AGENDA
FOR
205TH OCC MEETING

Date: 27.07.2023
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700033

EASTERN REGIONAL POWER COMMITTEE

AGENDA FOR 205TH OCC MEETING TO BE HELD ON 27.07.2023 (THURSDAY) AT 10:30 HRS

PART – A

ITEM NO. A.1: Confirmation of Minutes of 204th OCC Meeting held on 23rd June 2023 physically at ERPC, Kolkata.

The minutes of 204th Operation Coordination sub-Committee meeting held on 23.06.2023 was circulated vide letter dated 11.07.2023.

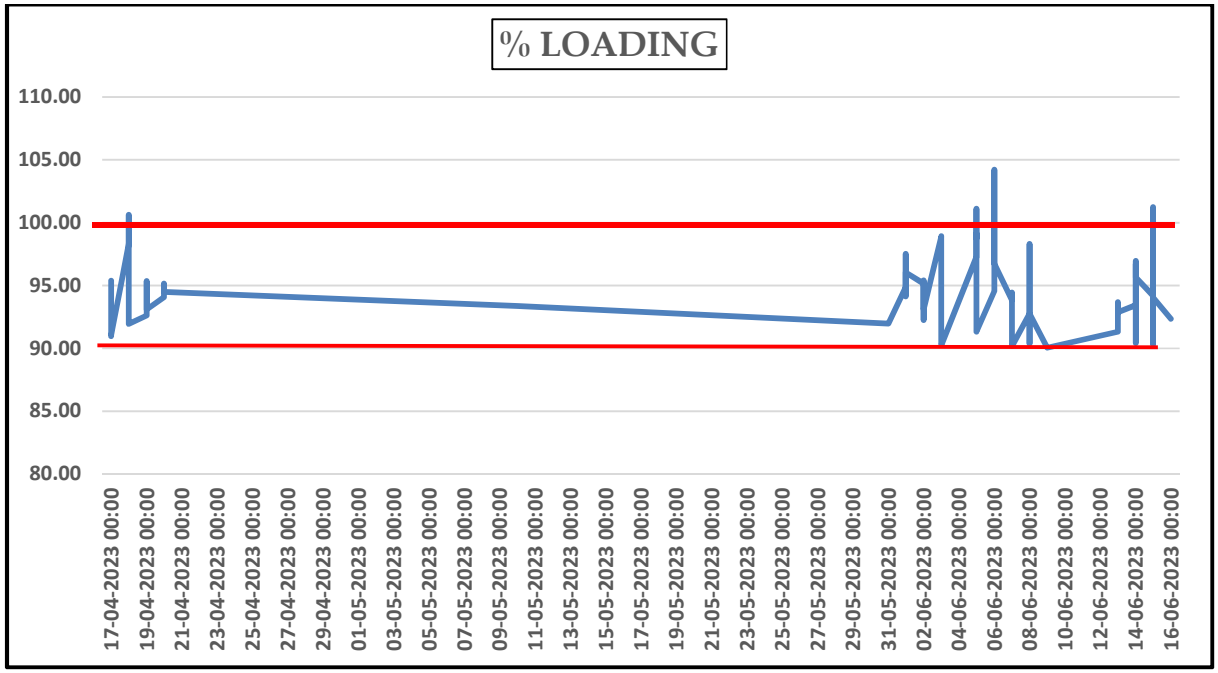
Members may confirm the minutes of 204th OCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B.1: Proposal for installation of 7th 400/220 KV ICT (500 MVA) at Powergrid/Subhashgram S/s: Powergrid ER-II

Presently at POWERGRID/Subhashgram SS, total 05 ICTs are present with total transformation capacity of 1760 MVA (4 X 315 MVA + 01 X 500 MVA). Further as per decision taken in 42nd ERPC meeting, 06th ICT in the form of 500 MVA will also going to be installed, which will take the tally of installed MVA to 2260 MVA.

Considering the present load flow of Subhashgram SS from 01.04.2023 to 15.06.2023, it is observed that loading is around 90% of the total transformation capacity for most of the period. Detail month wise, loading experienced in Subhashgram SS is given below for reference: -



Add to this, for entire period both Oil Temperature and Winding Temperature is in very high order (WTI- around 85-95 Deg, OTI- 70-80 Deg), which will have implications in accelerated ageing/degradation of cellulose in longer period.

It is evident that, even if 6th ICT installed and total transformation capacity goes to 2260 MVA and also neglecting any load increment, loading will be very high for all installed ICT's and catering any emergency situation for any outage will be very difficult.

Considering the above fact, it is prudent to envisage 7th ICT with 500 MVA ICT. For installation of 7th ICT, existing Bus Reactor place to be used and Bus Reactor may be relocated in other area.

In the 204th OCC meeting, ERLDC representative suggested that in view of ever increasing load demand commissioning of 6 th 500 MVA ICT at Subhasgram S/S will not completely ensure the system to remain N-1 compliant under emergency outage condition which inevitably necessitates installation of 7th 500 MVA ICT. He opined that this will serve as an effective solution to combat overloading crisis at 400KV /220 KV Subhasgram S/S .

SLDC West Bengal representative informed the forum that installation of 7th 500 MVA ICT at Subhasgram S/S will result in total transformation capacity of 2760 MVA that far exceeds maximum transformation capacity of 2500 MVA for 400 KV S/S as per CEA transmission planning criteria.2023. He opined that violation of CEA guidelines should not be made rather an alternative solution to be sought out for mitigation of the crisis.

He further added that maximum 630MW can be catered to CESC through 5 points by WBSETCL while maintaining N-1 security criteria intact in WBSETCL network and emphasized on applicability of same rule to both DISCOMS i.e WBSEDCL and CESC for following N-1 criteria.

Powergrid representative apprised the forum with three possible options to mitigate the ICT overloading crisis at Subhasgram S/S:
Option-1: Procuring and commissioning of 7th 500 MVA ICT with an estimated timeline of more than a year. Option 2: 500 MVA ICT available at Maithon PG S/S to be reinstated at Subhasgram S/S with an estimated timeline of 3 months.
Option 3: Replacing existing (PG Asset) 315 MVA ICT with 500 MVA ICT as earliest possible solution, thereby augmenting transformation capacity of 400KV /220 KV Subhasgram S/S by 185 MVA.

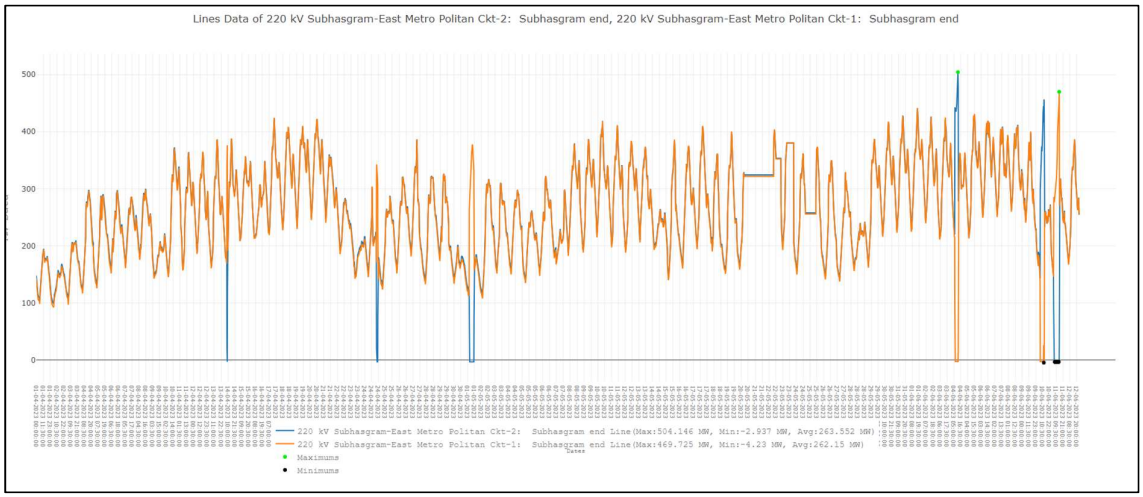
OCC opined that a special meeting may be convened to discuss and explore the best possible options to mitigate the ICT overloading crisis at Subhasgram S/S.

Members may discuss.

ITEM NO. B.2: System Augmentation of 220 KV Subhashgram PG – EMSS D/C - ERLDC.

220 kV Subhashgram (PG) -EMSS D/C during peak load are carrying more than 400 MW/Ckt and are reaching values up to 450-460 MW/Ckt (Plots attached from April-June 2023). These circuits have a thermal rating of 500 MVA and are not N-1 complied in line with CEA transmission planning criteria 2013 as well as 2023 and are presently being operated with SPS scheme. This issue of N-1 compliance has been flagged by ERLDC in its operational feedback to CEA and CTU on regular

basis. So, far there is no system augmentation plan received from CESC for these circuits. The situation is already vulnerable in this peak season and would further degrade in next season.



CESC in consultation with West Bengal STU may kindly share the firm plan for system augmentation to ensure fulfilment of reliability and planning criteria for these circuits.

In the 204th OCC meeting, ERLDC shared a comprehensive presentation (Attached at Annexure-B.3) on the network of feeders emanating from 400KV /220 KV Subhasgram S/S and catering load to Kolkata along with South 24 parganas District.

ED, ERLDC stressed upon the fact all 220 KV feeders from Subhasgram S/S are under persistent overload exceeding their thermal limit and may fail on tripping in near future if loading pattern remains unaltered. List of lines that are loaded up to its thermal limit (need to be upgraded) are given below:

- 220 kV Subhasgram(PG)-EMSS(CESC) D/C
- 220 kV Subhasgram(PG)-Subhasgram(WB) D/C
- 220 kV Subhasgram(WB)-Kasba(WB) D/C
- 220 kV Barasat(WB)-Kasba(WB) D/C

In view of above, he strongly suggested immediate upgradation of these 220 KV feeders to HTLS conductor for increasing thermal loading limit and urged for bilateral cooperation between CESC and WBSETCL in this regard.

CESC representative confirmed to share feedback and detailed action plan at the earliest after consultation with top management.

CESC may update.

ITEM NO. B.3: Start-up power to 2x660 MW Buxar Thermal Power Project, Chausa.

2X660 MW Buxar Thermal Power Project is being implemented by SJVN Thermal Private Limited (A wholly owned subsidiary of SJVN Ltd).

As per PPA signed between Bihar State Electricity Board & Buxar Bijlee Company Pvt Ltd which was further assigned to BSP(H)CL & STPL, the 85% power will be purchased by state of Bihar.

The 04 (four) double circuit transmission lines are being constructed by BSPTCL, STU of Bihar state for the evacuation of power from the project. The details of lines are as below

SI No	Lines	Progress			Vendor
		Foundation	Tower Erection	Stringing (KM)	
1	400KVD/C linestoNaubatpur	343/345	342/345	122.5/126	M/sKEC International
2	220VD/C linestoDehri-on-sone	245/246	245 /246	75/77	M/sKEC International
3	220KVD/C linestoKarmnasa	181/185	180/185	56.5/59	MlsKEC International
4	220KV D/C linestoDumaron	213/216	206/216	51/64	MlsRSInfra Projects PvtLtd

In the 204th OCC meeting, STPL representative submitted that inadvertent delay in delivery of 400/220 KV ICT on account of failure in short circuit test has rendered drawl of startup power from 400 KV line instead of 220KV line, as the only feasible option to bring their Buxar thermal power project into commercial operation.

Moreover, as submitted by BSPTCL representative two of the four D/C transmission lines under construction in the surrounding area of SJVNL project to be completed by 15.07.2023 and the rest two by 31.07.2023.

In view of above, STPL representative proposed LILO on 400KV Patna-Balia line at Nabautpur for drawl of startup power by Buxar thermal power project.

OCC referred the agenda to upcoming CMETS meeting for further deliberation.

As per agenda Item no B.9 of 204" OCC meeting of ERPC & vide Ref no: STPL/08/08/01/002/23-3127 dated 09.06.2023, GM & Head (Elec/ C&|), STPL, Buxar, SJVNL has requested for 45 MW start up power at 400 kV level by August 2023 for the completion of various commissioning sequences at SJVNL Thermal Pvt. Ltd.

A special meeting was held with officials of BSPTCL, SBPDCL and SJVNL under the chairmanship of Director(Operations) BSPTCL on 12th July 2023 at 4h Floor, Conference room, BSPTCL. (Proceeding of meeting attached as **Annexure-B.3.**)

SJVNL has deliberated that power from 220 KV line could not be availed due to non-availability of 400/220 kV ICT. Representative from SJVNL also informed that one unit of 400/220 kv 500 MVA power transformer will be available at site by October 2023. Further, work of 220kv GIS switchyard at Buxar Thermal is in initial stage and without Completion of all required system at Buxor TPS, power can't be availed at 220 KV level from any Sub-station of BSPTCL. Therefore, start-up power could only be drawn at 400 KV level.

Earlier, there was 04 ckt of 400 kv transmission line from Patna(PG) to Balia(PG). Out of 04 ckt, 02 ckt has been made LILO at 400/220/132/33 kV GIS Naubatpur(BGCL). There is proposal for making temparory arrangement by disconnecting existing 400kv Patna(PG)-Naubatpur ckt -I from associated 400 KV Bay at Naubatpur GSS and connecting newly constructed 400 kv Buxar TPS-Naubatpur ckt-II transmission line to this Bay (Schematic diagram is attached as **Annexure-B.3**). This shall ensure power availability at 400 kv level at SJVNL Thermal Pvt. Ltd, Buxar. This arrangement shall be

temporary and serve the purpose of start-up power to SJVNL till availability of either of following systems whichever is earlier:

1. Arrangement of start-up power through 220 KV system at SJVNL, Buxar TPS as mutually agreed (Status of transmission lines attached as **Annexure-B.3**). or
2. Commissioning of 400 kv bays (To be constructed by BSPTCL) at 400 kv Naubatpur GIS (Status attached as **Annexure-B.3**).

with this temporary arrangement at 400/220/132/33 kv Naubatpur GIS, following transmission line at 400kV level shall be available:

a. 400 kV Patna(PG)-Naubatpur one (01) ckt
b. 400 kV Naubatpur- Balia(PG) –Two (02) ckt.
c. 400 kV Patna(PG)-Naubatpur ckt 2(anti-theft from Patna PG end)
d. 400 kV Naubatpur-Buxar Thermal ckt II

ERPC may grant approval to facilitate start up power to SJVNL by temporarily disconnecting existing 400kV Patna(PG)-Naubatpur ckt I from associated 400 KV Bay at Naubatpur GSS and connecting newly constructed 400 kV Buxar TPS-Naubatpur ckt II transmission line till availability of start-up power through 220 KV system as mutually agreed earlier or commissioning of 400 kV bays (To be constructed by BSPTCL) at 400 kV Naubatpur GIS, whichever is earlier.

SJVN may update. Members may discuss.

ITEM NO. B.4: Shutdown proposal of generating units for the month of August 2023.

Approved Maintenance Schedule of Thermal Generating Units of ER during 2023-24 in the month of August'2023

System	Station	Unit No.	Capacity(MW)	Period (as per LGBR 2021-22)		No. of Days	Approved Period		No. of Days	Reason
				From	To		From	To		
TVNL	Tenughat TPS	1	210	01.07.2023	15.08.2023	46	10.07.2023	25.08.2023	47	COH
DVC	Mejia TPS	4	210	01.07.2023	25.07.2023	25				AOH-Blr-RLA, LPT, FGD
DVC	RTPS	2	600	15.07.2023	28.08.2023	45				COH- Boiler, DeNOX Burner &FGD, HPT, IPT, LPT, Gen
DVC	MTPS	8	500				25.07.2023	28.08.2023	35	Boiler Overhauling and FDG Connectivity work,
WBPDCL	Bakreshwar TPS	4	210	03.07.2023	06.08.2023	35	01.07.2023	03.08.2023	34	AOH/BOH
WBPDCL	Sagardighi TPS	1	300	09.08.2023	02.09.2023	25	02.08.2023	26.08.2023	25	AOH/BOH

WBPDCL	Sagardighi TPS	2	300	09.08.2023	18.08.2023	10	09.08.2023	18.08.2023	10	
WBPDCL	Bandel TPS	2	60	12.07.2023	10.08.2023	30	01.07.2023	30.07.2023	30	Boiler +HP+LP+IP+Generator
DPL	DPL TPS	7	300	01.08.2023	30.09.2023	61	01.08.2023	10.09.2023	41	Boiler +LPT O/H+Generator rotor thread out and checking + NOX work
NTPC	KhSTPS	3	210	01.07.2023	04.08.2023	35				O/H with Boiler modification
NTPC	KhSTPS	1	210				10.07.2023	08.08.2023	30	COH
NTPC	Nabinagar TPS	1	250	01.07.2023	14.08.2023	45				
NTPC	Nabinagar TPS	4	250				16.07.2023	25.08.2023	41	
JITPL	JITPL	1	600	01.07.2023	14.08.2023	45	01.07.2023	14.08.2023	45	
APNRL	APNRL	1	270	17.07.2023	06.08.2023	21	17.07.2023	06.08.2023	21	
GMR KEL	GMR	3	350	15.08.2023	17.09.2023	34	15.08.2023	17.09.2023	34	

Members may update.

ITEM NO. B.5: Shutdown requisition from Powerlink – Powerlink.

Request for requirement of planned outage for re-routing work of 400 kv Kishanganj-New Purnea Line 1 & 2, by providing new pile towers no 340 & 366 on west Bank of River Mahananda & Parman at Baisi, - District-Purnea, Bihar. In the said context, Powerlinks has also confirmed in the 204th OCC meeting that Pile foundation work on both locations has been completed in the month of May-June'23.

In 205th OCC outage coordination meeting, it was decided that necessary system study will be carried out by ERLDC and the matter would be discussed in the OCC meeting.

Sr. No.	Name of Requesting Agency	Element Name	Element Type	Daily/ Continous	Reason	Requested From Date	Requested From Time	Requested TO Date	Requested TO Time	Requester Remarks	No. of Days	Consent From
1	**Powerlinks**	400 KV Quad Kishanganj-New Purnea Ckt-1	**Transmission Line**	**D**	Re-routing Work at Tower	**17-Aug-23**	**09:00**	**18-Aug-23**	**18:00**	**Shut down will be required for both circuits**	**2**	**ER1**

					no 340 & 366					at a time simultaneously, as Old & new tower are in same Alignment and there is only 35 mtrs distance between Tower centres.		
2	**Powerlinks**	400 KV Quad Kishanganj-New Purnea Ckt-2	**Transmission Line**	**D**	Re-routing Work at Tower no 340 & 366	**17-Aug-23**	**09:00**	**18-Aug-23**	**18:00**		**2**	ER1
3	**POWERLINKS**	400 KV Quad Kishanganj-New Purnea Ckt-1	**Transmission Line**	**C**	Re-routing Work at Tower no 340 & 366	**20-Aug-23**	**08:00**	**10-Sep-23**	**18:00**		**22**	ER1
4	**POWERLINKS**	400 KV Quad Kishanganj-New Purnea Ckt-2	**Transmission Line**	**C**	Re-routing Work at Tower no 340 & 366	**20-Aug-23**	**08:00**	**10 Sept--2023**	**18:00**		**22**	ER1

Powerlink may update.

ITEM NO. B.6: Integration of (INTERFACE ENERGY METER) IEMs into SCADA/EMS SYSTEM for telemetry of meter data to Odisha SLDC – SLDC, Odisha.

The proposal for integration of (Interface Energy Meter) IEMs into SCADA / EMS system for telemetry of meter data to MP SLDC has been discussed elaborately in the Special Meeting of the National Power Committee held on 24.06.2022 through Video Conference. In the said meeting it was agreed that telemetry of real time active power flow data from IEMs to SLDC will help the States for efficient drawl management and reduction of DSM penalties.

The existing SEMs are having two communication ports, which can function independently for fetching the SEM data. The optical port is being used for fetching the weekly DSM data through Common Meter Reading Instrument (CMRI), for accounting purpose. The other RS232 port available remains unused, the online real time data can be fetched from the existing SEM through RS232 port. This arrangement does not require additional meters or new communication facilities and therefore no additional cost is involved.

In the said meeting, ERPC opined that the proposal of MP SLDC is technically feasible and without any commercial implication. ERPC stated that the proposed scheme may be implemented on pilot basis.

In the minutes of the said meeting under heading it was decided that "Similar projects may be implemented at the two ISTS Sub- stations (one at new system and other at old system) in each

region.

Odisha SLDC has been raising this issue in several forums for providing data from IEMs to SLDC Control Room for optimum real time operation. The matter may be discussed elaborately for implementation of the same in Odisha SLDC.

ERPC may update. Members may discuss.

ITEM NO. B.7: Change of flow of Chenga river direction near Tower No 378 of 400kV Teesta III-Kishanganj line

Teesta valley Power Transmission Limited (TPTL) is entrusted with responsibility of implementation of 400 kV D/C Power transmission line from Teesta III Hydro Electric Project of capacity 1200 MW located in Mangan in the State of Sikkim to Kishanganj in the State of Bihar. The transmission line of length 215 km (589 towers) passes through Mangan, Gangtok & Namchi District of Sikkim, Darjeeling District of West Bengal and Kishanganj District of Bihar. The line passes through the difficult hilly terrain of altitude in the range of 1000m – 2600m and during monsoon period landslides & soil erosion occur in this range due to geological condition of the Eastern Himalayan Region. Also, the transmission line crosses chenga river in West Bengal & Bihar and Mahananda & Dauk River in Bihar which change their course often. The line was commissioned on 13.02.2019 and is under operation and maintenance since then.

The Tower no. 378 of the transmission line is located in Basandubi Village, Sahebgunj, Kishanganj District, Bihar near the Chenga River. The tower is a “DA” type tower with +0 m extension. The foundation works of the tower were completed in the year 2010 and erection & stringing was completed in the year 2013. The foundation type of the tower is of Partially Submerged Soil type.

It is observed that scouring of riverbank near the tower is occurring due to the meandering of the Chenga river, year on year basis. Due to the change in course of the river, the flow of the river has shifted to the river bank near the tower and scouring is taking place. The distance between scoured river bank and tower is gradually decreasing which may endanger the tower foundation and accordingly the tower no. 378 has become vulnerable. At present, the distance between the scoured river bank and tower pit area is 30 mtr approximately.

To prevent further erosion of the river bank near the tower, following Protection measures have been taken:

1. Gabion/Crate wall using double twisted hexagonal wire mesh rectangular box of 34mtrs, 2 nos. layers has been placed along the river bank.
2. Construction of transverse gabion/crate wall of 5m -8m approximately has been done to reduce the impact and velocity of the river at the riverbank and deflect the river flow away from the riverbank, in turn reducing the velocities at the bank.
3. Bamboo Palisading works along the wall have also been carried out. Geotextile Bags used for river bank protection have also been placed.
4. Plantation of bamboo saplings and other rapid growing plant sapling along the effected riverbank has been done to promote afforestation as well as to improve the soil mass of the entire area.

Further, survey works for the alternate route alignment of the line is being taken up and the next course of action will be taken based on survey report.

TPTL may update.

ITEM NO. B.8: Transmission Constraints in the Odisha network- ERLDC.

Demand of Odisha has already crossed 7000 MW. With the increase in demand, it is observed that many of transmission lines in Odisha are failing to meet the N-1 reliability criteria, particularly during periods of peak electricity demand. The list of the lines which are not meeting N-1 criteria is as below

1. 400 kV OPGC-Lapanga D/C
2. 220 kV Budhipadar-Lapanga D/C,
3. 220 kV Budhipadar Vedanta D/C
4. 220 kV Rourkela-Tarkera D/C
5. 220 kV Pandiabili- Atri D/C
6. 220 kV Lapanga-Katapalli D/C,
7. 220 kV Katapali-New Bargarh-Sadepalli (New Bolangir) S/C,
8. 220 kV Katapali- Bolangir (PG)- S/C,
9. 220 kV Bolangir- New Bolangir D/C

Out of the above SPS is already installed for controlling of loading of 220 kV Rourkela-Tarkera D/C. Odisha is requested to share the long-term as well as short-term measures to mitigate these constraints.

ITEM NO. B.9: Standard Operating Procedures (SOP) for maintaining resources - ERLDC.

Resource adequacy is essential for reliable and secure grid operation. In this context, the Hon'ble Minister of Power & NRE discussed in a meeting on power supply position & reserve monitoring on 23rd June 2023. It was instructed to set up one group regarding monitoring the spare capacity in the grid and to formulate one standard operating procedure (SOP) covering the following criteria:

1. Monitoring of power plant maintenance
2. Available surplus capacities
3. Scheduling of surplus capacity in the market

SOP is attached as **Annexure B.9**

In addition to this, NLDC is currently preparing a report on spare capacity, shortfall & market participation of different stakeholders to appraise the Ministry (as directed in that meeting) based on data available from all RLDCs & NLDC. ERLDC is providing the data to NLDC as per the following table:

<table>
<tr><th></th><th>Bihar</th><th>Jharkhand</th><th>Odisha</th><th>West Bengal</th><th>Sikkim</th><th>NTPC</th><th>DVC</th><th>NHPC</th><th>IPP</th></tr>
<tr><td>DC</td><td rowspan="2">Web API</td><td rowspan="2">N/A</td><td rowspan="2">Website data but DC & Schedule same</td><td rowspan="2">Website</td><td rowspan="2">N/A</td><td rowspan="2">ERLDC WBES</td><td rowspan="2">Website</td><td rowspan="2">ERLDC WBES</td><td>N/A</td></tr>
<tr><td>SCHEDULE</td><td>ERLDC WBES</td></tr>
<tr><td>Actual Generation</td><td colspan="9">ERLDC SCADA</td></tr>
</table>

It is required to make available DC, Schedule & Actual generation data blockwise to ERLDC on a

daily basis by 10:00 hrs for timely submission of the report to MoP (i.e., 11:00hrs). MoP is monitoring the reserve detailed report on available reserves in state & regional generators and participation in different segments of the power market.

In view of the above matter, the following actions are required to adopt:

1. All states & generating stations are requested to follow the SOP to maintain an adequate reserve in the state & regional system to get prepared for any unexpected situations.
2. All states are requested to monitor real-time reserve and configure the same in the SCADA system. So that, ERLDC can also monitor the same in real time.
3. All states are requested to forward the Actual generation, Declared Capacity & schedule of all state-embedded generators for any day by 09:00 hrs. of the next day for smooth appraisal to the Hon'ble Minister of Power & NRE.

ERLDC may update.

ITEM NO. B.10: Updated Operating Procedures (SOP) of Eastern Region, 2023 - ERLDC.

As per IEGC 5.1(f) A set of detailed operating procedures for each regional grid shall be developed and maintained by the respective RLDC in consultation with the regional entities for the guidance of the staff of RLDC.

Accordingly, ERLDC has updated the Operating Procedure of the Eastern Region. The draft version of the same was circulated with all the utilities of ER vide mail dated 10th July 2023 seeking comments if any. The same can also be accessed through the following link:

https://app.erldc.in/Content/Upload/System%20Study/Operating%20Procedure/Draft%20ER%20Operating%20Procedure_Rev_Jul-2023.pdf

The annexures can be accessed in the following link:

https://app.erldc.in/Content/Upload/System%20Study/Operating%20Procedure/Annexure%20Operating%20Procedure.pdf

The major changes are detailed below:

- Changes in the frequency control has been implemented in line with Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2022
- Deviation settlement mechanism updated in line with the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2022.
- Guidelines for Deviation violation message and message formats for grid security updated in line with Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2022.
- Outage procedure is modified to streamline the planning process by adopting new methodology as discussed in the 204th outage OCC meeting. Shutdowns approved in three consecutive OCC meeting but not availed by utilities would be dropped in future OCC and number of shutdown requisition is limited to the 1.25 times of the maximum shutdown availed in a month during the last financial year.
- Procedure for obtaining permission for synchronization of New Transmission Element and successful trial operation of New Transmission Element updated (As per existing process already followed)

- Procedure for Charging of altered elements (including modified/replaced/upgraded elements) the added (As per existing process already followed)
- Website link of Daily, Quarterly, and Annual Report updated, Sub System demarcated
- Scheduling procedure of Tertiary Reserve Ancillary Services (TRAS) Up and Down added
- AMR module updated regarding the availability of various reports.
- Operation of Pool account, Weekly Deviation account, VARh account, SRAS, and TRAS account updated in line with Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2022
- Respective annexures are updated.

Members may note.

ITEM NO. B.11:	**Timely submission of net & gross energy data for daily Power Supply Position (PSP) - ERLDC.**

ERLDC prepares the Daily power supply position of the Eastern Region based on the Schedule data & Actual energy data of all regional entities such as States, Generating stations & Transmission utilities. Earlier all the data collection process was over the telephone & mail. ERLDC introduced one data collection & report preparation portal in 2019 to streamline & ease out the entire process. All states, generating plants & transmission utilities are submitting the data in ERLDC portal.

Meanwhile, MoP advised to furnish gross generation in the daily power supply position report and commensurately, it was added to the daily PSP report generated by ERLDC. Initially, ERLDC control room started to collect the gross & net generation data of all state & regional generators over Google Sheets instead of reporting portal for the earliest implementation of the direction. Now, ERLDC upgraded the reporting portal and made provisions for submitting the gross generation along with existing net generation data. The same was intimated to all SLDCs & generating stations via mail on 4th July 2023.

Hence, all stakeholders are requested to submit the energy data in the reporting portal within the 04:00hrs for the previous day. In case of any difficulty faced to fill the portal in real-time, same may be communicated to the ERLDC control room. For any other assistance, it is advised to contact with System operation department.

ERLDC may update.

ITEM NO. B.12:	**Non-availability of Auto Synchronization Facility at SAS based Sub-station- ERLDC.**

There were two events where synchronization issues had been observed during mock black start of Hydro power plants in the eastern region. The first event occurred during Black start mock drill of Teesta 3 where improper synchronization at Kishanganj resulted in the tripping of mock drill unit at Teesta 3 on 3rd Nov 2018. The second event occurred during the mock drill of Teesta V on 8th Feb 2022. In this event also, synchronization was not proper at Rangpo and caused a disturbance of mock drill unit. These events had been discussed with concerned transmission utilities and hydro power plants to find out the various issues. Minutes of meeting of “Discussion Summary and Recommendation for Synchronization Facility during Power System restoration” held on 30th May 2023 **(MoM attached)** Based on the discussion, Following are the major recommendations:

- **Auto Synchronization facility in BCU and Digital Synchroscope in HMI:** Auto-Synchronization facility and digital synchroscope should be made available and enabled in all transmission lines and bus coupler in SAS 61850 based substation. Such synchroscope should be configurable based on selection of VT input for synchronization. This should have been a part of the specification itself. POWERGRID also to consult CTUIL so that such facilities are included as a part of substation and bays design.
- **Synchronization Trolley and Synchro Check Relay (25) at Conventional substation (not having SAS):** Conventional substation should have synchronization trolley with check sync relay for each transmission line and bus coupler bay.
- **Digital Synchroscope facility at RCC:** Digital synchroscope facility should be made available Remote-Control Centre (RCC) if remote synchronization is to be performed. In addition, any such remote synchronization should be done only via auto-synchronization only.
- **Temporary Provision for Manual synchronization in SAS:** Manual synchronization in SAS based substation is to be done only if breaker closing command should be through synchro check relay (25) only to ensure wrong synchronization command due to delay in command execution through HMI is not processed. Such functions should be incorporated and tested by POWERGRID on urgent basis.
- **Guideline for Synchro check and auto-synchronization settings for normal operation:** A standard guideline for the setting on frequency, voltage and phase angle difference can be discussed at RPC level for auto synchronization process during normal operation. Auto-Synchronization parameters during restoration will be provided by ERLDC in discussion with power plant and these may be changed in real time during actual restoration.

Based on the above, there is a need to discuss these aspects as these directly affect the power system restoration and impact the overall crisis management plan. Utilities may share their view.

ITEM NO. B.13: Non-availability of main meter data of PPSP, West Bengal- ERLDC.

The meter number **ER-1130-A** at PPSP(WB) end of 400 KV PPSP NEW(WB)-RANCHI NEW(PG)-2 line was found faulty and accordingly ERLDC had asked for replacement of said meter. The matter

is being intimated to West-Bengal several times through mail since May-2023(mail dated 01.05.2023, 02.06.2023, 14.06.2023, 11.07.2023, 17.07.2023) but it is yet to be replaced. **It is to be noted that the meter is main meter of WB & due to non-availability of data, both DSM & VAR accounting of West-Bengal are being affected since then**.

West-Bengal may update the status.

ITEM NO. B.14: Approval for early commissioning of 220/132 KV, 160 MVA capacity spare ICT at Baripada S/s under provision of spare ICTs in Eastern Region – Powergrid Odisha.

1. PROJECT DETAILS:

a. Investment Approval (IA) Date: 04.10.2021
b. Commissioning Schedule (as per IA): 24 months from the date of IA
c. Project Scope: Procurement of 05 nos Transformer as regional spare for Eastern Region are as per details given below.

Voltage Rating	MVA capacity	Substation Name
400/220kV	500	Pusauli SS
400/220kV	500	Pandiabili SS
400/220kV	500	Maithon SS
220/132kV	160	Daltonganj SS
220/132kV	160	Baripada SS

Copy of Investment approval attached is enclosed as **Annexure-B.14**

2. AWARD DETAILS:

a. NOA placed on M/s Toshiba Transmission and Distribution Systems (India) Pvt. Ltd. on 15.11.2021 with completion schedule of 18 (eighteen months) from the date of issue of Notification of Award. Thus, contractual completion schedule is 15.05.2023.

(NOA Ref No: CC-CS/1087-ER1/TR-4256/3/G5/NOA-I/ER1-250005, Dtd.15.11.2021)

Copy of NOA is enclosed as **Annexure – B.14**

3. PRESENT STATUS:

After completion of Supply and erection activity, commissioning of one no 160MVA capacity, 220/132kV spare Transformer at POWERGRID Baripada substation has been done on dated 31.03.2023. Notification of DOCO Declaration dtd. 31.03.2023 is enclosed as **Annexure-B.14**.

4. **SUBMISSION:**

Considering the time-essence of the contract, POWERGRID has put all best efforts and has been able to commission Baripada Spare ICT on 31.03.2023, which is six months ahead of commissioning schedule (i.e. 4th October 2023) as per investment approval. After successful commissioning of this 160 MVA spare ICT at POWERGRID Baripada Substation, regional security of Eastern Region has enhanced.

It is to be appreciated that POWERGRID is keen on exploring the best possibilities and always striving hard for successful commissioning of transmission elements within approved timeline for the betterment of regional as well as national transmission system. Following the trend, 160 MVA spare ICT at Baripada was also commissioned ahead of schedule. Considering above, DOCO of 160 MVA spare ICT at POWERGRID Baripada Substation may be approved as 31.03.2023.

Powergrid Odisha may update.

ITEM NO. B.15: Confirmation of Revised Feeder Lists for UFR & ADMS schemes of DVC State due to exclusion of feeders under CTPS Islanding Region-DVC.

It may kindly be noted that the implementation of the CTPS Islanding Scheme of DVC is almost at the completion stage. For implementation of the same, it is a prerequisite to exclude the existing feeders under UFR and ADMS schemes emanating from the S/Ss (CTPS, Biada, Putki, Patherdih, Nimiaghat) covered under the Islanding scheme in order to maintain LGB post Islanding.

In view of the above a draft feeder list has been prepared both for UFR and ADMS schemes, after excluding feeders under the islanding zone and including feeders from other S/Ss keeping the sum total of load relief nearly same.

Existing Feeders under ADMS Schemes	***Proposed Revised FeederList under ADMS Excluding Feeders under CTPS Islanding Scheme***

Load Shed block-1			***CD(MVA)***	***Total MVA***
1	Barhi	JSEB	30	141
2	BDWN	WBSEB-4	48	
3	Putki	Katras-1&2	17	
4	Bokaro	JSEB-1	24	
5	Gola	JSEB-Huppu	22	

Load Shed block-1			**CD(MVA)**	**Total MVA**
1	Barhi	JSEB	30	121
2	KALIPAHARI	WBSEB LUCHIPUR	25	
4	Jamuria	WBSEDCL	20	
5	Bokaro	JSEB-1	24	
6	Gola	JSEB-Huppu	22	

Load Shed block-2			**CD(MVA)**	**Total MVA**
1	CTPS	Chas	35	64
2	Hazaribagh	JSEB-1	25	
3	Putki	Sendra Bansjora	4	

Load Shed block-2			**CD(MVA)**	**Total MVA**
1	Koderma	JSEB	38	63
2	Hazaribagh	JSEB-1	25	

Load Shed block-3			**CD(MVA)**	**Total MVA**
1	Putki	Jamadoba	13	44
2	Kumardhubi	KMDB 1&2	9	
3	CTPS	Jainamore	22	

Load Shed block-3			**CD(MVA)**	**Total MVA**
1	Mosaboni	JBVNL	28	62
2	Kumardhubi	KMDB 1&2	9	
3	KTPS	JBVNL Goshala	25	

	Load Shed block-4		**CD(MVA)**	**Total MVA**
1	Ramgarh	JSEB-1	40	JSEB-1

Load Shed block-4		**CD(MVA)**		**Total MVA**
Ramgarh	JSEB-1	40		40

Load Shed block-5			**CD(MVA)**	**Total MVA**
1	Kumardhubi	Mugma 1&2	22	82
2	Putki	Godhor-1&2	35	
3	Hazaribagh	JSEB-2	25	

Load Shed block-5			**CD(MVA)**	**Total MVA**
1	Kumardhubi	Mugma 1&2	22	60
2	Konar	Banaso+Karma	13	
3	Hazaribagh	JSEB-2	25	

	Load Shed block-6		CD(MVA)	Total MVA
1	Ramgarh	JSEB-2	40	JSEB-2

Load Shed block-6		CD(MVA)		Total MVA
Ramgarh	JSEB-2	40		40

Load Shed block-7			CD(MVA)	Total MVA
1	CTPS	Dughdha	25	78
2	Putki	Ganeshpur-1&2	35	
3	Barhi	Padma	18	

Load Shed block-7			CD(MVA)	Total MVA
1	Giridih	JBVNL	55	73
3	Barhi	Padma	18	

Existing FeederList in UFR Scheme

UFR Setting in Hz.	Name of Sub-Stn	Name of Feeder(MVA)	CD in MVA
PHASE - I 49.4 Hz	*BURDWAN	WBSEB BURDWAN	38
	GIRIDIH	JAMUA	25
	PUTKI	KATRAS+1	17
	GOLA	CHARGI	10
	KTPS	GOUSALA	25
	BIADA	BALIDIH	15
	BIADA	BARIDIH COOPERATIVE	10
		SUB TOTAL	**140**
PHASE-II 49.2Hz	NIMIAGHAT	DUMRI BANASO	30
	DHANBAD	DHANBAD - GOVINDPUR	40
	HAZARIBAGH	HAZARIBAGH FDR#1	15
	KUMARDHUBI	MUGMA+SANJAY CHOWK	22
	KODERMA	KODERMA#1&2	38
		SUB TOTAL	**145**
PHASE-III 49 Hz	KALIPAHARI	WBSEB LUCHIPUR	25
	HAZARIBAGH	HAZARIBAGH #2,3,4&5	100
	GOLA	JSEB HUPPU	22
		SUB TOTAL	**147**

Proposed Revised FeederList under UFR Excluding the feeders under CTPS-B Islanding Scheme

UFR Setting in Hz.	Name of Sub-Stn	Name of Feeder(MVA)	CD in MVA
PHASE - I 49.4 Hz	Jamuria	WBSEDCL	20
	GIRIDIH	JAMUA	25
	BTPS	JBVNL	24
	GOLA	CHARGI	10
	KTPS	GOUSALA	25
	BARHI	JBVNL PADMA	18
		SUB TOTAL	**122**
PHASE-II 49.2Hz	GIRIDIH	JBVNL	55
	HAZARIBAGH	HAZARIBAGH FDR#1	15
	KUMARDHUBI	**MUGMA+SANJAY CHOWK+JBVNL**	**37**
	KODERMA	KODERMA#1&2	38
		SUB TOTAL	**145**
PHASE-III 49 Hz	KALIPAHARI	WBSEB LUCHIPUR	25
	HAZARIBAGH	HAZARIBAGH #2,3,4&5	100
	GOLA	JSEB HUPPU	22
		SUB TOTAL	**147**

PHASE - IV 48.8 Hz	PUTKI	GANESHPUR #1&2	35
	PUTKI	GODHAR#1&2	35
	RAMGARH	RAMGARH #1&2	80
		SUB TOTAL	150
		ALL TOTAL(MVA)	582

PHASE - IV 48.8 Hz	MOSABONI	JBVNL	28
	BARHI	JBVNL BARHI	30
	RAMGARH	RAMGARH #1&2	80
		SUB TOTAL	138
		ALL TOTAL(MVA)	552

* As per suggestion from Coml. Dept., the WBSEB Burdwan feeder is excluded from the revised list.

DVC may update.

ITEM NO. B.16: Declaration of Peak Seasons for Hydro-Generating Stations of ER for calculation of RTDA accounts for the FY 2023-24 – ERPC.

As per the minutes of 3rd meeting of CERC with RPCs and further in line with the discussions of the 45th CCM meetings, the high inflow season for hydro generating stations is to be concluded in the OCC meetings as per the formulations provided in the 2019 Tariff Regulations.

Subsequently, as per the minutes of 190th OCC meeting, it was decided that the months in which spillage was there on daily basis throughout the complete months for last 3 years submitted data, the corresponding months would be taken as high-inflow period.

Further in case of partial spillage during a month, high inflow month would be considered in case the spillage is more than 15 days during the month according to the last 3 years submitted data.

Based on the spillage data received for the last 3 years and the preliminary study done, the inflow period for the respective hydro stations for the years 2023-24 is mentioned below.

Hydro Station	High inflow period	Duration
Teesta-V	June, July, August , September	04 months
Rangit	June, July, August, September, October	05 months
Jorethang	June, July, August, September	04 months
Tashiding	August	01 month
Dikchu	June, July, August, September	04 months
Chuzachen	June, July, August	03 months
Teesta-III	June, July, August, September	04 months
Rongnichhu	June, July, September	03 months

Members may note.

ITEM NO. B.17: Improved generation reduction scheme implementation at Talcher NTPC end for HDVC Talcher – Kolar SPS- ERLDC.

Major modification in the SPS scheme of Talcher Kolar was implemented with the inclusion of 400 kV Talcher-Meramundali D/C line flows in March 2021. During one event of SPS operation in May 2022, It was observed that generation reduction at the Talcher unit was not adequate as required for the scheme. Talcher submitted in its report that there is a need for a manual reset bit to be introduced so that complete generation reduction should occur when SPS operate, and it will not stop in between for the associated SPS timer implemented for SPS signal generation. However, the modification in generation reduction scheme can be implemented only when Unit 3 of Talcher is under outage as the entire SPS scheme and generation reduction control signal are implemented in Talcher Unit 3 DCS. Accordingly, the modification was carried out on 4th July 2023 when Talcher Unit 3 was under outage along with one Pole of HVDC.

Submitted for information to the OCC forum.

ITEM NO. B.18: Follow up Agenda

SL No	Issue/Agenda	Discussion in last OCC Meetings	Update/Status
1.	**De-stringing of overhead conductor in Power Line Crossing span of 220kV D/C Farakka-Lamatia Line in between span (Location No.-5 & Location No.-6) by JUSNL in order to protect underlying 400 kV S/C Farakka Sagardighi I & II TL (Loc No.- 3 & 4) of POWERGRID due to severe/repetitive theft incidents by miscreants near to Farakka Plant** 220kV Farakka-Lalmatia TL is under break-down condition due to tower collapse incidents since 21.04.2021. Since the line is under off condition for long, at several locations of the said line near to Farakka serious tower member theft/conductor theft incidents are occurring. During patrolling of 400 kV S/C Farakka Sagardighi I & II TL on dated 07.11.2022, huge no. of missing members has been observed in the Powerline crossing towers of 220 KV Farakka Lalmatia TL (owned by JUSNL) situated in village:Jorpukuria,Farakka crossing over Loc 03 & 04 of both 400 kV S/C Farakka Sagardighi I & II TL of POWERGRID. Considering the fact that any incident of collapse of towers of the mentioned crossing towers of Farakka Lalmatia line shall damage our	In the 204th OCC meeting, representative of Jharkhand submitted that the 220kV Farakka-Lalmatia S/C line is expected to be charged by 31.07.2023. OCC had advised Jharkhand to share regular update of progress in work with ERPC .	.

	existing 400 kV Farakka Sagardighi TL which is already more than 35 years old. Earlier also, an incident of Tower collapse of 220 kV Farakka Lalmatia line over POWERGRID 400 kV S/C Farakka Durgapur 1 & 2 TL had occurred in the year 2020 which had severely damaged the 400 kV S/C Farakka Durgapur 1 & 2 lines. Restoration of the lines were carried out under extreme ROW situations. Considering the seriousness of the issue JUSNL was requested to rectify the towers Loc No.-5 & 6 of 220kV Farakka-Lamatia Line on urgent basis.Vide mail dated 08.12.2022, JUSNL have informed that they have rectified the affected towers but considering the area being severe theft prone they will not able to save the towers in near future. In view of above considering the seriousness/repetitive theft incidents in towers near to Farakka Plant,M/s JUSNL is requested to remove the conductors in between Span Loc No.-5 & 6 of 220kV D/C Farakka-Lalmatia so that underlying POWERGRID lines 400kV Farakka-Sagardighi-I & II may be protected.		
2.	**<u>Islanding Schemes in Eastern Region</u>** **2.1. <u>Patna Islanding Scheme:</u>** 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.	In the 204th OCC Meeting, Representative of NTPC submitted that that the proposal is presently under financial vetting .	
	2.2. <u>Chandrapura Islanding Scheme:</u> 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	In the 196th OCC meeting, DVC representative submitted that the work is expected to be completed as per the given timeline.	

	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.		
	2.3. <u>IB-TPS Islanding Scheme:</u> 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 beenplaced 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 197th OCC meeting, OPGC representative was not present during the discussion. OPTCL representative submitted that the details would be shared shortly. Representative of OPGC informed that during AOH in the month of March'2023 if the turbine vibration issue gets resolved then they would go ahead with the testing.	-
3.	**<u>Outage of Important Transmission System</u>** **<u>132kV Sagbari–Melli.</u>** 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.	In 49th TCC & ERPC Meeting, Sikkim representative submitted that the 132kV Sagbari–Melli line would be restored by 15th April 2023. Sikkim representative was not present during 204th OCC Meeting .	

	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.		
4.	**<u>Ensuring N-1 reliability criteria at 400/220 KV Subhashgram (PG) S/s.</u>** The reliability issue of Subhashgram (PG) was discussed in the 46th TCC and ERPC meeting. In the meeting it was deliberated that there is an urgent requirement for installation of 6th 400/220kV, 500 MVA ICT at Subhashgram (Powergrid) S/s. On request of West Bengal, CESC agreed to bear the cost associated with the installation of the said ICT and its future maintenance. Further, CESC requested Powergrid to execute the project on deposit work basis. In the 194th OCC meeting, Powergrid representative submitted that decision in this regard would be taken by their corporate office and they would submit the details as and when it is received. ERLDC suggested Powergrid for applying requisition of shutdown regarding implementation of SPS scheme. However, no shutdown request has been received by ERLDC till date.	In the 204th OCC meeting, representative of Powergrid submitted that the tender for procurement of Subhasgram ICT has been opened and bid evaluation is presently under progress. He also submitted that prior to Price bid opening , Powergrid needs to receive 10% of the estimated value,i.e 5 crore from CESC and also confirmed commissioning of 500 MVA ICT tentatively within one month of payment receipt from CESC. Powergrid vide mail dated 03.07.2023 confirmed that CESC had made their share of payment against procurement cost of 6th 500 MVA ICT on 26.06.2023	
5.	**<u>Status of SAMAST, ABT implementation and certification of system operators in states.</u>** Implementation of SAMAST and ABT in all the states is a prerequisite for improving the reliability of grid considering the complexities involved in	In the 204th OCC meeting, representative of ERLDC emphasized certification of system	

	managing the large interconnected Indian grid. Further skilled, certified manpower is the key to operate the grid safely and securely. Various initiatives are being taken mutually by ERLDC and the states for successful implementation of the SAMAST/ABT in the states. The status of SAMAST, ABT implementation and certification of system operator of various states of eastern region is given below:	operators at all SLDCs to be completed at earliest for successful implementation of SAMAST/ABT in states. In response, all concerned SLDCs submitted respective details as follows: 22 out of 28 system operators from SLDC DVC,4 operators from SLDC, Jharkhand,9 operators from SLDC, Bihar and 2 operators from SLDC, West Bengal have participated in training program at NPTI Durgapur. SLDC, West Bengal	

Name of the state	Status of implementation of SAMAST	Number of Certified Operator
Bihar	Completed	4+(1 appearing in the exam in March'23)
Jharkhand		2
Odisha		19
DVC		50% of the operators will appear for the certification exam by Sep'23
WB		2
Sikkim		14 nos. system operators will be appearing for certification exam in March'2023

6.	**<u>Replacement of Heavily time drifted L&T meters in Eastern Region</u>** In 47th TCC & ERPC meeting, it was deliberated that in view of stringent provisions in new DSM regulations, the heavily time drifted L&T make SEMs need to be replaced on priority basis. Accordingly, PowerGrid was advised to replace	In the 204th OCC meeting, *NTPC* Farrakka representative submitted that all time drifted SEMs have been replaced. Kahalgaon	

the heavily time drifted meters on priority basis in co-ordination with ERLDC & concerned utilities.

Accordingly, ERLDC has provided a phase-wise replacement list of L&T meters to Powergrid for further necessary action at their end.

Utility	Substation	SEM to be replaced	SEM replaced	Remarks
NTPC	KAHALGAON	38	3	Phase-1
	BARH	13	0	
	BRBCL	3	0	
	KANTI	6	6	
	TALCHER	39	8	
	FARAKKA	14	13	
DVC	DHANBAD	2	2	
WB	NBU	1	0	
	HALDIA	2	0	
	DALKHOLA	3	0	
	BIDHANNAGAR	3	0	
	MALDA	2	0	
	BIRPARA	1	0	
PGCIL	BINAGURI	2	0	
	BIRPARA	7	7	
	DURGAPUR	5	5	
	MALDA	4	3	
	SUBHASGRAM	2	0	
	BERHAMPUR	2	2	
	JEYPORE	2	2	Phase-3
	KISHANGANJ	9	1	
IPP	CHUZACHEN	5	5	Phase-2
	APNRL	3	1	
NHPC	TEESTA	7	7	
JHARK	CHANDI	3	3	

representative submitted that 10 time drifted SEMs have been replaced and remaining 28 are still pending.

NTPC Barh representative claimed to have replaced all 13 time drifted SEMs but ERLDC representative claimed that the replaced SEMs at NTPC Barh were different from those supposed to be replaced.
Accordingly, OCC
OCC advised NTPC to get the meters installed using their own resources.

Representative of Talcher submitted that out of 39, 23 meters have been received. Further, it was also informed that the new meters have factory acceptance reports.

OCC advised NTPC Talcher to install the meters without any further delay.

	HAND	L				
		GARWA	1	1		
		JAPLA	1	1		
		JAMTARA	1	1		
	BIHAR	KAHALGAON	2	2		
7.	**Ensuring healthiness of ADMS**					-

State	Criteria for ADMS operation	Number of instances for which ADMS criteria satisfied	Number of instances for which detail received	Discussion regarding previous month performance	Update in 204th OCC meeting
West Bengal	1. System Frequency < 49.7 Hz 2. WB over-drawl > 150 MW 3. Delay = 4 min	2	Nil	-	
Jharkhand	1. System Frequency < 49.9 Hz 2. Jharkahnd over-drawl > 25 MW 3. Delay = 3 min	88	Nil	-	
DVC	1. System Frequency < 49.9 Hz 2. DVC over-drawl > 150 MW 3. Delay = 3 min	51	Nil	-	
Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. Delay = 3 min	28	Nil	-	

8.	**Commissioning status of ADMS** Automatic demand management scheme	In the 204th OCC meeting, Bihar representative	

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

Sl No	State/Utility	Logic for ADMS operation	Target Date
1	Bihar	F <49.7 AND deviation > 12 % or 150 MW	First week of March-2023

submitted that 9 no.s of feeders have been identified for implementation of ADMS scheme and expected timeline of completion for the same is within 1 week.
Bihar representative also suggested modification in 'Logic for ADMS operation' to the following:
F< 49.7 Hz
AND
Dev >100 MW for 3 min

9.	**Revised connectivity for Laxmikantpur 400/132 KV S/s and split bus arrangement at Laxmikantpur S/s** In the 2nd meeting of ERSCT held on 05-07-2019, CTU informed that the scope of works for establishment of 400/132kV New Laxmikantpur substation through LILO of Subhashgram (POWERGRID) – Haldia 400kV D/c line at New Laxmikantpur S/s under intra-state has already been approved on technical grounds by all the stakeholders including HEL and CESC (also recorded in the minutes of the meeting). HEL was requested to provide go ahead on the said scope before the next CEMTS-ER as further delays in implementation of New Laxmikantpur S/s may jeopardise reliability of power supply in Kolkata area.	In the 204th OCC meeting, Following deliberations were made: Detailed report in this regard has already been submitted by the Committee constituted for the purpose . WB STU representative suggested the issue to be taken up by CTU in 20th CMETS-ER meeting for further deliberation in line with Committee report. OCC, thus agreed on referring the agenda to upcoming CMETS meeting.	
10.	**Operational challenges in Jharkhand network due to multiple long outages/tripping** In Jharkhand network, 400/220 kV 2 X 315 MVA Ranchi ICTs and 400/220 kV 2 X 315 MVA Patratu ICTs and 220 kV Tenughat-PTPS S/C were meeting the demand of Ranchi capital city. At present, 400/220 kV Patratu substation both ICTs are out of service. This led to shifting of loads being fed from this substation back to Ranchi substation's ICTs. In addition, due to the outage of 220 kV Patratu-Tenughat S/C, there is no support from Tenughat (TTPS) power plant. This is leading to the entire Ranchi City demand being fed by 2X315 MVA ICTs Ranchi	**400 kV/220kV 315 MVA ICT 1 & ICT 2 AT PATRATU** In the 204th OCC meeting following was deliberated: 1.Powergrid ER-1 representative submitted ICT 1 at Patratu site is to be commissioned by 10.07.2023. 2.He further added that tentative timeline of ICT 2 commissioning at Patratu site is October 2023.	

	(PG). Presently Ranchi ICTs loading is to the tune of 160-190 MW/ICT. In this network configuration, Ranchi S/s one 315 MVA 400/220 kV ICT outage sensitivity on other ICT is more than 90%. Further degrading the overall situation is outage of 220 kV Ranchi-Hatia 2 on tower collapse. This is leading to n-1 loading violation for other two circuits i.e., 220 kV Ranchi-Hatia 1 and 3 which are loaded above more than 150 MW/ckt. **A list of major elements outages in JUSNL are provided below:** • 400 KV/220KV 315 MVA ICT 2 AT PATRATU: 27-09-2022 (DGA violation) • 400 KV/220KV 315 MVA ICT 1 AT PATRATU: 01-08-2022 (Buchholz Relay) • 220 KV/132KV 100 MVA ICT 2 AT LALMATIA: 22-01-2019 (FAILURE OF HV SIDE BREAKER) • 220 KV/132KV 100 MVA ICT 3 AT CHANDIL: 30-04-2020 (ICT failed due to fire) • 220 kV Tenughat-Patratu S/C: Under long shutdown for shifting work • 220 KV-RANCHI-HATIA-2: 24-09-2022 (Tower collapse) • 220 KV-FSTPP-LALMATIA-1: 21-04-2021 (Tower collapse)	**220kV/132 100 MVA ICT-2 AT LALMATIA (FAILURE OF HV SIDE BREAKER)** In this regard estimate has been obtained from field, estimate is being scrutinized at Head Quarter level to get the work done with minimum cost. The expected date of completion is 31.03.2023. In the 201st OCC meeting it was informed that 220kV/132 100 MVA ICT-2 AT LALMATIA (FAILURE OF HV SIDE BREAKER): W.O. would be issued by 1st week of April'2023. In the 204th OCC meeting, JUSNL representative submitted that 220kV/132 100 MVA ICT-2 AT LALMATIA is to be charged by 10.07.2023 **220kV/132kV 100 MVA ICT-3 AT CHANDIL** In the 204th OCC meeting, JUSNL representative informed that tentative timeline of commissioning 220kV/132kV 100 MVA ICT-3 AT CHANDIL is December 2023.	
11.	**Installation of Transmission Line Arrestor in 220 KV lines in North Bengal – PGCIL ER-II.** 220 KV D/C Siliguri-Kishanganj TL (erst 220kV D/C Siliguri-Dalkhola TL), 220kV D/C Birpara-Chukha TL, 220kV D/C Birpara-Alipurduar TL (erst 220kV D/C Birpara-Salakati TL) and 220kV S/C Birpara-Malbase TL were commissioned in the year 1986 under Chukha Transmission System. All the above-mentioned lines are located in the Himalayan Foothills and	In the 204th OCC meeting of ERPC, Powergrid ER-II informed that 825 out of 830 TLA have been installed, remaining 5 Line arrestors to be installed by 25.06.2023.	

		encounter severe lightning incidents during the monsoon period starting from April-Oct. As stated by NASA, The Himalayan Foreland is declared as Principal Lightening Hotspot zone. TFR measurement were carried out on the towers as well as section of line identified during Post Fault Tripping Analysis. Tower Footing Impedance measurement shows high values in most of the tower locations in the said lines. Considering the increase in lightning phenomenon over North-Bengal area, it seems that existing Tower Earthing system seems not sufficient and as such as a system improvement measure it has been felt necessary to adopt installation of Transmission Line Arresters as per latest practices adopt world-wide in certain stretches of lines where instances of auto-reclosures and tripping are high. Matter has been discussed in detail during 198th OCC, 199th OCC meeting and subsequently in recently concluded 48th CCM at ERPC.		

PART C: ITEMS FORUPDATE

ITEM NO. C.1: ER Grid performance during June 2023.

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month June-2023 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)
584 MU	639 MU 08-06-2023	29326 MW, 09-06-2023 at 00:15 Hrs.	18774 MW, 30-06-2023 at 05:37 Hrs.	2768	2661

ERLDC/ERPC may highlight the performance of the ER grid.

ITEM NO. C.2: Primary Frequency Response of generating units in ER.

The availability of sufficient primary frequency response is one of the fundamental requirements of power system operation not only from reliability point of view but also from regulatory compliance point of view. Based on the assessed FRC re-testing of primary frequency response can be recommended. Therefore, the accurate and high-resolution data from generator end is extremely important in absence of which assessment of FRC is done as per low resolution ERLDC SCADA data. The plant wise data submission statistic for frequency event flagged by ERLDC up to 30.06.2023 is given below:

Event	Frequency Change	ER FRC
Event 1: At 02:28 hrs. on 28-06-2023 400kV Teesta -Rangpo S/C, 400kV Teesta III-Dikchu S/C and 400kV Dikchu-Rangpo S/C tripped simultaneously. Fault was present in 400kV Dikchu-Rangpo S/C & Teesta III -Rangpo line. 400 kV Dikchu-Teesta III tripped from Teesta III end in Back up overcurrent protection. The above tripping led to loss of complete evacuation path for Dikchu and Teesta III substation leading to generation loss of 1304 MW at Teesta III and 106 MW at Dikchu respectively.	Initial Frequency:50.03 Hz Nadir Frequency: 49.91 Hz Final Frequency : 49.95 Hz. Frequency change= 0.8 Hz	**60.1 %**

STATIONS	20.12.2022	12.01.2023	14.01.2023				17.01.2023	09.02.2023		16.03.2023	28.03.2023	01.05.2023	15.05.2023	28.06.2023
	06:48	05:52	12:	13:	14:55	15:18	09:56	11:45	12:29	09:16	10:37	13:23	11:51	02:28

			06	03										
ADHUNIK														
BARH														
BRBCL														
DARLIPALLI														
DIKCHU														
FARAKKA														
GMR														
JITPL														
KAHALGAON														
MPL														
NPGC														
TALCHER														
TEESTA III														
TEESTA V														
North Karanpura	Not Applicable													

= Data Received

= Data not Received

In view of the same all utilities are once again requested to kindly look into the matter and take necessary action to ensure consistent data submission for every frequency event flagged by ERLDC.

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**.

Respective utilities may update.

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 AGCwill 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 DVCrepresentative were not present during the discussion.

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

SLDC Odisha representative submitted that the order has been place to M/s Siemens for AGC implementation and the feasibility test would be conducted on 3rd May 2022.

Members may update.

ITEM NO. C.5: Status of UFRs healthiness installed in Eastern Region.

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

ITEM NO. C.6: 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 forRLDC/SLDCs

S.NO	Name of Islanding Scheme	Healthiness of Communication channel

b. Format – II for GeneratingStation

S.NO	Name of Islanding Scheme	Healthiness ofIslandingRelay	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 toUFR 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©
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 perstate's peak of previous year)			

e. Format – V for Contact details of all NodalOfficer

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

ITEM NO. C.7: Latest Status of States ATC/TTC declared by States for the month of June-2023.

To harmonize the ATC/TTC calculation methodology and timeline One to one meeting and hands on training with each SLDC was conducted in the month of Sep-21 and Oct-21. As per the common agreed procedure and timeline ATC/TTC calculation in three-month advance and reconciliation of the TTC/ATC figure for the upcoming month between RLDC and SLDC has started from month Dec-21. Reconciled ATC/TTC figures for **August-2023** are as follows:

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

Sl No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	7570	--	1	--	7419	--	Aug-23
2	JUSNL	1759	--	41	--	1718	--	Aug-23
3	DVC	**1800**	**3479**	68	54	**1732**	**3425**	Aug-23
4	OPTCL	3971	1222	147	70	3824	1152	Aug-23
5	WBSETCL	6707	--	450	--	6257	--	Aug-23
6	Sikkim	216	--	1	--	215	--	Aug-23

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
July-23	Submitted	Submitted	Submitted	Submitted	Submitted	Pending
Aug-23	Submitted	Submitted	Submitted	Submitted	Submitted	Submitted
Sep-23	Pending	Submitted	Pending	Submitted	Submitted	Pending
Oct-23	Pending	Pending	Pending	Submitted	Submitted	Pending
Nov-23	Pending	Pending	Pending	Submitted	Pending	Pending

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. Sikkim are requested to share the ATC/TTC on regular basis. All states are again requested to follow the time line and make necessary changes for being able to calculate TTC on 11 month ahead basis once T-GNA regulation comes into effect.

ITEM NO. C.8: Mock Black start exercises in Eastern Region

As per IEGC Clause 5.8(b), Mock trial runs of the procedure for different subsystems shall be carried out by the Users/CTU/STU at least once every six months under intimation to the RLDC. Accordingly, the Black Start Schedule of different hydro stations for 2022-23 are given below:

Sl No	Name of Hydro Station	Schedule of Mock Black Start	Actual Date of Test	Schedule of Mock Black Start	Actual Date of Test
		Test-1		Test-2	
1	U. Kolab	June-2022	21st July-2022	Jan-2023	
2	Balimela	July-2022	09th Sep-2022	Feb-2023	
3	Rengali	June-2022	27- June-2022	Dec-2022	
4	Burla	July-2022	23-June-2022	Jan-2023	
5	U. Indravati	May-2022	25-May-2022	Feb-2023	
6	Maithon	DVC representative submitted that upgradation work is		Dec-2022	

		under progress due to issues in the governing system. Detailed timeline would be submitted to ERPC and ERLDC. Detail timeline yet to be received from DVC SLDC			
7	TLDP-III	Oct-2022		Jan-2023	
8	TLDP-IV	Oct-2022		Feb-2023	
9	Subarnarekha	Sep-2022		Dec-2022	
10	Teesta-V	Oct-2022		Jan-2023	
11	Chuzachen	Oct-2022		Feb-2023	
12	Teesta-III	April-2022	08-April-2022	Dec-2022	
13	Jorethang	Oct-2022		Jan-2023	
14	Tasheding	Oct-2022		Feb-2023	
15	Dikchu	Oct-2022		Dec-2022	
16	Rongnichu	Oct-2022		Jan-2023	

- Note:

*DVC representative submitted that upgradation work is under progress due to issues in the governing system. Detailed timeline would be submitted to ERPC and ERLDC. Detail timeline yet to be received from DVC SLDC.

**Jorethang intimated that Black Start provision is not incorporated in Jorethang HEP System

It is proposed that in case Mock black start is not feasible at Maithon HEP and Jorethang HEP, they may be deleted from this list for tracking.

Further all the generators are requested to express their readiness and provide the tentative date of mock black start exercise for the year 2022-23.

In the 197th OCC meeting OCC advised all the utilities to update the status of Mock Black Start exercise, if any, to ERPC and ERLDC.Jharkhand SLDC has intimated that mock black start exercise of Subarnarekha HEP is scheduled on 13.12.2022. However, no detail has been received from others yet.

Utilities to update the status, if any, to ERPC and ERLDC.

ITEM NO. C.9: Requirement of cold spares for ICTs in Eastern Region to meet any exigency.

As per CEA guidelines for availability of spares and inventories for power transmission system (transmission lines & substation/switchyard) assets, adequate cold spare for ICTs has to be maintained at regional as well as state level. Key guidelines for determining spare as per the guidelines are provided below:

- At present PGCIL along with multiple ISTS licensee is operating and maintaining most of the Inter-State Transmission System (ISTS) assets The transmission lines of above power utilities are spread across more than one states in the country.

- Regional level spare: For regional power utilities (PGCIL & Transmission licensees), the spare at regional level would be required for these assets. These spares should be increased, optimized and limited to double the quantities mentioned for State Level based on transmission line assets in that region in order to avoid unnecessary storage of inventories.

- State level spare: The spares at 'State level' can be maintained at a centralized location which could be conveniently accessed to meet the emergency requirement of various substations/switchyards spread across the State.

- Requirement of state level: ICT and Shunt Reactor: One number single phase/three-phase unit of each rating, as applicable

- Utility for State level spare: If there are five or more substations/switchyards (of same voltage class) of a utility in a State, the 'State Level' spares shall be maintained by the utility.

- Spare at state level by utility having spread in different states: If any utility has five or more substations/switchyards (of same voltage class) spread across different States, spare recommended for 'State Level' shall be maintained for these cluster of substations/switchyards at one or more appropriate locations in any of these States.

- Higher spare for areas having higher probability of damage with natural disaster events: The quantities of spares specified shall be applicable to transmission lines and substations / switchyards in all areas including cyclone / whirlwind / tornado prone areas. However, higher quantity of spares (for some spare items) shall be kept for cyclone / whirlwind / tornado prone areas as indicated in guideline.

- Support between utilities for sharing of spare and associated commercial mechanism: There may be cases, where the extent of damage is so much that specified minimum quantum of spares/inventories may be inadequate in meeting the eventuality. In such cases, support from central power utilities (PGCIL/NTPC/DVC etc.)/transmission licensees/neighboring State utilities may be requested. The financial modalities for providing spares to other utility shall be mutually decided between the utilities.

- Replenishment of Consumed spare: Replenishment of the consumed mandatory spares shall be made at the earliest but in any case, not later than six months from the date of its consumption depending on the criticality of equipment component/material.

With a significant rise in state demands and regional demand along with the number of ICTs, it would be desirable to have an adequate spare to improve reliability and resilience in case of any exigency. Recently, a substantial delay in restoration of damaged ICTs in eastern region has been observed.

Thus, maintaining adequate regional and state level cold spare is important. Table 1-4 provides various details for deciding the requirement of regional and state level cold spare in Eastern region

Table 1: State wise ICTs at various voltages in ER

State Wise ICT	315 MVA 400/220 kV	500 MVA 400/220 kV	315 MVA 400/132 kV	200 MVA 400/132 kV	270 MVA 400/132 kV	250 MVA 400/220 kV	1500 MVA 765/400 kV	255 MVA 765/132 kV	Cold Spare Availability
Bihar	6	27	3	15			5		
Jharkhand	15	6				1	2		
Sikkim	5				1				

Odisha	30	5					8	2	
West Bengal	38	5					4		

Table 2: Utility wise ICTs detail at various voltage level in ER

Utility	315 MVA 400/220 kV	500 MVA 400/220 kV	315 MVA 400/132 kV	200 MVA 400/132 kV	270 MVA 400/132 kV	250 MVA 400/220 kV	1500 MVA 765/400 kV	255 MVA 765/132 kV	Cold Spare Availability
PGCIL	47	27	3				15		
Other ISTS (NKTL,PMJTL, PMTL, DMTCL)		8		2			4		
IPP (Dikchu)					1				
NTPC/NPGC/BRBCL	4			9				2	
WBSETCL/WBPDCL/CESC	22			4					
OPTCL/SEL	11	2							
DVC	10								
BGCL		4							
JUSNL/TTPS		2				1			

Table 3: Utility wise number of substations with ICTs in ER

Utility Substation with ICTs	Number of Substation
PGCIL ERTS 1	15
PGCIL ERST 2	8
PGCIL Odisha	10
WBSETCL	5
WBPDCL	2
OPTCL	5
BGCL	2
DVC	5
JUSNL	1
ISTS (NKTL/DMTCL/PMTL/PMJTL)	7
NTPC	7

Table 4: Spread of substations of various utilities in different states

State	PGCIL ERTS 1	PGCIL ERTS 2	PGCIL Odisha	DVC	WBSETCL	OPTCL	Other ISTS	BGCL	JUSNL	NTPC	Others
Bihar	9						4	2		4	
Jharkhand	6			3			1		1		
Sikkim		1									
Odisha			10			5				2	1
West Bengal		6		2 + 1 (MTPS)	5		2			1	2

In the 192nd OCC meeting, ERLDC representative submitted that as per the CEA guidelines, maintenance of adequate spares at State level as well as at regional level had to be ensured.

ERPC representative submitted that as per the CEA guidelines, the inventory of spares should be digitized and reports of the same should be submitted to CEA on half-yearly basis.

OCC advised all the states to digitize the inventory of spares and submit the report to CEA with a copy to ERPC on half yearly basis.

Further, ERLDC was advised to make a standard format mentioning the date of procurement of ICTs, date of COD of ICTs, declared age of ICTs, remaining life etc and circulate among the concerned utilities.

OCC advised all the concerned utilities to follow the guidelines and submit the report on availability of spares ERPC and ERLDC at the earliest.

Further, Powergrid representative raised a concern regarding diverting the spares from ISTS pool to the states which may pose reliability issues and thereby requested the states to maintain a pool for cold spare ICTs.

MS, ERPC was of the view that the pool of cold spare ICTs may be maintained by a central agency

like Powergrid. In case of any requirement of spare ICT on emergency basis by any utility, the same may be provided and the commercial modalities may be decided mutually. Further, to avoid any reliability issues arising out of insufficient spares for the existing ISTS systems, the required optimum number of cold spare ICTs to be maintained by Powergrid may be enhanced which may be put up for approval subsequently.

In the 193rd OCC meeting, Powergrid Odisha representative submitted that 500 MVA and 160 MVA ICT are under procurement which would be placed at Pandiabili and Baripada S/s respectively and cater to the requirement of Odisha. A 315 MVA ICT was recently used in Jeypore S/s. After detailed cost benefit analysis, decision regarding procurement of 315 MVA ICT would be approved.

Powergrid ER-II representative submitted that a 500 MVA ICT is under procurement which would be located at Maithon or Subhashgram. 315 MVA spare ICT (released after augmentation) is available at Durgapur and Malda S/s. one 160 MVA spare ICT is available at Siliguri and one 50MVA ICT was available at Gangtok which was used recently.

Powergrid ER-I representative submitted that regional spare is available at Jamshedpur and Biharshariff S/s. The spare available at Jamshedpur was utilized at Chaibasa. One 315 MVA spare is available at Mujaffarpur S/s. one 160 MVA spare ICT of 220/132 KV is available at Purnea. Further, approval has been taken regarding procurement of one 500 MVA and one 160 MVA spare ICT at Pusauli and Daltonganj respectively.

OPTCL representative submitted that a 315 MVA spare ICT was available at Duburi S/s which was utilized in Meramundali S/s. Procurement of one 500 MVA spare ICT is under progress which would be located at new Duburi S/s. One 500 MVA ICT is available at Meramundali B. Regarding 315 MVA spare ICT, discussions are going on for procuring the same.SLDC DVC representative submitted that one 315 MVA ICT would be replaced by 500 MVA ICT which would be kept as spare and will be located at Ramkanali S/s.

OCC was of the view that a detailed representation highlighting the ICTs under procurement and ICTs available at present would be prepared by ERLDC, based on which decision regarding maintaining pool of spares and procurement of spares would be anticipated.

Present Situation of spare ICTS as per update in 193rd OCC Meeting

Utility	500 MVA 400/220 kV	315 MVA 400/220 kV	160 MVA 220/132 kV
PGCIL ERTS 1	1: Under procurement; will be put at Sasaram	1: Muzaffarpur (released with ICT upgradation) 1: Bihar Sharif 1 : Under Procurement	1: Purnea 1: Daltonganj
PGCIL ERTS 2	1 : Under procurement will	1 : Malda (released	1 :Silliguri

	be put at either Malda or Shubhasgram	with ICT upgradation) 1: Durgapur (released with ICT upgradation)	
PGCIL Odisha	1: Under procurement and will be put at Pandiabili	1: Will be procured	1 : Baripada
OPTCL	1: Under procurement	Under discussion with management	Notavailable
DVC	Not available	1 will be spare in future as per new approved plan	Not available
WBSETCL	No detail	No detail	Notavailable

- **For 43 numbers of 400/220 kV 500 MVA ICTs:** 3 regional and 1 state spare are under procurement
- **For 94 numbers of 400/220 kV 315 MVA ICTs:** 3 old and 1 new is available and 2 are under procurement
- **For 220/132 kV 160 MVA ICTs:** 4 regional spares are available.

Utilities may update.

ITEM NO. C.10: Availability of ERS in the Eastern Region and update on the status by various utilities including inter-state and intra-state transmission licensees

In line with CEA guidelines for the availability of spares and inventories for power transmission system (transmission lines & substation/switchyard) assets 2020 and the CEA disaster management plan for power sector 2021, adequate ERS is required to be maintained in ER grid for early restoration of transmission line due to any tower collapse. The Eastern region is prone to cyclones, Norwester/Kalbaisakhi localized storms, hilly terrain with landslides, floods, changes in river course, substation flooding, etc. due to which each year tower collapse occurs causing forced outages of transmission lines. This necessitates adequate ERS maintenance by various utilities in the eastern region for early restoration.

Present status available at ERLDC on ERS as collected during cyclone Yaas in 2021 is provided in the attached table. All transmission utilities are requested to kindly update the ERS availabilityand any ERS which are already engaged.

Status Update by: PGCIL ERTS 1, PGCIL ERST 2, PGCIL Odisha, WBSETCL and OPTCL (if any ERS is already engaged then same may be put as remarks)

Utility to provide details of available ERS in the attached format:

- State-level: BSPTCL, BGCL, DVC, JUSNL, Sikkim power department (SPD)
- ISTS: Indigrid (OGPTL, PKTCL, ENICL), PGCIL Subsidiaries (CBPTCL, PMTL, PMJTL), Powerlink Transmission limited (PTL), DMTCL, Adani transmission (ATL, NKTL), TPTL

In the 192nd OCC meeting, TPTL representative submitted that they would provide the details by the end of June 2022.

DVC representative submitted that procurement of 7 nos. (Combination of suspension and tension) of ERS is under progress. Further, pile and structures (2 nos.) at Putki and Maithon are available as immediate remedial measures up to 220 KV level.

West Bengal representative submitted that 10 nos. of ERS towers which can be used at all levels are available out of which 6 nos. have been used. Of the remaining, 3 nos. are tension towers and 1 is suspension tower.

JUSNL representative submitted that 8 nos. of ERS are available which could be used for up to 220 KV levels.

Bihar representative submitted that 36 nos. of ERS (for 220 KV and 132 KV level) are available and all are engaged at present.

The details have been received from OPTCL,PGCIL ERTS-1,ATL, PGCIL Odisha, PGCIL ERTS-2,PTL,ENICL,OGPTL,PKTCL. The details are awaited from WBSETCL,TPTL,BSPTCL, JUSNL and Sikkim Power Department. The utilities are requested to share the details at the earliest.

Present status available at ERLDC on ERS as collected during July 2022 is provided in the attached table.

Sl	**Utility**	**voltage levels**	**Number of ERS towers available**	**Location of ERS situated**	**Type of ERS (Suspension/ Tension/ any other)**
1	OPTCL	400 kV	14	ManchesWarGrid - 4 nos. (Hitech)	Can be used for both suspension and Tension
				Mancheswar store - 8 nos. (Hitech)	
				Mancheswar store - 2 nos. (Lindsey)	
			18 (Newly procured)	Mancheswar store - 18 nos. (Hitech)	
		220 kV	42	Budhipadar - 14 nos. (Lindsey)	
				Mancheswar grid – 14Nos. (Lindsey)	
				Chatrapur - 14 nos. (Lindsey)	
2	PGCIL	765 kV -24 sets	24 Sets	GAYA	15 Suspension & 9 Tension tower

Sl	Utility	voltage levels	Number of ERS towers available	Location of ERS situated	Type of ERS (Suspension/ Tension/ any other)
	ERTS 1	400 KV -30 sets	30 Sets	Jamshedpur, Purnea, Lakhisarai	Total 20 nos. Suspension & 10 nos. Tension ERS towers
3	Adani transmission limited (ATL)	400 KV	1 set (12 Column). Nos of ERS towers shall depend on line configuration, type of tower and extension of towers. Approximate 6 suspension towers/ set for 400kV D/C twin conductor.	Central India (Koradi, Maharashtra)- **48 Hours**	Modular aluminum guyed towers- Suspension tower
4	PGCIL (Odisha)	400 KV ERS - 3	3	Rourkela	Suspension - 2 & Tension-1
		765 KV ERS - 24	24	Rengali	Suspension - 15 & Tension-9
5	PGCIL ERTS 2	400 KV	1 Set (consisting of 10 towers) -400 KV Voltage level	Durgapur	7 Set-Suspension 03 Set-Tension
6	WBSETCL	400, 220, 132 kV	05+05set (can be used with 400/220/132 kV level) 6 used for Durgapur - asansol line diversion. 4 available	at Arambagh &Gokarno	Can be used for both suspension and Tension

Sl	Utility	voltage levels	Number of ERS towers available	Location of ERS situated	Type of ERS (Suspension/ Tension/ any other)
7	TPTL		MoU with PGCIL Tie up with Supreme Industry in progress	-	-
8	CBPTCL		No ERS	PTC does not own any ERS, however, in case of any such requirement for deployment of ERS, CPTC has an existing agreement with POWERGRID for deployment of ERS.	-
9	PMTL	-	No ERS	-	-
10	PMJTL	765 kV	NO ERS	-	-
11	PTL	400 kV	07 towers set ERS structures suitable for Twin Moose Configuration 400 or 220 kV.	Siliguri (W.B.)	Lindsey Manufacturing Company Ltd USA Model 600
			07 towers set ERS structures suitable for Twin Moose Configuration 400 or 220 kV.	Muzaffarpur (Bihar)ER1	
12	Indigrid (ENICL, OGPTL & PKTCL)	400 KV & 765 KV Line	765 KV- 6 Sets / 400 KV- 8 Sets	Siliguri, WB.	For 765 KV- 4 Suspension & 2 Tension. For 400 KV- 6 Suspension & 2 Tension.
13	DMTCL	400 kV Lines	Arrangement of ERS with M/s Supreme Engineering at	Can be Dispatched in 2–3-weeks periods	-

Sl	Utility	voltage levels	Number of ERS towers available	Location of ERS situated	Type of ERS (Suspension/ Tension/ any other)
			Kolkata.		
14	BSPTCL	220 kV & 132 kV	38 ERS which can be used for 220 and 132 kV	18 Towers in use for 132 kV Kishanganj-Barsoi ckt 4 towers for 220 kv BTPS-Hazipur ckt 4 towers for 220 kV Bodhgaya- Chandauti Purnea : 1 Dehri on sone: 2 Sultanganj: 2 Fatuah: 2 Muzaffarpur : 4	Can be used for both suspension and Tension
15	BGCL	-	No ERS	No ERS	-
16	JUSNL	220 kV	Total 8 ERS	Hatia: 3 Jamshedpur: 2 Dumka: 3	Details awaited
17	DVC	400 kV and 220 kV	400 kV: 7 (under procurement) 220 kV: 2 set Pilon structure	400 kV: **Under procurement** 220 kV: 1 at putki and 1 at Maithon	-
18	Sikkim Power Department		Details awaited	Details awaited	Details awaited

In the 193rd OCC meeting, TPTL representative submitted that they do not have any ERS towers of their own. In this regard, a MoU with PGCIL is there.

WBSETCL representative submitted that 10 nos. of ERS towers are available which could be used at all the voltage levels. Out of 10 nos., 6 nos. are used for Durgapur-Asansol line and 4 nos. are available. Procurement of additional 6 nos. of ERS towers (which could be used both under suspension and tension) is under planning stage.

Bihar representative submitted the status of ERS towers which is mentioned below.

Location	Status	Usage	Type	Quantity
Kishanganj-Barsoi Line	engaged	220/132 KV	Suspension/Tension	18
BTPS-Hajipur Line	engaged	220/132 KV	Suspension/Tension	4
Bodh Gaya-Chandauti	to be engaged	220/132 KV	Suspension/Tension	4
Purnea	**Spare**	220/132 KV	Suspension/Tension	**1**
Dehri	**Spare**	220/132 KV	Suspension/Tension	**2**
Fatuha	**Spare**	220/132 KV	Suspension/Tension	**3**
Mujaffarpur	**Spare**	220/132 KV	Suspension/Tension	**4**
Sultanganj	**Spare**	220/132 KV	Suspension/Tension	**2**
Total				**38**

OCC was of the view that many lines of BGCL and other new sub-stations like Mokama, Hajipur, etc. in Bihar fall under the coverage of river corridor and advised Bihar to keep provisions of ERS towers for those lines.

Utilities may update.

ITEM NO. C.11: List of lines of Eastern Region violating N-1 security criteria.

The list of such lines for which necessary planning needs to be done to make the system N-1 secure are given below:

Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
Transmission Constraint in Odisha Network				
1	i. 220 kV Budhipadar-Lapanga D/C, ii. 220 kV Budhipadar Vedanta D/C iii. 220 kV Rourkela-Tarkera D/C	SPS available only for 220 kV Rourkela-Tarkera D/C. However, even with SPS N-1 criteria is not satisfied for all the conditions. **Action Required**:- Load trimming scheme needs to be planned	1. Reconductoring of 220 kV Rourkela-Tarkera D/C with HTLS. 2. 220 kV Rourkela-Tarkera second D/C 3. Shifting of Vedanta from 220 kV to 400 kV	**OPTCL to provide a target date for Long term measures**

Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
2	i. 220 kV Lapanga-Katapalli D/C , ii. 220 kV Katapali-New Bargarh-Sadepalli (New Bolangir) S/C iii. 220 kV Katapali-Bolangir (PG)-S/C	No SPS Available. **Action Required:-** SPS/Load trimming scheme needs to be planned	Odisha to share long-term remedial action to make the system N-1 secure.	**OPTCL to provide a target date for Long term measures**
	Transmission Constraint in West Bengal Network			
3	i. 220 kV Waria-Bidhan Nagar D/C ii. 220 kV Waria-Mejia D/C	Opening of 220 kV Waria-Bidhan Nagar D/C as and when required	400/220kV, 315MVA (3rd) ICT at Bidhannagar	Target Date 2022-23. **WBSETCL may update the present Status**
	Transmission Constraint in DVC Network			
4	**i. 220 kV DSTPS-Waria D/C***	No SPS is Available. **Action Required:-** SOP/SPS/Load trimming scheme needs to be planned for the time being	i. 220 kV Connectivity at 400 kV Mejia-B ii. LILO of 220 kV Mejia-A and Barjora at Mejia-B	**DVC may update the target date**
5	ii. 220 kV Maithon-Dhanbad D/C, iii. 220 kV Maithon-Kalyaneshwari D/C	No SPS is Available. **Action Required:-** SOP/SPS/Load trimming scheme needs to be planned for the time being	iii. 220 kV Connectivity at 400 kV Mejia-B iv. 220 kV Connectivity at 400 kV RTPS	**DVC may update the target date**
*** The N-1 violation of 220 kV DSTPS- Waria D/C or DSTPS ICT 1&2 may result in large-scale disturbance, impacting an area between Durgapur and Maithon. To avoid any such mishap DVC needs to plan and implement an SPS on an urgent basis. Further, the long term measure also needs to**				

Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
be implemented in time bound manner.				
Transmission Constraint in Jharkhand Network				
6	220 kV Maithon Dumka D/C	No SPS Available. **Action Required:-** SPS/Load trimming scheme needs to be planned	i. LILO of 1st circuit of 220kVDumka – Govindpur D/c lineat Dhanbad	Target Date 2023. **Jharkhand may update the target date**
Transmission Constraint in West Bengal Network				
6	i. 220 kV Rajarhat-Newtown AA3 D/C, ii. 220 kV Subhasgram-EMSS D/C	SPS is Available for both the Ckts	1. 220 kV Rajarhat-Newtown AA3 D/C line with HTLS. 2. No Strenthing planned for 220 kV Subhasgram-EMSS D/C	1. Target Date November 2022 for recondutoring **WBSETCL may update the present Status**
7	i. 220 kV Subhasgram (PG) – Subhasgram (WB) D/C ii. 220 kV Subhasgram (WB)-Lakshmikantpur D/C	SPS Available for 220 kV Subhasgram (PG) – Subhasgram (WB) D/C	i. 220 kV Subshagram – Baruipur D/C ii. 400/132 kV Substation at Lakshimikantpur.	i. Line antitheft charged from Subhasgram end ii. Lakshimikantpurtareget date is December 2024 **WBSETCL may update the present Status**
Transmission Constraint in Bihar Network				
8.	220 kV Darbhanga-Darbhanga(BH) D/C	No SPS Available. **Action Required:-** SPS/Load trimming scheme needs to be planned	Bihar to share long-term remedial action to make the system N-1 secure.	**Bihar to provide a target date for Long term measures**
9.	220 kV Muzzafarpur-Hazipur D/C	No SPS Available. **Action Required:-** SPS/Load trimming scheme needs to be planned	1. 220 kV Muzzafarpur-Amnour D/C	**Bihar to provide a target date for Long term measures**

Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
10.	220 kV Gaya Bodhgaya D/C	No SPS Available. **Action Required:-** SPS/Load trimming scheme needs to be planned	1. 220 kV Gaya Bodhgaya Second D/C	**Bihar to provide a target date for Long term measures**

In the 193rd OCC meeting, ERLDC representative submitted that outage of DSTPC ICTs or DSTPS Waria D/C line may create a large scale disturbance.

DVC representative submitted that the contracts for connectivity between MTPS 220 KV to 400 KV and RTPS connectivity have already been awarded and the work is expected to be completed by December 2023. The 400 KV bus connectivity would extend some relief in case of evacuation problem from 220 KV bus due to MTPS generation.

Under long-term measures, programs for augmentation of DSTPS ICT and DSTPS-DTPS HTLS is under progress. Necessary approval from ERPC and CTU has already been taken in this regard.

Moreover, Parulia (PG)-Parulia (DVC) line has already been given to Powergrid for HTLS connectivity. After the HTLS connectivity, possibilities of switching-off of DSTPS ICT may be explored. Further, possibilities of bus-splitting at MTPS may also be worked out.

ERLDC representative requested DVC to maintain some minimum generation in Mejia. DVC representative submitted that Mejia unit-6 would be synchronized by 21st July 2022.

ERLDC representative was of the view that as per the study undergone by them, closing of Bidhannagar-Waria circuit would not cater to the generation loss issues and advised DVC to explore the possibilities of bus splitting and connectivity to 400 KV of MTPS and RTPS.

Utilities may update.

ITEM NO. C.12: ICT Constraints violating N-1 security criteria.

The list of ICTs which are not N-1 complaint are given below:

Sl. No	Name of ICT	Short Term Measures	Long term Measures	The target date for long term measures
ICT Constraint in West Bengal Network				
1	i. 400/220 kV 2 X 315 MVA ICTs at Gokarna &	SPS Available for Gokerno ICTs **Action Required**:- Load trimming scheme needs to be planned for	i. 3rd ICT at Gokerno	Target Date Dec-22 **WBSETCL may update the present Status**

Sl. No	Name of ICT	Short Term Measures	Long term Measures	The target date for long term measures
	ii. 400/220 kV Sagardighi 1 X 315 MVA ICTs	Sagardighi		
2	i. 400/220 kV ICT-1 & 2 at Bidhannagar	No SPS Available **Action Required**:- SPS needs to be planned	i. 400/220kV315MVA (3rd) ICT at Bidhannagar	Target Date 2022-23 **WBSETCL may update the present Status**
ICT Constraint in ISTS Network				
3	i. 400/220 kV Ranchi 2 X 315 MVA ICTs	SPS Available	i. 3rd 500 MVA ICT at Ranchi	**POWERGRID may update the target date**
ICT Constraint in DVC Network				
4	i. 400/220 kV Bokaro A 2 X 315 MVA ICTs	No SPS Available **Action Required**:- SPS needs to be planned	i. Upgradation with 500 MVA ICTs	**DVC may update target date**
5	**i.400/220 kV ICT-1 &2 at DSTPS ***	No SPS Available **Action Required**:- SPS needs to be planned	i. Upgradation with 500 MVA ICTs	**DVC may update target date**
ICT Constraint in Odisha Network				
6	i. 400/220 kV New Duburi 2 X 315 MVA ICTs	No SPS Available **Action Required**: - SPS needs to be planned	i) 3rd ICT at New Duburi	**Odisha may update the target date**

In the 193rd OCC meeting, ERLDC representative submitted that outage of DSTPC ICTs or DSTPS Waria D/C line may create a large-scale disturbance.

DVC representative submitted that under long-term measures, programs for augmentation of DSTPS ICT is under progress. Necessary approval from ERPC and CTU has already been taken in this regard.

Moreover, Parulia (PG)-Parulia (DVC) line has already been given to Powergrid for HTLS connectivity. After the HTLS connectivity, possibilities of switching-off of DSTPS ICT may be explored.

Utilities may update.

PART D: OPERATIONAL PLANNING

ITEM NO. D.1: Anticipated power supply position during August 2023.

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of July 2023 were prepared by ERPC Secretariat (**Annexure D.1**) on the basis of LGBR for 2023-24 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc.

Members may update.

ITEM NO. D.2: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 09.07.2023)

a) Thermal Generating Stations outage report:

SL No	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	MEJIA TPS	DVC	DVC	4	210	ESP A-stream foundation repairing work. However, since 12/06/2023 due to outage of one pass of ESP, capacity has been reduced to 124 MW. Unit is under shutdown condition from 22:15 hrs of 02.07.2023 for completion of ESP work.	11-May-2023
2	BANDEL TPS	WEST BENGAL	WBPDCL	2	60	Poor coal Stock	06-Jun-2023
3	DARLIPALI	ODISHA	NTPC	2	800	Annual overhauling	17-Jun-2023
4	DPL	WEST BENGAL	WBPDCL	7	300	Poor Coal Stock	25-Jun-2023
5	BOKARO-A'	DVC	DVC	1	500	Flue Gas Desulfurization connectivity work	25-Jun-2023
6	BAKRESHWAR	WEST BENGAL	WBPDCL	4	210	Boiler Overhauling	03-Jul-2023
7	MEJIA TPS	DVC	DVC	1	210	Boiler tube leakage	03-Jul-2023
8	FSTPP	WEST BENGAL	NTPC	1	200	Due to Low drum level	04-Jul-2023
9	BARAUNI TPS	BIHAR	NTPC	7	110	High Turbine Vibration	07-Jul-2023
10	FSTPP	WEST BENGAL	NTPC	2	200	Flame failure	08-Jul-2023
11	KHSTPP	BIHAR	NTPC	3	210	Disturbance in chemical parameters.	09-Jul-2023

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.

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

NIL

c) Hydro Unit Outage Report:

S. NO	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	BALIMELA HPS	ODISHA	OHPC	3	60	The unit taken out under R&M since 08/07/2022 for 18 months.	08-Jul-22
2	BALIMELA HPS	ODISHA	OHPC	4	60	The unit taken out under R&M since 08/07/2022 for 18 months.	08-Jul-22
3	INDRAVATI	ODISHA	OHPC	4	150	Capital maintenance for 6 Months, New stator change by OEM,Turbine OH	09-Dec-22
4	U. KOLAB	ODISHA	OHPC	2	80	Stator Earth Fault (WINDING DAMAGE)	29-Mar-23
5	RENGALI HPS	ODISHA	OHPC	5	50	Removal of foreign metallic object from stayring and Shear Pin damage	06-Jul-23

d) Long outage report of transmission lines (As on 09.07.2023):

Transmission Element / ICT	Outage From	Reasons for Outage
400 KV IBEUL JHARSUGUDA D/C	29.04.2018	As information gathered, around 40-50 nos of towers were collasped and conductor theft more than 400Ckm and restoration work is in progress
220/132 KV 100 MVA ICT II AT LALMATIA	22.01.2019	Commissioning work of 220/132KV, 100MVA Transformer and its associated control Panel under progress.
220 KV PANDIABILI - SAMANGARA D/C	03.05.2019	Tower Collapsed during Cyclone FANI (Restoration project is entrusted upon PGCIL & 220kV Samangara-Pandiabili ckt-I&II are anti-theft charged from Pandiabili end from loc no.01 to loc no.74)
220/132 KV 100 MVA ICT 3 AT CHANDIL	30.04.2020	Due to Fire hazard ICT damaged and burnt.
400KV/220KV 315 MVA ICT 4 AT JEERAT	09.04.2021	Due to Fire hazard ICT damaged and burnt. New Transformer procurement under pipeline and shall be replaced in the near future.
220KV-FSTPP-LALMATIA-I	21.04.2021	Conductor stringing 12.965 km has been completed and Stringing between Tower Loc. no. 152 to 159 is under progress. Transmission line is idle charged between Lalmatia GSS end to Tower Loc.no.169. Line is expected to be charged by 31/07/2023.
220KV-MUZAFFARPUR(PG)-GORAUL(BH)-1	11.06.2022	To rectify the CVT voltage missing issue
220KV-WARIA-BIDHANNAGAR-1 & 2	08.06.2022	To control overloading of 220 kV Waria-DSTPS (Andal) D/C line
400KV/220KV 315 MVA ICT 1 AT PATRATU	01.08.2022	ICT tripped on few occasions due to Buchholz later DGA violation found, internal fault in transformer to be rectified.
400KV/220KV 315 MVA ICT 2 AT PATRATU	27.09.2022	ICT tripped on few occasions due to Buchholz later DGA violation found, internal fault in transformer to be rectified. (DGA violation)
220KV/132KV 160 MVA ICT 1 AT MALDA	04.01.2023	For 132 KV GIS Commissioning work (GIB erection of ICT-I)

400KV-CHANDWA-LATEHAR(JUSNL)-1	27.01.2023	Tripped due to internal flashover of 400kV Main Bay of Latehar-1 at Chandwa
400KV/220KV 315 MVA ICT 2 AT MEJIA-B	14.03.2023	Checking and restoration of CSD problem
132KV-BARHI-RAJGIR-1	25.03.2023	Dismantling of tower no. 227, 228, and 229 crossing the premises of Mahabodhi Cultural centre along with Destringing of conductor of both circuits and Earthwire between tension tower no. 218-237 in same line.
132KV-NALANDA-BARHI(DVC)-1	25.03.2023	
400KV/220KV 315 MVA ICT 3 AT ROURKELA	09.04.2023	ICT#3 tripped on buchholz protection operation. Charging attempt of ICT-3 taken at 12:37hrs but tripped on bucholz & PRV protection.

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

ITEM NO. D.3: Commissioning of new units and transmission elements in Eastern Grid in the month of June-2023

The details of new units/transmission elements commissioned in the month of June -2023 based on the inputs received from beneficiaries:

ERLDC_LIST OF NEW ELEMENTS CHARGED DURING JUNE, 2023							
GENERATING UNITS							
SL. NO.	**Location**	**OWNER/ UNIT NAME**	**Unit No/Source**	**Capacity added (MW)**	**Total/Installed Capacity (MW)**	**DATE**	**Remarks**
NIL							
ICTs/ GTs / STs							
SL. NO.	**Agency/ Owner**	**SUB-STATION**	**ICT NO**	**Voltage Level (kV)**	**CAPACITY (MVA)**	**DATE**	**Remarks**
NIL							
TRANSMISSION LINES							
SL. NO.	**Agency/ Owner**	**LINE NAME**		**Length (KM)**	**Conductor Type**	**DATE**	**Remarks**
NIL							
LILO/RE-ARRANGEMENT OF TRANSMISSION LINES							
SL. NO.	**Agency/ Owner**	**Line Name/ LILO at**		**Length (KM)**	**Conductor Type**	**DATE**	**Remarks**
NIL							
BUS/LINE REACTORS							
SL. NO.	**Agency/ Owner**	**Element Name**		**SUB-STATION**	**Voltage Level (kV)**	**DATE**	**Remarks**
NIL							
HVDC /AC Filter bank / FACTS DEVICE associated System							
SL. NO.	**Agency/ Owner**	**Element Name**		**SUB-STATION**	**Voltage Level (kV)**	**DATE**	**Remarks**
NIL							
BAYS							
SL. NO.	**Agency/ Owner**	**Element Name**		**SUB-STATION**	**Voltage Level (kV)**	**DATE**	**Remarks**

NIL

ERLDC_LIST OF NEW ELEMENTS CHARGED DURING MAY, 2023							
GENERATING UNITS							
SL. NO.	**Location**	**OWNER/UNIT NAME**	**Unit No/Source**	**Capacity added (MW)**	**Total/Installed Capacity (MW)**	**DATE**	**Remarks**
NIL							
ICTs/ GTs / STs							
SL. NO.	**Agency/Owner**	**SUB-STATION**	**ICT NO**	**Voltage Level (kV)**	**CAPACITY (MVA)**	**DATE**	**Remarks**
1	**PGCIL**	**Ranchi**	**3**	**400/220**	**500**	**30-05-2023**	**ICT 3 at Ranchi SS was first time charged on 29-05-2023 at 10:03 Hrs as an idle using 400 kV Bay. Later on, 30-05-2023, 220 kV Bay was also charged at 13:05 Hrs. PGCIL has applied for ToC on 01-06-2023 and is currently under process.**
TRANSMISSION LINES							
SL. NO.	**Agency/Owner**	**LINE NAME**		**Length (KM)**	**Conductor Type**	**DATE**	**Remarks**
1	**BSPTCL**	**132 kV Kataiya (BSPTCL) - Kushaha (Nepal) circuit 3 along with associated bay number 113 at Kataiya end**		**16.86 (Indian Portion - 3.81 km)**	**ACSR Panther**	**23-05-2023**	**Format IV for both circuit was issued on 23-05-2023. Line was charged for the first time on 23-05-2023 on 20:15 Hrs.**
LILO/RE-ARRANGEMENT OF TRANSMISSION LINES							
SL. NO.	**Agency/Owner**	**Line Name/LILO at**		**Length (KM)**	**Conductor Type**	**DATE**	**Remarks**
NIL							
BUS/LINE REACTORS							
SL. NO.	**Agency/Owner**	**Element Name**		**SUB-STATION**	**Voltage Level (kV)**	**DATE**	**Remarks**
1	**WBSETCL**	**400 kV 125 MVAR Bus Reactor at Gokarna SS along with associated Bay Number 413**		**Gokarna**	**400**	**12-05-2023**	**Format IV was issued on 12-05-2023. Reactor was first time charged on 12-05-2023 at 17:36 Hrs**
HVDC /AC Filter bank / FACTS DEVICE associated System							
SL. NO.	**Agency/Owner**	**Element Name**		**SUB-STATION**	**Voltage Level (kV)**	**DATE**	**Remarks**
NIL							
BAYS							
SL. NO.	**Agency/Owner**	**Element Name**		**SUB-STATION**	**Voltage Level (kV)**	**DATE**	**Remarks**
NIL							

Odisha:

Elements charged for first time in June-2023			
Sl No.	Name of the element charged first time	Date	Time
1	132kV SC line on DC tower(Two conductor) from 220/132/33kV Grid S/S, Gunupur to proposed RTSS at Palasingi along with 132kV feeder bay extension at 220/132/33kV Grid S/S, Gunupur	5/6/2023	20:43HRS
2	132KV & 33KV Switchyard (01 No of 132KV Transformer Bay, 01 No of 132KV Bus Coupler Bay & 132/33KV 40MVA Power Transformer No-II along with 33KV temporary cable & 03 Nos of 33KV Bay) at 220/132/33KV Grid S/S, Dhamra.	6/6/2023	14:06HRS & 14:42HRS
3	132KV feeder Bay extension at 132 / 33KV Bhawanipatna Grid S / S & 132 KV 2 conductor SC line from 132 / 33KV Bhawanipatna Grid S / S to proposed RTSS of Bhwanipatna.	22/6/2023	20:20HRS
4	132KV Budhipadar – Lakhanpur line & 132 KV Brajrajnagar – Jorabaga MCL line by making LILO arrangement from Loc. No-17 of existing 132KV Budhipadar- Jorabaga MCL Ckt-II & utilizing 132 KV Brajrajnagar – Lakhanpur Ckt-II.	22/6/2023	BPDR-LKHNPR: 20:04HRS BRJRNGR-MCL: 21:08HRS
5	132KV Switchyard at 132 / 33KV Grid S/S Bhatli along with 132/33KV 40MVA Power Transformer No-I and 132KV Bargarh New-Bhatli DC line.	23/6/2023	Ckt-I: 14:28HRS Ckt-II: 14:31HRS TRF-I: 14:34HRS
6	Synchronisation of 8.92MW WHRS CGP Unit of M/S Shiva Cement Ltd. Kutra with OPTCL Network through 132kV Shiva Cement line having connectivity from 132kV LILO Sewitch Station, Kutra	28/6/2023	13:40HRS

Bihar:

Elements charged for first time in June-2023			
Sl No.	Name of the element charged first time	Date	Time
1	132kV SC line on DC tower(Two conductor) from 220/132/33kV Grid S/S, Gunupur to proposed RTSS at Palasingi along with 132kV feeder bay extension at 220/132/33kV Grid S/S, Gunupur	5/6/2023	20:43HRS
2	132KV & 33KV Switchyard (01 No of 132KV Transformer Bay, 01 No of 132KV Bus Coupler Bay & 132/33KV 40MVA Power Transformer No-II along with 33KV temporary cable & 03 Nos of 33KV Bay) at 220/132/33KV Grid S/S, Dhamra.	6/6/2023	14:06HRS & 14:42HRS
3	132KV feeder Bay extension at 132 / 33KV Bhawanipatna Grid S / S & 132 KV 2 conductor SC line from 132 / 33KV Bhawanipatna Grid S / S to proposed RTSS of Bhwanipatna.	22/6/2023	20:20HRS
4	132KV Budhipadar – Lakhanpur line & 132 KV Brajrajnagar – Jorabaga MCL line by making LILO arrangement from Loc. No-17 of existing 132KV Budhipadar- Jorabaga MCL Ckt-II & utilizing 132 KV Brajrajnagar – Lakhanpur Ckt-II.	22/6/2023	BPDR-LKHNPR: 20:04HRS BRJRNGR-MCL: 21:08HRS
5	132KV Switchyard at 132 / 33KV Grid S/S Bhatli along with 132/33KV 40MVA Power Transformer No-I and 132KV Bargarh New-Bhatli DC line.	23/6/2023	Ckt-I: 14:28HRS Ckt-II: 14:31HRS TRF-I: 14:34HRS
6	Synchronisation of 8.92MW WHRS CGP Unit of M/S Shiva Cement Ltd. Kutra with OPTCL Network through 132kV Shiva Cement line having connectivity from 132kV LILO Sewitch Station, Kutra	28/6/2023	13:40HRS

Members may note.

ITEM NO. D.4: UFR operation during the month of June 2023.

Frequency profile for the month as follows:

Month	Max (Date/Time)	Min (Date/Time)	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
June, 2023	50.41 Hz on 14.06.2023 at 08:00 Hrs.	49.51 Hz on 14.06.2023 at 22:33 Hrs.	6.5	67.8	25.7

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

Members may note.

****

Annexure-I

Proceeding of the Meeting held on 12th July 2023 to discuss START UP POWER for 2x660 MW Buxar Thermal Power Plant

List of participants is enclosed at Annexure-I

Agenda Details

As per agenda Item no B.9 of 204th OCC meeting of ERPC & vide Ref no :STPL/08/08/01/002/23-3127 dated 09.06.2023, GM & Head (Elec/ C&I), STPL, Buxar, SJVNL has requested for 45 MW start up power at 400 kV level by August 2023 for the completion of various commissioning sequences at SJVNL Thermal Pvt. Ltd.

Accordingly a special meeting was held with officials of BSPTCL, .SBPDCL and SJVNL in the chairmanship of Director(Operation) BSPTCL on 12th July 2023 at 4th Floor, Conference room, BSPTCL.

Deliberations in meeting

1. Status of transmission line & associated bays at 400 kV Naubatpur GIS has been shared by project wing which is as below-
    - 400 kV D/C Naubatpur- Buxar Thermal transmission line is already anti theft charged through 132kv Paliganj-Naubatpur transmission line.
    - Tendering of 400 kV bays at Naubatpur GIS is under process.
2. SJVNL has deliberated that power from 220 KV line could not be availed due to non-availability of 400/220 kV ICT. Representative from SJVNL also informed that one unit of 400/220 kV 500 MVA power transformer will be available at site by October 2023. Further, work of 220kV GIS switchyard at Buxar Thermal is in initial stage and without completion of all required system at Buxor TPS, power can't be availed at 220 KV level from any Sub-station of BSPTCL. Therefore, start up power could only be drawn at 400 KV level.

Final Decision/Conclusions

1. Earlier, there was 04 ckt of 400 kV transmission line from Patna(PG) to Balia(PG). Out of 04 ckt, 02 ckt has been made LILO at 400/220/132/33 kV GIS Naubatpur(BGCL). There is proposal for making temparory arrangement by disconnecting existing 400kV Patna(PG)-Naubatpur ckt –II from associated 400 KV Bay at Naubatpur GSS and connecting newly constructed 400 kV Buxar TPS-Naubatpur ckt II transmission line to this Bay. This shall ensure power availability at 400 kv level at SJVNL Thermal Pvt. Ltd, Buxar. This arrangement shall be temporary and serve the purpose of startup power to SJVNL till availability of startup power through 220 KV system as mutually agreed earlier

(69)

or commissioning of 400 kV bays (To be constructed by BSPTCL) at 400 kV Naubtapur GIS, whichever is earlier.

With this change 400/220/132/33 kV Naubatpur GIS shall have following transmission line at 400kV level.

a. 400 kV Patna(PG)-Naubatpur one (01)ckt
b. 400 kV Naubatpur- Balia(PG) –Two(02) ckt.
c. 400 kV Patna(PG)-Naubatpur ckt 2(anti theft from Patna PG end)
d. 400 kV Naubatpur-Buxar Thermal ckt II

2. 400 Patna (PG) ckt 2 bay at Naubatpur GIS may be utilized for the termination of one circuit of 400 KV Naubatpur- Buxar Thermal plant after getting all statutory clearances. Agenda for the same shall be put up in next OCC meeting for approval from ERPC/CEA.
3. Project wing of BSPTCL shall provide time line for the completion of bay work at Naubatpur GIS. A formal letter shall be given to Powergrid ER-1 regarding getting consent from them for this temporary arrangement.
4. After getting approval/clearances of aforesaid arrangement, SJVNL shall apply for the connection from the SBPDCL as per BERC/CERC regulations for start up power, accordingly SBPDCL shall provide the connection as per prevailing rules/regulations.

Memo No. Date..

Copy forwarded to GM & Head(Elect/ C&I), SJVNL Thermal(P) Ltd./ Chief Engineer(STU), BSPTCL / Chief Engineer (Commercial), SBPDCL/ Chief Engineer (O&M), SBPDCL /General Manager (Revenue), SBPDCL/ Chief Engineer (PMC), BSPHCL/ Chief Engineer (Project I), BSPTCL/ Chief Engineer (Project II), BSPTCL for kind information & needful.

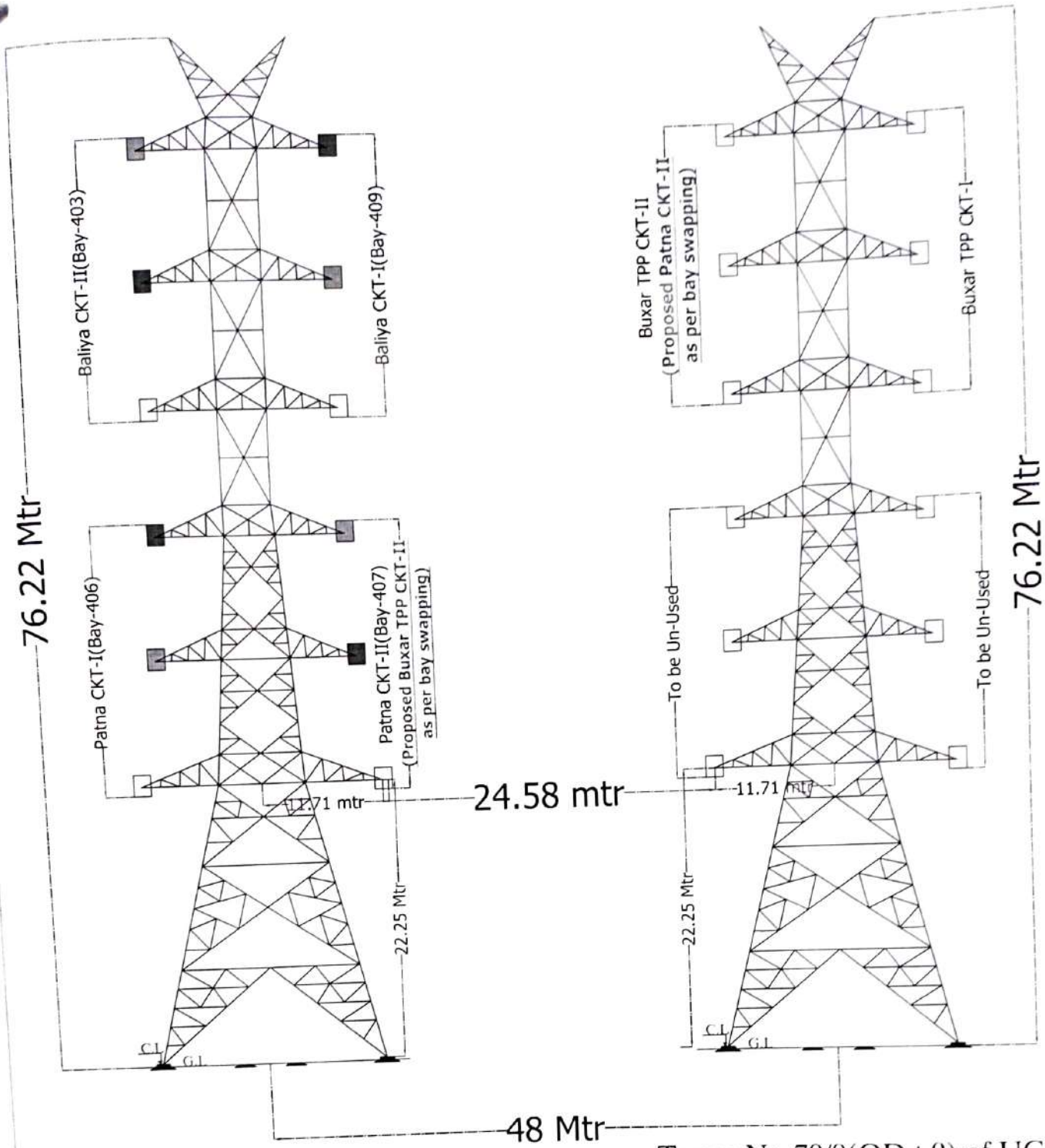
S/d-
Chief Engineer(S/O)
BSPTCL

Memo No. 479 Date.. 13.07.2023

Copy forwarded to Director (Operation), BSPTCL/ OSD to MD, BSPTCL/General Manager (Asset Management), PGCIL, ER-1 / General Manager(O&M), BGCL for kind information & needful

13/07/2023
Chief Engineer(S/O)
BSPTCL

Annexure II



Tower No-238(QD+0) of Naubatpur-Patna/Balia TL

Tower No-79/0(QD+0) of UC Buxar TPP-Naubatpur TL

Note:-For tower erection Guide rope is required in every leg and every Deric pole. One side new tower and existing tower distance is 25 meter. As per the SOP we required to fix guide rope up to approx. 76 meter (Height of tower). As tower erection goes to height beyond 20 meter we require shutdown to fix guide rope circuit wise as requested. We have to fix guide rope after crossing the existing line conductor and at evening we have removed guide rope after fixing the tower diagonal.

Email

Annexure - III

SODEPT

Regarding status of work of Buxar power evacuation

From : Project Two <project.2@bsptcl.bihar.gov.in>
Subject : Regarding status of work of Buxar power evacuation
To : SODEPT <so.dept@bsptcl.bihar.gov.in>

Thu, Jul 13, 2023 12:49 PM
1 attachment

Progress NIT-23						Date: 12/07/2023
Activity	**Unit**	**Total Scope**	**Completed**	**Balance**	**Under Progress**	**Remarks**
400kV Buxar Naubatpur						
Foundation	Nos	345	345	0		
Erection	Nos	345	345	0		
Pile	Nos	80	80	0		
Stringing	Km	126.36	123.99	2.37	0.00	
220kV Buxar Karamnasha						
Foundation	Nos	185	185	0	0	
Erection	Nos	185	182	3	1	
Stringing	Km	59.218	58.171	1.047		
220kV Buxar-Dehri-on-Sone						
Foundation	Nos	246	246	0	0	
Erection	Nos	246	246	0	0	
Stringing	Km	76.642	74.953	1.689	0	600m at dehri end common portion
Total NIT-23						
Foundation	**Nos**	**776**	**776**	**0**	**0**	Landowners demanding land compensation for allowing stringing work.
Erection	**Nos**	**776**	**773**	**3**	**1**	
Stringing	**Km**	**262.22**	**257.114**	**5.106**	**0.0**	

220KV D/C Buxar TPP- Dumraon(BGCL) NIT -24

1.Foundation: 216/216

Team: Nill

2.Tower Erection: 213/216
WIP : Nill.

Team: 2 No

3.Stringing : 62.65/64.1km
WIP: Nill

Stringing Team : 2No.

--
Sincerely -
S. Kumar,
Chief Engineer, Project-II,
CUG No. 7763816743

Annexure-4

Gmail

Chief Engineer Trans BSPTCL <ce.trans664@gmail.com>

Regarding providing the time line for completion of bay work at Naubatpur GIS

1 message

Chief Engineer Trans BSPTCL <ce.trans664@gmail.com> Thu, Jul 13, 2023 at 3:15 PM
To: so.dept@bsptcl.bihar.gov.in

Sir,

Chief Engineer (S/O) vide memo no:-479 dated 13.07.2023 have forwarded the proceeding of the meeting held on 12th July- 2023 to discuss Start up power for 2x600 MW thermal power plant. The status of timeline for completion of bay work at Naubatpur GIS is hereby attached.

--

Regards,

Chief Engineer
Project-I, BSPTCL

status of work.pdf
346K

Status of work

A. Construction of 02 nos. of 400 KV GIS bays at GSS Naubatpur (BGCL):-

1. Tender was floated as NIT NO:-07/PR/BSPTCL/2023.

2. TEC completed on 10.07.2023 and price part will be opened after getting approval from competent authority.

3. The timeline for completion of 02 nos. of 400 KV GIS bays at GSS Naubatpur (BGCL) is 12 months from the date of issuance of NOA/LOI.

***B.* Construction of 02 nos. of 220 KV GIS bays at GSS Dumraon (BGCL):-**

1. The work for Construction of 02 nos. of 220 KV GIS bays at GSS Dumraon (BGCL) has been awarded to M/s Gepdech infatech limited.

2. The work under progress for 02 nos. of 220 KV GIS bays at GSS Dumraon (BGCL) & expected to take another 8-10 months i.e. up to Mid April-24 for completion of above 2 nos. 220 KV GIS bays at GSS Dumraon (BGCL).

ग्रिड-इंडिया GRID-INDIA

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
राष्ट्रीय भार प्रेषण केन्द्र / National Load Despatch Centre

कार्यालय : बी-9, प्रथम एवं द्वितीय तल, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016
Office : 1st and 2nd Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.grid-india.in, E-mail : gridindiacc@grid-india.in, Tel.: 011- 42785855

Ref: NLDC/SO/GO/RA-03/ 112

Date: 06-07-2023

From,	To,
General Manager, Head (Operational Planning section), NLDC, GRID-INDIA	All Heads, Operational planning section, NRLDC/ WRLDC/SRLDC/ ERLDC /NERLDC GRID-INDIA

Subject: Standard Operating Procedure (SOP) for maintaining adequate resources

Madam/Sir,

In compliance to direction of Hon'ble Minister of Power and New & Renewable energy during meeting held on 23.06.23, please find attached standard operating procedure for maintaining adequate resources.

In this connection, all RLDCs are requested to kindly share the SOP with SLDCs/utilities of your control region and advise them to follow the SOP so that all India demand can be met without any supply crunch.

Cooperation from all is highly solicited.

With Regards,

(Ashok Kumar) 6/7/23

For kind information:

1. **Chairman and Managing Director, GRID-INDIA**
2. **Executive Director, NLDC/NRLDC/ WRLDC/SRLDC/ ERLDC /NERLDC**

Standard Operating procedure

Date: 06th July 2023

Purpose:

Resource adequacy is essential to ensure a reliable, secure, and sustainable electricity supply that meets the needs of consumers, supports economic growth, and maintains public safety. It involves careful planning, investment, and coordination among various stakeholders in the power sector to balance supply and demand and maintain the stability and reliability of the power system

Related topics:

1. https://static.pib.gov.in/WriteReadData/specificdocs/documents/2023/jun/doc20236282188801.pdf
2. https://powermin.gov.in/sites/default/files/uploads/Consumers_Rules_2020.pdf and amendments thereof

Context:

To ensure resource adequacy, power system operators and planners engage in activities such as demand forecasting, capacity planning, market mechanisms, interconnection enhancements, and the development of emergency response plans. These activities aim to ensure that there is a sufficient reserve margin (the difference between available capacity and peak demand) to handle unexpected events, maintain system reliability, and meet the electricity needs of consumers.

It's important to note that resource adequacy can vary across different regions and power systems, depending on factors such as geography, climate, regulatory frameworks, and the mix of generation resources. Each jurisdiction typically establishes its own guidelines, standards, and processes to address resource adequacy within its specific context.

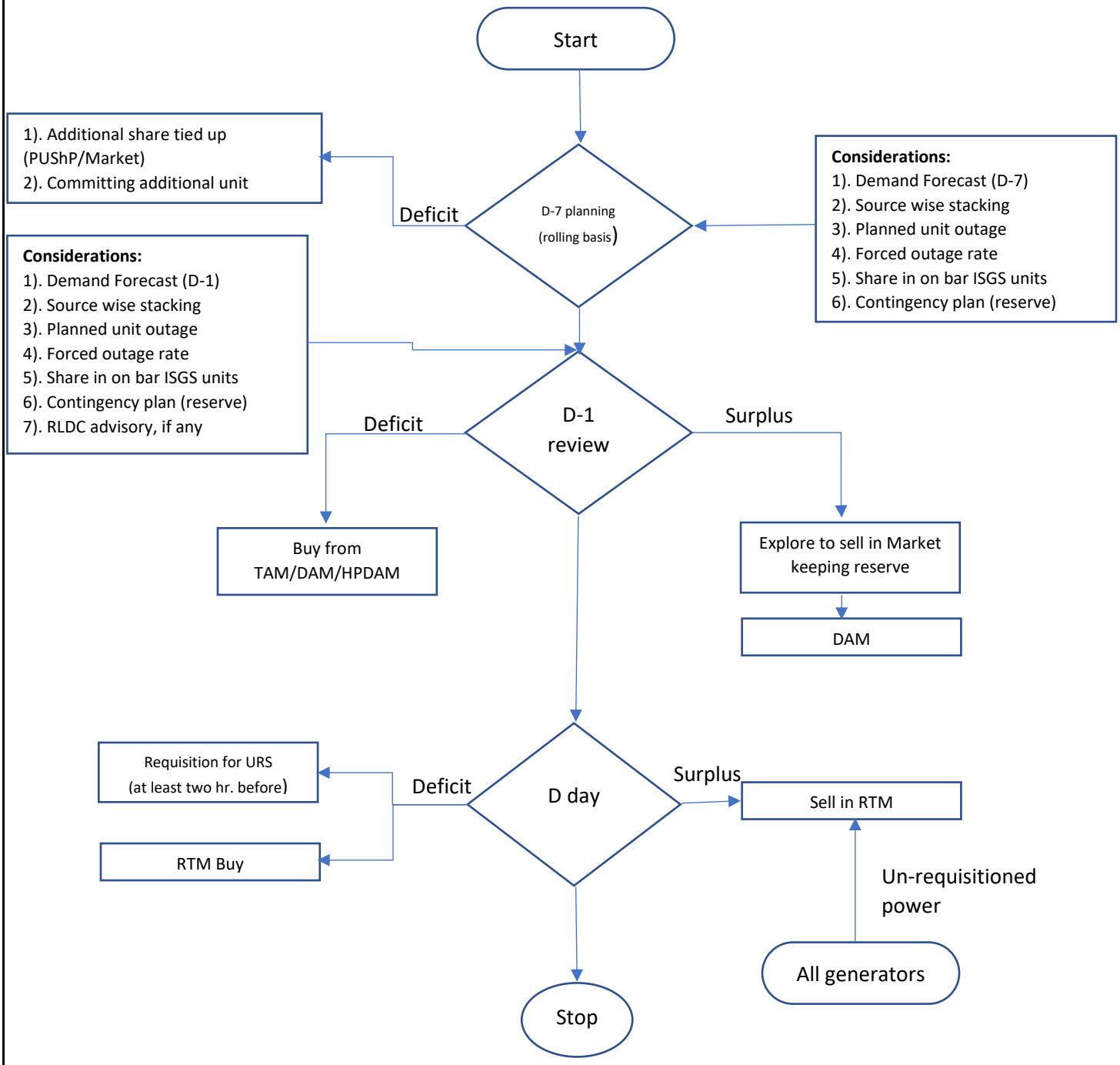
General Guidelines:

1. Forecasting helps in estimating future demand and determining the required capacity. Therefore, all states should carry out meticulous demand forecasting (month ahead, week ahead, day ahead and intra day) and make all efforts to maintain their portfolio all the time. Develop accurate and robust electricity demand forecasts that consider factors such as historical data, seasonal variations, growth, and weather patterns.
2. Maintain a diverse and balanced mix of electricity generation resources, including fossil fuels (coal, natural gas), nuclear power, renewables (solar, wind, hydro), and energy storage systems. The capacity should be sufficient to meet both normal and peak demand conditions.
3. During the peak demand seasons, planned outages of units and major trunk lines may be avoided or availed during the power surplus hours not more than a day.
4. All states are being requested to plan adequate resources in a week ahead advance (from Mon) on rolling basis for meeting full demand. Further, it should also be reviewed in D-1 so that dependency on Real Time Market (RTM) can be minimized.

5. Renewable rich states should have enough margin in the running coal-based units to meet any contingency on account of variability and intermittency of renewable generation. Quantum of variability and intermittency, should be decided on historical events scaled with capacity addition in a given area.
6. All RE rich states should also advise their renewable generators to regularly monitor the weather condition in the located area. Any impact of weather such as cloud in solar and wind speed more than cut out wind speed, should be informed to the load despatchers immediately. Schedule of the generation should also be revised with probable impact on generation. It will help in managing load generation balance at regional/national level by activating reserve during the period.
7. Emergency Preparedness: maintaining a reserve margin to handle unexpected contingencies, such as generator outages or extreme weather events. This includes having contingency plans for severe weather events, natural disasters, or other disruptions to ensure the continuity of power supply
8. Hydro power stations would be scheduled maximum during non-solar peak hours. It would also be ensured that hydro stations would not operate as base load (barring canal-based stations, Run-Off-the River (ROR), ROR with pondage where overflowing conditions exist). Irrigation, drinking water and any other environmental or social requirements would be duly factored in the scheduling process.
9. All states should intend to sell their surplus power into the market proactively (after factoring their own internal reserve requirement) so that enough resources are available into the various segments of market.
10. Un requisition surplus should also be offered into the real time market by all generators.
11. States should also explore the possibility to tie up power with other states during lean demand period via PUShP portal for surplus capacity.
12. Regular Review and Improvement:
    a. Conduct periodic reviews and assessments of the above SOP to identify areas for improvement and incorporate lessons learned from system operations.
    b. Stay updated with technological advancements, regulatory changes, and emerging industry practices to enhance load generation balance.

X----X----X

Flow chart for reviewing load generation balance



पावरग्रिड POWERGRID

पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

C/CP/PA2122-07-0P-IA015 October 04, 2021

MEMORANDUM

SUB: INVESTMENT APPROVAL FOR "PROVISION OF SPARE ICT's IN EASTERN REGION"

Investment approval for **"PROVISION OF SPARE ICT's IN EASTERN REGION"** has been accorded by the Competent Authority on October 01, 2021 as per the details given bellow:

1. SCOPE OF PROJECT

Broad Scope of works:

Procurement of 05 nos. transformer as regional spare for Eastern Region as per details given below:

400kV

i) ~~500MVA,~~ 400/220kV 3-Phase Auto transformer as regional spare for Bihar, Odisha & West Bengal (one in each state): 3 nos

a) 1 No. 500MVA,400/220kV ICT at 400/220 kV Pusauli Sub Station
b) 1 No. 500MVA,400/220kV ICT at 400/220 kV Pandiabili Sub Station
c) 1 No. 500MVA,400/220kV ICT at 400/220 kV Maithon Sub Station

220kV

i) 160MVA, 220/132kV 3-Phase Auto transformer as regional spare for Jharkhand & Odisha (one in each state): 2 nos

a) 1 No. 160MVA, 220/132kV ICT at 400/220/132kV Daltonganj Sub Station
b) 1 No. 160MVA, 220/132kV ICT at 400/220/132kV Baripada Sub Station

2. PROJECT COST & FUNDING

The estimated cost of the project based on June, 2021 price level is **₹94.56 crore** including IDC of **₹4.62 crore**. The abstract cost estimate is attached as **Annexure - I**.

The project is proposed to be implemented through Debt (70%) and Equity (30%) with loan component from domestic borrowing/ bonds/ External Commercial Borrowing (ECB) etc. and equity component through internal resources.

3. COMMISSIONING SCHEDULE

The project is scheduled to be commissioned within 24 months from the date of investment approval.

4/10/2021

(Priti Nahar)
DGM (CP)

Annexure – I

ABSTRACT COST ESTIMATE

PROVISION OF SPARE ICT's IN EASTERN REGION

(JUNE 2021 price level)

Sl. No.	DESCRIPTION	AMOUNT (Rs. in crore)
A	**Civil Works**	
	i) Infrastructure for substations	1.00
B	**Equipment Cost**	
	a) Sub-Stations	78.07
	Sub Total A TO B	**79.07**
C	Incidental Expenditure During construction (IEDC) **@ 10.75% of C**	8.50
D	Contingencies @ 3% of C	2.37
	Sub Total (A TO D)	**89.94**
E	Interest During Construction(IDC)	4.62
	GRAND TOTAL	**94.56**

वितरण /Distribution:

1. CMD, Power System Operation Corporation Limited, B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai, New Delhi -11001
2. Chairman, BSEB, Bidyut Bhawan, Bailey Road, Patna – 800 001
3. Chairman, WBSEB, Bidyut Bhawan, Bidhan Nagar, Block- DJ, Sector-II, Salt Lake City, Kolkata – 700 091
4. Chairman, Jharkhand UrjaVikas Nigam Ltd. Ranchi, Engineering Building, H.E.C Dhurwa, Ranchi – 834 004
5. Secretary (Power), Power Department, Govt. of Sikkim, Gangtok – 727 102
6. CMD, GRIDCO, Vidyut Bhawan, Janpath, Bhubaneswar – 751 007

प्रति विनम्र सूचनार्थ /Copy for kind information, please:

1. PS to Secretary (Power), MoP, Shram Shakti Bhawan, New Delhi- 110 001
2. PS to Addl. Secretary & Financial Advisor, MoP, Shram Shakti Bhawan, New Delhi- 110 001
3. Chairperson, CEA, Sewa Bhawan, R.K. Puram, New Delhi- 110 066
4. Secretary, CERC, 3rd & 4th Floor, Chanderlok building, 36, Janpath, New Delhi- 110 001
5. CEO, NITI Aayog, Yojana Bhawan, New Delhi- 110 001
6. Advisor, PAMD, NITI Aayog, Yojana Bhawan, New Delhi
7. Member Secretary, NRPC, 18/A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi- 110 016
8. Member (Power Systems), CEA, Sewa Bhawan, R.K.Puram, New Delhi- 110 066
9. Secretary, CEA, Sewa Bhawan, R.K.Puram, New Delhi- 110 066 – 03 copies
10. Joint Secretary, Ministry of Statistics & Programme Implementation, Sardar Patel Bhawan, New Delhi-110001
11. Joint Secretary (Transmission), MoP, Shram Shakti Bhawan, New Delhi- 110 001
12. Joint Secretary (Plan Finance Div.-II), Ministry of Finance, North Block, New Delhi- 110 001
13. Director (Transmission), MoP, Shram Shakti Bhawan, New Delhi- 110 001
14. Director, Ministry of Finance (Plan finance Div.), North Block, New Delhi- 110 001
15. Deputy Secretary, Cabinet Secretariat, Rashtrapati Bhawan, New Delhi- 110 001
16. Under Secretary, Finance & Budget Section, MoP, Shram Shakti Bhawan, New Delhi- 110 001
17. CMD, Power System Operation Corporation Limited, B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai, New Delhi -11001

(Priti Nahar)
DGM (CP)

Important Note:

As per approval, following critical activities may be monitored:

(i) Timely Award of major package(s).

(ii) Timely supply of major equipment.

(iii) Risk Management Matrix indicating various milestones to be monitored for the subject project is attached at **Annexure-II**.

Distribution:

COO : IB, BDD & EMD

ED : ESMD & CSR/ CMG / TBCB/ Engg.- SS, TL, Civil, CE, FQA/ CS & MM / DMS/ Finance/ ERP & IT Cell/ HR/ Commercial & RC/ AM , LD&C & Safety Cell /TD/ Engg-HVDC & QA&I/ Telecom/ ERTS-I/ ERTS-II/PHTL

Chief GM : NTAMC/ PUTL/ Admin-IR/ HRD, RB & Corp. Comm

Sr.GM : CCC

Company Secretary

DGM: Law

For kind information of:

Director (Operations)/ Director (Personnel)/ Director (Finance)/Director (Projects)/CVO

(Priti Nahar)
DGM (CP)

Annexure-II

RISK MANAGEMENT MATRIX FOR "PROVISION OF SPARE ICT's IN EASTERN REGION"

Sl. No.	Risk Parameters	Broad Mitigation steps		Responsibility Centre**
		Mitigation-1	Mitigation-2	
1	Delay in commencement of project	Award of major contracts to be placed within 1 month of Investment Approval & Contract Agreement to be signed within 2 months thereafter.	Kick-off meeting within 1 month of Letter of Award	CS/CMG
2	Restriction of additional cost by CERC in absence of RCE	RCE-I to be prepared within 1 month of award of all major packages (Transmission line and substation)	RCE-II to be prepared when actual Capex is > 50% & thereafter regular review of project cost and completion schedule to ascertain requirement, if any, of further RCE requirement	Site Project Head / Cost. Engg.
3	Restriction of IDC/IEDC by CERC due to lack of / insufficiency in documentary evidence of time overrun	Regular records to be maintained regarding constraints in project progress and documented for support.	Hinderance register to be maintained in SAP and reviewed regularly by Project Head	Site Project Head / Commercial
4	Failure of equipments due to non-resolution of quality issue resulting in delay in projects	All major equipment quality checks to be maintained at per standard practice.	Quality to be ensured at different stages of manufacture as per standard practice.	QA & I Group
5	Non-compliance to statutory requirement of legal/safety/social/ environmental etc.	preparation of check-list at RHQ level and monitoring of same		Site Project Head
6	Timely Implementation of the Project			
a.	Commencement			
1	Finalization of L2	Within 1 month of CA		CMG
2	Site Mobilisation	As per L2		Site Project Head
3	Survey	As per L2		Site Project Head
4	Statutory Approvals/NOC (i.e. PTCC, Civil Aviation, Defence Establishment ., Railways, Roadways, Waterways etc)	Application to be submitted within 1 month of completion of survey	Complete within 3 months before completion schedule .	Site Project Head
b.	Physical Progress			
1	Foundation for Cold spare ICT	As per L2	Completion 2 months before Receipt of ICT at site.	Site Project Head
2	Supply of ICTs & other major equipment	As per L2	Commencement of supply 5 months before completion schedule and Completion of supply 1 months before completion schedule.	CC: Head (Engg.- S/s) Site Project Head
c. 1	Commissioning	As per L2		Site Project Head

** Overall in-charge for Responsibility Centre is Head of the respective Region / Department

पावरग्रिड
POWERGRID

पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

सन्दर्भ सं: ओडिशा/पी.इ.एस.एम./डी.ओ.सी.ओ./22-23/1047 दिनांक: 31-03-2023

NOTIFICATION OF DOCO

व्यवसायिक प्रचालन तिथि अधिसूचना

This is for Notification that consequent to successful installation & completion of pre-commissioning tests/checks, the following asset under "Provision of Spare ICTs in Eastern Region" have been put under Commercial Operation w.e.f. 00:00 Hrs of 31-03-2023 in terms of Clause-5 of CERC (Terms & Conditions of Tariff) Regulations 2019.

- **1 No. 160MVA, 220/132KV, 3-Ph ICT at 400/220/132KV Baripada Substation (Regional SPARE ICT for Odisha)**

Transmission charges of the above Asset is payable w.e.f. 31-03-2023.

सफल स्थापना और प्री-कमीशनिंग परीक्षणों/जांचों के बाद, केंद्रीय विद्दूत विनियामक आयोग नियमावली 2019 खंड-5 के अनुसार यह सूचित किया जाता है कि "Provision of Spare ICTs in Eastern Region" के अंतर्गत 1 नंबर 160MVA, 220/132KV, 3-Ph ICT (ओडिशा के लिए क्षेत्रीय स्पेयर ट्रांसफार्मर) को 400/220/132KV बारीपदा उपकेन्द्र में दिनांक 31-03-2023, 00.00 Hrs से व्यवसायिक प्रचालन के लिए शामिल किया गया है ।

उपरोक्त परिसम्पति से संबंधित विद्दूत प्रसारण शुल्क दिनांक 31-03-2023 से लागू होगा ।

31/3/23

(वाई. के. दीक्षित)
कार्यपालक निदेशक
ओडिशा परियोजनायें, भुवनेश्वर

प्रतिलिपि : विनम्र सूचना के लिए:

1. The Member Secretary,
   Eastern Region Power Committee
   14, Golf Club Road, Tollygunj,Kolkata-700033
2. General Manager,
   ERLDC (POSOCO)
   14, Golf Club Road, Tollygunj
   Kolkata-700033.
3. Chairman
   Damodar Valley Corporation,
   DVC Tower, VIP Road, Kolkata-700054
4. Chairman & Managing Director
   West Bengal State Electricity Distribution Co. Limited,
   DJ block, Vidyut Bhawan, Salt Lake City,
   Kolkata-700091
5. Chairman & Managing Director, BSP(H)CL,
   Bihar State Power Holding Company Limited,
   Vidyut Bhavan, Bailey Road,
   Patna: 800 001
6. Chairman,
   Jharkhand State Electricity Board,
   HEC Building,
   Ranchi: 834 002
7. The Chairman and Managing Director,
   Grid Corporation of Orissa Limited
   Vidyut Bhavan, 4th Floor, Saheed Nagar
   Bhubaneswar- 751 007
8. Secretary (Power), Power Department,
   Govt. of Sikkim, Kaji Road,
   Gangtok: 727 101
9. The Chief Executive Officer
   Maithon Power Limited
   MA-5, Gogna Colony, Maithon Dam Post Office,
   District : Dhanbad, Jharkhand: 828 207
10. General Manager(Power Generation Project),
    Generation Office (W-175),
    M/s Tata Steel Limited,
    Jamshedpur-831001, Jharkhand
11. Managing Director, WBSETCL,
    West Bengal State Elect. Transmission Co. Ltd.,
    DJ Block, Vidyut Bhavan, Salt Lake City
    Kolkata: 700 091

प्रतिलिपि:

ED (CMG), CC Gurgaon

ED, ER-II, Kolkata

ED, ER-I, Patna

ED, Commercial, CC, Gurgaon

CGM (AM), Bhubaneswar/ ER-II, Kolkata/ ER-I, Patna /

CGM (Projects), ER-II, Kolkata/ ER-I, Patna

Sr.GM (Projects & Commercial), Bhubaneswar

CGM (F&A), ER-II, Kolkata/ Sr.GM(F&A)ER-I, Patna / DGM(F), Bhubaneswar

CGM (Commercial), ER-I, Patna

DGM, Baripada

प्रतिलिपि : विनम्र सूचना के लिए:

Director (Projects)

Director (Operation)

ORIGINAL

NOA Ref. No.: CC-CS/1087-ER1/TR-4256/3/G5/NOA-I/ER1-250005 **Date: 15/11/2021**

To,

M/s. Toshiba Transmission & Distribution Systems (India) Pvt. Ltd (TOSHIBA)

Rudraram Village, Patancheru Mandal,
Sangareddy District, Telangana - 502329

Kind Attention: Mr. Srikanth Iyengar, Vice President
Email: srikanth.iyengar@toshiba-ttdi.com

Subject: **Notification of Award for Supply of Goods Contract for Spare Transformer package TR03 for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC";**
Spec No: CC-CS/1087-ER1/TR-4256/3/G5.

Bidding: Domestic Competitive Bidding
Bidding Process: Single Stage Two Envelope Bidding through E-Procurement.
Project Funding: Domestic.

(SUPPLY OF GOODS CONTRACT)

Dear Sir,

1.0 REFERENCE

This has reference to the following:

1.1 Our Invitation for Bids (IFB) dated 07/07/2021.

1.2 Bidding documents for the subject package downloaded by you from e-procurement portal https://pgcileps.buyjunction.in, comprising the following:

a)	Conditions of Contract	Volume-I
b)	Technical Specifications	Volume-II
c)	Bid Form & Price Schedules	Volume-III

1.2.1 Amendment No-I & Clarification No-I to the Bidding Documents issued through e-procurement portal https://pgcileps.buyjunction.in vide our Letter Ref. No. CC-CS/1087-ER1/TR-4256/3/G5/Amend-I & Clar I dated 09/08/2021.

1.2.2 Amendment No-II & Clarification No-II to the Bidding Documents issued through e-procurement portal https://pgcileps.buyjunction.in vide our Letter Ref. No. CC-CS/1087-ER1/TR-4256/3/G5/Amend-II & Clar II dated 10/08/2021.

1.3 First Envelope (Techno-Commercial) of your bid for subject package under Bid Proposal Reference No. TTDI/EPC/DOM/PGCIL/TRANSFORMER PACKAGE/TR-03/2021-22/TCP dated 12/08/2021, uploaded on portal https://pgcileps.buyjunction.in was opened electronically on 20/08/2021.

1.4 Intimation for opening of second Envelope issued to you through https://pgcileps.buyjunction.in on 18/10/2021.

1.5 Second Envelope of your bid for subject package under Bid Proposal Reference no. TTDI/EPC/DOM/PGCIL/TRANSFORMER PACKAGE/TR-03/2021-22/TCP dated 13/08/2021, uploaded on portal https://pgcileps.buyjunction.in was opened on 18/10/2021.

1.6 The Intimation for conducting e-Reverse Auction was issued to you by M/s mjunction on behalf of POWERGRID to participate in e-Reverse Auction scheduled on 27/10/2021.

1.6.1 Your participation in the e-Reverse Auction for the subject package which was held on 27/10/2021 on portal https://pgcileps.buyjunction.in

1.6.2 Your Confirmation of Price Breakup on Price Schedules after e-RA submitted vide your letter Ref. No. NIL dated 27/10/2021.

2.0 AWARD OF CONTRACT AND ITS SCOPE

2.1 We confirm having accepted your Bid (referred to at para 1.3, 1.5 & 1.6.2 above) read in conjunction with all the specifications, terms & conditions of the Bidding Documents (referred to at para 1.2, 1.2.1 and 1.2.2 above) and award on you the '**Supply of Goods Contract**' (also referred to as the 'First Contract') covering inter-alia Supply of Goods of all equipment and materials including Type Testing to be conducted as per Technical Specifications, required for the complete execution of the **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC; Spec No: CC-CS/1087-ER1/TR-4256/3/G5, as detailed in the documents referred hereinabove.

The scope of work covered under the subject contract shall include Design, Engineering, Manufacture, testing at manufacturer's works and supply of 500MVA, 400/220/33kV 3- phase Transformers & 160MVA, 220/132kV 3-phase Transformers, along with all fittings, accessories including individual marshaling box for each Auto-Transformer, foundation bolts (if any), cables as per Technical specification for the following:

- 1 x 500 MVA, 400/220/33kV Transformer at Pusauli ss
- 1 x 500 MVA, 400/220/33kV Transformer at Pandiabili ss
- 1 x 500 MVA, 400/220/33kV Transformer at Maithon ss
- 1 x 160 MVA, 220/132kV Transformer at Baripada ss
- 1 x 160 MVA, 220/132kV Transformer at Daltonganj ss

The above scope of work is indicative and the detailed scope of work is given in the Technical Specification (Volume-II) of the Bidding Documents.

The scope of work under this Notification of Award (NOA) shall also include all such items which are not specifically mentioned in the Bidding Documents and/or your bid but are necessary for successful completion of your scope under the Contract for the execution of **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC"; Spec No: CC-CS/1087-ER1/TR-4256/3/G5, unless otherwise specifically excluded in the Bidding Documents or in this Notification of Award (NOA).

2.2 The notification for award of Contract for performance of all other activities, as set forth in the documents, viz. Inland Transportation, Delivery and unloading at site including insurance & storage, handling, erection, testing & Pre-commissioning and documentation of all equipment and material required for complete execution of contract for **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC"; Spec No: CC-CS/1087-ER1/TR-4256/3/G5 has been issued on you vide our NOA Ref. No. CC-CS/1087-ER1/TR-4256/3/G5/NOA-II/ER1-250006 dated 15/11/2021 (hereinafter called the "**Supply of Services Contract**" or "**Second Contract**").

Notwithstanding the award of work under two separate Contracts in the aforesaid manner, you shall be overall responsible to ensure the execution of both the Contracts to achieve successful completion and taking over of the works under the package by the Employer as per the requirements stipulated in the Bidding Documents. It is expressly understood and agreed by you that any default or breach under the 'Second Contract' shall automatically be deemed as a default or breach of this 'First Contract' also and vice-versa, and any such default or breach or occurrence giving us a right to terminate the 'Second Contract', either in full or in part, and/or recover damages there under, shall give us an absolute right to terminate this Contract, at your risk, cost and responsibility, either in full or in part and/or recover damages under this 'First Contract' as well. However, such default or breach or occurrence in the 'Second Contract', shall not automatically relieve you of any of your obligations under this 'First Contract'. It is also expressly understood and agreed by you that the equipment/materials supplied by you under this 'First Contract', when erected, installed & commissioned by you under the 'Second Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

3.0 CONTRACT PRICE

3.1 The total contract price for the entire scope of work under this Contract shall be **INR 57,85,51,783/- (Indian Rupees Fifty Seven Crore Eighty Five Lakh Fifty One Thousand Seven Hundred and Eighty Three Only)** as per the following break-up:

Sl. No.	Price Component	Amount
	Ex-Works Price component	INR 57,85,51,783/-
Total for Supply of Goods Contract		**INR 57,85,51,783/-**

The above award price is exclusive of reimbursable GST, which shall be reimbursable / payable by POWERGRID in line with the provisions of Bidding Documents.

3.2 Notwithstanding the break-up of the Contract Price, the Contract shall, at all times, be construed as a single source responsibility Contract and any breach in any part of the Contract shall be treated as a breach of the entire Contract.

4.0 You are required to furnish at the earliest a Performance Security(ies), in line with the provisions of the Bidding Documents for an amount of **INR 1,73,56,554/- (Indian Rupees One Crore Seventy Three Lakh Fifty Six Thousand Five Hundred Fifty Four Only)** i.e. equal to 03% (Three percent) of the **Ex-works Price** of **400 kV Class /220 kV Class Transformers**, and valid upto and including **31/08/2028** (18m+60m+90days) and any other securities as per the Bidding Documents.

5.0 For release of advance payment (admissible as per the Bidding Documents) for an amount of **INR 5,78,55,179/- (Indian Rupees Five Crore Seventy Eight Lakh Fifty Five Thousand One hundred Seventy Nine Only)** i.e. equal to 10% of the Ex-works price component, you are, inter-alia, required to furnish a Bank Guarantee for 110% (One Hundred Ten Percent) of the advance amount i.e for an amount of **INR 6,36,40,697/- (Indian Rupees Six Crore Thirty Six Lakh Forty Thousand Six Hundred Ninety Seven Only)**. The validity of the Advance Bank Guarantee shall be up to and including **31/08/2023** (18m+90days). Further please note that furnishing of all the Contract Performance Securities under the 'First Contract' and 'Second Contract' shall be one of the conditions precedent to release of advance under this Contract.

6.0 All the bank guarantees shall be furnished from an eligible bank as described in the Bidding Documents.

7.0 The schedule for Taking Over/Completion of Facilities by the Employer upon successful completion of the **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC"; Spec No: CC-CS/1087-ER1/TR-4256/3/G5 shall be **18(Eighteen months)** from the date of issue of this Notification of Award for all contractual purposes.

8.0 This Notification of Award constitutes formation of the Contract and comes into force with effect from the date of issuance of this Notification of Award.

9.0 You shall enter into a Contract Agreement with us within twenty-eight (28) days from the date of this Notification of Award.

10.0 This Notification of Award is being issued to you in duplicate. We request you to return its duplicate copy duly signed and stamped on each page as a token of your acknowledgement.

Please take the necessary action to commence the work and confirm action.

Yours faithfully,

For and on behalf of
POWER GRID CORPORATION OF INDIA LTD.

(Neeraj Kumar)
DGM (CS-G5)

नीरज कुमार / NEERAJ KUMAR
उप महाप्रबंधक (संविदा सेवाएं) / Dy. General Manager (Contract Services)
पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
Power Grid Corporation of India Ltd.
(भारत सरकार का उद्यम/A Govt. of India Enterprise)
प्लॉट सं-2, सैक्टर-29, गुड़गाँव-122 001 (हरियाणा)
Plot No.-2, Sector-29, Gurgaon-122 001 (Haryana)

ORIGINAL

NOA Ref. No.: CC-CS/1087-ER1/TR-4256/3/G5/NOA-II/ ER1-250006 Date: 15/11/2021

To,

M/s. Toshiba Transmission & Distribution Systems (India) Pvt. Ltd (TOSHIBA)

Rudraram Village, Patancheru Mandal,
Sangareddy District, Telangana - 502329

Kind Attention: Mr. Srikanth Iyengar, Vice President
Email: srikanth.iyengar@toshiba-ttdi.com

Subject: **Notification of Award for Supply of Services Contract for Spare Transformer package TR03 for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC";Spec No: CC-CS/1087-ER1/TR-4256/3/G5.**

Bidding: Domestic Competitive Bidding
Bidding Process: Single Stage Two Envelope Bidding through E-Procurement.
Project Funding: Domestic.

(SUPPLY OF SERVICES CONTRACT)

Dear Sir,

REFERENCE

This has reference to the following:

1.1 Our Invitation for Bids (IFB) dated 07/07/2021.

1.2 Bidding documents for the subject package downloaded by you from e-procurement portal https://pgcileps.buyjunction.in, comprising the following:

a)	Conditions of Contract	Volume-I
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c)	Bid Form & Price Schedules	Volume-III

1.2.1 Amendment No-I & Clarification No-I to the Bidding Documents issued through e-procurement portal https://pgcileps.buyjunction.in vide our Letter Ref. No. CC-CS/1087-ER1/TR-4256/3/G5/Amend-I & Clar I dated 09/08/2021.

1.2.2 Amendment No-II & Clarification No-II to the Bidding Documents issued through e-procurement portal https://pgcileps.buyjunction.in vide our Letter Ref. No. CC-CS/1087-ER1/TR-4256/3/G5/Amend-II & Clar II dated 10/08/2021.

1.3 First Envelope (Techno-Commercial) of your bid for subject package under Bid Proposal Reference No. TTDI/EPC/DOM/PGCIL/TRANSFORMER PACKAGE/TR-03/2021-22/TCP dated 12/08/2021, uploaded on portal https://pgcileps.buyjunction.in was opened electronically on 20/08/2021.

1.4 Intimation for opening of second Envelope issued to you through https://pgcileps.buyjunction.in on 18/10/2021.

1.5 Second Envelope of your bid for subject package under Bid Proposal Reference no. TTDI/EPC/DOM/PGCIL/TRANSFORMER PACKAGE/TR-03/2021-22/TCP dated 13/08/2021, uploaded on portal https://pgcileps.buyjunction.in was opened on 18/10/2021.

1.6 The Intimation for conducting e-Reverse Auction was issued to you by M/s mjunction on behalf of POWERGRID to participate in e-Reverse Auction scheduled on 27/10/2021.

1.6.1 Your participation in the e-Reverse Auction for the subject package which was held on 27/10/2021 on portal https://pgcileps.buyjunction.in

1.6.2 Your Confirmation of Price Breakup on Price Schedules after e-RA submitted vide your letter Ref. No. NIL dated 27/10/2021.

2.0 AWARD OF CONTRACT AND ITS SCOPE

2.1 We confirm having accepted your Bid (referred to at para 1.3, 1.5 & 1.6.2 above) read in conjunction with all the specifications, terms & conditions of the Bidding Documents (referred to at para 1.2, 1.2.1 and 1.2.2 above) and award on you the '**Supply of Services Contract**' (also referred to as the 'Second Contract') for performance of all other activities, as set forth in the documents, viz. Inland transportation, delivery and unloading at site including insurance & storage, handling, erection, testing and Pre-commissioning at site and documentation of all equipment and material inter alia includes Auto transformers along with all fittings, accessories including Marshalling box for each Auto Transformer as per Technical Specifications required for the complete execution of the contract for Spare Transformer package TR03 for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC; Spec No: CC-CS/1087-ER1/TR-4256/3/G5.

The scope of work under this Notification of Award (NOA) shall also include all such items which are not specifically mentioned in the Bidding Documents and/or your bid but are necessary for successful completion of your scope under the Contract for the execution of **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC; Spec No: CC-CS/1087-ER1/TR-4256/3/G5, unless otherwise specifically excluded in the Bidding Documents or in this Notification of Award (NOA).

2.2 The Notification for Award of Contract for Ex-works Supply of all equipment and materials including Type Testing to be conducted as per Technical Specifications, as set forth in the bidding documents, viz. Design, Engineering, Manufacture, testing at manufacturer's works and supply of Auto transformers along with all fittings, accessories including individual Marshalling box for each Auto Transformer, cables and mandatory spares as per Technical specifications or the following:

- 1 x 500 MVA, 400/220/33kV Transformer at Pusauli ss
- 1 x 500 MVA, 400/220/33kV Transformer at Pandiabili ss
- 1 x 500 MVA, 400/220/33kV Transformer at Maithon ss
- 1 x 160 MVA, 220/132kV Transformer at Baripada ss
- 1 x 160 MVA, 220/132kV Transformer at Daltonganj ss

for **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC; Spec No: CC-CS/1087-ER1/TR-4256/3/G5, has been issued on you vide our NOA no. CC-CS/1087-ER1/TR-4256/3/G5/NOA-I/ER1-250005 dated 15/11/2021 (hereinafter called the "**Supply of Goods Contract**" or "**First Contract**").

Notwithstanding the award of contract under two separate contracts in the aforesaid manner, you shall be overall responsible to ensure the execution of both the contracts to achieve successful completion and taking over of the works under the package by the Employer as per the requirements stipulated in the Bidding documents. It is expressly understood and agreed by you that any default or breach under the 'First Contract ' shall automatically be deemed as a default or breach of this 'Second Contract 'also and vice-versa, and any such default or breach or occurrence giving us a right to terminate the 'First Contract', either in full or in part, and/or recover damages there under, shall give us an absolute right to terminate this Contract, at your risk, cost and responsibility, either in full or in part and/or recover damages under this 'Second Contract 'as well.

However, such default or breach or occurrence in the 'First Contract', shall not automatically relieve you of any of your obligations under this 'Second Contract'. It is also expressly understood and agreed by you that the equipment/materials supplied by you under the 'First Contract', when erected, installed & commissioned by you under this 'Second Contract 'shall give satisfactory performance in accordance with the provisions of the Contract.

3.0 **CONTRACT PRICE**

3.1 The total Contract Price for the entire scope of work under this Contract shall be **INR 3,60,89,212/- (Indian Rupees Three Crore Sixty Lakh Eighty Nine Thousand Two Hundred Twelve Only)** as per the following breakup:

S. N.	Price Component	Amount (INR)
1	Local Transportation, In-transit Insurance, loading & Loading and unloading Charges (including GST, if any)	**2,96,96,912**
2	Installation Charges	**63,92,300**
	Total for Supply of Services Contract	**3,60,89,212**

The above award prices are exclusive of reimbursable GST (except for Local Transportation, In-transit insurance, loading and unloading), which shall be reimbursable/payable by POWERGRID in line with provisions of Bidding Documents. Further, prices for Local Transportation, In-transit insurance, loading and unloading (i.e. F&I Charges), are inclusive of GST, if applicable and in such case, the contractor shall raise GST invoice in such a manner that total liability to POWERGRID on account of F&I Charges including applicable GST (if any) thereon (mentioned in the Invoice) remain equal to F&I Charges as indicated above.

3.2 Notwithstanding the break-up of the Contract Price, the Contract shall, at all times, be construed as a single source responsibility Contract and any breach in any part of the Contract shall be treated as a breach of the entire Contract.

4.0 You are/is required to furnish at the earliest a Performance Security(ies), as per the Bidding Documents, for an amount of **INR 10,82,677/- (Indian Rupees Ten Lakh Eighty Two Thousand Six Hundred Seventy Seven only)** i.e. equal to 03% (Three percent) of the Contract Price, and valid upto and including **31/08/2024** (18m+12m+90days) and any other securities as per the Bidding Documents.

5.0 All the bank guarantees shall be furnished from an eligible bank as described in the Bidding Documents.

6.0 The schedule for Taking Over/Completion of Facilities by the Employer upon successful completion of the **Spare Transformer package TR03** for Procurement of Transformers i.e. 1x500MVA, 400/220/33kV, 3-phase Transformer at Pusauli SS, 1x500MVA, 400/220/33kV, 3-phase Transformer at Pandiabili SS, 1x500MVA, 400/220/33kV, 3-

phase Transformer at Maithon SS, 1x160MVA, 220/132/33kV, 3-phase Transformer at Baripada SS and 1x160MVA, 220/132/33kV, 3-phase Transformer at Daltonganj SS under "Procurement of spare Transformers approved by ERPC"; Spec No: CC-CS/1087-ER1/TR-4256/3/G5 shall be **18 (Eighteen months)** from the date of issue of this Notification of Award for all contractual purposes.

7.0 This Notification of Award constitutes formation of the Contract and comes into force with effect from the date of issuance of this Notification of Award.

8.0 You shall enter into a Contract Agreement with us within twenty-eight (28) days from the date of this Notification of Award.

9.0 This Notification of Award is being issued to you in duplicate. We request you to return its duplicate copy duly signed and stamped on each page as a token of your acknowledgement.

Please take the necessary action to commence the work and confirm action.

Yours faithfully,

For and on behalf of
POWER GRID CORPORATION OF INDIA LTD.

(Neeraj Kumar)
DGM (CS-G5)

नीरज कुमार / NEERAJ KUMAR
उप महाप्रबंधक (संविदा सेवाएं) / Dy. General Manager (Contract Services)
पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
Power Grid Corporation of India Ltd.
(भारत सरकार का उद्यम/A Govt. of India Enterprise)
प्लाट सं०-2, सैक्टर-29, गुड़गाँव-122 001 (हरियाणा)
Plot No.-2, Sector-29, Gurgaon- 122 001 (Haryana)

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			24		56.04		69.195	90% grant availed on award cost.
2			Installation of Capacitor bank in 20 Nos of Grid Sub Station. (74)	19.40			24		18.62		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	Project Completed.
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	0.713		0.713	30% grant availed. Work in Progress.
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	Project Completed
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	Project Completed.
			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	Project Completed.
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 D.1

Updated Anticipated Peak Demand (in MW) of ER & its constituents for August 2023

1	**BIHAR**	**Demand (MW)**	**Energy Requirement (MU)**
	NET MAX DEMAND	8368	4653
	NET POWER AVAILABILITY- Own Sources	554	313
	Central Sector+Bi-Lateral	6484	4494
	SURPLUS(+)/DEFICIT(-)	-1330	154
2	**JHARKHAND**		
	NET MAXIMUM DEMAND	1980	1140
	NET POWER AVAILABILITY- Own Source	338	160
	Central Sector+Bi-Lateral+IPP	921	692
	SURPLUS(+)/DEFICIT(-)	-929	-288
3	**DVC**		
	NET MAXIMUM DEMAND	3293	2228
	NET POWER AVAILABILITY- Own Source	5438	2983
	Central Sector+MPL	425	333
	Bi- lateral export by DVC	2169	1440
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	400	-351
4	**ODISHA**		
	NET MAXIMUM DEMAND (OWN)	5950	4096
	NET MAXIMUM DEMAND (In Case of CPP Drawal)	6895	3190
	NET POWER AVAILABILITY- Own Source	4038	2644
	Central Sector	1953	1395
	SURPLUS(+)/DEFICIT(-) (OWN)	41	-57
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	-904	849
5	**WEST BENGAL**		
	WBSEDCL		
5.1	NET MAXIMUM DEMAND	7976	5004
	NET MAXIMUM DEMAND (Incl. Sikkim)	7986	5011
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	5113	2587
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2768	2009
	EXPORT (To SIKKIM)	10	7
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	-105	-415
5.2	**CESC**		
	NET MAXIMUM DEMAND	2030	1076
	NET POWER AVAILABILITY- Own Source	830	528
	IMPORT FROM HEL	540	376
	TOTAL AVAILABILITY OF CESC	1370	904
	DEFICIT(-) for Import	-660	-172
	WEST BENGAL (WBSEDCL+CESC+IPCL)		
	(excluding DVC's supply to WBSEDCL's command area)		
	NET MAXIMUM DEMAND	10006	6080
	NET POWER AVAILABILITY- Own Source	5943	3115
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3308	2385
	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT	-755	-580
	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT	-765	-587
6	**SIKKIM**		
	NET MAXIMUM DEMAND	100	47
	NET POWER AVAILABILITY- Own Source	8	3
	Central Sector	81	66
	SURPLUS(+)/DEFICIT(-)	-11	22
	EASTERN REGION		
	NET MAXIMUM DEMAND	29115	18244
	NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha)	30041	17338
	BILATERAL EXPORT BY DVC (Incl. Bangladesh)	2169	1440
	EXPORT BY WBSEDCL TO SIKKIM	10	7
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	478
	NET TOTAL POWER AVAILABILITY OF ER	27322	17143
	(INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)		
	SURPLUS(+)/DEFICIT(-)	-1803	-1107
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	-2729	-201