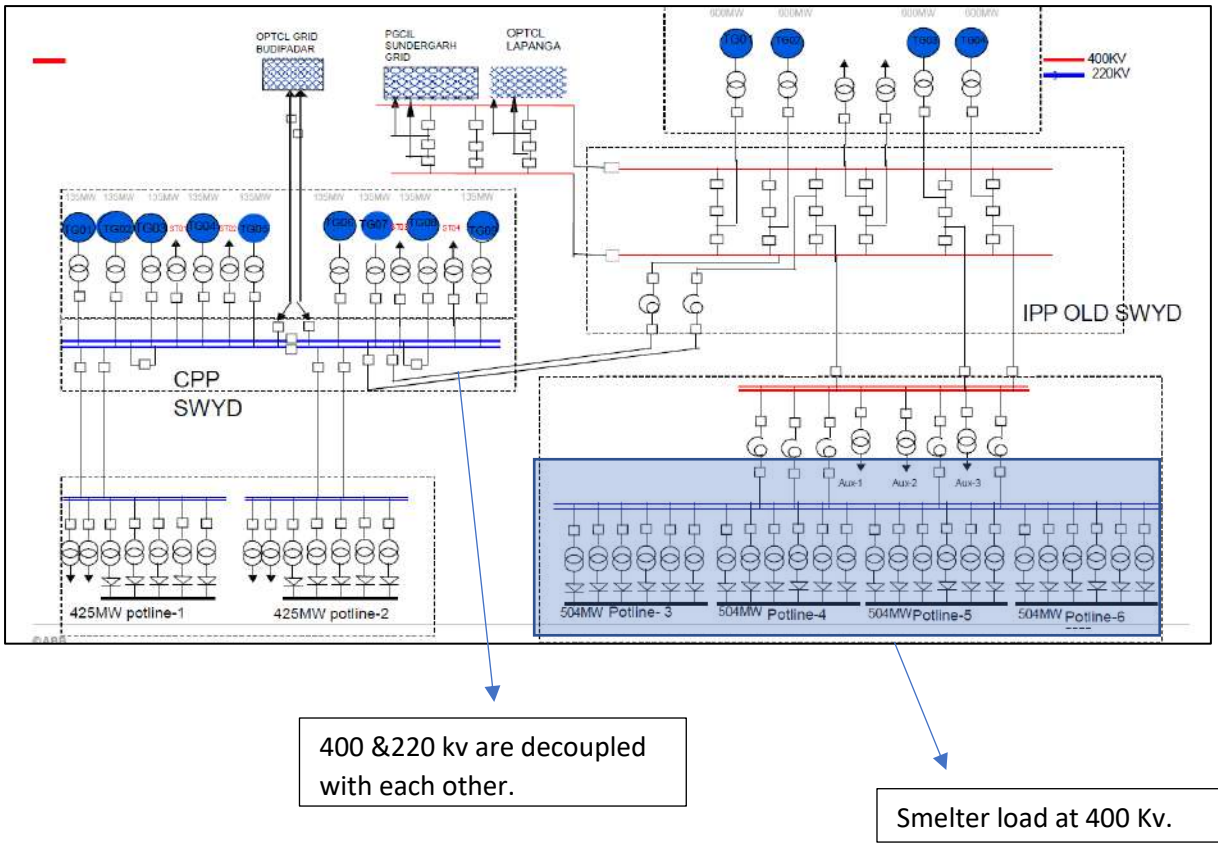
Action Points from Review Meeting by Hon'ble MOP on 31.01.2022

Sl. No	Issue/subject	Decision / direction	Officer concerned
1.	Metering	Status of Installation of smart meter and also disposal of digital meter was discussed. Standardise the output of smart metering and also clarify the ownership of meters in TOTEX model.	JS (Dist.)
2.	ALMM Framework for Smart Metering	Prepare ALMM framework for smart metering and trajectory for local content.	JS (Dist.)
3.	Financial Accounts Rules	To be expedited.	JS (Dist.)
4.	OSOWOG	It was directed to convene a meeting at the level of HMoP to be attended by Secretary (P), Sec. (MNRE), CMD (PGCIL) and Task force.	JS (Trans)
5.	LPS Rule	Sec. (P) informed that few changes suggested in the draft Rule. Being submitted.	JS (R&R)
6.	Pass through in Tariff	It was directed to submit proposal for allowing pass through like fuel companies in proposed rules.	JS (R&R)
7.	Bundling of RE Power	It was informed that data has been received and file is being submitted. It was directed to submit file for trajectory separately.	JS (R&R)
8.	Coal Linkage	It was observed that excess power generated using coal linkage was being sold to power exchange. This power should have been scheduled to DISCOMS. The generator should sell power to the exchange utilising coal purchased against coal auction. Issue to be examined and submitted on file.	AS (Th)

9.	Pumped Storage Projects	It was directed that Hydro division will issue guidelines for survey of river basins with objective of exploring possibility of setting pumped storage. Reports regarding PSP to be given in three categories be submitted: a) existing HEP which can be supplemented with pumped storage b) under construction HEP which can also have pumped storage c) General survey of all the river basins and other potential locations suitable for development of pumped storage. d) Ministry of Coal be requested to indicate abandoned coal field areas suitable for pumped storage.	JS (Hydro)
10.	Manufacturing Zone	It was indicated that file is being submitted.	AS (Th)
11.	Priority to States under Revised Distribution Schemes	It was directed that in implementation of RDSS, priority be given to States which are leading in separation of feeders and KUSUM is being adopted for solarisation.	JS (Dist)
12.	Board Nominee for Discom	REC / PFC to immediately opertionalise the system.	JS (Dist)
13.	Rating of Utilities	To be finalised on priority.	

EVENT OF SMELTER LOAD TRIPPING ON 28th September

Sterlite SLD:



Plant scenario prior to event:

- Unit 3 was out and Unit 1,2&4 was running with total **generation of 1232 Mw**.
- Sterlite was **drawing 258 Mw from** Grid ,so **total load was 1490 MW.**

At 17:48 Hrs due to fault in downstream within 400 kv Sterlite switchyard ,Smelter load reduced by 1450 Mw .

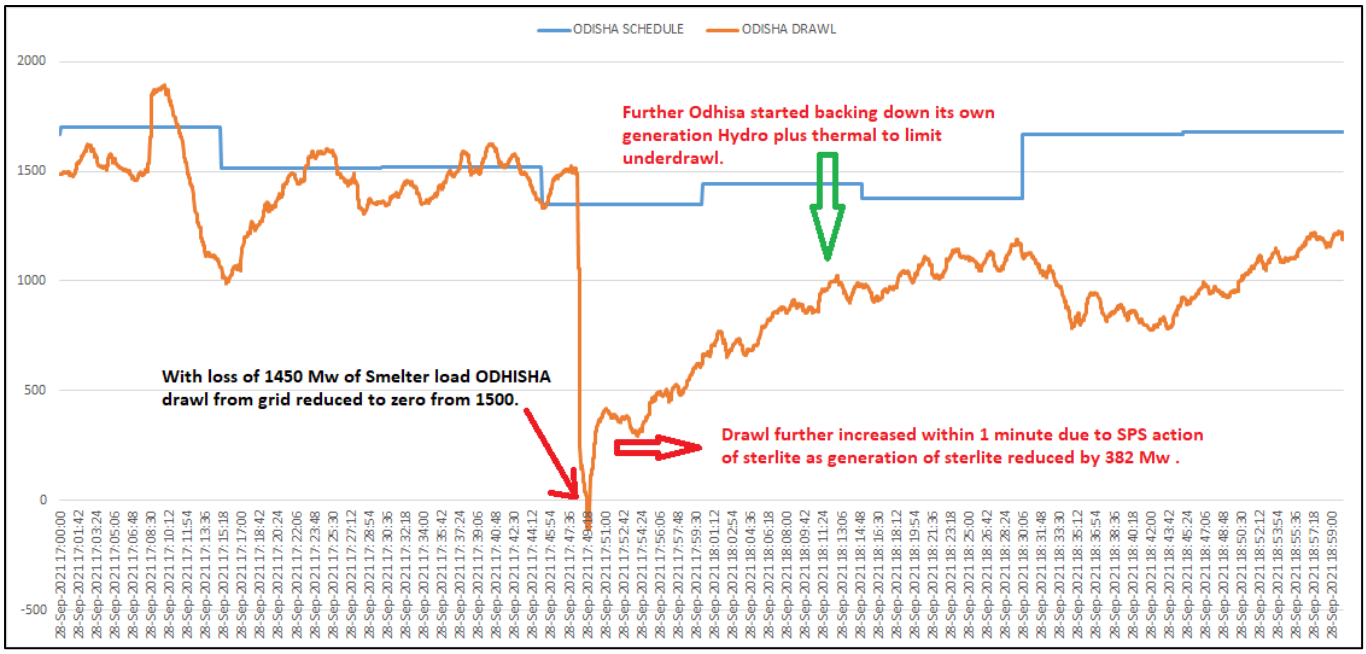
- As Sterlite load reduced ,Sterlite started exporting to the grid by 1182 Mw so total load reduced was 1450 Mw .
- At Sterlite SPS is there to take care of Huge injection in the grid which was set at 800Mw whenever injection is more than 800 MW it will limit it by generation reduction logic .
- Hence total generation to be reduced to limit till 800 Mw was ,1182-800= 382 Mw.

As per logic shown below priority 6 was satisfied

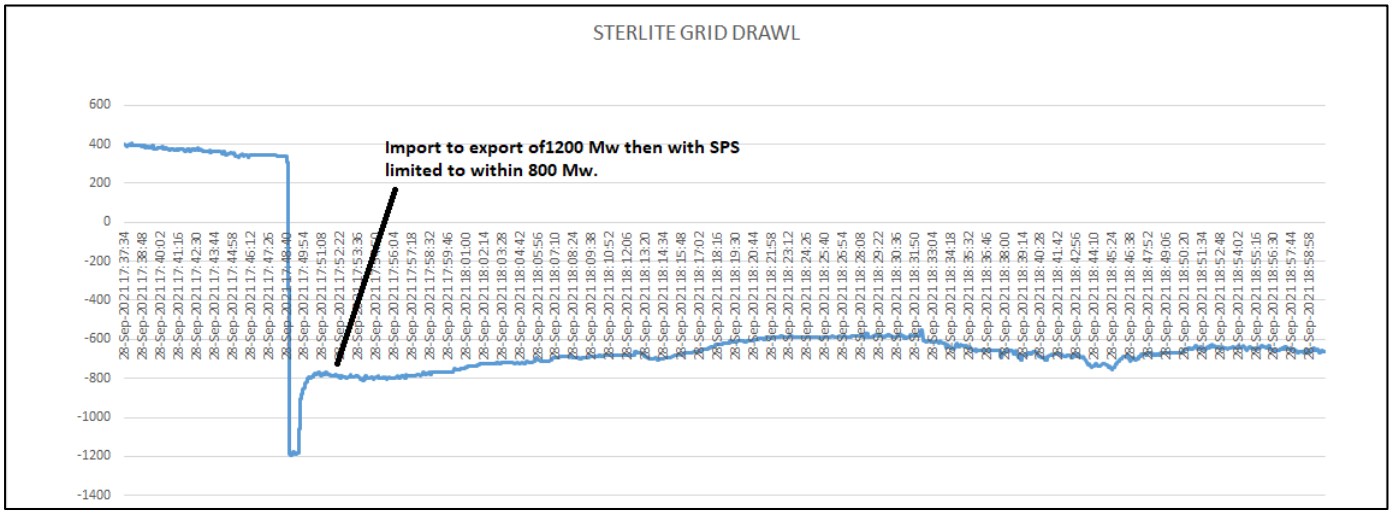
So generator 1 HP,LP Bypass occurred with generator 1 shedding which reduced the grid export within 800 Mw within 1 minutes .

Acuumulated generation shed table	Priority	MW
GEN2 HPLP	1	81.417
GEN2 HPLP+GEN1 HPLP	2	225.621
GEN2HPLP+GEN1 HPLP+GEN 4 HPLP	3	369.45
GEN2HPLP+GEN1 HPLP+GEN 4 HPLP+GEN3 HPLP	4	369.45
GEN2	5	271.39
GEN2+ GEN1 HPLP	6	415.594
GEN2+ GEN1 HPLP+GEN4 HPLP	7	559.423
GEN2+ GEN1 HPLP+GEN4 HPLP+GEN 3 HPLP	8	559.423
GEN2+GEN1	9	752.07
GEN2+GEN1+GEN4 HPLP	10	895.899
GEN2+GEN1+GEN4 HPLP+GEN3 HPLP	11	895.899
GEN2+GEN1+GEN4	12	1231.5
GEN2+GEN1+GEN4+GEN3 HPLP	13	1231.5
GEN2+GEN1+GEN4+GEN3	14	1231.5

ODISHA schedule vs Drawl



Sterlite Drawl from Grid:



Annexure B.13

Proposed Schedule for Testing

Central Sector

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start**	Reactive power Testing	PFR Testing	PSS Tunning
1	Farakka STPS Stage I & II	1600	1	200	Not Applicable	Apr-22	Complete	Complete
			2	200	Not Applicable	May-22	Complete	Complete
			3	200	Not Applicable	Jun-22	Complete	Complete
			4	500	Not Applicable	Jul-22	Complete	Complete
			5	500	Not Applicable	Aug-22	Complete	Complete
2	Farakka STPS Stage III	500	6	500	Not Applicable	Sep-22	Complete	Complete
3	Kahalgaon STPS Stage I	840	1	210	Not Applicable	Oct-22	Complete	Mar-22
			2	210	Not Applicable	Nov-22	In POSOCO Phase 2	Complete
			3	210	Not Applicable	Dec-22	In POSOCO Phase 2	Apr-22
			4	210	Not Applicable	Jan-23	In POSOCO Phase 2	May-22
4	Kahalgaon STPS Stage II	1500	5	500	Not Applicable	Feb-23	Complete	Complete
			6	500	Not Applicable	Mar-23	Complete	Jun-22
			7	500	Not Applicable	Apr-22	Complete	Complete
5	Talcher STPS Stage I	1000	1	500	Not Applicable	May-22	Mar-22	Complete
			2	500	Not Applicable	Jun-22	Mar-22	Complete
6	Talcher STPS Stage II	2000	3	500	Not Applicable	Jul-22	Apr-22	Apr-22
			4	500	Not Applicable	Aug-22	Apr-22	May-22
			5	500	Not Applicable	Sep-22	Apr-22	Jun-22
			6	500	Not Applicable	Oct-22	Apr-22	Jul-22
7	Barh STPS Stage I	660	1	660	Not Applicable	Nov-22	In POSOCO Phase 2	Apr-22
8	Barh STPS Stage II	1320	4	660	Not Applicable	Dec-22	May-22	May-22
			5	660	Not Applicable	Jan-23	May-22	Jun-22
9	BRBCL Nabinagar	1000	1	250	Not Applicable	Feb-23	Complete	Mar-22
			2	250	Not Applicable	Mar-23	Complete	Mar-22
			3	250	Not Applicable	Apr-22	In POSOCO Phase 2	Mar-22
			4	250	Not Applicable	May-22	In POSOCO Phase 2	Mar-22

10	KBUNL Stage II	390	3	195	Not Applicable	Jun-22	Not Applicable	Test done Under Review -If required retuning to be taken
			4	195	Not Applicable	Jul-22	Not Applicable	Test done Under Review -If required retuning to be taken
11	Nabinagar STPP Stage I	1980	1	660	Not Applicable	Aug-22	Complete	Complete
			2	660	Not Applicable	Sep-22	In POSOCO Phase 2	Complete
			3	660	Not Applicable	Oct-22	After COD-Phase 2	
12	Darlipali STPP	800	1	800	Not Applicable	Nov-22	May-22	Complete
			2	800	Not Applicable	Dec-22	In POSOCO Phase 2	Complete
13	Teesta V	510	1	170	Nov-22/Feb-23	Oct-22	Complete	Apr-22
			2	170		Nov-22	In POSOCO Phase 2	Apr-22
			3	170		Dec-22	In POSOCO Phase 2	Apr-22

Jharkhand

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start	Reactive power Testing	PFR Testing	PSS Tunning
1	Tenughat	2x210	1	210	Not Applicable	Dec-22	Jharkhand SLDC to update	Apr-22
			2	210	Not Applicable	May-22	Jharkhand SLDC to update	Apr-22
2	Subarnarekha	2X65	1	65	Aug-22		Jharkhand SLDC to update	Jun-22
			2	65	Oct-22		Jharkhand SLDC to update	Jun-22

Bihar

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start	Reactive power Testing	PFR Testing	PSS Tunning
1	Barauni	2x250+2x110	6	110	Not Applicable	Apr-22	Not Applicable	Apr-22
			7	110	Not Applicable	May-22	Bihar SLDC to Update	Apr-22
			8	250	Not Applicable	Jun-22	Bihar SLDC to Update	Apr-22
			9	250	Not Applicable	Jul-22	Not Applicable	May-22

2	Muzaffarpur	2X110	1	110	Not Applicable	Aug-22	Not Applicable	May-22
			2	110	Not Applicable	Sep-22	Not Applicable	

DVC

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start	Reactive power Testing	PFR Testing	PSS Tunning
1	Waria	(U#4) 210	4	210	Not Applicable	Apr-22	DVC SLDC to update	Apr-22
2	Mejia	1340	1	210	Not Applicable	May-22	DVC SLDC to update	Complete
			2	210	Not Applicable	Jun-22	DVC SLDC to update	Complete
			3	210	Not Applicable	Jul-22	DVC SLDC to update	Complete
			4	210	Not Applicable	Aug-22	DVC SLDC to update	Complete
			5	250	Not Applicable	Sep-22	DVC SLDC to update	Complete
			6	250	Not Applicable	Oct-22	DVC SLDC to update	Complete
3	Mejia-B	1000	7	500	Not Applicable	Nov-22	DVC SLDC to update	Complete
			8	500	Not Applicable	Dec-22	DVC SLDC to update	Complete
4	CTPS B	500	7	250	Not Applicable	Jan-23	DVC SLDC to update	Complete
			8	250	Not Applicable	Feb-23	DVC SLDC to update	Complete
5	Koderma TPS	1000	1	500	Not Applicable	Mar-23	DVC SLDC to update	Complete
			2	500	Not Applicable	Apr-22	DVC SLDC to update	Complete
6	Bokaro"B"	210	3	210	Not Applicable	May-22	DVC SLDC to update	May-22

7	Bokaro"A"	500	1	500	Not Applicable	Jun-22	DVC SLDC to update	Complete
8	RAGHUNATHPUR	1200	1	600	Not Applicable	Jul-22	DVC SLDC to update	Apr-22
			2	600	Not Applicable	Aug-22	DVC SLDC to update	Apr-22
9	DSTPS	1000	1	500	Not Applicable	Sep-22	DVC SLDC to update	Complete
			2	500	Not Applicable	Oct-22	DVC SLDC to update	Complete

West Bengal

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start	Reactive power Testing	PFR Testing	PSS Tunning
1	Kolaghat	1260	1	210	Not Applicable	Apr-22	West Bengal SLDC to update	Apr-22
			2	210	Not Applicable	May-22	West Bengal SLDC to update	May-22
			3	210	Not Applicable	Jun-22	West Bengal SLDC to update	Jun-22
			4	210	Not Applicable	Jul-22	West Bengal SLDC to update	Complete
			5	210	Not Applicable	Aug-22	West Bengal SLDC to update	Complete
			6	210	Not Applicable	Sep-22	West Bengal SLDC to update	Complete
2	Sagardighi	1600	1	300	Not Applicable	Oct-22	West Bengal SLDC to update	Complete
			2	300	Not Applicable	Nov-22	West Bengal SLDC to update	Complete
			3	500	Not Applicable	Dec-22	West Bengal SLDC to update	Complete
			4	500	Not Applicable	Jan-23	West Bengal SLDC to update	Complete
3	Bakreshwar	1050	1	210	Not Applicable	Feb-23	West Bengal SLDC to update	Complete
			2	210	Not Applicable	Mar-23	West Bengal SLDC to update	May-22
			3	210	Not Applicable	Apr-22	West Bengal SLDC to update	Complete
			4	210	Not Applicable	May-22	West Bengal SLDC to update	May-22
			5	210	Not Applicable	Jun-22	West Bengal SLDC to update	May-22

4	Santaldih	500	5	250	Not Applicable	Jul-22	West Bengal SLDC to update	Complete
			6	250	Not Applicable	Aug-22	West Bengal SLDC to update	Complete
5	Bandel	U#5 (210)	5	210	Not Applicable	Sep-22	West Bengal SLDC to update	Complete
6	TLDP III	132	1	33	Nov-22/Feb-23		Not Applicable	Aug-22
			2	33			Not Applicable	Aug-22
			3	33			Not Applicable	Aug-22
			4	33			Not Applicable	Aug-22
7	TLDP IV	160	1	40	Nov-22/Feb-23		Not Applicable	Sep-22
			2	40			Not Applicable	Sep-22
			3	40			Not Applicable	Sep-22
			4	40			Not Applicable	Sep-22
8	PPSP*	900	1	225	Nov-22/Feb-23		West Bengal SLDC to update	Mar-22
			2	225			West Bengal SLDC to update	Mar-22
			3	225			West Bengal SLDC to update	Mar-22
			4	225			West Bengal SLDC to update	Mar-22
9	DPL	550	7	300	Not Applicable	Apr-22	West Bengal SLDC to update	Complete
			8	250	Not Applicable	May-22	West Bengal SLDC to update	Complete
10	HALDIA	600	1	300	Not Applicable	Jan-23	West Bengal SLDC to update	Complete
			2	300	Not Applicable	Feb-23	West Bengal SLDC to update	Complete
11	Hiranmayee Enegry Ltd (Previously IPC(H)L)	300	1	150	Not Applicable	Aug-22	Not Applicable	Aug-22
			2	150	Not Applicable	Sep-22	Not Applicable	Sep-22
12	Budge-Budge	750	1	250	Not Applicable	Oct-22	West Bengal SLDC to update	Complete
			2	250	Not Applicable	Nov-22	West Bengal SLDC to update	Complete
			3	250	Not Applicable	Dec-22	West Bengal SLDC to update	Complete

* PPSP machines also operate in motor mode and their rating as motor is 250 MW each

Odisha

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start	Reactive power Testing	PFR Testing	PSS Tunning

1	IBTPS Stage I	420	1	210	Not Applicable	Aug-22	Orissa SLDC to update	Mar-22
			2	210	Not Applicable	Sep-22	Orissa SLDC to update	Mar-22
2	IBTPS Stage II	1320	1	660	Not Applicable	Oct-22	Orissa SLDC to update	Complete
			2	660	Not Applicable	Nov-22	Orissa SLDC to update	Complete
3	Balimela	510	1	60	June-22/Dec-22		Orissa SLDC to update	Apr-22
			2	60			Orissa SLDC to update	Apr-22
			3	60			Orissa SLDC to update	Apr-22
			4	60			Orissa SLDC to update	Apr-22
			5	60			Orissa SLDC to update	Apr-22
			6	60			Orissa SLDC to update	Apr-22
			7	75			Orissa SLDC to update	Apr-22
			8	75			Orissa SLDC to update	Apr-22
4	U-Kolab	320	1	80	July-22/Jan-23		Orissa SLDC to update	May-22
			2	80			Orissa SLDC to update	May-22
			3	80			Orissa SLDC to update	May-22
			4	80			Orissa SLDC to update	May-22
5	U-Indravati	600	1	150	Aug-22/Feb-23		Orissa SLDC to update	Jun-22
			2	150			Orissa SLDC to update	Jun-22
			3	150			Orissa SLDC to update	Jun-22
			4	150			Orissa SLDC to update	Jun-22
			1	50			Orissa SLDC to update	Jul-22
			2	50			Orissa SLDC to update	Jul-22

6	Rengali	200	3	50	Sep-22/Dec-22		Orissa SLDC to update	Jul-22
			4	50			Orissa SLDC to update	Jul-22
			5	50			Orissa SLDC to update	Jul-22
7	Burla	281.5	1	49.5	Sep-22/Dec-22		Not Applicable	Aug-22
			2	49.5			Not Applicable	Aug-22
			3	32			Not Applicable	Aug-22
			4	32			Not Applicable	Aug-22
			5	37.5			Not Applicable	Aug-22
			6	37.5			Not Applicable	Aug-22
			7	43.5			Not Applicable	Aug-22
7	Sterlite (CPP)	2400	1	600	Not Applicable	Aug-22	Orissa SLDC to update	Sep-22
			2	600	Not Applicable	Sep-22	Orissa SLDC to update	Sep-22
			3	600	Not Applicable	Oct-22	Orissa SLDC to update	Sep-22
			4	600	Not Applicable	Nov-22	Orissa SLDC to update	Sep-22

IPPs

Sl No.	Station	Total Install Capacity	*Unit No*	Size	Mock Black Start	Reactive power Testing	PFR Testing	PSS Tunning
1	MPL	1050	1	525	Not Applicable	Aug-22	Feb-22	Complete
			2	525	Not Applicable	Sep-22	Feb-22	Complete
2	ADHUNIK	540	1	270	Not Applicable	Oct-22	Complete	Apr-22
			2	270	Not Applicable	Nov-22	Complete	Apr-22
3	GMR	1050	1	350	Not Applicable	Dec-22	Mar-22	May-22
			2	350	Not Applicable	Jan-23	Mar-22	May-22
			3*	350	Not Applicable	Feb-23	SLDC Orissa to update	May-22
4	JITPL	1200	1	600	Not Applicable	Aug-22	Mar-22	Jun-22
			2	600	Not Applicable	Sep-22	Mar-22	Jun-22
6	Jorthang	96	1	48	Nov-22/Feb-23	Oct-22	Not Applicable	Complete
			2	48		Nov-22	Not Applicable	Complete
7	TEESTA -III	1200	1	200	Nov-22/Feb-23	Oct-22	Complete	Complete
			2	200		Nov-22	Complete	Complete
			3	200		Dec-22	In POSOCO Phase 2	Complete
			4	200		Jan-23	Complete	Complete
			5	200		Feb-23	Complete	Complete
			6	200		Mar-23	Complete	Complete

8	DIKCHU	96	1	48	Nov-22/Feb-23	Oct-22	Complete	Complete
			2	48		Nov-22	Complete	Complete
9	Tashding	97	1	48.5	Nov-22/Feb-23	Dec-22	Not Applicable	Complete
			2	48.5		Jan-23	Not Applicable	Complete
10	Chujachen	110	1	55	Nov-22/Feb-23	Feb-23	Not Applicable	Complete
			2	55		Mar-23	Not Applicable	Complete
11	Rongnichu	113	1	56.5	Nov-22/Feb-23	Oct-22	Not Applicable	Complete
			2	56.5		Nov-22	Not Applicable	Complete

* Unit-3 of GMR is Dedicated to Odisha

** For All Mock Black Start exercise, ideally power should be extended upto some nearby load and unit should run in islanded model for some time, post that it can be synchronized at some nearby transmission substation

Proposed Schedule for Testing

System Protection Schemes

Sl No.	Name of SPS	Proposed Date of Testing				
1	Talcher Kolar SPS					
2	Bangladesh SPS					
3	Motihari ICT SPS					
4	Ranchi ICT SPS					
5	220 kV EMSS-Shubhasgram D/C SPS					

STATCOM

Sl No.	Name of STATCOM	Proposed Date of Testing				
1	Rourkela					
2	Jeypore					
3	New Ranchi					
4	Kishangangj					

TCSC

Sl No.	Name of TCSC	Proposed Date of Testing				
1	TCSC in Purnea Muzzafarpur D/C at Purnea					

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	
			Total	**83.10**					**73.03**		**90.745**	
5	**Jharkhand**	**JUSNL**	Renovation & Upradation 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.
			Total	**160.49**					**114.68**		**145.674**	
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.
			Total	**270.18**					**101.35**		**193.42**	
14	**West Bengal**	**WBSETCL**	Installation of switchable reactor & shunt capacitor for voltage improvement. (88)	43.37	22-May-17	22-Jun-18	19	22-Jan-20	33.07		40.83	90% grant availed on award cost. Will get completed by Oct'21
15			Renovation & Modernisation of Transmission System. (87)	70.13	22-May-17	25-Jun-18	25	25-Jul-20	63.12		96.44	90% grant availed on award cost. Will get completed by Mar'22
16			Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid. (210)	71.74	24-May-19	23-Oct-19	19	23-May-21	39.3		45.62	30% grant availed on award cost. 04 Nos. of Reactors will be commissioned by December 2021. LoA of the 5th Reactor is yet to be placed.
17			Project for establishment of reliable communication and data acquisition at different substation at WBSWTCL. (222)	31.19	24-May-19	23-Oct-19	25	23-Nov-21	3.12			The tender has been been cancelled for OPGW. Re-tendering has to be done.
18			Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal. (197)	10.08	43910		12					10% grant not yet requested
19		**WBPDCL**	Renovation and Modernization of 220/ 132 kV STPS switch yard and implementation of Substaion Automation System. (72)	23.48	5-Sep-16	18-May-17	18	18-Nov-18	21.13		32.09	Target date for completion of project is Sept.'21 subject to availability of S/D & Covid scenario. Request for release for final 10% grant has been placed.
21			Renovation and Modernization of switchyard and related protection system of different power stations (BTPS, BKTPS and KTPS) of WBPDCL (155)	45.16	27-Jul-18	27-Mar-19	12	27-Mar-20	34.52		41.68	Target date for completion of project is Oct'21, subject to availability of S/D & Covid scenario. 90% grant availed on award cost.
			Total	**295.15**					**194.26**		**256.661**	

POWER SYSTEM DEVELOPMENT FUND												
Status of the Projects in Eastern Region												
Sl No	**State**	**Entity**	**Name of the scheme**	**Grant Approved**	**Grant sanctioned on**	**1st Installment grant released on**	**Completion Schedule**	**Completion schedule w.r.t date of 1st instalment**	**Grant aviled so far**	**Under process of release**	**Total awards amount of placed of till date**	**Latest status**
22	**DVC**	**DVC**	Renovation and Upgradation of the protection and control system of Ramgarh Sub Station. (81)	25.96	2-Jan-17	31-May-17	24	31-May-19	22.95	2.57	28.603	90% grant availed on award cost.
23			Renovation and Modernization of control and protection system and replecement 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	
			Total	**166.46**					**125.38**		**156.287**	
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
				10.00					**3.00**		**20.00**	
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.
			Total	**26.07**					**19.98**		**22.45888**	
			GrandTotal	**1,011.46**					**631.68**		**885.25**	

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		1st 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
West Bengal							
Kolaghat-WBPDCL	1	No	Yes	Long Back	No	Yes	Under retirement
Kolaghat-WBPDCL	2	No	Yes	Long Back	No	Yes	Under retirement
Kolaghat-WBPDCL	**3**	No	Yes	Long Back	No	Yes	To be done within Jan./Feb. 2022 after DAVR replacement.
Bakreshwar-WBPDCL	**2**	Yes	Yes	2019	Yes	Yes	PSS tuning to be done during Unit O/H in the month of November-December, 2021
Bakreshwar-WBPDCL	**4**	Yes	Yes	2019	Yes	Yes	BHEL offer received. PSS tuning to be done within Dec , 2021
Bakreshwar-WBPDCL	**5**	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
DVC							
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
ISGS							
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
IPP							
Jorethang	1	Yes	Yes	2015	No	Yes	Apr-21
Jorethang	2	Yes	Yes	2015	No	Yes	Apr-21
ADHUNIK	1	Yes	YES	2013	No	Yes	Mar-21
ADHUNIK	2	Yes	YES	2013	No	Yes	Mar-21
JITPL	1	Yes	Yes	2016	Yes	Yes	Jul-21
JITPL	2	Yes	Yes	2016	Yes	Yes	Jul-21
GMR	1	Yes	Yes	2013	No	Yes	Dec-21
GMR	2	Yes	Yes	2013	No	Yes	Dec-21
GMR	3	Yes	Yes	2013	No	Yes	Dec-21
Orissa							
IB TPS	1	Yes	Yes	2011	No	Yes	Mar'2021
IB TPS	2	Yes	Yes	2012	No	Yes	Mar'2021
Upper Indravati	1	Yes	No	2015	No	Yes	To be updated by OHPC
Upper Indravati	2	Yes	No	2015	No	Yes	To be updated by OHPC
Upper Indravati	3	Yes	No	2000	No	Yes	To be updated by OHPC
Upper Indravati	4	Yes	No	2001	No	Yes	To be updated by OHPC
Balimela	1 (60 MW)			No detail		Yes	To be updated by OHPC

Balimela	2 (60 MW)			No detail		Yes	To be updated by OHPC
Balimela	3 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	4 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	5 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	6 (60 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	7 (75 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Balimela	8 (75 MW)	No	No	Not tuned	No	Yes	To be updated by OHPC
Upper Kolab	1	Yes	Yes	2007	No	Yes	To be updated by OHPC
Upper Kolab	2	Yes	Yes	2007	No	Yes	To be updated by OHPC
Upper Kolab	3	Yes	Yes	2007	No	Yes	To be updated by OHPC
Upper Kolab	4	Yes	Yes	2007	No	Yes	To be updated by OHPC
Rengali	1	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	2	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	3	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	4	Yes	Yes	Not tuned	No	Yes	To be updated by OHPC
Rengali	5	No	Yes	Not tuned	No	Yes	To be updated by OHPC
Sterlite	4 X 600			No detail		Yes	To be updated by SLDC
Jharkhand							
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
Bihar							
BTPS	6 (110)					Yes	To be updated by BSPGCL
BTPS	7 (110)					Yes	To be updated by BSPGCL
BTPS	8					Yes	To be updated by BSPGCL
BTPS	9					Yes	To be updated by BSPGCL
Bhutan							
Tala	1	No	Yes			Yes	To be updated by BPC
Tala	2	No	Yes			Yes	To be updated by BPC
Tala	3	No	Yes			Yes	To be updated by BPC
Tala	4	No	Yes			Yes	To be updated by BPC
Tala	5	No	Yes			Yes	To be updated by BPC
Tala	6	No	Yes			Yes	To be updated by BPC
Chukha	1	No	Yes	2005	No	Yes	To be updated by BPC

Chukha	2	No	Yes	2005	No	Yes	To be updated by BPC
Chukha	3	No	Yes	2005	No	Yes	To be updated by BPC
Chukha	4	No	Yes	2005	No	Yes	To be updated by BPC
Mangdechu	1	No	Yes			Yes	Sep-21
Mangdechu	2	No	Yes			Yes	Sep-21

Annexure C.13

Statewise transmission adequacy

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

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

Annexure-C.14

Upcoming Transmission Elements in Eastern Region

ISTS

Sl. No.	Name of the Licensee	Name of the transmission elements	Expected Commissioning Date	Revised Commissioning Date
1	NKTL	400 kV North Karanpura (NTPC) – Gaya (PG) D/C	Mar-23	
2		400 kV North Karanpura (NTPC)– Chandwa (PG) D/C	Jul-22	
6	APJL	400 kV Godda Bangladesh D/C	Mar-22	
5	PMTL	400/132 kV, 315 MVA ICT 3 at Motihari	Jan-22	
3	PMJTL	400 kV New Jeerat (PMJTL) -Subhashgram (PG) D/C	Jan-22	
4	PGCIL	500 MVA Malda ICT 5	Feb-22	
7		220 kV Alipurduar Salakari D/C	Jan-23	
8		400 kV Binaguri-Bongaigaon D/C	Jan-23	
9		220/132 kV, 100 MVA ICT-4 at Rangpo	Dec-21	
10		400 kV Maithon-Maithon RB D/C	Dec-21	
11		LILO of 400 kV Teesta III-Kishanganj S/C at Rangpo	Jan-22	
12		400 kV Durgapur-Kahelgaon D/C	Dec-21	
13		315 MVA ICT 3 at Binaguri	Dec-21	

States

Sl. No.	Name of State	Name of the transmission elements	Expected Charging Date	
1	West Bengal	125 MVAr Bus Reactor Durgapur/Bidhannagar	Mar-22	
2		125 MVAr Bus Reactor Gokarna	Mar-22	
3		125 MVAr Bus Reactor Kharagpur	Mar-22	
4		125 MVAr Bus Reactor New Chanditala	Mar-22	
5		125 MVAr Bus Reactor New PPSP	Jun-22	
6		220 kV Rajarhat (PG) – New Town AA2 D/C	Dec-21	
7		220 kV Rajarhat (PG)-Barasat D/C	Mar-22	
8		220 kV Subashgram (PG)-Baraipur D/C	Aug-21	
9		3rd 315 MVA ICT at Bidhannagar	Dec-21	
10		Laxmikantpur GIS: 400/132kV, 2x315MVA	Aug-22	
11		LILO of 220 kV STPS - Durgapur at Asansole S/C	Apr-22	
12	Odisha	1x125 MVAr Bus Reactor at New Dubri	Jun-21	
13		LILO of 220 kV Balimela-Malkangiri D/C at Gobindpalli	Feb-22	
14		220/132 kV Gunupur 1x160 MVA	Nov-21	
15		LILO of 220 kV Narendrapur - Therubali line at Gunupur S/S	Nov-21	
16		LILO of 220 kV Therubali-Narendrapur DC line at Aska.	Jan-22	
17		LILO of one Ckt. of 220 kV Bhanjanagar - Meramundali D/C at Daspalla	Mar-22	
18		220 kV Malkangiri - Kalimela S/C	Mar-22	
19		LILO of 220 kV Budhipadar - Tarkera S/C at Kuanramunda	Mar-22	
20		LILO of 220 kV Duburi - Balasore S/C at Dhamra	Mar-22	
21		LILO of 220 kV Budhipadar - Tarkera S/C at Bamra	Dec-21	
22		220 kV Keonjhar (PG) –Turumunga D/C	Nov-21	
23		Narendrapur (New): 400/220kV, 2x500MVA	Dec-23	
24		Khuntuni: 400/220kV, 2x500MVA	Dec-21	
25		Bhadrak: 400/220kV, 2x500MVA	Dec-21	
26		Paradeep: 400/220kV, 2x500MVA	Jan-22	
27		Begunia: 765/400kV, 2x1500MVA along with Angul-Begunia 765 kV D/C line and LILO of Pandiabil – Narendrapur 400kV D/C line at Begunia	Jan-23	
28		Narendrapur – Therubali – Jeypore 400kV D/c line along with 400kV switching station at Therubali and 420kV, 1x125MVAr bus reactor	Dec-23	

29		New 2x500MVA, 400/220 kV sub-station at Meramundali-B (i) Shifting of Duburi – Meramundali 400kV D/C line from Meramundali to Meramundali-B (ii) Shifting of GMR – Meramundali 400kV S/C line from Meramundali to Meramundali-B (1x350MW unit of GMR shall be connected to Odisha grid through the subject line) (iii) Shifting of Duburi – Meramundali 220kV D/C line from Meramundali to Meramundali-B	Sep-21	
32		220 kV Chatra - PBCMP (Barkagaon) D/C	Dec-21	
33		LILO of 220 kV D/C Govindpur -TTPS at Jainmore	Sep-21	
34		220 kV Daltonganj (PG)-Latehar D/C 132 kV Daltonganj (PG)- Chatarpur D/C	Dec-21	
35		Jainamore GSS 220/132/33 kV	Sep-21	
36		Patratu GSS 400/220 2x315 MVA	Aug-21	
37		From Patratu 400/220/132kV substation: Patratu (JUSNL) S/s to Latehar 400kV D/c line (already underconstruction)	Sep-21	
38		220 kV Chaibasa - Gua D/C TL	Jan-22	
39		400 kV Quad Essar (Latehar) - Latehar (JUSNL) D/C,Latehar-Essar proposed 400 kV line, to extend this line up to Chandwa (PG),	Dec-20	
40		From Patratu 400/220/132kV substation: Patratu (JUSNL) to Ranchi (POWERGRID) 765/400kV S/s 400kV D/c line (already under construction)	Aug-21	
41		Jasidih: 400/220kV, 2x500MVA	Nov-22	
42		Chandil (New): 400/220kV, 2x500MVA	Nov-22	
43		Koderma: 400/220kV, 2x500MVA	Nov-22	
44		Mander: 400/220kV, 2x500MVA	Nov-22	
45		Dumka (New): 400/220kV, 2x500MVA	Nov-22	
46		LILO of both circuits at Mandar 400/220 kV S/S or PTPS - Bero (New Ranchi)	Mar-22	
47		220 kV Tashiding - Legship D/C 220 kV Legship-New Melli D/C	Dec-21	
48		LILO of Dikchu pool – Singhik D/C at Dikchu HEP	Dec-21	
49	**Sikkim**	220 kV Dikchu pool - Singhik D/C	Dec-21	
50		220 kV Rangpo (Samardong)-Dikchu D/C; Establishment of 2x50MVA, 132/66kV substation at Rangpo (Samardong)	Dec-21	
51		220 kV Rangpo-Samardong D/C	Dec-21	
52		132 kV Dikchu pool -Perbing D/C	Dec-21	
53		220 kV Dikchu-Singhik D/C	Dec-21	
54		220 kV Saharsa (PMTL) –Khagaria D/C 220 kV Saharsa (PMTL) –Begusarai D/C	Dec-21	
55		132 kV Saharsa (PMTL) – Saharsa (BSEB) D/C formed by LILO of Saharsa –Banmankhi S/C and 132 kV Saharsa – UdaKishanganj S/C	Feb-21	
56		LILO of 132 kV Benipatti – Pupri S/C at Sitamarhi	Feb-21	
57		Raxaul (New) – Gopalganj 220kV D/c line (#Twin Moose/Single Zebra or equivalent HTLS)	Mar-21	
58		Establishment of 2x500 MVA +2x160 MVA+2x80 MVA 400/220/132 kV S/S at Naubatpur LILO of circuits 3 & 4 of Patna (PG)-Balia 400 kV D/C (Quad) line at Naubatpur 400 kV 2x D/C 400 kV 2x D/C March'21 c) LILO of both circuits of Ara(PG) – Khagaul (BSPTCL) line at Naubatpur (New) 220 kV 2xD/C 220 kV 2xD/C March'21 d) Naubatpur (New)-Bihta (BSPTCL) 220kV D/c March'21 e) Naubatpur (New)-Bhusaula (New) 220kV D/c March'21 f) Naubatpur (New)- Paliganj 132kV D/c May'21 g) Naubatpur (New)- Masaurhi (existing) 132kV D/c March'21	Dec-21	
59		Bakhtiyarpur GIS: 400/220/132kV, 2x500MVA +2x160MVA a) Bakhtiyarpur 2x500 MVA +2x160 MVA 400/220/132 kV GIS b) LILO of both circuits of Barh– Patna (PG) 400kV D/c (Quad) line-1 at Bakhtiyarpur 400 kV 2xD/C 400kV 2x D/C	Dec-21	
60		220 kV Bakhtiyarpur (New)-Sheikhpura (New) D/C	Dec-21	
61		220 kV Bakhtiyarpur (New) -Hathidah (New) D/C	Dec-21	
62		220 kV Bakhtiyarpur (New) -Fatuha (BSPTCL) D/C	Dec-21	
63		132 kV Bakhtiyarpur (New)-Harnaut (BSPTCL) D/C	Dec-21	
64		132 kV Bakhtiyarpur (New) -Baripahari (BSPTCL) D/C	Dec-21	
65	**Bihar**	LILO of 132 kV Baripahari-Harnaut S/C at Bakhtiyarpur	Dec-21	

66		(i) 400 kV Buxar TPS – Naubatpur D/C (ii)220 kV Buxar TPS – Dumraon (New) D/C and 220 kV Buxar TPS – Karmnasa (New) D/C (iv)220 kV Buxar TPS – Dehri D/C (v) 2x500 MVA, 400/220 kV ICT at Buxar generation switchyard (vii) 400kV, 2x125 MVAR Bus Reactors at Buxar TPS.	Apr-22	
67		Jakkanpur GIS 400/220/132/33kV, 2x500MVA +3x160MVA +4x80MVA a) Jakkanpur 2x500 MVA +3x160 MVA+3x80 MVA 400/220/132/33 kV GIS S/S b) LILO of both circuits of 400kV Nabinagar-II – Patna (PG) D/C at Jakkanpur	Dec, 21	
68		LILO of 220 kV Khagaul (BSPTCL)-Sipara (BSPTCL) S/C at Jakkanpur (New)	Dec-21	
69		LILO of both circuits of 220 kV Sipara (BSPTCL)-Bihta (BSPTCL) D/C at Jakkanpur	Dec-21	
70		LILO of both circuits of 132 kV Jakkanpur-Sipara line at Jakkanpur New	Dec-21	
71		LILO of 132 kV Jakkanpur/Mithapur-Fatuha S/C at Jakkanpur New.	Dec-21	
72		220 kV Muzaffarpur-Goraul D/C	May-21	
73		220 kV Amnour-Mujaffarpur D/C	Aug-22	
74		220 kV Gaya Chandauti D/C LILO at Bodhgaya	Feb-22	
75		220 kV Patna-Sipara T/C	Jul-22	
76		Karmanasa (New) 220/132kV S/S: 2x200MVA SS (a) LILO of 220 kV Sasaram-Sahupuri S/C at Karmnasa (New) (b)220 kV Karmnasa (New) – Pusauli (BSPTCL) D/C	Apr-21	
77		220 kV Ranchi-MTPS S/C	Apr-22	
78		220 kV Ramgarh MTPS S/C	Apr-22	
79		220 KV Burdwan Parulia S/C	Feb-22	
80		Installation of 2 x 315 MVA 400/220 kV ICT along with controlling bays at Mejia B	Mar-22	
81	**DVC**	LILO of 220 kV MTPS-A – Barjora D/C at MTPS-B Switchyard	Apr-22	
82		LILO of 220 kV MTPS-A – Durgapur S/C at Barjora Substation	Apr-22	
83		Establishment of 220 kV infrastructure at existing Raghunathpur Thermal Power Station (RTPS), 2 x 315MVA 400/220 kV ICT (already in service) , LILO of 220 kV Chandrapura TPS – Kalyaneswari D/C to RTPS	Apr-22	

Annexure D.1

Anticipated Peak Demand (in MW) of ER & its constituents for the month of March 2022

1	**BIHAR**	**Demand (MW)**	**Energy Requirement (MU)**
	NET MAX DEMAND	5500	2980
	NET POWER AVAILABILITY- Own Sources	310	153
	Central Sector+Bi-Lateral	5500	3165
	SURPLUS(+)/DEFICIT(-)	310	338
2	**JHARKHAND**		
	NET MAXIMUM DEMAND	1650	820
	NET POWER AVAILABILITY- Own Source	385	191
	Central Sector+Bi-Lateral+IPP	1135	527
	SURPLUS(+)/DEFICIT(-)	-130	-102
3	**DVC**		
	NET MAXIMUM DEMAND	3160	2101
	NET POWER AVAILABILITY- Own Source	5358	3181
	Central Sector+MPL	259	138
	Bi- lateral export by DVC	2424	1803
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	33	-585
4	**ODISHA**		
	NET MAXIMUM DEMAND (OWN)	4350	2641
	NET MAXIMUM DEMAND (In Case of CPP Drawal)	5500	3180
	NET POWER AVAILABILITY- Own Source	3637	2300
	Central Sector	1937	878
	SURPLUS(+)/DEFICIT(-) (OWN)	1224	537
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	74	-2
5	**WEST BENGAL**		
5.1	**WBSEDCL**		
	NET MAXIMUM DEMAND	7460	4069
	NET MAXIMUM DEMAND (Incl. Sikkim)	7595	4157
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	5295	2409
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2350	1010
	EXPORT (To SIKKIM)	5	4
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	50	-738
5.2	**IPCL**		
	IPCL Demand	130	84
	IPCL Import	130	84
	SURPLUS(+)/DEFICIT(-)	0	0
5.3	**CESC**		
	NET MAXIMUM DEMAND	1750	850
	NET POWER AVAILABILITY- Own Source	700	460
	FROM OTHER SOURCE (IEX)	510	49
	IMPORT FROM HEL	540	341
	TOTAL AVAILABILITY OF CESC	1750	850
	SURPLUS(+)/DEFICIT(-)	0	0
	WEST BENGAL (WBSEDCL+CESC+IPCL)		
	(excluding DVC's supply to WBSEDCL's command area)		
	NET MAXIMUM DEMAND	9340	5003
	NET POWER AVAILABILITY- Own Source	5995	2869
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3400	1400
	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT	55	-734
	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT	50	-738
6	**SIKKIM**		
	NET MAXIMUM DEMAND	115	58
	NET POWER AVAILABILITY- Own Source	2	2
	Central Sector	198	77
	SURPLUS(+)/DEFICIT(-)	85	21
	EASTERN REGION		
	NET MAXIMUM DEMAND	23642	13603
	NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha)	24848	14142
	BILATERAL EXPORT BY DVC	2424	1803
	EXPORT BY WBSEDCL TO SIKKIM	5	4
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	310
	NET TOTAL POWER AVAILABILITY OF ER	28116	14881
	(INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)		
	SURPLUS(+)/DEFICIT(-)	1403	-839
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	197	-1378

ANNEXURE D2

Approved Maintenance Schedule of Thermal Generating Units of ER during 2021-22 in the month of March'2022												
System	Station	Unit No.	Capacity(MW)	Period (as per LGBR 2021-22)		No. of Days	Approved Period		No. of Days	Reason	Whether as per LGBR or not	Remarks
				From	To		From	To				
NTPC	Barauni TPS	8	250	01.03.2022	04.04.2022	35	01.03.2022	04.04.2022	35	Boiler+LPT+Gen. OH	YES	
DSTPS	Andal	1	500	14.02.2022	30.03.2022	45	30.09.2021	04.11.2021	35	AOH	NO	
Odisha	IB TPS	2	210	15.02.2022	22.03.2022	36	01.08.2021	30.08.2021	30	AOH	NO	