



भारत सरकार  
Government of India  
विद्युत मंत्रालय  
Ministry of Power  
पूर्वी क्षेत्रीय विद्युत समिति

**Eastern Regional Power Committee**

14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033  
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वसुधैव कुटुम्बकम्  
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NO. ERPC/EE/OPERATION/2023/532

DATE: 11.07.2023

To

As per list enclosed.

**Sub: Minutes of 204th OCC Meeting held on 23.06.2023 (Friday) physically at ERPC Secretariat, Kolkata - reg.**

23.06.2023 (शुक्रवार) को ईआरपीसी सचिवालय, कोलकाता में भौतिक रूप से आयोजित 204वीं ओसीसी बैठक का कार्यवृत्त - संबंध में।

Sir,

Please find enclosed minutes of 204<sup>th</sup> OCC Meeting held on 23.06.2023 (Friday) physically at ERPC Secretariat, Kolkata at 10:30 hrs for your kind information and necessary action. The same is also available at ERPC website ([www.erpc.gov.in](http://www.erpc.gov.in)).

कृपया अपनी जानकारी और आवश्यक कार्रवाई के लिए 23.06.2023 (शुक्रवार) को ईआरपीसी सचिवालय, कोलकाता में 10:30 बजे आयोजित 204वीं ओसीसी बैठक के संलग्न कार्यवृत्त देखें। यह ईआरपीसी वेबसाइट ([www.erpc.gov.in](http://www.erpc.gov.in)) पर भी उपलब्ध है।

Observations, if any, may please be forwarded to this office at the earliest.  
टिप्पणियाँ, यदि कोई हों, कृपया यथाशीघ्र इस कार्यालय को अग्रेषित करें।

This issues with the approval of Member Secretary.  
इसे सदस्य सचिव के अनुमोदन से जारी किया जाता है।

Regards/ सम्मान,

Yours faithfully/ आपका विश्वासी,

अल्मीक  
11. जू. 23

(A. De)

EE(Operéation)

ईई(ऑपरेशन)

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**CC:**

Chief Engineer, OPM, CEA	Chief Engineer, NPC, CEA	ASSIATANT SECRETARY,ERPC
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**MINUTES  
OF  
204<sup>TH</sup> OCC MEETING**

**Date: 23.06.2023  
Eastern Regional Power Committee  
14, Golf Club Road, Tollygunge  
Kolkata: 700033**

## **EASTERN REGIONAL POWER COMMITTEE**

### **MINUTES OF 204<sup>TH</sup> OCC MEETING TO BE HELD ON 23.06.2023 (FRIDAY) AT 10:30 HRS**

Member Secretary, ERPC chaired the 204<sup>th</sup> OCC meeting. On welcoming all the participants he outlined the performance of ER grid during May and highlighted the following points:

- In May-2023, energy consumption of ER was 16214.24 MU which was 1.23% less than May 2022.
- In May-2023, peak demand of ER was 27,761MW which was 11.25% more than May 2022.
- During May-2023, 68.3% of the time, grid frequency was in IEGC band(49.90 Hz-50.05Hz)
- As per LGBR 2023-24, total 3788MW of thermal capacity is scheduled for planned maintenance in July'2023.
- During the month of May 2023, following new transmission elements have been commissioned:

1)LILO of 220 KV Howrah-KTPP at Jangalpur 220 KV GIS.

As far as coal stock is concerned, WBPDCCL along with nabinagar TPP, New Nabinagar STPS (NPGCL),Muzaffarpur TPS (KBUNL)and GMR need to focus on building their actual coal stock as per their normative requirement.

ED,ERLDC addressed challenging issues faced in real time Grid operation during May'2023.

### **PART – A**

#### **ITEM NO. A.1: Confirmation of Minutes of 203<sup>rd</sup> OCC Meeting held on 19<sup>th</sup> May 2023 physically at ERPC, Kolkata.**

The minutes of 203<sup>rd</sup> Operation Coordination sub-Committee meeting held on 19.05.2023 was circulated vide letter dated 05.06.2023.

Members may confirm the minutes of 203<sup>rd</sup> OCC meeting.

#### **Deliberation in meeting**

Members confirmed the minutes of 203<sup>rd</sup> OCC Meeting with some changes in the minutes of Item No. B2. The minutes of Item No. B2 will be replaced by the following:

#### **Item B2:**

Representative of ERLDC submitted that the peak demand of West Bengal in 2021 was around 9880 MW which increased to 11858 MW in 2023. He further submitted that except for 400/220 KV Arambagh sub-station, no other sub-station is satisfying N-1 criteria. Some sub-stations are not satisfying the criteria even in the case of no contingencies.

Representative of SLDC West Bengal submitted that according to their SCADA data the highest demand was around 11354 MW, out of which 9024 MW was for WBSEDCL, 2523 MW was for CESC and 93 MW was for IPCL. All came on 18.04.2023 in different hours.

He further expressed that planning for the Intra-state network is done by STU (Central Planning Department, WBSETCL) while SLDC shares the real time system operation constraints and apprehended bottlenecks for future years with STU. STU have their 5 years perspective plan and each year's rolling plan based on the real time input from SLDC, WB. SLDC, WB is handling real time systems within its jurisdiction. As a result of these WBSETCL is maintaining more than 99.9% availability figure for more than the last 5 years.

He further added that the voltage profile shown in the agenda is erroneous and not matching with real time data. The lowest voltage recorded at furthest point of south 24 parganas was recorded during highest loading hour was 129 kV, which can easily be taken care of through tap operation of 132/33 kV transformers making voltage 33 kV at the deliverable point (i.e. 33 kV bus of EHT sub-station). Representative of SLDC, WB apprised the forum that WBSETCL had planned additional 670 MVAR capacitor bank to synchronize in the grid, out of which 500 MVAR has already come into service. There is no 132 kV sub-station in the state with low voltage issue at deliverable point.

He further submitted that the little lower side voltage as observed in South 24 parganas, is because of non-commissioning of New Lakshmikantapur 400 kV sub-station in time. The said sub-station work cannot be started because of no response from CESC and HEL regarding LILO of 400 kV HEL-Subhasgram ckts, even after technically agreed unanimously in Standing Committee meeting in the year 2019 in presence of representatives of CESC. This is the major reason of such voltage profile, less redundancy in south 24 parganas and over dependence /over loading issue of Subhasgram(PG) sub-station.

Regarding 315 MVA ICT at Sagardighi, NIT has already been floated and L&T is the L-1 bidder. Further, there are no issues of N-1 contingency in 315 MVA ICT at KTPS. In case of outage of an ICT enough time would be available for load shifting. Planning regarding shifting of connectivity from one 400 KV bus connected machine to 400 KV bus is also under progress.

Representative of WBSETCL submitted that the repair works of 400/220 KV ICTs at Jeerat would commence shortly. The 400/220 KV ICTs at Gokarno and Bidhannagar is expected to be commissioned around July 2023 and December 2023 respectively. Tender for 4<sup>th</sup> 315 MVA ICT at New Chanditala has already been floated and would be opened by 1<sup>st</sup> week of June 2023. Regarding ICT at Kharagpur, peak load has reached 590 MVA as against 945 MVA and STU is carrying out studies for installation of 4<sup>th</sup> ICT. 2 nos. of tenders for ICT at Jeerat were cancelled due to some commercial issues and the third tender is under progress.

Representative of ERLDC submitted that the highlighting of above-mentioned issues was to supplement the SLDCs in resolving the problems through combined effort and ideas from all the stake holders and utilities.

Representative of Powergrid submitted that the agreement for installation of Subhashgram ICT has been finalized and MoU signing is pending which would be completed by the end of May 2023. The NIT has been floated but due to low participation it has been extended.

Representative of ERLDC also raised a concern on whether the installation of 6<sup>th</sup> ICT would be sufficient to cater the load at Subhashgram.

OCC advised Powergrid and CESC to expedite the installation of 6<sup>th</sup> ICT at Subhashgram S/s.

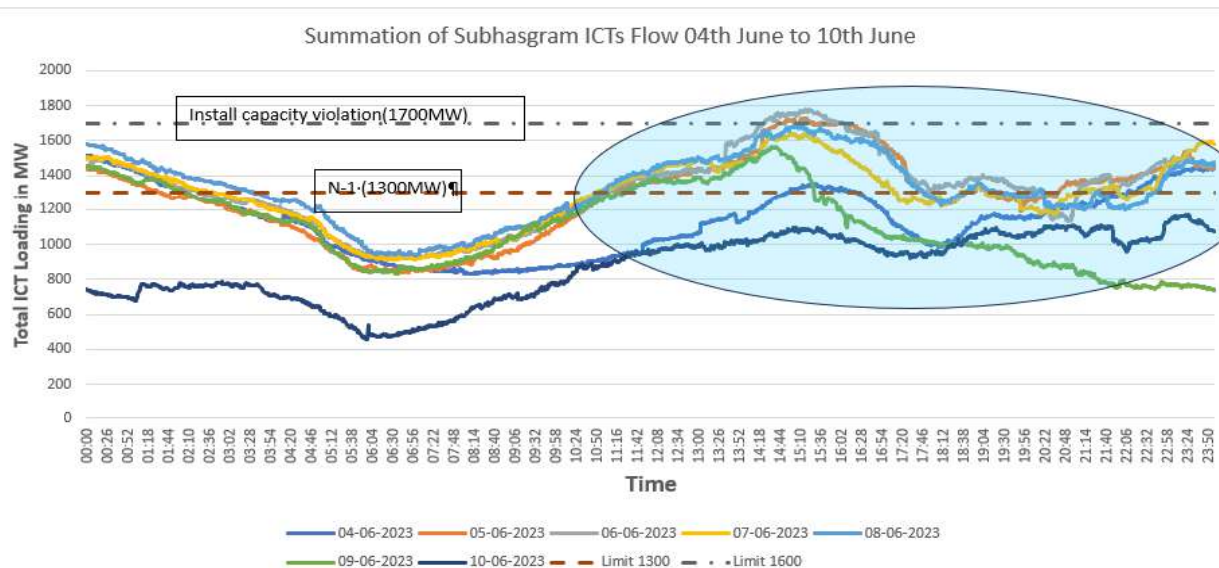


## **PART B: ITEMS FOR DISCUSSION**

### **ITEM NO. B.1: High loading of Subhashgram ICTs - ERLDC.**

The majority of the load in the metropolitan city of Kolkata and the South 24 Parganas district in West Bengal are catered through the five 400/220 kV ICTs at Subhashgram. While these five ICTs have been commissioned progressively, the demand growth in these areas has outpaced the capacity.

This summer, total loading of these ICTs crossed more than its transformation capacity i.e., 1760 MVA for a considerable period and the system was not even N compliant. To this effect, CESC as well as WB had to shed some load in some pockets of metropolitan area of Kolkata and around. The loading pattern for 4th to 10th June is shown below.



The procurement of the 6th ICT (500 MVA) is still in the tendering stage. As intimated by POWERGRID, it is unlikely to be available by next summer season. Even after commissioning of this ICT, the system will not be N-1 compliant. Further, the commissioning of 400/220 kV Laxmikantapur S/s has been pending for the last two years. There is no definite timeline for the commissioning of this sub-station.

Given the limited options available in such a short timeframe, it may be necessary to consider the commissioning of the 7th ICT (500 MVA) at Subhashgram to meet the demand and satisfy the N-1 criteria. Although commissioning seven ICTs with a total transformation capacity of 2760 MVA exceeds the maximum transformation capacity of 2500 MVA suggested in the CEA manual on transmission planning criteria, 2023. It may be worth exploring the possibility of an exemption to this criterion or exploring bus splitting arrangement at Subhashgram.

Members may discuss.

### **Deliberation in meeting**

*ERLDC shared a detailed presentation on loading pattern of 500 MVA Subhasgram ICT which clearly depicted its operation in overloaded state is endangering system security and reliability, thereby system ceases to remain even N-compliant.*

ED, ERLDC strongly urged all the constituents (WBSETCL, CESC and Powergrid) related to this matter to collectively initiate remedial action at the earliest.

Powergrid representative submitted that high loading of 500 MVA Subhasgram ICT is also causing accelerated ageing of the equipment.

Member Secretary, ERPC raised serious concern regarding delay in commissioning of 6<sup>th</sup> ICT(500 MVA) at 400/220 KV Subhasgram S/S despite being approved in 46<sup>th</sup> TCC meeting.

Powergrid representative confirmed that tender pertaining to procurement of 6<sup>th</sup> ICT(500 MVA) at 400KV /220 KV Subhasgram S/S is presently in bid evaluation stage and price bid shall be opened only on receipt of 10% of estimated procurement cost,i.e 5 crores from M/S CESC.He also submitted that as per present situation, commissioning of 6<sup>th</sup> 500 MVA ICT at Subhasgram S/S is unlikely to be completed by next summer.

CESC representative confirmed to revert on the proposal of M/s Powergrid at the earliest after consultation with top management.

Powergrid vide mail dated 03.07.2023 confirmed that CESC has made their share of payment against procurement cost of 6<sup>th</sup> 500 MVA ICT on 26.06.2023.

SLDC, West Bengal representative delivered a brief presentation (**Attached at Annexure-B.1**)elucidating the real background of ongoing power scenario in Kolkata and adjacent areas. He further suggested to explore Tap Changing in overloaded 500 MVA ICT to a value different from 315 MVA ICTs(having some room to take load) to facilitate equal load sharing. He apprised the forum that to handle the apprehended loading in ICTs of Subhasgram(PG) sub-station during 2024 summer, immediate actions need to be initiated from CESC to augment one 315 MVA ICT of CESC (either transformer 3 or transformer 4) by the 500 MVA transformer (owned by Power Grid) taking from ER pool and the 315 MVA ICT may be used after making the bay ready etc as the third ICT of CESC with combined capacity of  $315 \text{ MVA} \times 2 + 500 \text{ MVA} = 1130 \text{ MVA}$ . Any delay to decide and implement the above proposal may result in no capacity addition in Subhasgram(PG) sub-station which will lead to overloading of all ICTs at Subhasgram(PG) and will result in load shedding in the state capital. Regarding bus splitting he opined that this measure will forbid WBSEDCL from utilizing excess room at CESC installed transformer in future,if necessary.

Member Secretary, ERPC urged OCC forum to suggest a feasible and earliest possible solution to the crisis.

OCC referred the agenda to upcoming TCC meeting for further detailed deliberation.

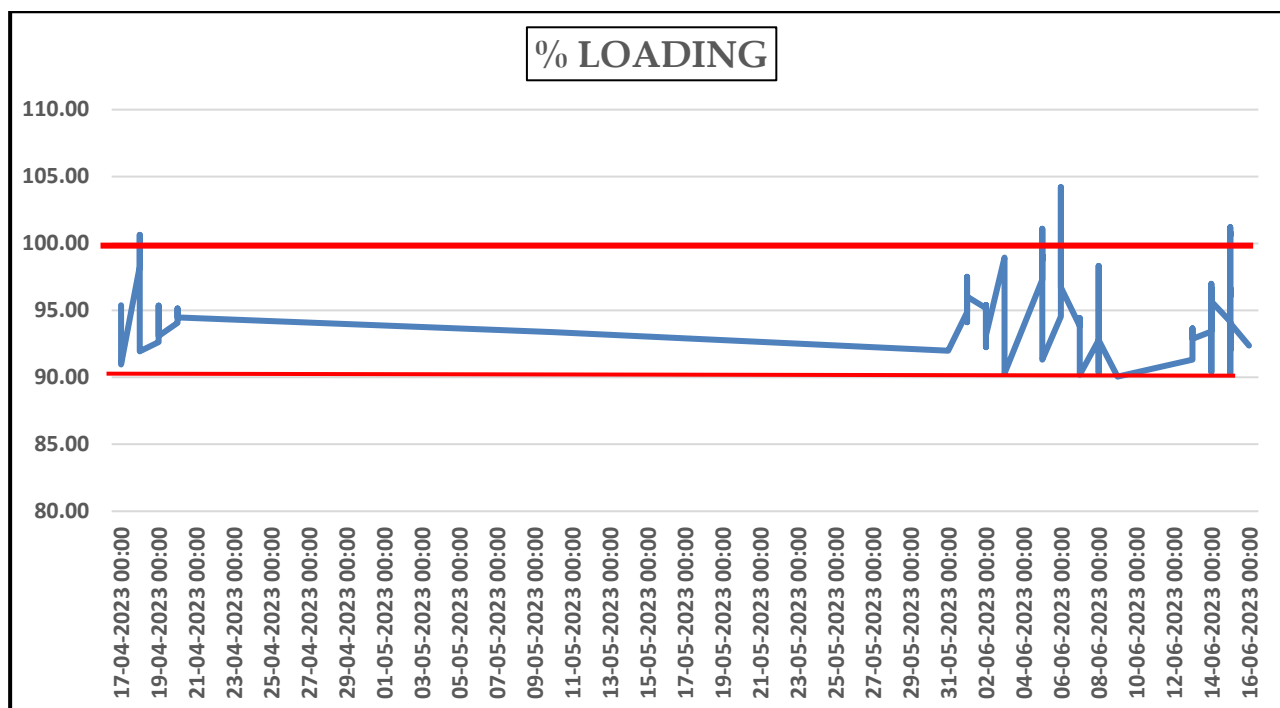
<b>ITEM NO. B.2: Proposal for installation of 7<sup>th</sup> 400/220 KV ICT (500 MVA) at Powergrid/Subhashgram S/s: Powergrid ER-II</b>
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Presently at POWERGRID/Subhashgram SS, total 05 ICTs are present with total transformation capacity of 1760 MVA (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.

Powergrid may update. Members may discuss.

### **Deliberation in meeting**

*ERLDC representative suggested that in view of ever increasing load demand commissioning of 6<sup>th</sup> 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 7<sup>th</sup> 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 7<sup>th</sup> 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 7<sup>th</sup> 500 MVA ICT with an estimated timeline of more than a year.

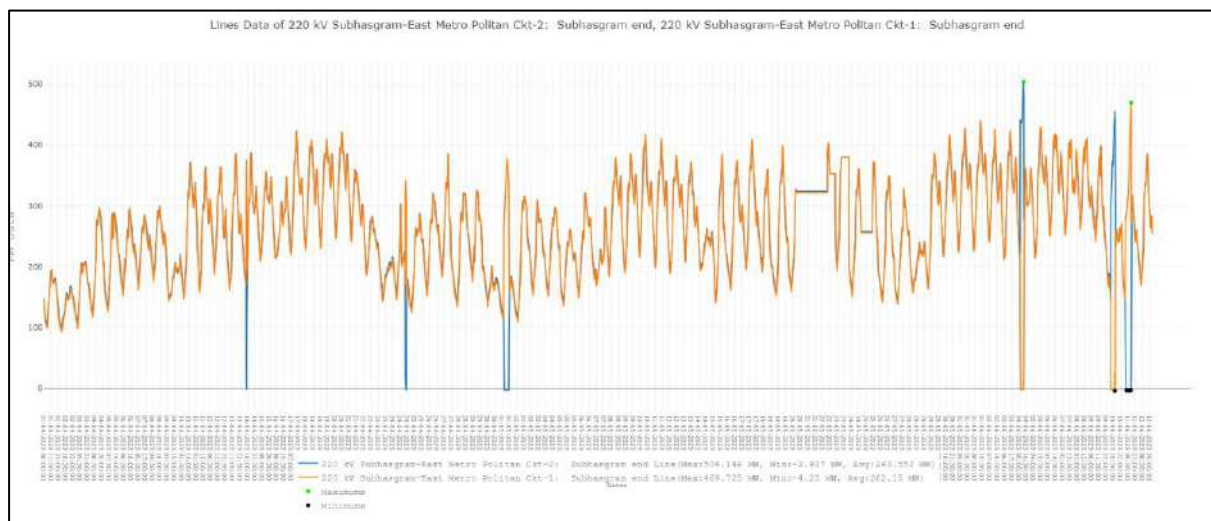
Option 2: 500 MVA ICT available at Maithon PG S/S to be reinstated at Subhasgram S/S with an estimated timeline of 3 months.

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.

### ITEM NO. B.3: 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.

### Deliberation in 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.

**ITEM NO. B.4: Requirement of adequate Capacitor banks in 132 KV and below network in Eastern Region - ERLDC.**

During the peak demand season in 2023, it is observed that certain pockets in the eastern region are facing chronic low voltage issue. These include following areas (Plots attached for nodes whose data are properly reflected at ERLDC):

1. Southern West Bengal system (Shubhasgram/ Rajarhat/ Jeerat/ Bakreshwar/ Chanditala)
2. Southern Orissa (Meramandali/Mendhasal/Pandiabali/New-Dubri)
3. Northern Bihar (Muzaffarpur/Motihari/Sitamari/Darbhanga/Purnea) and Some portion of western Bihar (Sonagar/Sasaram)

ERLDC in coordination with SLDCs are taking following requisite actions for voltage control:

1. Daily switching of 400 and 765 kV Bus reactors as well Switchable line reactors in substations through which the 220 and 132 kV substation are being fed.
2. Higher Var injection from nearby power plants
3. Less scope of tap changing of 400/220 kV ICTs as both side voltages are on lower side.

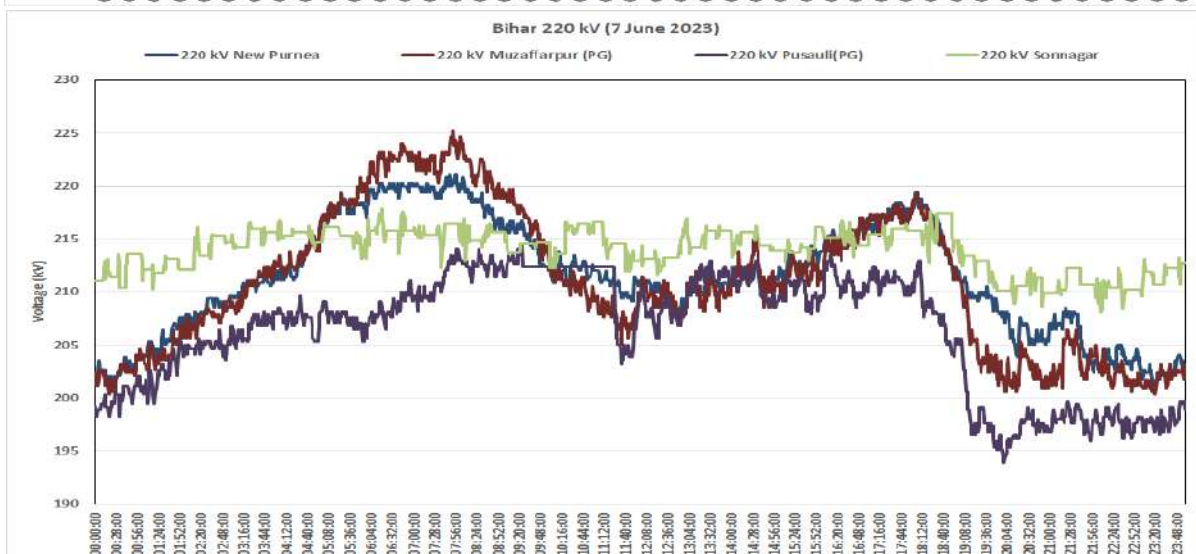
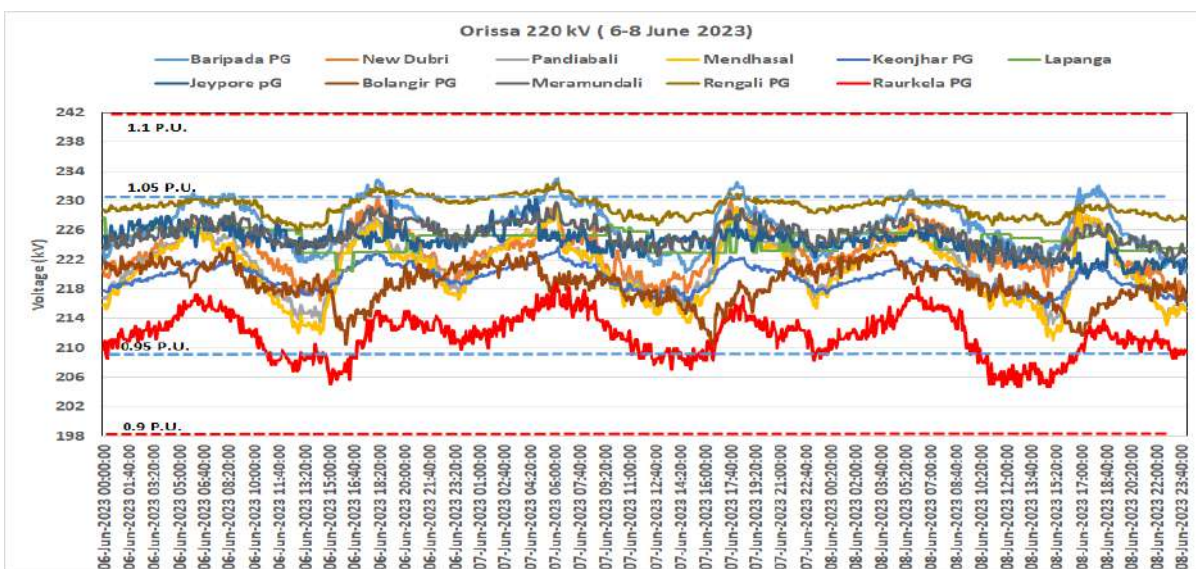
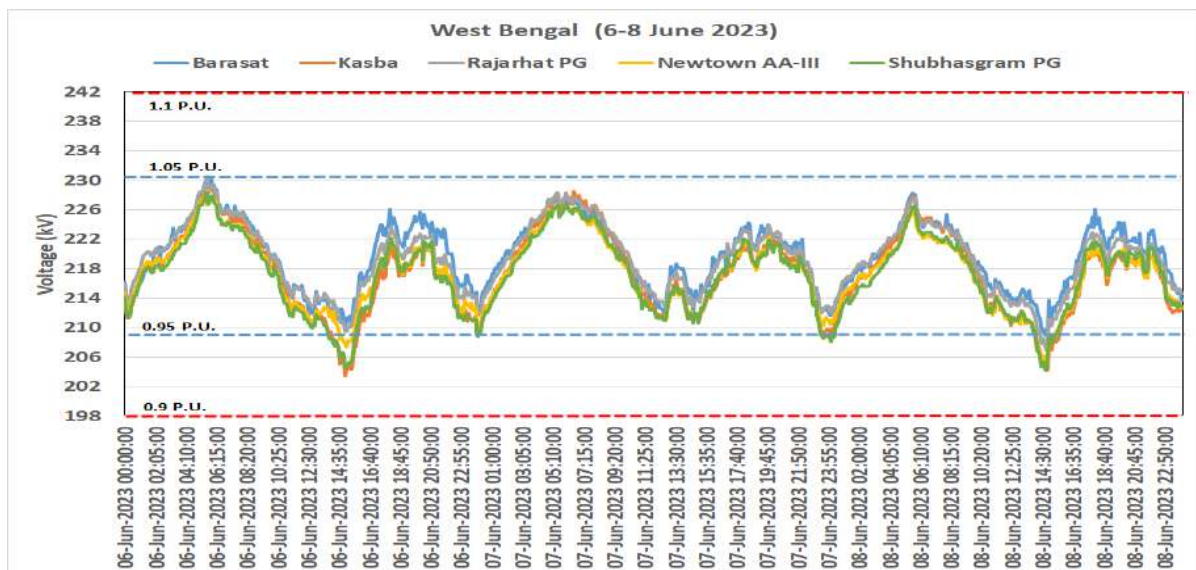
However, voltage is not improving significantly, and considerable VAR flow is observed in 220 kV network from 400 kV during peak demand period. Further, South Bengal situation is also peculiar in view of variation in demand resulting in voltage going high as well low twice during a day leading to two times switching on/off reactors available in the system.

In the past a study has been done by ERPC for capacitor bank assessment within state system. Based on which capacitor have been planned. However, it is observed with present scenario that the study is required to be revisited and if required new capacitor banks need to be planned. It is expected that such studies and related augmentation is being done continuously by STUs in coordination with SLDCs. Further, existing capacitor banks are also required to be properly modelled by SLDCs in simulation base cases as due to lack of such details, operational planning studies including ATC/TTC, outage etc. are significantly impacted and provide wrong signal and poor situation awareness to grid operation.

In view of the above, two major points that need discussion are as following:

- SLDC and STU of West Bengal, Orissa and Bihar may kindly share the capacitor bank related study carried out based on the present load and future load growth in network, implementation plan and its present progress.

- All SLDCs have been advised on 25th May 2023 to share details of existing capacitor bank in network so that these can be appropriately modelled in Simulation to access operational security. However, same has not been shared. SLDCs are again advised to share these details to ERLDC.



ERLDC may update.



## Deliberation in meeting

Bihar representative proposed for conducting training on carrying out capacitor bank related study.

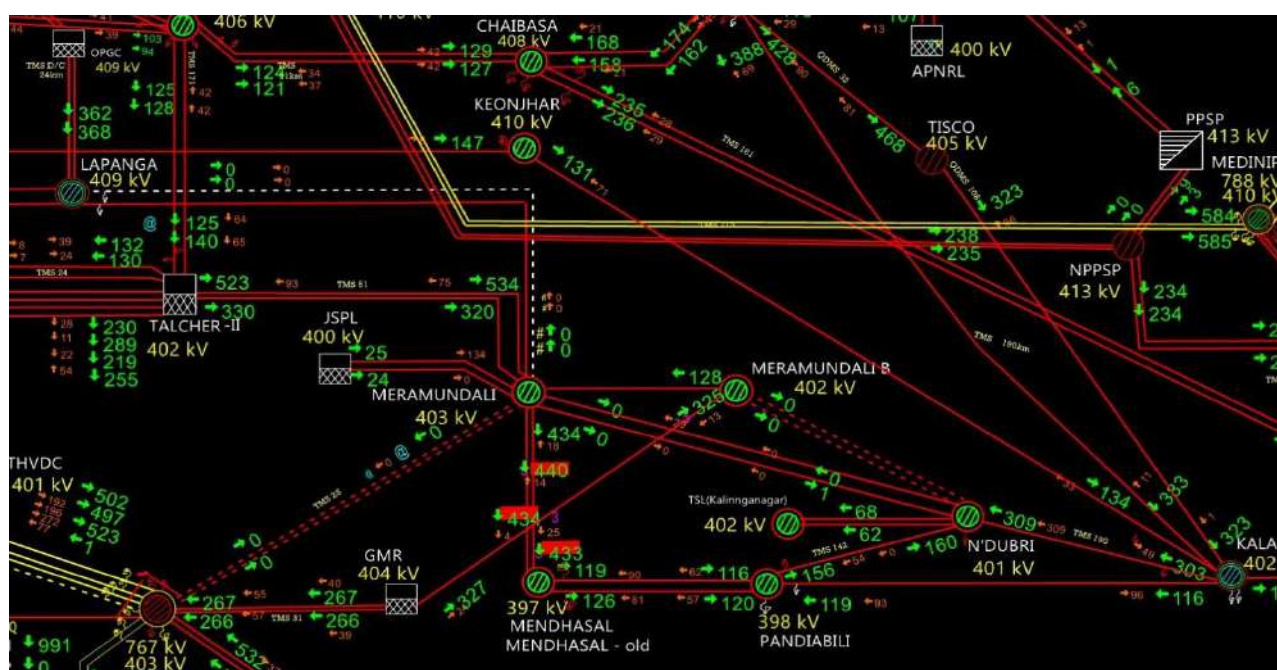
SLDC, West Bengal representative submitted that as data related to forthcoming capacitor banks and future study on capacitor bank requirements are coming under purview of STU, these matters may please be taken up with STU / Central Planning Dept, WBSETCL.

OCC advised all concerned utilities to share details of existing capacitor banks in their network and study conducted, if any, with ERLDC at the earliest to facilitate more accurate modelling in simulation thereby streamlining operational planning studies.

### **ITEM NO. B.5: Multiple tower collapse in the Odisha system in the month of June 2023.**

Presently four 400 kV Transmission lines and two 220 kV Transmission lines from 400/220 kV Meramandali Substation are under outage due to damage of towers. Apart from these Pole-2 of HVDC Talcher-Kolar is also out from 6th June 2023 due to problem in the converter transformer. Details of tower collapse is provided below. These tower collapse has put Odisha system in vulnerable state.

Name of Transmission Lines	Outage details	Reason
400 kV New Duburi – Meramandali D/C	08-06-2023, 14:32	Tower bend at one location 132 (31 km from Meramandali) reported (expected revival in 20-25 Days)
400 kV MeramandaliLapanga D/C	10-06-2023. 16:21	Tower bend at one location reported (review going on for revival)
220 kV Talcher Meramandali D/C	10-06-2023. 16:21	Tower collapse at two locations reported (review going on for revival)



On 10th June at 17:27 hrs. during charging attempt of 400 kV Lapanga-Meramandali 1 from Lapanga end, all 400 kV Lines and 400/220 kV ICTs emanating from Lapanga along with 400 KV Lines from OPGC tripped. Due to absence of evacuation lines, only running unit of OPGC tripped resulting into loss of 580 MW generation. It is clearly evident that relays have not been properly coordinated in the said pocket.

Post such tower collapse events, 400 kV Meramundali, 400 kV Meramundali B, Mendhasal, New Dubri substation were connected via 400 kV Talcher-Meramundali D/C, 400 kV Baripada-New Dubri S/C and 400 kV Baripada-Pandiabali S/C. N-1 criteria for 400 kV Talcher-Meramundali D/C was not satisfied along with 400 kV Meramandali-Mendhasal D/C.

As 400 kV Meramandali-Mendhasal D/C were N-1 non-compliant, OPTCL had implemented definite time overcurrent setting (1200 Amp) on these circuits, however same was not informed to ERLDC/ERPC. To strengthen the infeed to Meramandali, 400 kV Angul-Meeramundali was closed and 400 kV Talcher-Meeramundali ckt-2 was docked at Angul on 11th June 2023.

However, on 12th June 2023, 400 kV Meramundali-Mendhasalckt 2 tripped on R phase fault at loading below thermal capacity due to vegetation issues which lead to loading of other circuit above its thermal loading on overcurrent protection.

**During these events, some aspects may require discussion.**

1. Reason for multiple tower collapse/damage and associated investigation report needs to be analysed/shared.
2. Detailed reason for complete substation blackout of 400 kV Lapanga Substation leading to tripping of OPGC unit. Protection coordination and suggested remedial actions. (**OPTCL May share details**)
3. Implementing definite time overcurrent setting (1200/1500 Amp) on Meramandali-Mendhasal D/C by OPTCL which is not in line with the CEA standards.
4. It was observed that 400 kV Meramandali-Mendhasal ckt-2 was tripping when its loading was crossing 640 MW. A twin moose 400 kV line has thermal loading limit of 870 MVA. Root cause for such unwanted tripping may be shared by OPTCL.

ERLDC may update.

**Deliberation in meeting**

*Regarding tower collapse of multiple feeders emanating from 400/220 KV Meramandali S/S , OPTCL representative submitted that 400 KV New Duburi-Meramandali D/C and 400 KV Meramandali-Lapanga D/C lines have already been restored while in case of 220 KV Talcher-Meramandali D/C line-two ERS towers have already been erected and third ERS tower restoration is under progress.*

*ERLDC representative enquired M/s OPTCL regarding use of O/C settings in 400 KV line which is not as per extant CEA standards. ERLDC representative also advised M/s OPTCL to look into the probable root cause for tripping of the lines well below their thermal loading limit.*

*OCC referred the agenda to upcoming PCC meeting for further deliberation.*



As per IEGC 2010, Each SLDC shall carry out its own demand estimation from the historical data and weather forecast data from time to time. Further in the IEGC 2023 it has been mandated to carry out demand forecasting at different time horizon by SLDC/RLDC and compute the forecast error. ERLDC is carrying out week ahead as well as Day Ahead demand forecasting for all the states as well as the region and the same is being circulated to SLDCs. The timeline for demand estimation and submission of demand estimation by SLDC as per IEGC 2023 is given as follows:

Timeline for submission of demand estimate data by SLDCs or other entities directly connected to ISTS, as applicable, to the respective RLDC and RPC shall be as follows:

**TABLE 4: TIMELINE FOR DEMAND ESTIMATION**

Daily demand estimation	10:00 hours of previous day
Weekly demand estimation	First working day of previous week
Monthly demand estimation	Fifth day of previous month
Yearly demand estimation	30 <sup>th</sup> September of the previous year

Further in case SLDC observes a major change in demand in real time for the day, it shall immediately submit the revised demand estimate to the concerned RLDC for demand estimate correction. Presently such regular forecast is not being received in ERLDC from any states. West Bengal SLDC is sending day ahead forecast for some days but not on regular basis. Whereas DVC has sent day ahead forecast for some days however not on regular basis.

In view of the above all the states are once again requested to carry out the demand forecasting as per the above timeline and send the same to RLDC for regional demand estimation positively.

#### **Deliberation in meeting**

*OCC advised all concerned utilities to strictly adhere to timelines of Demand estimation as per IEGC 2023 guidelines.*

*OCC advised SLDC, West Bengal to convey the timelines of demand estimation to IPCL so that besides CESC and WBSEDCL, demand estimation for IPCL also gets received on regular basis henceforth.*

*SLDC, WB vide mail dated 28.06.2023 informed that SLDC, West Bengal had already requested representative of IPCL in a meeting on 27.06.2023 in SLDC and had sent email to all state DISCOMs to send the data to SLDC, WB within the given timeline.*

*OCC advised all concerned to send forecasted demands of their respective control areas as per IEGC mandated timeline.*

400/220 kV Biharsharif and 400/220 kV Jamshedpur sub-stations were commissioned in 1991 under Kahalgaon Transmission projects. Both said sub-stations are most critically important for smooth and reliable supply to the downstream transmission lines as well as for smooth evacuation of power from important generating plants of Eastern Region. It is to mention that under ADDCAP tariff block 2019-24 works e.g. replacement of CB, Isolator, FF renovation, AC renovation switchyard PCC have been carried out. However, some works which have not been taken up in previous ADDCAP block, but now important are to be carried out for smooth functioning of sub-stations such as complete renovation of control and protection system.

In addition to the above, replacement of 15 nos. BHEL make 420 kV CBs on ground of obsolescence and discontinuation of spares as well as service support from OEM at Muzaffarpur ss is also envisaged.

**1. Retrofitting of 15 nos. BHEL make 420 kV CB installed at 400/220 kV Muzaffarpur ss.**

400/220 kV Muzaffarpur sub-station was constructed in the year 2006. Following assets were commissioned under initial construction project:

Sr. No	Asset Detail	Year of Commissioning
1	400 kV Muzaffarpur-New Purnea D/C line along with L/R	2006
2	400 kV Muzaffarpur-Gorakhpur D/C line along with L/R	2006
3	400 kV Muzaffarpur-Biharsharif D/C line	2006
4	400/220 kV, 315 MVA ICT-I & II	2006
5	400kV, 63 MVAR Bus Reactor-I	2006

BHEL make CBs are used in the bay of 400 KV Muzaffarpur-Gorakhpur D/C lines, 400 KV Muzaffarpur-New Purnea D/C line, 400/220 kV 315 MVA ICT-I & II and 63 MVAR Bus Reactor-I. In total, 15 nos. BHEL make CBs (08 nos. PIR type and 07 nos. without PIR type) installed in 2006 at Muzaffarpur ss.

The said BHEL make CBs are having hydraulic type operating mechanism. In BHEL make CB, there is chronic issue of accumulator failure, leakage from pilot valve, drift in open & close time. In recent days, issues in main and arcing contacts have also been observed during routine maintenance.

To attend the above-mentioned issues, the BHEL make CB needs frequent maintenance for reliable operation of the circuit breaker. Till now, it is being maintained by spare and service support of M/s BHEL.

In past few years we, had witnessed three Bus tripping at Muzaffarpur ss due to non-operation / delay operation of BHEL make CBs.

Further, it is to mention that we have been facing difficulties in maintaining CBs for a long time due to a delay in service support as well as the long delivery time (approx. 24 months) for the supply of spares.

Now, M/s BHEL has completely stopped manufacturing and supplying switchgear spares for all

three models (125 kV, 245 kV & 42 kV) of SF6 Circuit Breakers (Communication mail enclosed). Keeping in view of above, the installed 15 nos. BHEL make CBs needs to be replaced on priority though it has completed 17 years of service life only for reliability and stability of the grid.

Total estimated cost for replacement of 15 nos. BHEL make CB will come to Rs.7.81 Cr (Approx). Thus, it is proposed to grant in-principle approval from OCC/ERPC for replacement of 15 nos.

BHEL CBs at Muzaffarpur ss under add-cap (tariff block 2024-29) on ground of obsolescence of equipment.

## 2. Renovation of control room of 400/220 kV Biharsharif ss and 400/220 kV Jamshedpur ss.

Both 400/220 kV Biharsharif and 400/220 kV Jamshedpur ss were constructed in the year of 1991 under Kahalgaon Transmission Projects. During course of operation, many transmission assets (Transmission line, Transformer, Reactors) are added to the system under various projects.

Assets details of both sub-stations are as below.

### Jamshedpur ss:

- 1) 02 Nos of 400 kV Main Bus
- 2) 26 nos. of 400 KV bays
- 3) 03 nos. of 400/220/33KV 315 MVA ICT
- 4) 03 nos. of Bus Reactor i.e. 50 MVAR B/R-1, 125MVAR B/R-2, 125 MVAR B/R-3

Assets completing/completed 25 years' service life:

Sl. No.	Name of Bay/Line/ICT	Make	DOCO
1	400/220/33KV 315MVA ICT 1	BHEL	03.08.1993
2	400/220/33KV 315MVA ICT 2	BHEL	29.12.1993
3	400KV 16.7 X 3 MVAR BUS REACTOR - 1	CGL	30.07.1993
4	400KV Chaibasa Line -2		17.02.2002
5	415V MSB & ACDB		30.07.1993
6	220V DCDB		30.07.1993

### Biharsharif ss:

- 1) 04 Nos of 400 kV Main bus with 02 nos. of Bus Sectionalizer
- 2) 46 nos. of 400 KV bays
- 3) 03 nos. of 315 MVA ICT & 01 no. 500 MVA ICT
- 4) 04 nos. of Bus Reactor i.e 50 MVAR B/R-1, 80MVAR B/R-2, 125 MVAR B/R-3 & 4
- 5) 05 nos. of Line Reactor i.e 50 MVAR LKS-2, 50 MVAR VNS-1, 50 MVAR VNS-2, 80 MVAR PRN-1, 80 MVAR PRN-2

Assets completing/completed 25 years' service life:

Sl. No.	Name of Bay/Line/ICT	Make	DOCO
1	50MVAR SAS-1 LINE REACTOR	CGL	09.08.1991
2	50MVAR LKS-2 LINE REACTOR	CGL	07.12.1991
3	50MVAR BUS REACTOR-1	CGL	24.09.1992
4	315MVA ICT-2	BHEL	14.07.1992

5	BSF-LKS LINE-1	-	23.10.1992
6	BSF-LKS LINE-2	-	09.08.1991
7	BSF-SAS LINE-1	-	01.08.2002
8	BSF-SAS LINE-2	-	24.11.2002

Further, additional assets under various projects had been added since commissioning, which cause the suppression of old cables to the beneath of cable trench. Furthermore, due to ageing of cables, faults in cable are being observed on regular basis which leads to unwarranted tripping of transmission elements and damages healthy cables also. Further, it is to mention that cables trenches are full of cables and therefore identification of fault and laying of new cable is very difficult.

Further, it is pertinent to mention that the existing sub-station is of conventional type and old electromechanical relays are used for protection system. And therefore, lots of upgradation and modification in existing C&R panels and switchyard equipment are being carried out which involves laying of extra cables from switchyard to control room as well as inter panel cabling but due to space constraints in cable vault room, now it is almost impossible to place new cable.

Keeping in view of above constraints, a small new panel room has been constructed for newly commissioned ICT at Biharsharif ss and KIOSK was proposed for upcoming 125 MVAR Bus Reactor.

In view of above, it is proposed for construction of KIOSK for bays which have completed 30 years of service life at Jamshedpur and Biharsharif ss to mitigate the above-mentioned issues and to avoid any major outage of sub-station due to fire /faults in aged cables. Accordingly, an exercise has been carried out to arrive cost for construction of 05 nos. KIOSK in each sub-station. Total estimated cost for conversion of existing system to KIOSK system will come to Rs. 10.0 Cr (approx) for each sub-station.

Proposed for in-principle approval from OCC/ERPC for conversion of exiting conventional system to SAS system along with construction of KIOSK, Power & control cables and electro mechanical relays etc.

Powergrid may update. Members may discuss.

### **Deliberation in meeting**

*Powergrid ER-I representative delivered a detailed presentation on present unhealthy condition of hydraulic circuit breakers at 400/220 KV Muzaffarpur S/S ,whose maloperation or delayed operation was responsible for frequent bus tripping at the substation.*

*Powergrid ER-I representative also submitted that adequate OEM support is also not available for maintaining these CBs in healthy condition as manufacturing of these old model CBs is discontinued.*

*This presentation also included details of conventional cable trenches posing inconvenience in day-to-day operation as well as dilapidated condition of control rooms at 400/220 KV Biharsarif S/s and 400/220 KV Jamshedpur S/S , whose old control panels need immediate replacement.*

*Assessing the merit of the proposal, OCC gave in-principle approval of various modernization works at 400/220 KV Muzaffarpur S/S,400/220 KV Biharsarif S/s and 400/220 KV Jamshedpur S/S.*

OCC referred the agenda to upcoming Commercial sub-committee meeting for deliberation on financial aspects.

**ITEM NO. B.8: Agenda by Powergrid Odisha.**

**1. PLCC issue in Baripada-Kharagpur T/L.**

In reference to the MOM of 190th OCC & 45th TCC of item no. B. 16 & item no 16 respectively PLCC related issues were discussed in reference to the 400kV Kharagpur-Baripada line and following deliberation was made in the meetings.

Deliberation in the meeting: Powergrid Odisha representative submitted that replacement and maintenance of PLCC's at their end is not possible as the asset does not belong to them. He further stressed the fact that while replacement of PLCC's it has to be ensured that both are of same make and are properly tuned. He further submitted that Powergrid is ready to extend any kind of technical assistance to WBSETCL for the replacement and maintenance of the PLCCs. Powergrid would replace the PLCC at their end on a chargeable basis solely to be borne by WBSETCL. WBSETCL representative advised Powergrid to submit documents in support of ownership of the assets. In case the ownership of the asset lies with WBSETCL, they would replace the panels at both the ends. Otherwise, the replacement of the PLCC's to be done on cost sharing basis.

Accordingly, documentary evidence of ownership of PLCC panels attached for ready reference (**Annexure –B.8**). (CE/ED/PLCC/Kharagpur/ 793(4) Dt.30/08/2010 & Ref.no: TR.PROJ./T-181/20 Dt.11.04.2012 ). Therefore, WBSETCL is requested to take necessary replacement of PLCC panels at both ends.

WBSETCL may update.

**Deliberation in meeting**

*Powergrid Odisha representative submitted that the ownership of PLCC panels at both ends of 400 KV Baripada-Kharagpur S/C Line lies with WBSETCL. He repeatedly stressed on the fact that replacement of PLCC panels at both ends should be done by the entity having original ownership the panels.*

*WBSETCL representative submitted that irrespective of ownership of existing PLCC panels, it will be replaced by the utilities at their respective substation end or on cost sharing basis. He further added that if the total line is owned by WBSETCL and if the cost of the entire line is adjusted through tariff of WBSETCL, then WBSETCL will replace the panels at both ends. He also submitted that for all the tie-lines throughout the country there should be a uniform process for investment, installation and maintenance.*

*OCC opined that functional PLCC in place being an important aspect in day-to-day grid operation, the issue can't be kept on hold for long at the cost of compromising with grid security. OCC, therefore, advised WBSETCL to execute the replacement of PLCC panels at both ends of the line at the earliest on cost sharing basis; i.e. 50% cost for the same to be borne by Powergrid Odisha.*

*OCC referred the agenda to upcoming TCC meeting for further approval.*

## **2. Operational & Maintenance related issues of 220KV OPTCL bays of Jeypore -Jayanagar-3 & 4 at POWERGRID, Jeypore S/s**

Two no of bays pertaining to above mentioned lines were constructed & commissioned in June'2021. All the protection & control panels of these bays were housed in Switch yard kiosk and integrated with PG-NTAMC system for remote monitoring & controlling. No LOCAL SCADA was provided at in control room of POWERGRID (PG) -Jeypore substation which is causing difficulty in operation of equipments during emergencies from local control room. Further, many of the signals reporting to NTAMC/RTAMC system are suspect causing difficulties in remote monitoring & control of these bays. Maintenance of these bays & rectification of persisting problems of protection system are also not being done regularly. This is very detrimental to the existing system at PGJeypore as non-operation of relays pertaining to these bays cause disturbance on wider scale. Several correspondences made with OPTCL including higher officials, but no concrete action was taken. Copies of all MOMs, mail & letter correspondences are attached for reference (**Annexure –B.8**). As such, following issues need to be addressed pertaining to operation & maintenance of 220KV Jayanagar-3- & 4-line bays at POWERGRID- Jeypore substation.

### **I. Local SCADA for operation of these bays:**

Since there are no control panels/SCADA installed for these JeyporeJayanagar- 3 & 4 bays in existing control room of PG-Jeypore and SPR is situated at Switchyard, it is quite difficult on our part to do any operation in these bays especially in rainy / bad weather conditions as well as during night time. It is a standard practice that wherever SPR (Switchyard Panel Room) is constructed in lieu of Control Panels on account of space constraint, a Local SCADA is invariably provided in the control room for operation of the breaker and isolators installed in the bays. Moreover, Local Scada is required for monitoring the healthiness of equipment and relays in the bays as well as for extraction of Disturbance Recorder data in case of various faults in lines and bays.

### **II. Defective Main-II Relays:**

02 no.s GE make MICOM P442 relays are not communicating due to long pending firm-wire updation and defective LAN port since commissioning time i.e., from 01/05/2021. Due to this noncommunication, about 73 signals are reporting as "Suspect Signals" at NTAMC/RTAMC which is affecting proper monitoring of system healthiness and reliability of protection system.

### **III. Hand-Over of bays to O&M Wing Pending:**

Further, it is gathered that these bays are yet to be handed over from Construction wing of OPTCL to their O&M wing, as a result of which the OPTCIL O&M staff also express their inability to do anything with regard to attending small issues like-nonworking of 01 no. Split AC which is pending since about 01 year. Additionally, these bays are also not handed over to Power Grid-Jeypore as there has been no MOU signed between Power Grid and OPTCL for O&M of these bays. As such no proper maintenance is being carried out in these bays. Deliberation in this regard may be done for a fruitful solution.

Powergrid may update. Members may discuss.

### **Deliberation in meeting**

*OCC opined that the issue, being a bilateral matter, needs to be sought out by mutual cooperation and meeting between Powergrid Odisha and OPTCL.*



OPTCL representative assured to cooperate with Powergrid Odisha and resolve the matter at the earliest.

If the issue continues to stay unresolved despite deliberations between Powergrid Odisha and OPTCL, OCC advised Powergrid Odisha to place the agenda to upcoming TEST meeting.

**ITEM NO. B.9: 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 line to Naubatpur	343/345	342/345	122.5/126	M/s KEC International
2	220VD/C line to Dehri-on-sone	245/246	245 /246	75/77	M/s KEC International
3	220KVD/C line to Karmnasa	181/185	180/185	56.5/59	M/s KEC International
4	220KV D/C line to Dumaron	213/216	206/216	51/64	M/s RS Infra Projects Pvt Ltd

As per information available at this end, the bay works at Naubatpur is yet to be awarded. The bay works at Dumaron has been awarded but works progress has been abysmal. Bay works at Dehri-on-sone has been awarded but works could not be started. At Karmnasa bays are available for both circuit connection.

The project works at Chausa has been progressing at fast pace and equipment's trials will be starting progressively. Therefore, the start-up power requirement will arise tentatively from August, 2023.

The station transformer has voltage rating of 400/11 KV and ICT is of 400/220 KV. Further, ICT delivery has been delayed due to failure in short circuit test. Therefore, startup power from 220 KV line could not be utilized at the moment and therefore, startup power could only be drawn from 400 KV line.

The above is for your kind information and necessary intervention so that 400 KV power could be made available for startup power to the project tentatively by August 2023.

SJVN may update. Members may discuss.

### **Deliberation in 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 start up power by Buxar thermal power project.*

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

### **ITEM NO. B.10: Multiple tripping of EHV lines in India-Bhutan corridor in the month of April 2023: ERLDC.**

There have been 18 tripping instances of EHV lines in India-Bhutan corridor. As per relay details submitted, majority of fault lies in Bhutan's jurisdiction. With upcoming monsoon, availability of these EHV lines is must for reliable evacuation of hydropower from Bhutan. Further, multiple discrepancies were observed in protection. Bhutan is requested to investigate the issues to avoid

further tripping and take remedial measures for proper operation of protection scheme. Details of tripping are attached at **Annexure B.10**.

In the 203<sup>rd</sup> OCC meeting, representative of ERLDC submitted that majority of faults due to which incidents of tripping occurred were under Bhutan's jurisdiction.

Bhutan may update.

### **Deliberation in meeting**

*Upon enquiring about the probable cause behind multiple tripping of EHV lines in India-Bhutan corridor, Bhutan representative submitted that the same is mostly attributed to inclement weather conditions and passage of the EHV lines through highly lightning prone areas.*

*ERLDC representative advised Bhutan representative to install adequate number of Lightning arrestors on specific EHV lines in lightning prone areas to avoid recurrence of such multiple tripping event in future. Bhutan representative submitted that installation of Lightning arrestors is under progress and almost on verge of completion (2nos of towers left).*

*On enquiry from ERPC, Bhutan representative confirmed that there existed no vegetation or sag problem in the EHV lines subjected to multiple tripping.*

*Powergrid ER-2 representative requested Bhutan to directly communicate with RTAMC of PGCIL for timely sharing of DR of lines tripping in Bhutan so that the same can be conveniently analyzed at Powergrid end. Bhutan representative granted consent to this request and confirmed to comply with the same henceforth.*

**ITEM NO. B.11: Shutdown proposal of generating units for the month of July 2023.**

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

System	Station	Unit No.	Capacity (MW)	Period (as per LGBR 2023-24)		No. of Days	Reason
				From	To		
TVNL	Tenugh at TPS	1	210	01.07.2023	15.08.2023	46	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	7	500	10.07.2023	19.07.2023	20	Boiler Overhauling and FDG Connectivity work,
WBPDC L	Bakresh war TPS	4	210	03.07.2023	06.08.2023	35	AOH/BOH
WBPDC L	Bakresh war TPS	5	210	21.07.2023	30.07.2023	10	PG Test/ Boiler License Renewal
WBPDC L	Bandel TPS	2	60	12.07.2023	10.08.2023	30	AOH/BOH
WBPDC L	Southern TPS	1	68	14.07.2023	28.07.2023	15	
NTPC	KhSTP S	3	210	01.07.2023	04.08.2023	35	Boiler +HP+LP+IP+Generator

<b>NPGCL</b>	Nabina gar TPS	1	250	01.07.2023	14.08.2023	45	Boiler +LPT O/H+Generator rotor thread out and checking + NOX work
<b>NPGCL</b>	Nabina gar STPS	2	660	01.07.2023	18.09.2023	80	O/H with Boiler modification
<b>JITPL</b>	JITPL	1	600	01.07.2023	14.08.2023	45	COH

Members may update.

### **Deliberation in meeting**

*TVNL representative requested for revision in shutdown of unit-01(1\*210 MW)(Tenughat TPS) from 10.07.2023 to 25.08.2023(for 47 days). OCC consented to the same.*

*DVC vide mail dated 21.06.2023 shared revised O/H schedule for FY 2023-24 (**attached at Annexure- B.11.1**)*

*Representative of WBPDCCL submitted that unit-05(Bakreshwar TPS) shutdown shall not be availed in July'2023 but requested for allowing shutdown of unit-04(210 MW) at Bakreshwar TPS and unit-02 at Bandel TPS. On consideration of the proposal, OCC granted approval for shutdown of unit-04(210 MW) at Bakreshwar TPS from 01.07.2023 to 03.08.2023(for 34 days) and unit-02(60 MW) at Bandel TPS from 01.07.2023 to 30.07.2023( for 30 days)*

*CESC representative submitted that shutdown of Southern TPS shall be availed in July 2023 as per LGBR 2023-24.*

*NTPC Kahalgaon representative requested the forum for shutdown of unit-01(210 MW) instead of unit-03. OCC agreed and approved shutdown of unit-01(KhSTPP) from 10.07.2023 to 08.08.2023(for 30 days)*

*NPGCL representative apprised the forum of deferring the shutdown of unit-02(660 MW)(Nabinagar STPS) to 01.11.2023.*

*NTPC representative apprised the forum that s/d of unit-4 (instead of unit 1) of BRBCL (250MW) would be taken from 16.07.2023 to 25.08.2023.*

*DPL representative submitted regarding boiler tube leakages and associated issues necessitating shutdown of unit-08(250 MW)(DPPS) for purpose of boiler overhauling. Considering criticality of operation, plant safety and subsequent possibility of forced outage, OCC approved shutdown of unit-08(250 MW)(DPPS) from 01.08.2023 to 10.09.2023(for 41 days)*

*NTPC Barh representative requested for shutdown of unit-04 for the period 01.07.2023 to 31.07.2023.*

OCC advised NTPC Barh to declare commercial operation of unit-02 prior to seeking approval for unit-04 shutdown.

The approved maintenance schedule of generating stations is provided at **Annexure-B.11**

**ITEM NO. B.12: Proposal for LILO connection at Ind Barath Energy (Utkal) Ltd, (IBEUL).**

Ind-Barath Energy (Utkal) Limited (IBEUL) requested ERPC in 202nd OCC meeting for LILO arrangement of its 400 kV DTL line with nearby line of IB Thermal Power station to PGCIL Sundergarh for interim period of 6 months, so that the construction activities can be resumed and plant can be revived earlier (U-1 by Oct-23 and U-2 by Mar-24).

As per the minutes of 202nd ERPC-OCC meeting

“OCC advised IBEUL to convene a separate meeting with OPTCL, GRIDCO and SLDC Odisha for further deliberation of the issue in order to arrive at a mutual consensus. Further, IBEUL was also advised to coordinate with CTU and raise the issue in the upcoming CMETS meeting.”

We have approached CMD, (OPTCL & SLDC) Odisha in ref to above matter vide letter cited in ref-4, in reply the corporate planning division of OPTCL had advised

“I am directed to state that the matter of LILO connection of 400kV transmission line may be taken up with ERPC/ERLDC, OPGC and CTU/PGCIL after detailed system study under CTU as suggested in the MOM under reference”

We have also approached CTU for taking up the GNA for 400kV DTL of IBEUL and interim LILO connection in 19th CMETS meeting the same was discussed and granted GNA for 400kV transmission line and for LILO connection they have advised to take up with ERPC/ERLDC and get the consent for final approval also the system study was conducted by IBEUL through M/s DNV, Transient stability study results, it can be inferred that the system remains stable for the interconnection of IBEUL generators with proposed LILO arrangement (report attached)

In reference to the outcome of CMETS meeting and as advised by OPTCL Planning division, the 400kV LILO connection of IBEUL with IB thermal- Sundergarh 400kV transmission line is to be discussed in the upcoming OCC meeting of ERPC.

IBEUL may update.

**Deliberation in meeting**

*Ind Bharat Energy (Utkal) Ltd representative proposed LILO of one circuit of 400 KV D/C line from IB Thermal power station to PGCIL Sundergarh for interim period of 6 months to facilitate timely revival of the units.*

*After due consideration of the proposal, OCC granted approval of proposed LILO arrangement.*

## ITEM NO. B.13: Implementation of Resource Adequacy framework.

Central Electricity Authority (CEA) is in the process of preparing Long Term-National Resource Adequacy Plan (LT-NRAP). For preparing the LT-NRAP State-wise information viz. Demand, Installed Capacity, Generation (both RE and conventional), financial data etc. may be required.

The issue was discussed in details in the last OCC meeting (203<sup>rd</sup> OCC, held at ERPC Conference Hall on 19.05.2023) and it was decided that SLDCs of the respective states will act as the Nodal Agency for providing the requisite data/information in respect of all the concerned agencies of the states. Also, it was decided that SLDCs will nominate and provide the name & contact details of a Nodal Officer from their side who will be contacted subsequently by CEA/ERPC for any matters on the issue.

Accordingly, all the SLDCs were requested to provide the name & contact details of the Nodal Officer and arrange to ensure the furnishing of the requisite data/information at the earliest vide this office mail dated 26.05.2023 and again on 12.06.2023.

But till date no nomination received from SLDC, West Bengal. It is requested to provide the name of Nodal Officer from SLDC, WB and arrange to provide the requisite data/information as per prescribed proforma at the earliest.

Shri Rajesh Prasad Sahoo, Manager (Elec.) is the Nodal Officer i.r.o. SLDC, Odisha.

Shri Preetosh Ghosh, EE (E) is the Nodal Officer i.r.o. SLDC, DVC.

Shri Raju Kachhap, Sr. Manager is the Nodal Officer i.r.o. SLDC, Jharkhand.

Shri Pavan, AEE is the Nodal Officer i.r.o. SLDC, Bihar.

Though official nomination has not been received from SLDC, Sikkim but on request Shri NamgayalTashi, EE, SLDC, Sikkim provided some data/information in prescribed proforma.

SLDC, Odisha and SLDC, Bihar have already submitted some data/information to IRP Division, CEA.

SLDC, Jharkhand and SLDC, DVC are yet to provide any data/information from their end.

Members/representatives from concerned SLDCs may update.

### **Deliberation in meeting**

*SE(Reporting),ERPC urged all SLDCs for timely sharing of data pertinent to preparation of Long Term -National Resource Adequacy Plan as conceived by Central Electricity Authority(CEA) and thereby requested all SLDCs for nomination of respective nodal officers to serve the purpose.*

*Bihar representative submitted that Shri Gagan Kumar, EEE, SLDC and Shri Deepak Kumar Ram,EEE,SLDC may be nominated as two nodal officers.*

*West Bengal SLDC representative nominated Shri Soumen Mandal,DE as the Nodal Officer.*



SL No	Issue/Agenda	Discussion in last OCC Meetings	Update/Status
1.	<p><b><u>De-stringing of overhead conductor in Power Line Crossing span of 220kV D/C Farakka-Lamatia Line in between span (Location No.-5 &amp; Location No.-6) by JUSNL in order to protect underlying 400 kV S/C FarakkaSagardighi I &amp; II TL (Loc No.- 3 &amp; 4) of POWERGRID due to severe/repetitive theft incidents by miscreants near to Farakka Plant</u></b></p> <p>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.</p> <p>During patrolling of 400 kV S/C FarakkaSagardighi I &amp; II TL on dated 07.11.2022, huge no. of missing members has been observed in the Powerline crossing towers of 220 KV FarakkaLalmatia TL (owned by JUSNL) situated in village:Jorpukuria,Farakka crossing over Loc 03 &amp; 04 of both 400 kV S/C FarakkaSagardighi I &amp; II TL of POWERGRID.</p> <p>Considering the fact that any incident of collapse of towers of the mentioned crossing towers of FarakkaLalmatia line shall damage our existing 400 kV FarakkaSagardighi TL which is already more than 35 years old. Earlier also, an incident of Tower collapse of 220 kV FarakkaLalmatia line over POWERGRID 400 kV S/C Farakka Durgapur 1 &amp; 2 TL had occurred in the year 2020 which had severely damaged the 400 kV S/C Farakka Durgapur 1 &amp; 2 lines.Restoration of the lines were carried out under extreme ROW situations.</p> <p>Considering the seriousness of the issue JUSNL was requested to rectify the towers Loc No.-5 &amp; 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.</p>	<p>In the 203<sup>rd</sup> OCC meeting, representative of Jharkhand submitted that the works are expected to be completed by the end of May 2023.</p>	<p><i>Representative of Jharkhand submitted that the 220kV Farakka-Lalmatia S/C line is expected to be completed by 31.07.2023. OCC advised Jharkhand to share regular update of the work with ERPC.</i></p>

	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.	<p><b><u>Islanding Schemes in Eastern Region</u></b></p> <p><b><u>2.1. Patna Islanding Scheme:</u></b></p> <p>In the meeting held on 28<sup>th</sup> December 2020 and chaired by the Hon'ble Minister of State (IC) it was directed that islanding schemes should be implemented for all major cities of the country considering all the strategic and essential loads. Subsequently, in line with the direction given in the meeting, the subject matter was discussed in PCC meeting of ERPC, and it was finalized that new islanding scheme would be implemented for capital city of Patna &amp; Ranchi.</p>	In the 200 <sup>th</sup> OCC Meeting, Representative of NTPC submitted that Internal approval is under process. 3 months of timeline would be required before award.	<i>Representative of NTPC submitted that the proposal is presently under financial vetting.</i>
	<p><b><u>2.2. Chandrapura Islanding Scheme:</u></b></p> <p>The scheme detail in brief is as follows:</p> <ul style="list-style-type: none"> <li>➤ The CTPS-B islanding scheme is to be designed with two units of CTPS-B (2x250 MW) generating station as participating generator and connected loads at CTPS, Putki, Biada, Nimiaghata &amp; Patherdih. The estimated off-peak and peak load in the proposed islanding system is 280 MW &amp; 420 MW respectively.</li> <li>➤ The islanding frequency for CTPS-B islanding system was decided as 48.4 Hz.</li> </ul>	In the 196 <sup>th</sup> OCC meeting, DVC representative submitted that the work is expected to be completed as per the given timeline.	
	<p><b><u>2.3. IB-TPS Islanding Scheme:</u></b></p> <p>The scheme was finalized in the special Meeting on Islanding Scheme of IB-TPS held at ERPC, Kolkata on 12th December 2018.</p> <p>In special meeting held on 06.08.2021, OPGC representative informed that work order had been placed on OEM (M/s BHEL) for implementation of the Islanding scheme at IB TPS units.</p>	<p>In the 197<sup>th</sup> OCC meeting, OPGC representative was not present during the discussion.</p> <p>OPTCL representative submitted that the details would be shared shortly.</p> <p>Representative of</p>	-

	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.	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.	<p><b><u>Outage of Important Transmission System</u></b></p> <p><b><u>132kV Sagbari–Melli.</u></b></p> <p>Sikkim vide mail dated 09.06.2021 updated the following status:</p> <p>1) In loc 82,83 &amp; 84 we have low ground clearance which need hill cutting but if needed TL can be charged after putting temporarily barbed wire fencing.</p> <p>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.</p> <p>3) In loc 116 &amp;117 land owner demanding for intermediate tower and not allowing for us to clear the jungles.</p> <p>4) Loc 128 is in dilapidated condition due to sinking effect posing threat to lives and properties.</p> <p>Local public are asking to shift the tower in safe place before restoration of supply in the TL.</p> <p>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.</p> <p>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.</p>	In49 <sup>th</sup> TCC &ERPCMeeting, Sikkim representative submitted that the 132kV Sagbari–Melliline would be restored by 15th April 2023.	<i>Sikkim representative was not present in the meeting.</i>

4.	<p><b><u>Ensuring N-1 reliability criteria at 400/220 KV Subhashgram (PG) S/s.</u></b></p> <p>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 6<sup>th</sup> 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.</p>	<p>In the 203<sup>rd</sup> OCC meeting, representative of Powergrid submitted that the agreement for installation of Subhashgram ICT has been finalized and MoU signing is pending which would be completed by the end of May 2023. The NIT has been floated but due to low participation it has been extended.</p>	<p><i>Powergrid representative submitted that the tender for procurement of Subhashgram 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 has made the above payment against procurement cost of 6<sup>th</sup> 500 MVA ICT on 26.06.2023.</i></p>
5.	<p><b><u>Integration of (Interface Energy Meter) IEMs into SCADA/EMS system for telemetry of meter data to SLDCs.</u></b></p> <p>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</p>	<p>In the 202<sup>nd</sup> OCC meeting, Powergrid submitted that M/S. Genus has confirmed that as the matter is related to parallel data transmission to 02 different data center, cyber security aspect and data decryption method to be</p>	<p>--</p>

	<p>other RS 232 port available remains unused, the online real time data can be fetched from the existing SEM through the unused RS 232 port. This arrangement does not require additional meters or new communication facilities and therefore no additional cost is involved.</p>	<p>discussed first. However, both RS 485 &amp; Ethernet port of existing SEM can be configured subjected to data size and handling method.</p> <p>Genus also confirmed that, same thing will be discussed during training session at ERPC during first week of May and expected demonstration afterwards.</p> <p>Considering above, the agenda may be kept in abeyance till June-2023 such that every activity for demonstration can be planned and executed.</p>													
6.	<p><b><u>Status of SAMAST, ABT implementation and certification of system operators in states.</u></b></p> <p>Implementation of SAMAST and ABT in all the states is a prerequisite for improving the reliability of grid considering the complexities involved in 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.</p> <p>The status of SAMAST, ABT implementation and certification of system operator of various states of eastern region is given below:</p> <table><tr><th>Name of the state</th><th>Status of implementation of SAMAST</th><th>Number of Certified Operator</th></tr><tr><td></td><td></td><td>4+(1 appearing in the exam in March'23 )</td></tr><tr><td>Bihar</td><td>Completed</td><td></td></tr><tr><td>Jharkhand</td><td></td><td>2</td></tr></table>	Name of the state	Status of implementation of SAMAST	Number of Certified Operator			4+(1 appearing in the exam in March'23 )	Bihar	Completed		Jharkhand		2	<p>In the 203<sup>rd</sup> OCC meeting, representative of ERLDC requested all the SLDCs to send their nominations for the training program at NPTI Durgapur.</p> <p>Representative of Odisha submitted that the number of certified operators is 19.</p>	<p>ERLDC representative emphasized that certification of system 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, Jharkhan</p>
Name of the state	Status of implementation of SAMAST	Number of Certified Operator													
		4+(1 appearing in the exam in March'23 )													
Bihar	Completed														
Jharkhand		2													

	<table><tr><td>Odisha</td><td></td><td>19</td></tr><tr><td></td><td></td><td>50% of the operators will appear for the certification exam by Sep'23</td></tr><tr><td>DVC</td><td></td><td></td></tr><tr><td>WB</td><td></td><td>2</td></tr><tr><td></td><td></td><td>14 nos. system operators will be appearing for certification exam in March'2023</td></tr><tr><td>Sikkim</td><td></td><td></td></tr></table>	Odisha		19			50% of the operators will appear for the certification exam by Sep'23	DVC			WB		2			14 nos. system operators will be appearing for certification exam in March'2023	Sikkim				d,9 operators from SLDC,Bihar and 2 operators from SLDC,West Bengal have participated in training program at NPTI Durgapur. SLDC,West Bengal representative proposed to squeeze the training duration of operators to 15 days to facilitate system operation with adequate manpower.								
Odisha		19																											
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Sikkim																													
7.	<p><b><u>Replacement of Heavily time drifted L&amp;T meters in Eastern Region</u></b></p> <p>In 47<sup>th</sup> TCC &amp; ERPC meeting, it was deliberated that in view of stringent provisions in new DSM regulations, the heavily time drifted L&amp;T make SEMs need to be replaced on priority basis. Accordingly, PowerGrid was advised to replace the heavily time drifted meters on priority basis in co-ordination with ERLDC &amp; concerned utilities.</p> <p>Accordingly, ERLDC has provided a phase-wise replacement list of L&amp;T meters to Powergrid for further necessary action at their end.</p> <table><tr><td>Utility</td><td>Substation</td><td>SEM to be replaced</td><td>SEM replaced</td><td>Remarks</td></tr><tr><td rowspan="6">NTPC</td><td>KAHALGAON</td><td>38</td><td>3</td><td rowspan="6">Phase-1</td></tr><tr><td>BARH</td><td>13</td><td>0</td></tr><tr><td>BRBCL</td><td>3</td><td>0</td></tr><tr><td>KANTI</td><td>6</td><td>6</td></tr><tr><td>TALCHER</td><td>39</td><td>8</td></tr><tr><td>FARAKKA</td><td>14</td><td>12</td></tr></table>		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	12	<p>In the 203<sup>rd</sup> OCC meeting, Representative of ERLDC submitted that 7 nos. of meters have already been provided to West Bengal.</p> <p>Replacement of meters in Powergrid substations would be carried out by Powergrid itself.</p> <p>Representative of NTPC submitted that until any clear directions are provided regarding replacement of meters, status quo would be maintained by them.</p> <p>Representative of Powergrid submitted that in the earlier cases as the cost of installation of were</p>	<p>NTPC Farrakka representative submitted that all time drifted SEMs have been replaced.</p> <p>NTPC Kahalgaon representative submitted that 10 time drifted SEMs have been replaced.</p> <p>NTPC Barh representative claimed to have replaced all 13 time drifted SEMs but ERLDC representative submitted that these 13 nos meters are different ones. Accordingly, OCC advised</p>
Utility	Substation	SEM to be replaced	SEM replaced	Remarks																									
NTPC	KAHALGAON	38	3	Phase-1																									
	BARH	13	0																										
	BRBCL	3	0																										
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	FARAKKA	14	12																										

Minutes of 204<sup>th</sup> OCC Meeting

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		DVC	DHANB AD	2	2			included in the cost of meters, replacement works were being carried out by Powergrid.	<i>ERLDC to share the meter list NTPC Barh.</i>
		WB	NBU	1	0			<p>OCC advised NTPC to get the meters installed using their own resources.</p> <p>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.</p> <p>OCC advised NTPC Talcher to install the meters without any further delay.</p>	<i>Powergrid representative submitted that SEMs have already been provided to West Bengal but yet to be replaced.</i>
			HALDIA	2	0				
			DALKHO LA	3	0				
			BIDHAN NAGAR	3	0				
			MALDA	2	0				
			BIRPAR A	1	0				
		PGCIL	BINAGU RI	2	0				
			BIRPAR A	5	0				
			DURGAP UR	5	5				
			MALDA	4	2				
			SUBHAS GRAM	2	0				
			BERHA MPUR	2	2				
			JEYPORE	2	2				
			KISHAN GANJ	9	1	Phase- 3			
		IPP	CHUZAC HEN	5	5			Phase- 2	
		JHARK HAND	CHANDI L	3	3				
			GARWA	1	1				
			JAPLA	1	1				
			JAMTAR A	1	1				
			KAHALG AON	2	2				
		BIHAR							
8.	<b><u>Ensuring healthiness of ADMS</u></b>								-

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 204 <sup>th</sup> OCC meeting

West Bengal	1. System Frequency < 49.7 Hz 2. WB over-drawl > 150 MW 3. Delay = 4 min	1	Nil	-	
Jharkhand	1. System Frequency < 49.9 Hz 2. Jharkahnd over-drawl > 25 MW 3. Delay = 3 min	126	Nil	-	
DVC	1. System Frequency < 49.9 Hz 2. DVC over-drawl > 150 MW 3. Delay = 3 min	30	Nil	-	
Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. Delay = 3 min	32	Nil	-	

9.	<p align="center"><b><u>Commissioning status of ADMS</u></b></p> <p>Automatic demand management scheme (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.</p> <table border="1"> <thead> <tr> <th>Sl No</th><th>State/Utility</th><th>Logic for ADMS operation</th><th>Target Date</th></tr> </thead> <tbody> <tr> <td>1</td><td>Bihar</td><td>F &lt; 49.7 AND deviation &gt; 12 % or 150 MW</td><td>First week of March-2023</td></tr> </tbody> </table>	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	<p>In the 203<sup>rd</sup> OCC meeting, Representative of Bihar submitted that some new feeders have been added out of which testing of 5 new feeders have been completed.</p>	<p><i>Bihar representative submitted that 9 nos 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 &lt; 49.7 Hz AND Dev &gt; 100 MW for 3 min</i></p>
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								
10.	<p align="center"><b><u>Revised connectivity for Laxmikantpur 400/132 KV S/s and split bus arrangement at Laxmikantpur S/s</u></b></p>	<p>In 49th TCC Meeting, The Committee submitted the</p>	<p><i>Detailed report in this regard</i></p>								

	<p>In the 2nd meeting of ERSCT held on 05-07-2019, CTU informed that the scope of works for establishment of 400/132kV New Laxmikanpur substation through LILO of Subhashgram (POWERGRID) – Haldia 400kV D/c line at New Laxmikanpur 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 Laxmikanpur S/s may jeopardise reliability of power supply in Kolkata area.</p>	<p>following:</p> <ol style="list-style-type: none"> <li>1. Two meetings have been conducted on 20.12.2022 and on 24.01.2023 to discuss revised connectivity for Laxmikanpur 400/132 KV S/s. The final report is under preparation.</li> <li>2. Two measures have been recommended by the Committee: <ol style="list-style-type: none"> <li>a) Final arrangement: One circuit of 400kV New Jeerat-Subhasgram D/C to be LILOed at 400/132 KV Laxmikanpur S/s. Necessary load flow study has to be conducted by CTU for this arrangement.</li> <li>b) Interim arrangement: One circuit of 400kV HEL-Subhasgram D/C to be LILOed at 400/132 KV Laxmikanpur S/s. Transient study has already been conducted by HEL and the same has been submitted to OEM for suggestions/feedback. However, the same is awaited from OEM.</li> </ol> </li> <li>3. The Committee requested TCC for extension of timeline for submission of the final report.</li> </ol> <p>TCC advised the following:</p> <ol style="list-style-type: none"> <li>1. HEL to expedite the matter with OEM in getting their feedback.</li> <li>2. CTU to conduct the load flow study at the earliest.</li> <li>3. Committee to submit the final report by</li> </ol>	<p>has already been submitted by the Committee constituted for the purpose. WB STU representative suggested the issue to be taken up by CTU in 20<sup>th</sup> CMETS-ER meeting for further deliberation in line with Committee report.</p> <p>OCC, thus agreed on referring the agenda to upcoming CMETS meeting.</p> <p>-</p>
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		April'2023.	
11.	<p><b><u>Operational challenges in Jharkhand network due to multiple long outages/tripping</u></b></p> <p>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.</p> <p>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 (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%.</p> <p>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.</p> <p><b>A list of major elements outages in JUSNL are provided below:</b></p> <ul style="list-style-type: none"> <li>• 400 KV/220KV 315 MVA ICT 2 AT PATRATU: 27-09-2022 (DGA violation)</li> <li>• 400 KV/220KV 315 MVA ICT 1 AT PATRATU: 01-08-2022 (Buchholz Relay)</li> <li>• 220 KV/132KV 100 MVA ICT 2 AT LALMATIA: 22-01-2019 (FAILURE OF HV SIDE BREAKER)</li> <li>• 220 KV/132KV 100 MVA ICT 3 AT CHANDIL: 30-04-2020 (ICT failed due to fire)</li> <li>• 220 kV Tenughat-Patratu S/C: Under long shutdown for shifting work</li> <li>• 220 KV-RANCHI-HATIA-2: 24-09-2022 (Tower collapse)</li> <li>• 220 KV-FSTPP-LALMATIA-1: 21-04-2021 (Tower collapse)</li> </ul>	<p><b><u>400 kV/220kV 315 MVA ICT 1 &amp; ICT2 AT PATRATU</u></b></p> <p>Powergrid vide mail dated 16.06.2023 submitted that the following:</p> <ol style="list-style-type: none"> <li>1. ICT 1 is at Patratu site and commissioning activities are started. Commissioning schedule is attached at <b>Annexure B.14.11</b>. The same is expected to be commissioned by 30th June 2023.</li> <li>2. ICT 2 has reached factory and preliminary inspection started on 15.06.23. Detailed investigation/opening of insulation/winding dismantling shall be carried out in due course.(photographs attached at <b>Annexure B.14.11</b>)</li> </ol> <p><b><u>220kV/132 100 MVA ICT-2 AT LALMATIA (FAILURE OF HV SIDE BREAKER)</u></b></p> <p>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.</p> <p>In the 201<sup>st</sup> OCC meeting it was informed that <b><u>220kV/132 100 MVA ICT-2 AT LALMATIA (FAILURE OF HV SIDE BREAKER)</u></b>; W.O. would be issued by 1<sup>st</sup> week of April'2023.</p> <p><b><u>220kV/132kV 100 MVA ICT-3 AT CHANDIL</u></b></p>	<p>1.Powergrid ER-1 representative submitted that ICT 1 at Patratu site is to be commissioned by 10.07.2023.</p> <p>2.He further added that tentative timeline of ICT 2 commissioning at Patratu site is October 2023.</p> <p>JUSNL representative submitted that 220kV/132 100 MVA ICT-2 AT LALMATIA is to be charged by July'2023</p>

		In place of this ICT new ICT of 100 MVA will be procured soon. The tender is under technical evaluation stage and work order would be placed soon. The expected timeline of completion is July 2023.	JUSNL representative informed that tentative timeline of commissioning 220kV/132kV 100 MVA ICT-3 AT CHANDIL is December 2023
12.	<p><b><u>Installation of Transmission Line Arrestor in 220 KV lines in North Bengal – PGCIL ER-II.</u></b></p> <p>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 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.</p> <p>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.</p> <p>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 48<sup>th</sup> CCM at ERPC.</p>	In the 203 <sup>rd</sup> OCC meeting of ERPC, It was informed that 170 TLA out of 500 have been installed in the 220 KV D/C Siliguri-Kishanganj ckt-1&2. By June 2023 end, 330 TLA would be installed.	Powergrid ER-II informed that 825 out of 830 TLA have been installed, remaining 5 Line arrestors to be installed by 25.06.2023
13.	<b><u>Removal of Internet Connectivity from AMR server at ERLDC as per compliance</u></b>	In the 203 <sup>rd</sup> OCC meeting,	Representative



	<p><b><u>against cyber security guidelines.</u></b></p> <p>Presently total 163 No's SS are connected in AMR system, and total 142 No's stations are now communicating over LAN, and remaining 21 No stations are communicating over GPRS which require internet connectivity at AMR server at ERLDC.</p> <p>As per CEA directive, segregation to be done between IT/OT network for cyber security compliance and to maintain that Public IP based internet connectivity (Very much vulnerable) to be removed immediately from AMR server.</p>	<p>representative of ERLDC submitted that an online training program was conducted on 27.04.2023 after which data is being received on timely basis.</p>	<p><i>of Powergrid submitted that removal of internet connectivity from AMR server at ERLDC was done on 22.06.2023.</i></p>
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## **PART C: ITEMS FOR UPDATE**

### **ITEM NO. C.1: ER Grid performance during May 2023.**

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month May-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)
544.6 MU	610.4 MU 31-05-2023	27761 MW, 31-05-2023 at 23:39 Hrs.	17621.9 MW, 01-05-2023 at 17:17 Hrs.	2617	2714

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

### **Deliberation in meeting**

*The grid performance of ER for the month of May 2023 was highlighted.*

### **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 upto 31.05.2023 is given below:

Event	Frequency Change	ER FRC
<b>Event 1:</b> On 01st May 2023, As reported, at 13:23 hrs, Multiple tripping of 765kV lines (765kV Fatehgarh II - Bhadla I Ckt-I, 765kV Ajmer - Bhadla II ckt-I, 765kV Ajmer - Phagick-I) occurred due to operation of over voltage stage-1 protection operation in Northern region Rajasthan Renewable complex and solar generation loss of around 1130 MW observed.	Initial Frequency: 50.174 Hz Nadir Frequency: 50.042 Hz Final Frequency : 50.110 Hz. Frequency change= 0.06 Hz	<b>29.4 %</b>
<b>Event 2:</b> On 15th May 2023, As reported at 11:51 hrs, Multiple tripping in Rajasthan renewal generation complex in Northern Region occurred and resulted in generation loss of around 7120 MW.	Initial Frequency: 49.981 Hz Nadir Frequency: 49.400 Hz Final Frequency : 49.742 Hz. Frequency change= 0.24 Hz	<b>31.3 %</b>

STATION S	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
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	06:48	05:52	12:06	13:03	14:55	15:18	09:56	11:45	12:29	09:16	10:37	13:23	11:51
ADHUNK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
BARH	Received	Received	Pending	Pending	Pending	Pending	Received	Received	Received	Received	Received	Pending	Received
BRBCL	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
DARLIPALLI	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
DIKCHU	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
FARAKKA	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Pending
GMR	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
JITPL	Pending	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
KAHALGAON	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
MPL	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
NPGC	Received	Received	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Received	Pending
TALCHER	Received	Received	Received	Received	Received	Received	Pending	Received	Received	Received	Received	Received	Pending
TEESTA III	Received	Received	Received	Received	Received	Received	Received	Received	Received	Pending	Pending	Received	Pending
TEESTA V	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
North Karanpura	NA	NA	NA	NA	NA	NA	NA	NA	NA	Pending	Pending	Pending	Pending

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.

#### **Deliberation in meeting**

*OCC advised all utilities to ensure timely submission of data to ERLDC*

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

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

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

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

Respective utilities may update.

**Deliberation in meeting**

*OCC advised all the utilities to update the status of PSDF project, if any, to ERPC and ERLDC.*

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

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

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

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

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

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

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

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

In the 185<sup>th</sup> OCC meeting, DVC representative informed that the NIT for implementation of AGC will

be floated by 9<sup>th</sup> December 2021.

OPGC representative was not present during the discussion.

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

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

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

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

Members may update.

#### **Deliberation in meeting**

*OCC advised all the utilities to update the status, if any, to ERPC and ERLDC.*

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

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

#### **Deliberation in meeting**

*Members updated.*

#### **ITEM NO. C.6: Status of Islanding Schemes healthiness installed in Eastern Region.**

As per the decision taken in the meeting held on 8<sup>th</sup> July 2021 and chaired by member (GO&D),

CEA, data in prescribed formats may be submitted by concerned utilities to RPCs on monthly basis to certify the healthiness of the Islanding Schemes.

##### **a. Format – I for RLDC/SLDCs**

S.NO	Name of Islanding Scheme	Healthiness of Communication channel

##### **b. Format – II for Generating Station**

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

##### **c. Format – III for Transmission Utility/DISCOMs**



S.NO	Name of Islanding Scheme	Elements considered for tripping to from Island	For communication-based tripping logic Of feeders	For UFR based tripping logic of feeders	
			Healthiness of Communication channel	Healthiness of PT Fuse and status of DC supply 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 Nodal Officer

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

**Deliberation in meeting**

OCC advised all the utilities to update the status, if any, to ERPC and ERLDC.

**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 **June-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	6990	--	0	--	6850	--	May-23
2	JUSNL	1586	--	39	--	1547	--	June-23
3	DVC	<b>1940</b>	<b>3371</b>	72	56	<b>1868</b>	<b>3315</b>	June-23
4	OPTCL	3898	1338	145	70	3753	1268	June-23
5	WBSETCL	6475	--	450	--	6025	--	June-23
6	Sikkim	170	--	1	--	169	--	May-23

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

State	Bihar	Jharkhand	DVC	Odisha	West Bengal	Sikkim
Month						
May-23	Submitted	Submitted	Submitted	Submitted	Submitted	Submitted
June-23	Pending	Submitted	Submitted	Submitted	Submitted	Pending
July-23	Pending	Submitted	Submitted	Submitted	Submitted	Pending
Aug-23	Pending	Pending	Submitted	Submitted	Pending	Submitted
Sep-23	Pending	Pending	Pending	Pending	Pending	Pending

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

Sl No	SLDC	Declared on Website	Website Link	Constraint Available on Website	Type of Website Link

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

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.

#### **Deliberation in meeting**

*OCC advised all the utilities to update the status, if any, to ERPC and ERLDC.*

#### **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	21 <sup>st</sup> July-2022	Jan-2023	
2	Balimela	July-2022	09 <sup>th</sup> 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 under progress due		Dec-2022	

		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.

### **Deliberation in meeting**

*OCC advised all the 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 400/2 20 kV	500 MVA 400/2 20 kV	315 MVA 400/1 32 kV	200 MVA 400/1 32 kV	270 MVA 400/1 32 kV	250 MVA 400/2 20 kV	1500 MVA 765/4 00 kV	255 MVA 765/1 32 kV	Cold Spare Availabilit y
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 192<sup>nd</sup> 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 193<sup>rd</sup> 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 193<sup>rd</sup> OCC Meeting**

Utility	500 MVA	315 MVA	160 MVA
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	<b>400/220 kV</b>	<b>400/220 kV</b>	<b>220/132 kV</b>
<b>PGCIL ERTS 1</b>	1: Under procurement; will be put at Sasaram	1: Muzaffarpur (released with ICT upgradation) 1: Bihar Sharif 1 : Under Procurement	1: Purnea 1: Daltonganj
<b>PGCIL ERTS 2</b>	1 : Under procurement will be put at either Malda or Shubhasgram	1 :Malda (released with ICT upgradation) 1: Durgapur (released with ICT upgradation)	1 :Silliguri
<b>PGCIL Odisha</b>	1: Under procurement and will be put at Pandiabili	1: Will be procured	1 :Baripada
<b>OPTCL</b>	1: Under procurement	Under discussion with management	Notavailable
<b>DVC</b>	Not available	1 will be spare in future as per new approved plan	Not available
<b>WBSETCL</b>	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.

### **Deliberation in meeting**

*The latest status, as updated by the concerned utilities in the 204<sup>th</sup> OCC meeting is given below:*

<b>Utility</b>	<b>500 MVA 400/220 kV</b>	<b>315 MVA 400/220 kV</b>	<b>160 MVA 220/132 kV</b>
<b>PGCIL ERTS 1</b>	1. Sasaram (under commissioning)	1: Muzaffarpur (released with ICT upgradation)	1: Purnea 1: Daltonganj
<b>PGCIL ERTS 2</b>	1 : Maithon	1 :Malda (released with ICT upgradation) 1: Durgapur (released with ICT upgradation)	1 :Silliguri
<b>PGCIL Odisha</b>	1: Pandiabili	-	1 :Baripada
<b>OPTCL</b>	1: Under procurement	Under discussion with management	Notavailable
<b>DVC</b>	Not available	1 will be spare in future as per new approved plan	Not available
<b>WBSETCL</b>	No detail	No detail	Not available

**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 availability and 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 192<sup>nd</sup> 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.

SI	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)	
		220 kV	42	18 (Newly procured) Mancheswar store - 18 nos. (Hitech)	
				Budhipadar - 14 nos. (Lindsey)	
				Mancheswar grid - 14Nos. (Lindsey) Chatrapur - 14 nos. (Lindsey)	
2	PGCIL ERTS 1	765 kV -24 sets	24 Sets	GAYA	15 Suspension & 9 Tension tower
		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	Central India (Koradi, Maharashtra)- <b>48 Hours</b>	Modular aluminum guyed towers- Suspension tower



SI	Utility	voltage levels	Number of ERS towers available	Location of ERS situated	Type of ERS (Suspension/ Tension/ any other)
			conductor.		
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
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,	-

SI	Utility	voltage levels	Number of ERS towers available	Location of ERS situated	Type of ERS (Suspension/ Tension/ any other)
				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 Kolkata.	Can be Dispatched in 2–3-weeks periods	-
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-Barsoickt 4 towers for 220 kv BTPS-Hazipurckt 4 towers for 220 kV	Can be used for both suspension and Tension

SI	Utility	voltage levels	Number of ERS towers available	Location of ERS situated	Type of ERS (Suspension/Tension/any other)
				Bodhgaya- Chandauti  Purnea : 1  Dehri on sone: 2  Sultanganj: 2  Fatuah: 2  Muzaffarpur : 4	
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: <b>Under procurement</b> 220 kV: 1 at putki and 1 at Maithon	-
18	Sikkim Power Department		Details awaited	Details awaited	Details awaited

In the 193<sup>rd</sup> 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	<b>Spare</b>	220/132 KV	Suspension/Tension	<b>1</b>
Dehri	<b>Spare</b>	220/132 KV	Suspension/Tension	<b>2</b>
Fatua	<b>Spare</b>	220/132 KV	Suspension/Tension	<b>3</b>
Mujaffarpur	<b>Spare</b>	220/132 KV	Suspension/Tension	<b>4</b>

Sultanganj	Spare	220/132 KV	Suspension/Tension	2
<b>Total</b>				<b>38</b>

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.

### **Deliberation in meeting**

*OCC advised all the utilities to update the status, if any, to ERPC and ERLDC.*

### **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.  <b>Action Required:-</b> 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	<b>OPTCL to provide a target date for Long term measures</b>
2	i. 220 kV Lapanga-Katapalli D/C , ii. 220 kV Katapali-New Bargarh-Sadepalli (New Bolangir) S/C iii. 220 kV	No SPS Available. <b>Action Required:-</b> SPS/Load trimming scheme needs to be planned	Odisha to share long-term remedial action to make the system N-1 secure.	<b>OPTCL to provide a target date for Long term measures</b>

Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
	Katapali-Bolangir (PG)- S/C			
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 (3 <sup>rd</sup> ) ICT at Bidhannagar	Target Date 2022-23. <b>WBSETCL may update the present Status</b>
Transmission Constraint in DVC Network				
4	i. 220 kV <b>DSTPS-Waria D/C*</b>	No SPS is Available. <b>Action Required:-</b> 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	<b>DVC may update the target date</b>
5	ii. 220 kV Maithon-Dhanbad D/C, iii. 220 kV Maithon-Kalyanesh wari D/C	No SPS is Available. <b>Action Required:-</b> 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	<b>DVC may update the target date</b>
<b>* The N-1 violation of 220 kV DSTPS- Waria D/C or DSTPS ICT 1&amp;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 be implemented in time bound manner.</b>				
Transmission Constraint in Jharkhand Network				

Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
6	220 kV Maithon Dumka D/C	No SPS Available. <b>Action Required:-</b> SPS/Load trimming scheme needs to be planned	i. LILO of 1st circuit of 220kVDumka – Govindpur D/c lineat Dhanbad	Target Date 2023. <b>Jharkhand may update the target date</b>
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 reconduiting <b>WBSETCL may update the present Status</b>
7	i. 220 kV Subhasgram (PG) – Subhasgram (WB) D/C ii. 220 kV Subhasgram (WB)-Lakshmikant pur 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 Lakshmikantpur.	i. Line antitheft charged from Subhasgram end ii. Lakshmikantpurtareget date is December 2024 <b>WBSETCL may update the present Status</b>
Transmission Constraint in Bihar Network				
8.	220 kV Darbhanga-Darbhang(BH) D/C	No SPS Available. <b>Action Required:-</b> SPS/Load trimming scheme needs to be planned	Bihar to share long-term remedial action to make the system N-1 secure.	<b>Bihar to provide a target date for Long term measures</b>
9.	220 kV Muzzafarpur-Hazipur D/C	No SPS Available. <b>Action Required:-</b> SPS/Load trimming scheme needs to be planned	1. 220 kV Muzzafarpur-Amnour D/C	<b>Bihar to provide a target date for Long term measures</b>
10.	220 kV Gaya Bodhgaya D/C	No SPS Available. <b>Action Required:-</b> SPS/Load trimming	1. 220 kV Gaya Bodhgaya Second D/C	<b>Bihar to provide a target date for Long term measures</b>



Sl. No	Name of Element	Short Term Measures	Long term Measures	The target date for long term measures
		scheme needs to be planned		

In the 193<sup>rd</sup> 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 21<sup>st</sup> 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.

#### **Deliberation in meeting**

*OCC advised all the utilities to update the status, if any, to ERPC and ERLDC*

#### **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 Gokarno ICTs <b>Action Required:-</b> Load trimming scheme needs to be	i. 3 <sup>rd</sup> ICT at Gokarno	Target Date Dec-22 <b>WBSETCL may update the present Status</b>

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	planned for Sagardighi		
2	i. 400/220 kV ICT-1 & 2 at Bidhannagar	No SPS Available <b>Action Required:-</b> SPS needs to be planned	i. 400/220kV315MVA (3rd) ICT at Bidhannagar	Target Date 2022-23 <b>WBSETCL may update the present Status</b>
ICT Constraint in ISTS Network				
3	i. 400/220 kV Ranchi 2 X 315 MVA ICTs	SPS Available	i. 3 <sup>rd</sup> 500 MVA ICT at Ranchi	<b>POWERGRID may update the target date</b>
ICT Constraint in DVC Network				
4	i. 400/220 kV Bokaro A 2 X 315 MVA ICTs	No SPS Available <b>Action Required:-</b> SPS needs to be planned	i. Upgradation with 500 MVA ICTs	<b>DVC may update target date</b>
5	<b>i.400/220 kV ICT-1 &amp;2 at DSTPS *</b>	No SPS Available <b>Action Required:-</b> SPS needs to be planned	i. Upgradation with 500 MVA ICTs	<b>DVC may update target date</b>
ICT Constraint in Odisha Network				
6	i. 400/220 kV New Duburi2 X 315 MVA ICTs	No SPS Available <b>Action Required:-</b> SPS needs to be planned	i) 3 <sup>rd</sup> ICT at New Duburi	<b>Odisha may update the target date</b>

In the 193<sup>rd</sup> 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.

#### **Deliberation in meeting**

*OCC advised all the utilities to update the status, if any, to ERPC and ERLDC*

## PART D: OPERATIONAL PLANNING

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

#### Deliberation in meeting

The updated anticipated power supply position for July 2023 is provided at **Annexure D.1**

### ITEM NO. D.2: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 14.06.2023)

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

SL No	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	ADHUNIK	JHARKHAND	APNRL	2	270	Generator stator earth fault (Stator winding flash over)	12-Mar-2023
2	KOLAGHAT	WEST BENGAL	WBDCL	4	210	For boiler license renewal followed by boiler overhauling for 20 days	06-June-2023
3	BANDEL TPS	WEST BENGAL	WBDCL	2	60	Poor coal Stock	06-June-2023
4	Sterlite	ODISHA	SEL	2	600	Initially ash handling problem. later, guide roller broke down and to be replaced with new one. as reported, no spare guide roller is available now.	10-June-2023
5	DPL	WEST BENGAL	WBDCL	8	250	Boiler tube leakage	12-June-2023
6	MEJIA TPS	DVC	DVC	7	500	Boiler Tube Leakage	13-June-2023
7	MPL	JHARKHAND	MPL	2	525	Boiler Tube Leakage	14-June-2023
8	FSTPP	WEST BENGAL	NTPC	2	200	STATOR EARTH FAULT	14-June-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:

S. NO	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	MEJIA TPS	DVC	DVC	4	210	Initially tripped due to very low Furnace pressure. Unit was under RSD from 00:00 hrs 15.05. 2023. Again from 20.05.2023 it is out due to CHP Fuel feeding Problem. Further, unit is under RSD from 14:30 hrs of 25.05.2023. Now, unit is out due to	11-May-2023

snapping of belt from-16:30 hrs on 30.05.2023. Unit again under RSD from 19:53 Hrs of 12/06/2023

### 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 for 18 months.	08-Jul-2022
2	BALIMELA HPS	ODISHA	OHPC	4	60	The unit taken out under R & M for 18 months.	08-Jul-2022
3	INDRAVATI	ODISHA	OHPC	4	150	Capital maintenance for 6 Months, New stator change by OEM,Turbine OH	09-Dec-2022
4	U. KOLAB	ODISHA	OHPC	2	80	Stator Earth Fault (Winding damage)	29-Mar-2023

### d) Long outage report of transmission lines (As on 14.06.2023):

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 COLLAPSED AND CONDUCTOR THEFT MORE THAN 400CKM AND RESTORATION WORK IS IN PROGRESS
220/132 KV 100 MVA ICT II AT LALMATIA	22.01.2019	FAILURE OF HV SIDE BREAKER
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- 1	21.04.2021	THREE TOWER COLLAPSED NEAR LALMATIA
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-1)
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
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.
132KV-BARHI-RAJGIR-1	25.04.2023	DISMANTLING OF TOWER NO. 227, 228, AND 229 CROSSING THE PREMISES OF MAHABODHI CULTURAL CENTRE ALONG WITH DESTSTRINGING OF CONDUCTOR OF BOTH CIRCUITS AND EARTH WIRE BETWEEN TENSION TOWER NO. 218-237 IN SAME LINE.
132KV-NALANDA-BARHI(DVC)-1	25.04.2023	
400KV/132KV 200 MVA ICT 1 AT MOTIHARI (DMTCL)	29.05.2023	DIFFERENTIAL RELAY OPERATED (BLAST IN B-PHASE IV BUSHING OF 400/132KV 200MVA ICT-1 AT DMTCL MOTIHARI).
220KV-BIHARSARIEFF-TTPS-1	03.06.2023	TOWER ERECTION ALONG WITH CONDUCTOR STRINGING AT TTPS END FOR DIVERSION OF 400KV TENUGHAT-PATRATU TO PROVIDE START-UP POWER TO PVUNL(NTPC)
HVDC TALCHER -KOLAR Pole-II	06.06.2023	DISCONNECTOR AT POLE-2 GOT DAMAGED
400KV-NEW DUBURI-MEERAMUNDALI-1 & 2	08.06.2023	TOWER COLLAPSE AT LOC NO 135 (APPX 31KM FROM MERAMUNDALI)
220KV-TSTPP-MEERAMUNDALI-1&2	10.06.2023	TOWER COLLAPSE AT LOC NO 41, 42 (FROM MERAMUNDALI END)
400KV-MERAMUNDALI-LAPANGA-1&2	10.06.2023	TOWER COLLAPSE AT LOC NO 08 (FROM MERAMUNDALI END)

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)

### **Deliberation in meeting**

*Members noted.*

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

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

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:



GSS Name	Description	FTC Date	FTC Time	Remarks
Kataiya	132KV Kataiya-Kushaha (Nepal) Circuit No.03 Transmission Line.	23-05-2023	20:15	
Raxaul (New)	220 kv raxaul - gopalganj ckt 1	28-05-2023	17:08	Anti theft charge as bay is not ready at Gopalganj end
Raxaul (New)	220 kv raxaul Gopalganj ckt 2 transmission line	28-05-2023	16:50	Anti theft charge as bay is not ready at Gopalganj end
Amnour	220 kv muzaffarpur(PG) bay 2 AT BGCL AMNOUR	11-05-2023	18:34	
Amnour	220 kv muzaffarpur (PG) bay 1 AT BGCL AMNOUR	11-05-2023	18:32	
Amnour	220 kv digha New bay 2 AT BGCL AMNOUR	11-05-2023	18:35	
Amnour	220 kv digha New bay 1 AT BGCL AMNOUR	11-05-2023	18:36	

Members may note.

### **Deliberation in meeting**

*Members noted.*

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

Frequency profile for the month as follows:

Month	Max	Min	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
	(Date/Time)	(Date/Time)			
June, 2023	50.43 Hz on 18.05.2023 at 01:19 Hrs.	49.48 Hz on 15.05.2023 at 11:52 Hrs.	9.8	68.3	21.9

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

Members may note.

### **Deliberation in meeting**

*Members noted.*

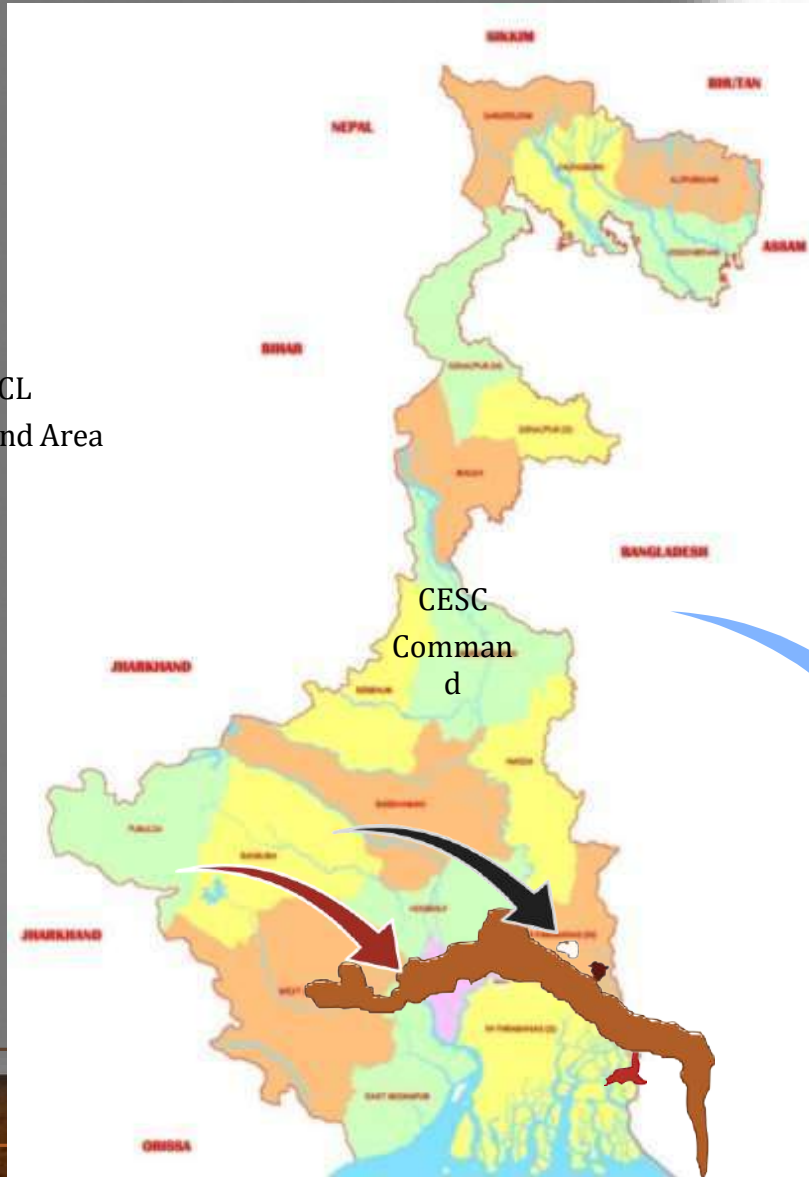
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## ANNEXURE B.1

WBSETCL  
COMMAND

DVC  
Command  
d

IPCL  
Command Area



**A brief overview on the  
assistance extended from  
WBSETCL to CESC to meet the  
demand of state capital during  
summer season of 2023**

## A brief background history

CESC was an embedded consumer of WBSEDCL till the time they used to take power through 5 interfacing point of WBSETCL only to fulfil its excess demand beyond it's internal generation. As on today CESC is drawing power through 5 points of connectivity with WBSETCL system ( 150 MW LTOA from Kasba / Howrah point and rest through STOA) and through one CTU connectivity at Subhasgram (PG). The average load growth of around 4% of WBSEDCL and that of the state system has jumped up to around 16% and 16.73% respectively and that of CESC also more than 11% since last one year. This unprecedented load rise in a year has resulted in severe congestion in different segments including the corridors related to power supply to state capital, one of such congested point is Subhasgram(PG) 400/220 kV sub-station, as has been experienced in summer 2023.



## Maximum demand recorded for CESC during 2019-20

*Maximum demand of CESC was recorded as **2340 MW** on 10.05.2019. This was met with following break up of CESC's own generation plus drawal from different points of WBSETCL & of Power Grid Subhasgram s/stn:*

CESC's Generating stn	Generation sent out	CESC's drawal points	Total drawal (in MW)
Budge Budge	699 MW		
southern	125 MW		
		Kasba WBSETCL	301
		Howrah	223
		Rishra	124
		Titagarh	75
		Liluah	88
		Subhasgram (PG)	705

## **The Journey --The way SLDC, WEST BENGAL, WBSETCL extended help to CESC for providing power to state capital**

1. Not raised the demand of split bus arrangement (CESC with it's assets and lines in one bus) at Subhasgram (PG) point against ERLDC's through bus operation at Subhasgram(PG) which has allowed CESC to draw continuously more than it's installed capacity in Subhasgram(PG) through out the period from very beginning.
2. While allowing the CTU connectivity at Subhasgram (PG) for CESC at pre-GNA regime during 2014 around by honourable CERC, it was decided that CESC will draw 400 MW power from Subhasgram(PG) through it's 220 kV Subhasgram-EM D/C lines. ERLDC allowed CESC to operate in through bus resulting in 850+ MW drawal by CESC from Subhasgram(PG) point by CESC.
3. Allowing CESC to draw power through 5 points of WBSETCL not maintaining (n-1) in WBSETCL network.
4. At Titagarh point though CESC is not bringing back their generation for some unknown issue (up to this date, we don't have any document from WBERC or from NGT that these machines are decommissioned), we have extended power assistance sometime up to 75, 80 MW even in past and now in this summer, up to 50-60 MW during the extremely high system demand day at particular hours and withdrawn restriction whenever system permits..



•Despite of the fact that WBSEDCL is drawing 865 MW around against it's installed capacity of 1130 MVA at Subhasgram point, we have proposed to install 1600 Amp CT in respect

## **The Journey --The way SLDC, WEST BENGAL, WBSETCL extended help to CESC for providing power to state capital**

4. Despite of the fact that WBSEDCL has drawn maximum 865 MW around against it's installed capacity of 1130 MVA at Subhasgram point, we have proposed to install 1600 Amp CT in respect of 220 kV Rajarhat-New Town AA3 lines sacrificing bus differential protection of 220 KV New Town AA3 sub-station of WBSETCL to harness some more power from Rajarhat 400 kV sub-station to Subhasgram, so that CESC can draw some more power (way more than its installed capacity at Subhasgram(PG) sub-station) from Subhasgram (PG) point.

5.At the last, but not the least to mention that finally SLDC WB has removed in first phase its load of 220/33 kV transformer load from bus 2 to bus 1 at New Town AA3 sub-station and in second phase the load of KLC also on single ckt on New Town / Rajarhat sub-station radially to reduce loading of Subhasgram ICTs or in other word creating room for CESC to draw more from Subhasgram(PG) point.

**This has severely affected the redundancy of 5 numbers of EHT sub-stations (Ntown AA3, Ntown AA1, SLT GIS, KLC, Basirhat) of WBSETCL. It's important to mention here that OCC forum has continuously requested SLDC, WB to go for such a network arrangement to reduce loading of Subhasgram (PG) ICTs at the cost of creating vulnerability to WBSETCL's network.**



## Maximum permissible quantum from different connectivity points of WBSETCL maintaining (n-1) during summer load of 2023

CESC's Point of Drawal from WBSETCL	Maximum amount (in MW) can be allowed maintaining (n-1) contingency	Actually allowed drawal (in MW) after imposing restrictions in real time
Kasba	210	350
Howrah	180	(Howrah + Liluah) combined restriction 300 to 320
Liluah	100	
Rishra	90	100
Titagarh	50	50 to 60
total	<b>630</b>	<b>800 to 830</b>

This may please be noted that the allowed quantum made network of WBSETCL vulnerable, and with growing load of WBSEDCL in coming years this allowed amount will reduce to avoid any major grid hazard like cascade tripping.



# CESC's drawal from different points of WBSETCL on 15.06.2023

15/6 /2023			14:36:0			Rev. No. 141			TABLE - 2			FREQ 49.73 HZ			
PDCL GENERATION						GENERATION		SYSTEM/ C.S TIES		C.S TIES		CESC TIES			
STN NAME	MW	MVAR	STN NAME	MW	MVAR	DCL GEN	MW					WB - CESC TIES	MW	MVAR	
BTPS U2	↑ 0	↑ 0	KTPS U3	↑ 126	↑ 98	PPS N	↑	DCL DRL	↑ 8460	NTWN3-SUB_PG	↑ 0	HOW-CESC	↑ 229	↑ 16	
U5	↑ 189	↑ 122	U4	↑ 0	↑ 0	PPS P	↓	DCL SYSTM	↑ 8128	KLC-SUB_PG	↑ 0	KSB-CESC	↑ 403R	↑ 1	
			U5	↑ 166	↑ 51	TCF-1+2+3	↑ 0	CESC SYS	↑ 2603Q	SUB-SUB_PG1	↑ 408	LILU-CESC	↑ 141	↑ 5	
TOT GEN	↑ 189	↑ 122	U6	↑ 161	↑ 40	RAM TOT	↑ 40	DPL SYS	↑ 398	SUB-SUB_PG2	↑ 467	TTG-CESC	↑ 57	↑ 17	
SENT OUT	↑ 170					JHP TOT	↑ 31	DVC LOAD	↑ 1018	BARULSUB_PG1	↑ 3	RSH-CESC	↑ 108	↑ 14	
			TOT GEN	↑ 453	↑ 189			NPSP-RACHI1	↑ 426		↑ 3	SUB-CESC	↑ 837	↑ 106	
STPS U5	↑ 195	↑ 68	SENT OUT	↑ 408		HYD TOT	↑ 71	NPSP-RACHI2	↑ 424	NTWN-RJRHT2	↑ 261	CESC DRL	↑ 1776	↑ 148	
U6	↑ 192	↑ 65	U1	↑ 265	↑ 66	TLDP3(S/O)	↑ 116	DGP-PAR1	↑ 377	BARAS-RJRHT1	↑ 155	KSB-CESC-1	↑ 205	↑ 10	
TOT GEN	↑ 387	↑ 132	SGTPS U2	↑ 282	↑ 71	TLDP4(S/O)	↑ 168	DGP-PAR2	↑ 362	BARAS-RJRHT2	↑ 154	KSB-CESC-2	↑ 198	↑ 2	
SENT OUT	↑ 347		U3	↑ 475	↑ 103	HRM EL(S/O)	↑ 210	DGP-WAR1	↑ 0	DUMMY DRL	↑ 0	HEL-SUBH(PG)1	↑ 276		
			U4	↑ 481	↑ 99	TATA (S/O)	↑ 91	DGP-WAR2	↑ 0	SUM (S.B)	↑ 5351	HEL-SUBH(PG)2	↑ 275		
			TOT GEN	↑ 1503	↑ 336	CRSNT (S/O)	↑ 32	KGP-MEDNI1	↑ 91	MLD-MLD1	↑ 29	CESC-SUBH(PG)1	↑ 423		
			SENT OUT	↑ 1380		CESC GEN	MW	KGP-CHAIB1	↑ 92	MLD-MLD2	↑ 108	CESC-SUBH(PG)2	↑ 414		
BKTPS U1	↑ 153	↑ 75	SOLAR			BDG-1	↑ 256	KGP-CHAIB2	↑ 282	BIR-BIR1	↑ 45	DGP-DPL TIES	MW	MVAR	
U2	↑ 156	↑ 11	GROUND	↑ 3		BDG-2	↑ 251	KGP-KALB	↑ 54	BIR-BIR2	↑ 45	DGP-B ZONE	↑ 64	↑ 9	
U3	↑ 159	↑ 83	FLOATING	↑ 1		BDG-3	↑ 261	CHAND-MEDNI1	↑ 177	NSU-S2-2	↑ 44	DGP-C ZONE	↑ 46	↑ 4	
U4	↑ 171	↑ 139	DPL U7	↑ 213		SDRN	↑ 143	CHAND-MEDNI2	↑ 177	RAM-RNGT	↑ 7	DGP-DPL1	↑ 37	↑ 24	
U5	↑ 179	↑ 103	U8	↑ 0		TOTAL	↑ 910	JRT-JRT_PG 1	↑ 186	NJP-S2-1	↑ 26	DGP-DPL2	↑ 42	↑ 21	
TOT GEN	↑ 819	↑ 409	TOT GEN	↑ 213		HEL GEN	U1	JRT-JRT_PG 2	↑ 182	NJP-S4-1	↑ 95	NET DPL	↑ 188		
SENT OUT	↑ 737		SENT OUT	↑ 192		U2	↑ 298	SUBH-JRT_PG 1	↑ 290	NJP-S4-2	↑ 59	C.S GENERATION			
			PDCL GEN	↑ 3562	↑ 1187			SUBH-JRT_PG 2	↑ 291	ALIPR-ALIPR1	↑ 48	FARAKKA	↑ 1156		
			DMY GEN	↑ 0				JRT-SUBH	↑ 325	ALIPR-ALIPR2	↑ 48	TALCHER	↑ 795		
			PDCL S/O	↑ 3236				JRT-RAJRHT	↑ 278	GAJOL-MLD1	↑ 0	KAHAL	↑ 1661		
			MEDNPR-NRCHI1	↑ 745				GOK-RAJRHT	↑ 377	GAJOL-MLD2	↑ 2	CHUKHA	↑ 6		
			MEDNPR-JRT PG1	↑ 480				RAJHT-PARK1	↑ 473	GAJOL-DLK1	↑ 0	TALA	↑ 743		
								GOK- PURNEA	↑ 561	GAJOL-DLK2	↑ 145	KURICHU	↑ 20		
								SAG-FARK1	↑ 531	DLK-DLK1	↑ 119	RANGIT	↑ 55		
								SAG-FARK2	↑ 478	DLK-DLK2	↑ 104	TEESTA	↑ 531		
								SAG-PAR1	↑ 158	DLK-BAISI	↑ 18	DSTPP	↑ 1423		
								SAG-PAR2	↑ 158	KURSG-S2	↑ 10	MANGDECHU	↑ 297		
								SAG-BERH1	↑ 20	KURSG-RNG	↑ 17				
								SAG-BERH2	↑ 19	KLPG-MELI	↑ 5				
								KOL-KLDV	↑ 0	DMY DRL NB	↑ 35				
								STPS-CHDL	↑ 75	SUM (N.B)	↑ 742				
										NET TIE	↑ 6092				
SYSTEM TCL								TOTAL GEN		STATE GEN		STATE DMND		W.B DMND	
10611.0								4515.8		5758.8		11014.9		12012.2	
SCHEDULE		DRAWAL		NET		SYSTEM TCL		TOTAL GEN		STATE GEN		STATE DMND		W.B DMND	
↑ 6002.4		↑ 115.9		↑ 115.9		10611.0		4515.8		5758.8		11014.9		12012.2	
BKTPS ISLANDING															



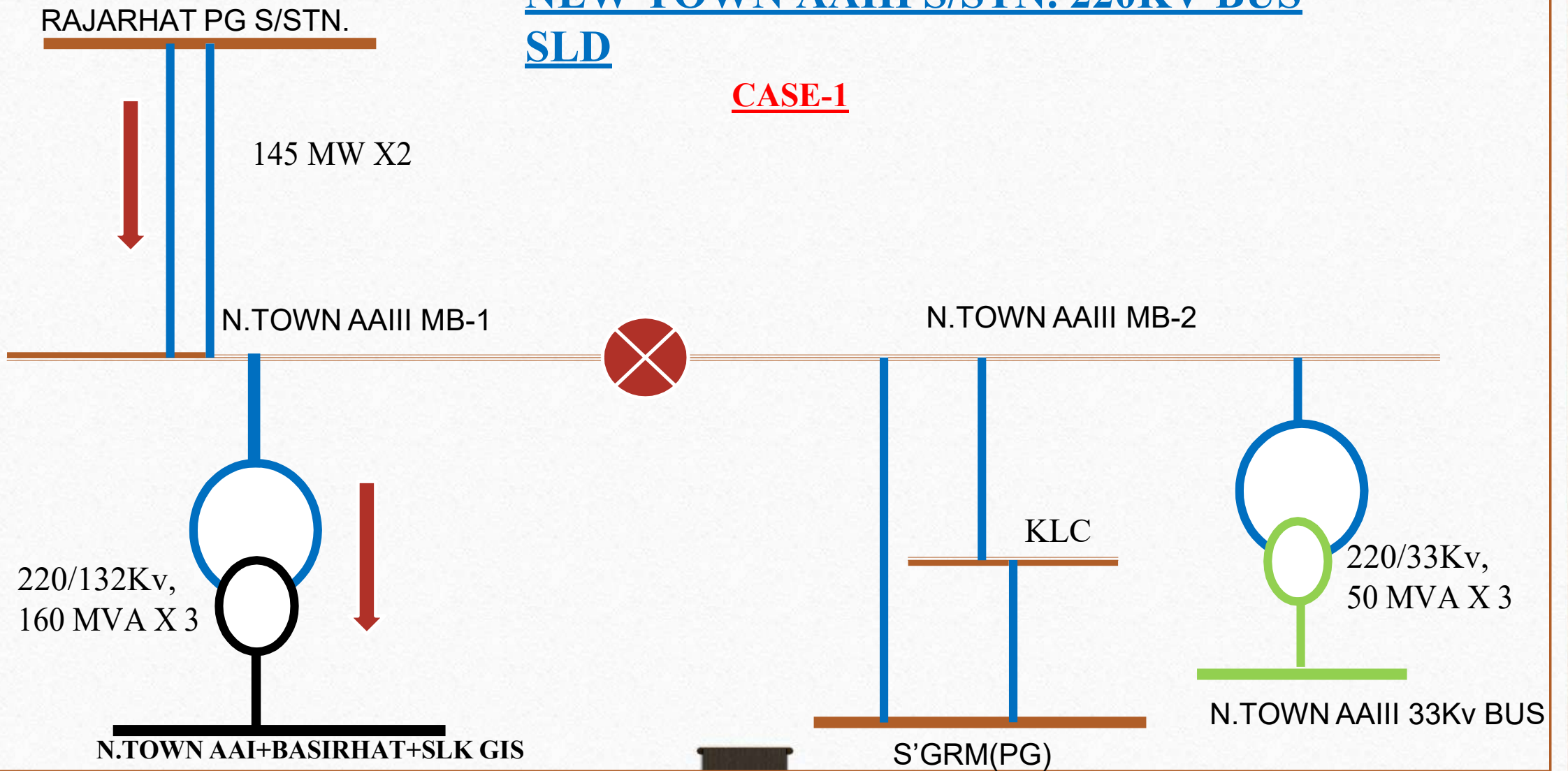
### CESEC's drawal through 5 points of connectivity with WBSETCL on 15.06.2023

CESEC's Point of Drawal from WBSETCL	Maximum amount (in MW) can be allowed maintaining (n-1) contingency	Actually allowed drawal (in MW) after imposing restrictions in real time	Actually drawn on 15.06.2023 just after putting restrictions, but not followed by CESEC
Kasba	210	350	403
Howrah	180	(Howrah + Liluah) combined restriction 300 to 320	229
Liluah	100		141
Rishra	90	100	108
Titagarh	50	50 to 60	57
total	630	800 to 830	938

The last column value made the system extremely vulnerable and sustained for few mins only till implementation of SLDC imposed point restrictions. This may please be noted that on 18.04.23 due to delay to implement SLDC given point restriction by CESEC, 220 kV Barasat – Kasba tripped, SLDC somehow handled the situation by imposing manual load shedding in WBSEDCL area, we were lucky enough to save the network that day.

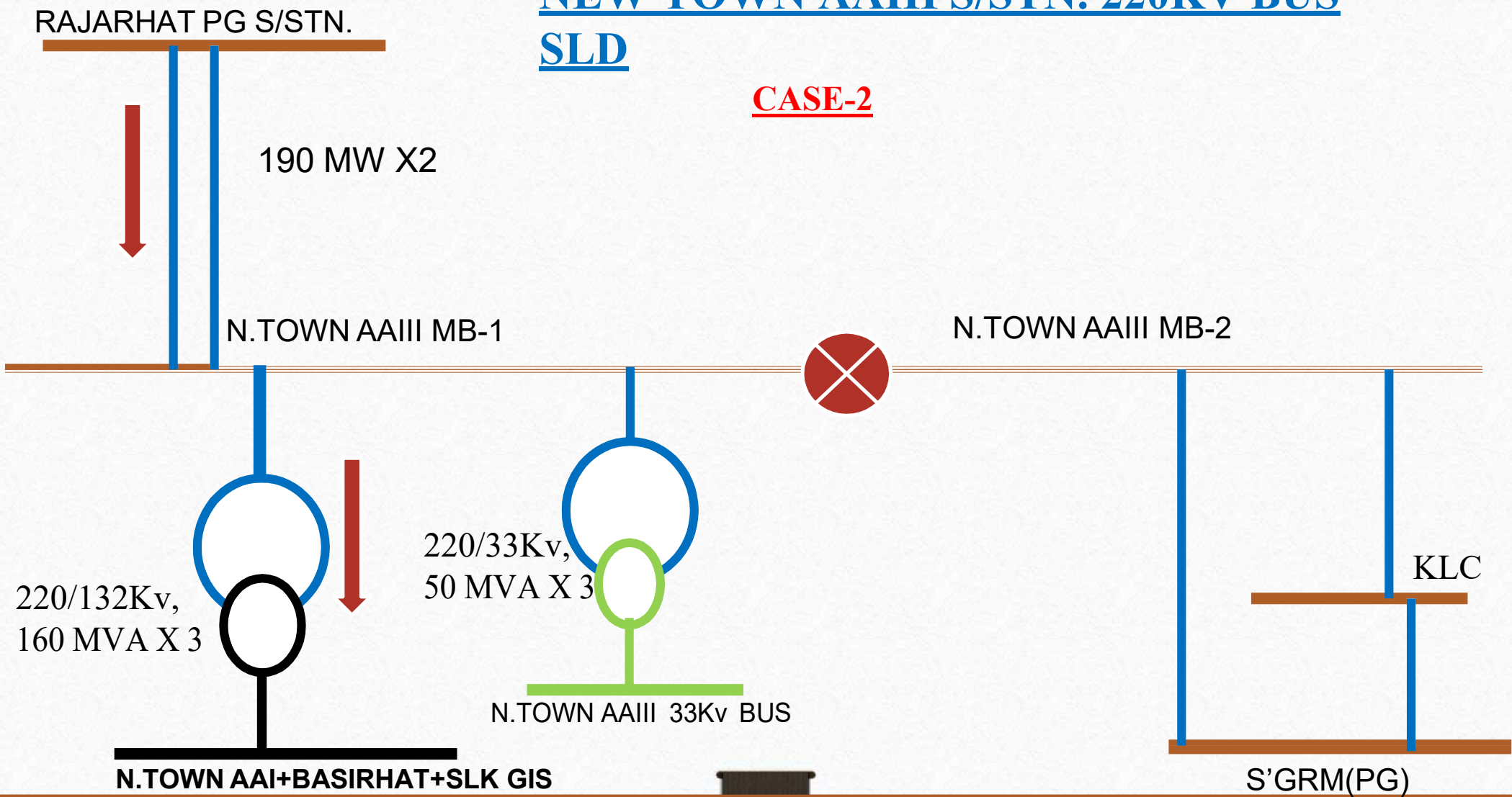
# NEW TOWN AAI S/STN. 220KV BUS SLD

## CASE-1



## NEW TOWN AAI S/STN. 220KV BUS SLD

CASE-2





## NEW TOWN AAI S/STN. 220KV BUS SLD

RAJARHAT PG S/STN.

CASE-3

250 MW X2

N.TOWN AAI MB-1

220/132Kv,  
160 MVA X 3

220/33Kv,  
50 MVA X 3

N.TOWN AAI 33Kv BUS

N.TOWN AAI+BASIRHAT+SLK GIS

This configuration has endangered WBSETCL system severely, as tripping of any one circuit of Rajarhat – New Town AA3 could have made 5 sub-stations (New Town AA3, New Town AA1, SLT GIS, KLC, Basirhat) of WBSETCL under no power with possibility of conductor snapping even i.r.o Rajarhat-New Town AA3 ckt. Still this configuration was requested from OCC forum to SLDC, WB repeatedly to avoid ICT overloading in Subhasgram(PG), though WBSETCL / WBSEDCL was drawing way less than its Installed capacity at Subhasgram(PG) s/stn.

N.TOWN AAI MB-2

KLC

S'GRM(PG)



## Some Mathematical calculation to understand the scenario after commissioning of 6<sup>th</sup> ICT at Subhasgram(PG)

CESC's peak demand recorded this year in SCADA: = 2624 MW

CESC's maximum internal generation s/o fig recorded as= 824 MW

WBSETCL has provided through its 5 points to CESC this year maximum without considering (n-1) = 830 MW

**(Please record one fact here that as on today WBSETCL can give maximum 630 MW power to CESC through it's 5 points as on 2023 summer, if (n-1) is considered.)**

If CESC wants to avoid PLS, then they need to take **970** MW from Subhasgram(PG) sub-station considering this year's highest load scenario of CESC.

This amount will be more than **1050** MW in next year, for CESC's load growth plus reduced amount to get through 5 points of WBSETCL (as load of WBSEDCL also increasing).

**So, in nutshell CESC installed capacity on next summer will be =  $2 * 315 \text{ MVA} + 500 \text{ MVA} = 1130 \text{ MVA}$  (If the 3<sup>rd</sup> ICT (500 MVA) of CESC is installed and commissioned before summer of 2024) against load of 1050 MW. Will it satisfy (n-1)?**

**Will it satisfy (n-1)?**

At the last but not the least a humble submission to the forum is “Same rule should be applicable to all DISCOMs”. If at Subhasgram (PG) point ‘(n-1)’ compliance is needed for WBSETCL/WBSEDCL, then the same should be applicable for CESC, which was not followed since the time of CTU connectivity offered to CESC in pre-GNA regime long back in 2014.



For your Attention.

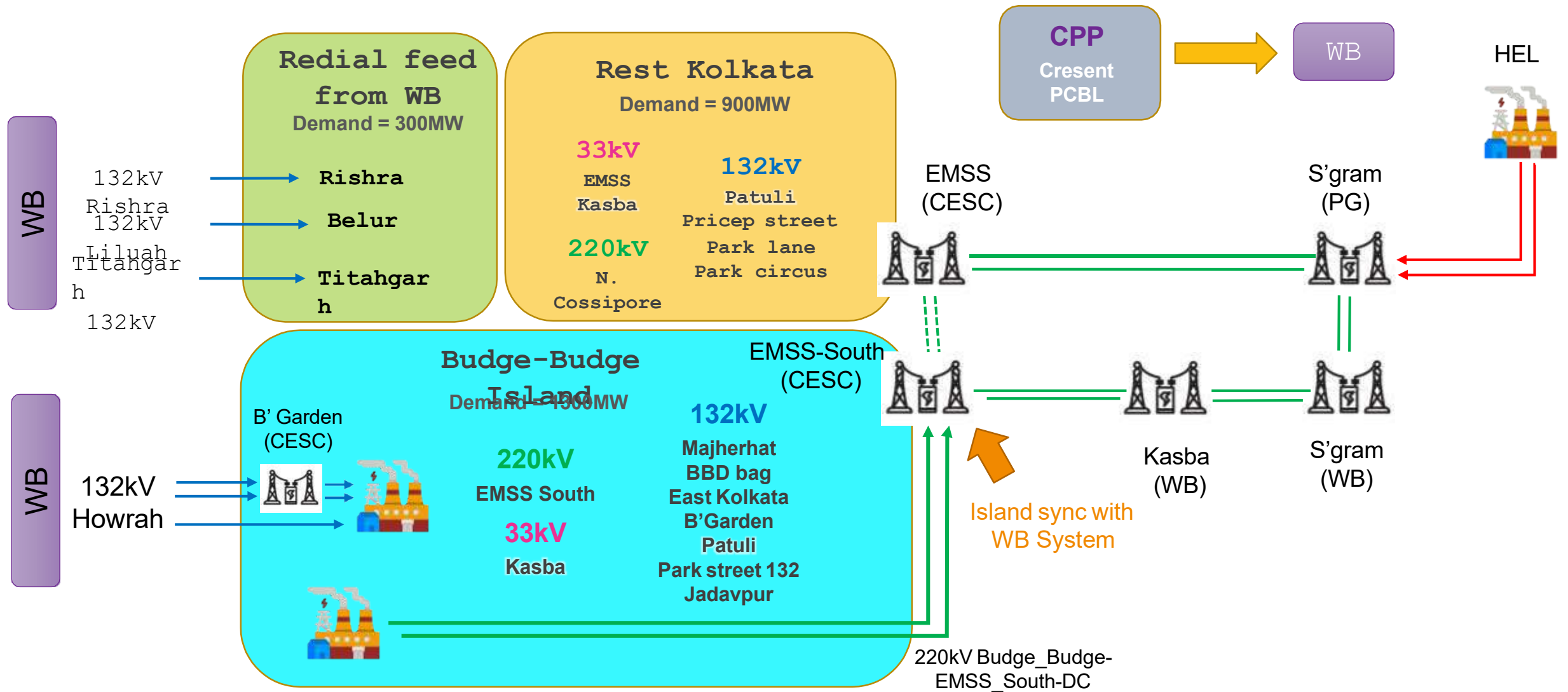


ANNEXURE B.3

CESC



# CESC block diagram



# Present Demand Condition

WB Demand 11600 MW, CESC Demand 2500 MW

June-2023

# Present Case:- WB Demand 11600 MW, CESC Demand 2500 MW

June-2023

Rajarhat  
(1000 MVA)

ICT Flow  
812 MW

Subhasgram  
(1760 MVA)

Even N is not  
Satisfied at  
Subhasgram

ICT Flow  
1720 MW

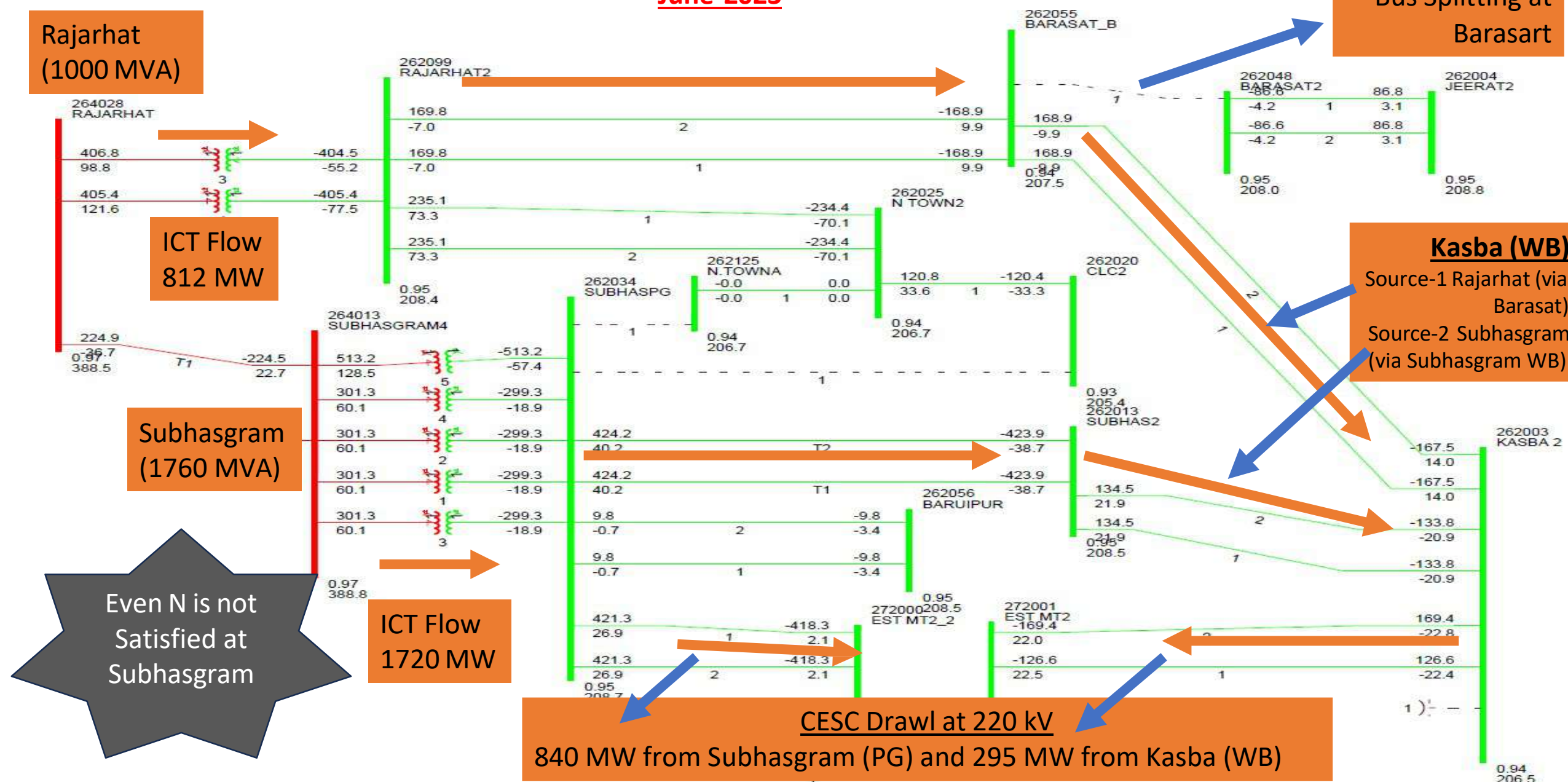
Jeerat Source is  
decoupled by  
Bus Splitting at  
Barasart

Kasba (WB)

Source-1 Rajarhat (via  
Barasat)  
Source-2 Subhasgram  
(via Subhasgram WB)

CESC Drawl at 220 kV

840 MW from Subhasgram (PG) and 295 MW from Kasba (WB)



# Future Demand Condition

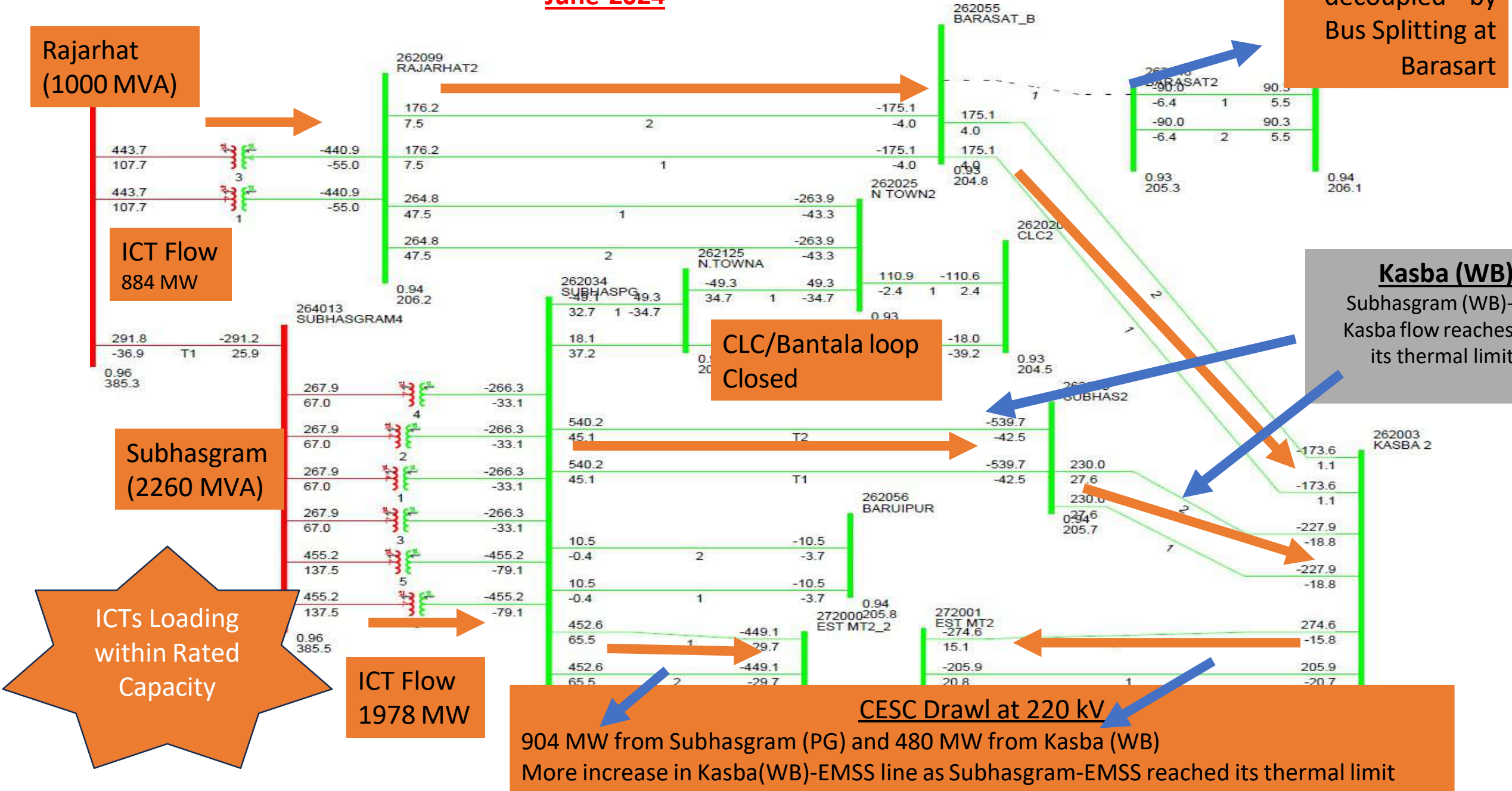
WB Demand 12400 MW, CESC Demand 2740 MW

May -June-2024



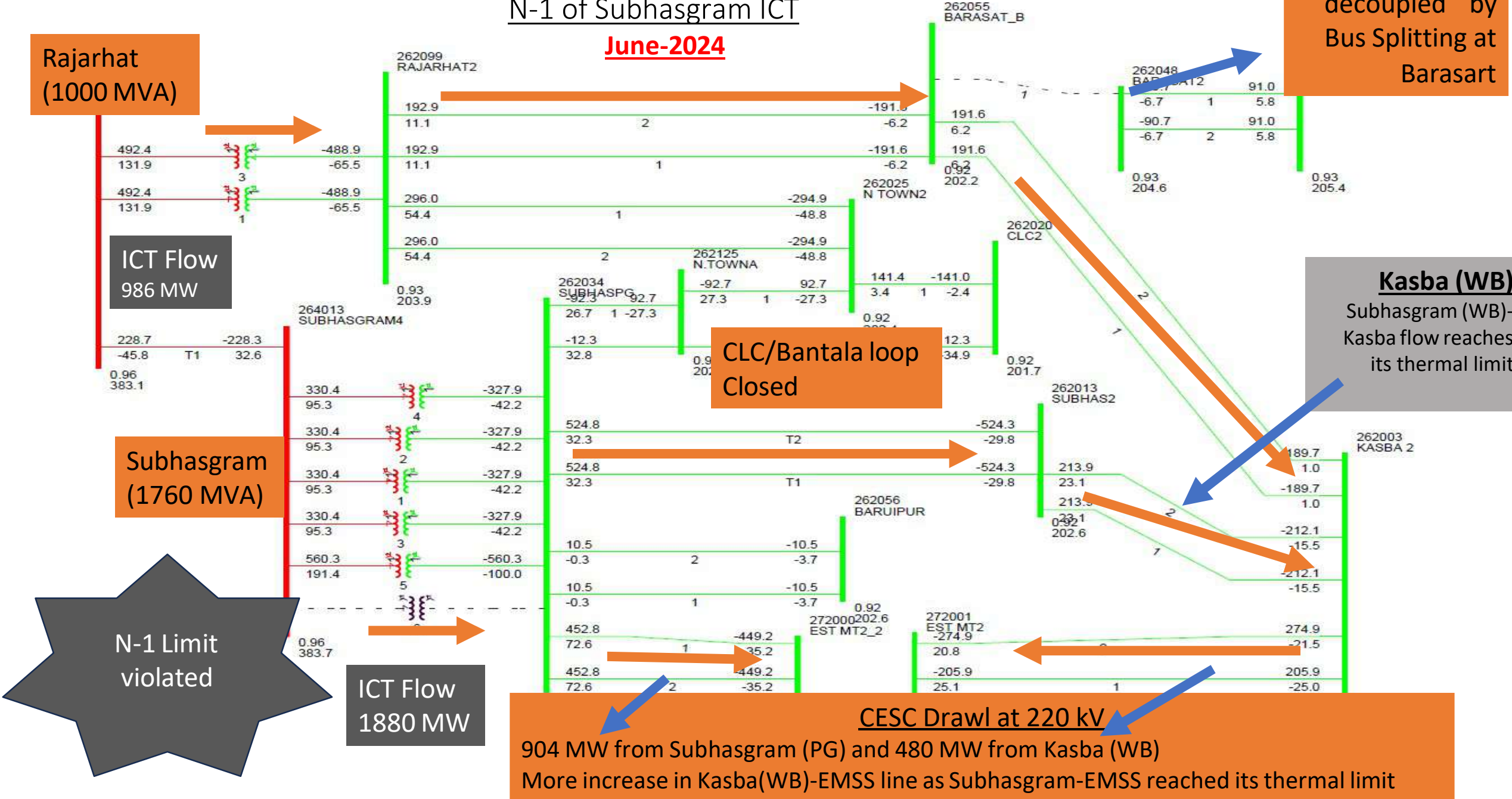
With 6<sup>th</sup> ICT & Future Demand:- WB Demand 12400 MW, CESC Demand 2740 MW

June-2024



With 6<sup>th</sup> ICT & Future Demand:- WB Demand 12400 MW, CESC Demand 2740 MW  
N-1 of Subhasgram ICT

June-2024

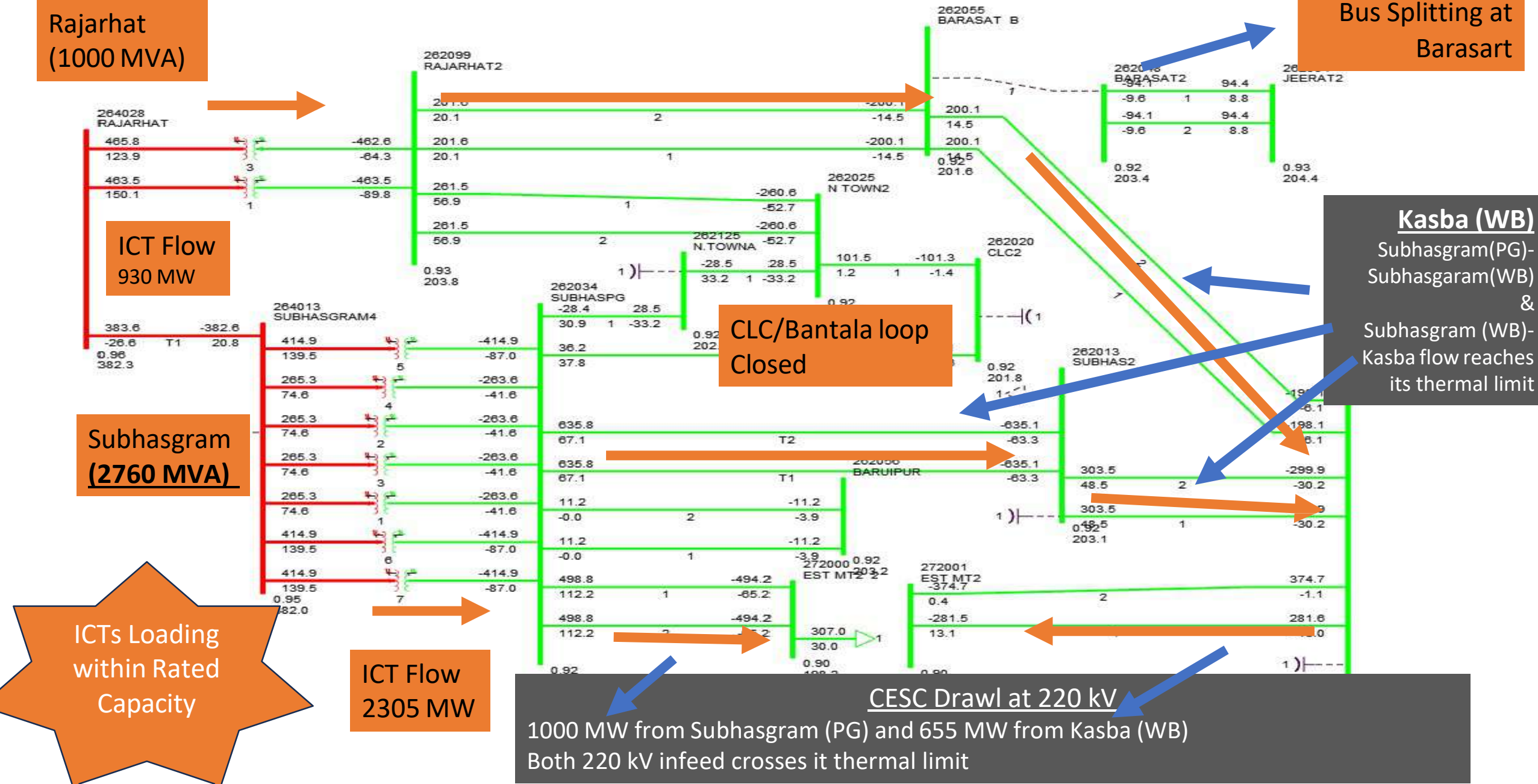


# Future Demand Condition with 7<sup>th</sup> ICT at Subhasgram

WB Demand 13520 MW, CESC Demand 3000 MW

June-2025

With 7<sup>th</sup> ICT & Future Demand:- WB Demand 13520 MW, CESC Demand 3000 MW  
June-2025





With 7<sup>th</sup> ICT & Future Demand:- WB Demand 13520 MW, CESC Demand 3000 MW  
June-2025

Jeerat Source is decoupled by Bus Splitting at Barasart

Rajarhat (1000 MVA)

ICT Flow 1002 MW

Subhasgram (2260 MVA)

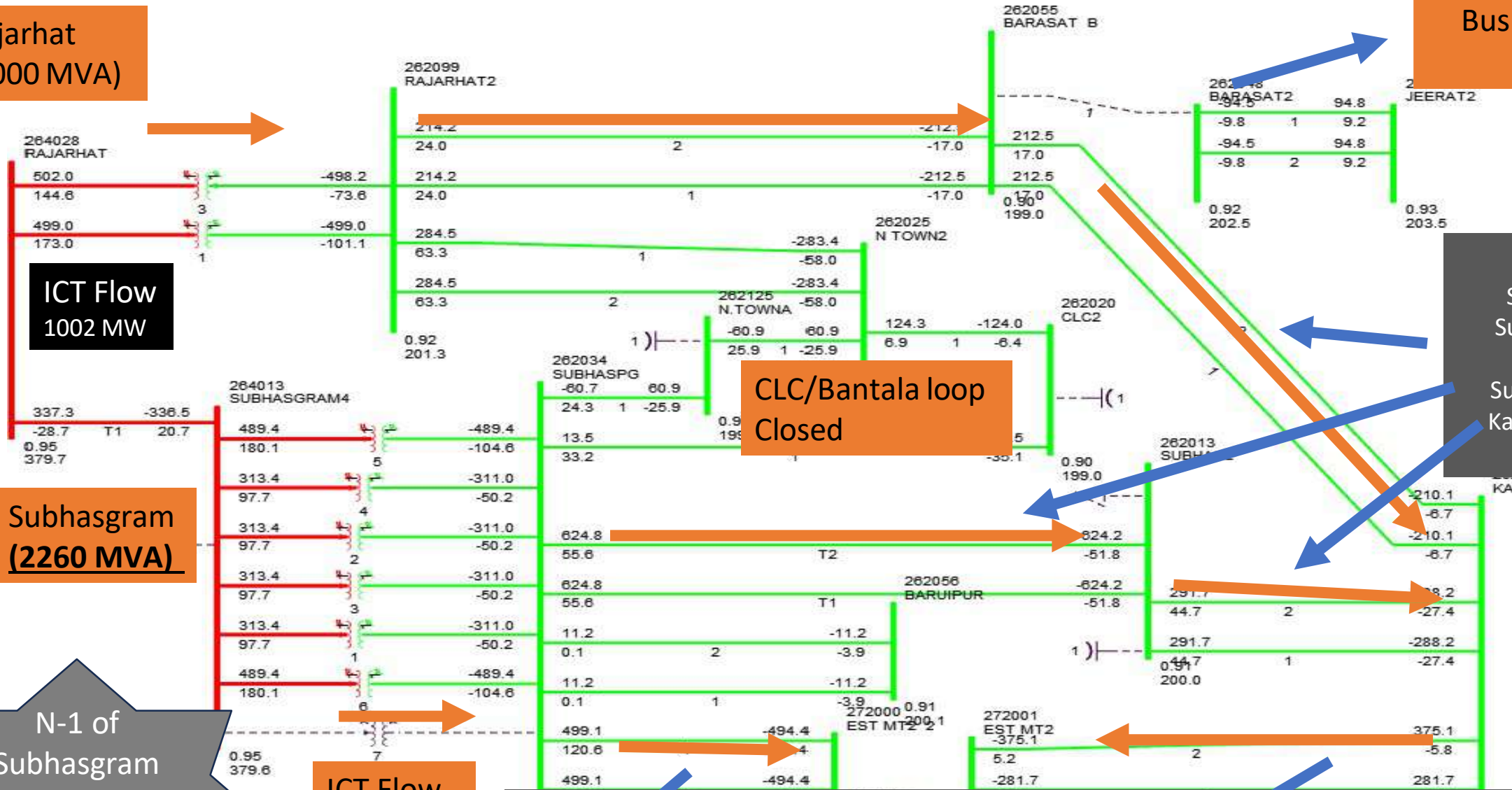
CLC/Bantala loop Closed

Kasba (WB)  
Subhasgram(PG)-Subhasgram(WB) & Subhasgram (WB)-Kasba flow reaches its thermal limit

N-1 of Subhasgram ICT just Satisfied

ICT Flow 2230 MW

CESC Drawl at 220 kV  
1000 MW from Subhasgram (PG) and 655 MW from Kasba (WB)  
Both 220 kV infeed crosses it thermal limit



# Other Area of Concern

- 7<sup>th</sup> ICT at Subhasgram N-1 criteria at 400/220 kV ICT is satisfied in Upto 2025 time frame.
- However following lines are critically loaded
  - Lines loaded upto its thermal limit (Need to be upgraded)
    - 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
  - Lines not satisfying N-1 criteria
    - 220 kV Kasba(WB)-EMSS South(CESC) D/C

## Annexure B.10

Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	Fault Clearance time in msec	Remarks
1	400 KV BINAGURI-MALBASE-1	01-04-2023	05:24	01-04-2023	06:22	Binaguri: Y_N, 43.52 km, 5.672 kA		Y-Earth	1200	Line tripped from Binaguri after 100 msec and A/r attempt taken after 1 sec which was unsuccessful. However, fault was not cleared from Malbase till 1.2 seconds.
2	400KV BINAGURI-TALA-1	02-04-2023	22:43	02-04-2023	23:11	Binaguri : R_N, 3.33 kA, A/r Successful	Tala: R_N, 18.2 km	R-Earth	100	A/r successful from Binaguri. Three phase tripping at Tala.
3	400KV BINAGURI-TALA-1	16-04-2023	15:15	16-04-2023	15:55	Binaguri: DT received	Tala: Didn't trip	No fault	NA	DT received at Binaguri
4	400KV BINAGURI-TALA-1	19-04-2023	20:29	19-04-2023	21:12	Binaguri : Y_B, ly: 4.39 kA, lb: 4.14 kA, DT received		Y-B-Earth	230	Phase to phase fault which was in Zone-2 from Binaguri. After 230 msec, DT received at Binaguri
5	400KV BINAGURI-TALA-1	19-04-2023	21:35	19-04-2023	22:40	Binaguri: B_N, 126 km, 2 kA	Tala: B_N, 60.8 km	B-Earth	2300	Resistive fault
6	400KV BINAGURI-TALA-4	21-04-2023	21:29	21-04-2023	22:17	Binaguri: B_N, Zone-2, 122.8 km, 3.3 kA		B-Earth	500	Tripped in Zone-2 time from Binaguri. A/r successful from Tala
7	220KV BIRPARA-MALBASE-1	21-04-2023	21:42	21-04-2023	22:46	Birpara: Y_N	Malbase: Y_N, Zone-1, 14.9 km, 2.49 kA	Y-Earth	100	A/r couldn't be ascertained from PMU
8	400KV BINAGURI-TALA-1	21-04-2023	22:06	21-04-2023	22:33	Binaguri: B_N		B-Earth	2200	Resistive fault
9	400KV BINAGURI-TALA-4	22-04-2023	04:40	24-04-2023	21:07		Tala: R_N, 120.6 km, 3.58 kA	R-Earth	500	Tripped in Zone-2 time from Binaguri.
10	400KV BINAGURI-TALA-1	22-04-2023	06:03	22-04-2023	08:32	Binaguri: B_N, 1.1 kA		B-Earth	2600	Resistive fault
11	220KV CHUKHA-BIRPARA-1	29-04-2023	01:53	29-04-2023	03:39		Birpara: R_Y, 42 km, Ir= 2.708 kA, ly: 2.335 kA	R-Y	100	Phase to phase fault
12	220KV CHUKHA-BIRPARA-2	29-04-2023	01:53	29-04-2023	03:40		Birpara: R_Y, Zone-1, 42.32 km, Ir= 2.773 kA, ly: 2.329 kA	R-Y	100	Phase to phase fault
13	400KV BINAGURI-TALA-2	29-04-2023	01:59	29-04-2023	02:59	Binaguri: R_N, Zone-1, 125.2 km, 2.8 kA		R-Earth	100	Three phase tripping for single phase fault
14	400KV ALIPURDUAR (PG)-JIGMELLING-2	29-04-2023	03:53	29-04-2023	04:30	Alipurduar: R_N, Zone-1, 60.5 km, 6.7 kA	Jimelling: R_N, Zone-1, 125.4 km, 1.59 kA	R-Earth	100	As per PMU, A/r failed after 1 second.
15	220KV CHUKHA-BIRPARA-1	29-04-2023	04:10				Birpara: R_B, 55.32 km, Ir= 2.372 kA, lb= 2.774 kA	R-B	100	Phase to phase fault
16	220KV CHUKHA-BIRPARA-2	29-04-2023	04:10	29-04-2023	09:56	Chukha: R_B, Zone-1, 54.2 km, Ir= 2.447 kA, lb= 2.739 kA	Birpara: R_B, Zone-1, 53.98 km, Ir= 2.482 kA, lb= 2.758 kA	R-B	100	Phase to phase fault
17	400KV ALIPURDUAR (PG)-PUNASANGCHUN-2	30-04-2023	00:28	30-04-2023	01:41	Alipurduar: R_N, 83.7 km, 3.34 kA, A/r successful	Punasangchu: R_N, 160 km, 1.25 kA	R-Earth	100	A/r successful from Alipurduar only
18	400KV BINAGURI-MALBASE-3	30-04-2023	03:04	30-04-2023	03:37	Binaguri: R_N, 113 km, 7.962 kA, A/r successful	Malbase: R_N, 166 km, 1.908 kA	R-Earth	100	A/r successful from Binaguri only



## Annexure B.11

Approved Maintenance schedule of Thermal Generating units of ER during 2023-24 for July 2023												
SYSTEM	STATION	UNIT NO.	CAPACITY(MW)	PERIOD(as per LGBR 2023-24)		No. of days	Approved period		No. of days	Reason	Whether as per LGBR or not	Remarks
				From	To		From	To				
TVNL	Tenughat TPS	1	210	01.07.2023	15.08.2023	46	10.07.2023	25.08.2023	47	COH	NO	
DVC	—	—	—	—	—	—	—	—	—	—		*Attached at Annexure B.11.1
WBPDC	Bakreshwar TPS	4	210	03.07.2023	06.08.2023	35	01.07.2023	03.08.2023	34	AOH/BOH	NO	
WBPDC	Bakreshwar TPS	5	210	21.07.2023	30.07.2023	10	—	—	—	PG Test/Boiler License Renewal	NO	NOT AVAILNG
WBPDC	Bandel TPS	2	60	12.07.2023	10.08.2023	30	01.07.2023	30.07.2023	30	AOH/BOH	NO	
CESC	Southern TPS	1	67.5	14.07.2023	28.07.2023	15	14.07.2023	28.07.2023	15	Not Specified	YES	
NTPC	KhSTPP	1	210	01.07.2023	04.08.2023	35	10.07.2023	08.08.2023	30	Boiler + HP + IP + LP +Generator	NO	
BRBCL	Nabinagar TPS	4	250	01.07.2023	14.08.2023	45	16.07.2023	25.08.2023	41	Boiler+LPT O/H+Generator rotor thread out and checking+NOX work	NO	
NPGCL	Nabinagar TPS	2	660	01.07.2023	18.09.2023	80	—	—	—	Overhauling with boiler modification		Deferred
JITPL	JITPL	1	600	01.07.2023	14.08.2023	45	01.07.2023	14.08.2023	45	COH	YES	
DPL	DPPS	8	250	01.01.2024	10.01.2024	10	01.08.2023	10.09.2023	41	Boiler License Renewal	NO	

\*OCC advised NTPC Barh to declare COD of unit-02 prior to seeking shutdown approval of unit-04

**Annexure B.11.1**

**Proposed Shut down Programme for DVC Thermal Units in FY 2023-24**

Sl. No.	Unit	High Demand Season for FY 2023-24	Capacity (MW)	Proposed Start of OH	Tentative Finish	Days	Remark
1	CTPS U#7	Jun,Jul, Aug	250	20-Feb-23	29-Apr-23	69	(COH -Blr,HPT,IPT, LPT,De-Nox Burner, Complete rewinding of Generator stator, HMI upgradation, Unification of BTG Control Room, Generator Stator end-winding vibration monitoring System) (69 days)-Completed
2	BTPS A	Jun,Jul, Aug	500	25-Jun-23	4-Jul-23	10	FDG Connectivity work, attending leakage of ESV,attending Gas Leakage of GIS and attending passing of CW Pump discharge valve <b>(10 days)</b>
3	MTPS U#7	Feb, Mar, Apr	500	10-Jul-23	19-Jul-23	10	Boiler Overhauling and FDG Connectivity work,
4	MTPS U#8	Feb, Mar, Apr	500	25-Jul-23	28-Aug-23	35	(COH -Blr,HPT,IPT, LPT, Gen, FGD) (35 days)
5	KTPS U#2	Apr, May, Jun	500	16-Sep-23	13-Oct-23	28	Boiler Overhauling and FDG Connectivity work,
6	KTPS U#1	Apr, May, Jun	500	25-Oct-23	31-Oct-23	7	Boiler Overhauling and FDG Connectivity work,
7	MTPS U#5	Jun,Jul, Aug	250	2-Nov-23	6-Dec-23	35	COH-Blr, Turb, Gen, FGD & De Nox (35 days)
8	MTPS U#4	Apr, May, Jun	210	10-Dec-23	3-Jan-24	25	AOH- Blr RLA, LPT & De-Nox Burner (25 days),
9	RTPS U#1	Jun,Jul, Aug	600	10-Dec-23	24-Dec-23	15	Boiler Overhauling and FDG Connectivity work,
10	RTPS U#2	Jun,Jul, Aug	600	10-Jan-24	24-Jan-24	15	Boiler Overhauling and FDG Connectivity work,
11	DSTPS U#2	Jun,Jul, Aug	500	24-Jan-24	20-Feb-24	28	AOH-Blr, FGD & De-Nox Burner & LPT (28 days)
12	MTPS U#3	Apr, May, Jun	210	25-Feb-24	23-Mar-24	28	AOH-Blr, LPT, FGD, Gen (28 days)

**Note:** 1. BOH - Boiler overhauling, AOH - Annual overhauling & COH - Capital overhauling.

**Note:** 2. Above schedule has been revised following comments of ERPC & Considering Durga Puja '23.(20th -24th Oct'2023)

**As per finalised LGBR-23-24 Dtd. 20-03-2023**

Start of OH	Finish	No. of Days
-	-	-
15-02-2024	20-03-2024	35
01-01-2024	28-01-2024	28
-	-	-
-	-	-
01-09-2023	25-09-2023	25
25-10-2023	28-11-2023	35
01-07-2023	25-07-2023	25
-	-	-
15-07-2023	28-08-2023	45
01-12-2023	28.12.2023	28
21-01-2024	14-02-2024	25

13	MTPS U#2	Apr, May, Jun	210	NA
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01-08-2023	25-08-2023	25
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## Updated Anticipated Peak Demand (in MW) of ER &amp; its constituents for July 2023




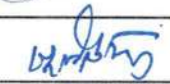


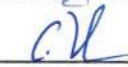
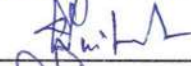
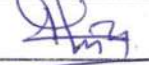





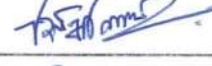
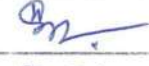


1	BIHAR	Demand (MW)	Energy Requirement (MU)
	NET MAX DEMAND	7092	4252
	NET POWER AVAILABILITY- Own Sources	556	299
	Central Sector+Bi-Lateral	5861	4320
	SURPLUS(+)/DEFICIT(-)	-675	368
2	JHARKHAND		
	NET MAXIMUM DEMAND	1730	1175
	NET POWER AVAILABILITY- Own Source	280	208
	Central Sector+Bi-Lateral+IPP	1120	667
	SURPLUS(+)/DEFICIT(-)	-330	-300
3	DVC		
	NET MAXIMUM DEMAND	3363	2236
	NET POWER AVAILABILITY- Own Source	5450	3706
	Central Sector+MPL	330	278
	Bi- lateral export by DVC	2450	1407
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	-33	341
4	ODISHA		
	NET MAXIMUM DEMAND (OWN)	5600	3927
	NET MAXIMUM DEMAND (In Case of CPP Drawal)	6400	3197
	NET POWER AVAILABILITY- Own Source	3670	2228
	Central Sector	1952	1325
	SURPLUS(+)/DEFICIT(-) (OWN)	22	-374
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	-778	356
5	WEST BENGAL		
	WBSEDCL		
5.1	NET MAXIMUM DEMAND	8500	4659
	NET MAXIMUM DEMAND (Incl. Sikkim)	7680	4663
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	5272	2727
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2758	1831
	EXPORT (To SIKKIM)	5	4
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	350	-105
5.2	CESC		
	NET MAXIMUM DEMAND	2380	1136
	NET POWER AVAILABILITY- Own Source	830	545
	IMPORT FROM HEL	540	373
	TOTAL AVAILABILITY OF CESC	1370	918
	DEFICIT(-) for Import	-1010	-218
	WEST BENGAL (WBSEDCL+CESC+IPCL)		
	(excluding DVC's supply to WBSEDCL's command area)		
	NET MAXIMUM DEMAND	10055	5795
	NET POWER AVAILABILITY- Own Source	6102	3272
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3298	2204
	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT	-656	-319
	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT	-661	-323
6	SIKKIM		
	NET MAXIMUM DEMAND	100	48
	NET POWER AVAILABILITY- Own Source	8	1
	Central Sector	81	58
	SURPLUS(+)/DEFICIT(-)	-11	11
	EASTERN REGION		
	NET MAXIMUM DEMAND	28056	17433
	NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha)	28838	16703
	BILATERAL EXPORT BY DVC (Incl. Bangladesh)	2187	1407
	EXPORT BY WBSEDCL TO SIKKIM	5	4
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	462
	NET TOTAL POWER AVAILABILITY OF ER	28709	17159
	(INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)		
	SURPLUS(+)/DEFICIT(-)	648	-278
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	-134	452

Participants in 204th OCC Meeting of ERPC

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 23.06.2023 (Friday)

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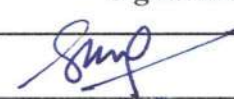
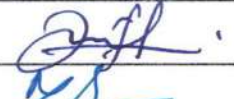

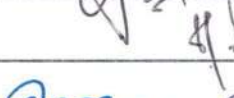
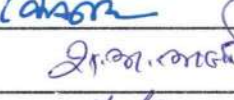
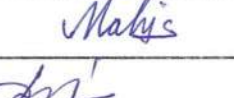
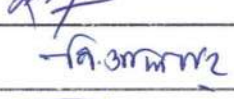
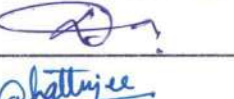
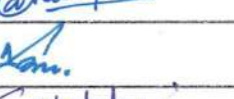
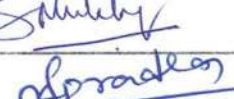
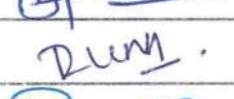





# Participants in 204th OCC Meeting of ERPC

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 23.06.2023 (Friday)

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# Participants in 204th OCC Meeting of ERPC

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 23.06.2023 (Friday)

Sl. No.	Name	Designation & Organisation	Contact No.	E-mail Id	Signature
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