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GOVERNMENT OF INDIA
MINISTRY OF POWER
Eastern Regional Power Committee

AGENDA
FOR
53rd TCC MEETING

Date: 10.02.2025

Time: 10:00 Hrs

Mayfair Palm Beach Resort, Gopalpur, Odisha

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Eastern Regional Power Committee, Kolkata

AGENDA FOR 53rd TCC MEETING

Date: 10th February, 2025(Monday) at 10:00 Hrs

Gopalpur, Odisha

1. PART-A

1.1. Confirmation of Minutes of 52nd TCC Meeting held on 5th September 2024 at Goa

The minutes of 52nd TCC meeting held on 05.09.2024 at Goa was circulated vide letter no. ERPC/ TCC & ERPC COMMITTEE/2024/1082 dated 26.09.2024.

Members may confirm the minutes of 52nd TCC meeting.

2. PART-B: ITEMS FOR DISCUSSION

2.1 Recovery of Relinquishment Charges as per the direction of CERC in order dated 08.03.2019

A letter has been received from Chairperson, SRPC on this subject citing below points:

CERC Order dated 08.03.2019 in Petition No. 92/MP/2015, directed CTU to assess the stranded transmission capacity and calculate the charges payable towards relinquishment and the relinquishment charges paid by LTA customers shall be used for reducing transmission charges payable by other long term and medium term customers in the year in which such compensation is due in the ratio of transmission charges payable for that year by such long term customers and medium term customers. Accordingly, the relinquishment charges had been computed by CTUIL and uploaded on its website (Before the CERC Order, many IPPs/generators had relinquished the LTA and the charges were being recovered from the beneficiaries).

II. It is noted that some of the generators filed appeal in APTEL against the recovery. Insolvency proceedings (CIRPL) of some generators, among the above generators have been completed. Insolvency proceedings of some generators are currently underway. CTUIL informed that APTEL stayed raising of invoices against generators who are not under insolvency proceedings.

III. The current litigations led to delays in the recovery of charges and have impacted the beneficiaries across regions. CTUIL has been actively pursuing the vacation of the APTEL stay order and requested the support of all stakeholders, including DISCOMs through representation in the APTEL case.

In light of the discussions and recommendations of SRPC members in the meeting held on 18.11.2024, it is requested that each RPC may actively participate in the matter and the following suggestions are forwarded for further needful:

1. Representation: Encourage all DISCOMs in the Region to actively participate in the Judicial proceedings. This collective action can emphasize the liabilities of beneficiaries and the financial impact on the pool.

2. Expert Legal Consultation: Obtain and share expert legal opinions on the judicial relinquishment charge recovery to strengthen the case, across platforms.

3. Awareness and Preparedness: CUIL has assured the sharing of hearing schedules and the list of appeals with constituents. It is suggested that this practice be adopted by all RPCs to ensure better preparedness for court proceedings.

4. Coordination across RPCs: Propose regular communication among RPCs to exchange updates and formulate a unified approach to address the matter of recovery of relinquishment charges and stay order/legal issues effectively. It is felt that by collectively engaging in this matter, the resolution of the challenges can be expedited and ensure equitable recovery, as early as possible, that would protect the interests of all stakeholders.

It is requested that each RPC may deliberate on the above points and initiate suitable actions.

TCC may discuss.

2.2 New ER-SR Interregional Link: Proposal for 765 kV Angul-Srikakulam 2nd D/C line—CTU

The transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh was discussed in the 33rd CMETS-SR for ISTS proposals held on 25.07.2024 and the Angul – Srikakulam 765 kV 2nd D/c link shall be required for supply of power to Green Hydrogen / Ammonia projects at Kakinada under Phase-I (3000 MW).

52nd SRPC approved the proposal of 765 kV Angul-Srikakulam D/C and recommended that the line shall be considered under National Component as it would be used to meet the GH&GA loads.

The Inter-Regional Strengthening between SR Grid and ER Grid i.e. Angul – Srikakulam 765 kV 2nd D/c line (about 275 km) is discussed and agreed in the 34th CMETS-SR held on 24.09.2024. The scheme was also deliberated and agreed in the 37th CMETS-ER held on 29.11.2024. During the 37th CMETS-ER, in addition to the Angul – Srikakulam 765 kV 2nd D/c line, 330 MVAR bus reactor at Angul 765/400kV S/s was also agreed for implementation. The proposal is attached at **Annexure- B.2.2.**

Scope of the Scheme:

- 1) Angul – Srikakulam 765 kV 2nd D/c line (about 275 km) with 240 MVAR SLR at both ends on both circuits.
- 2) 1x330 MVAR, 765kV bus reactor (3rd) at Angul Substation

Estimated Cost : Rs 2580 Crore

Impact on the total
ATC in % along with the
existing ATC : 0.843 %

CTU may explain. TCC may discuss.

2.3 Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District. Uttar Pradesh—CTU

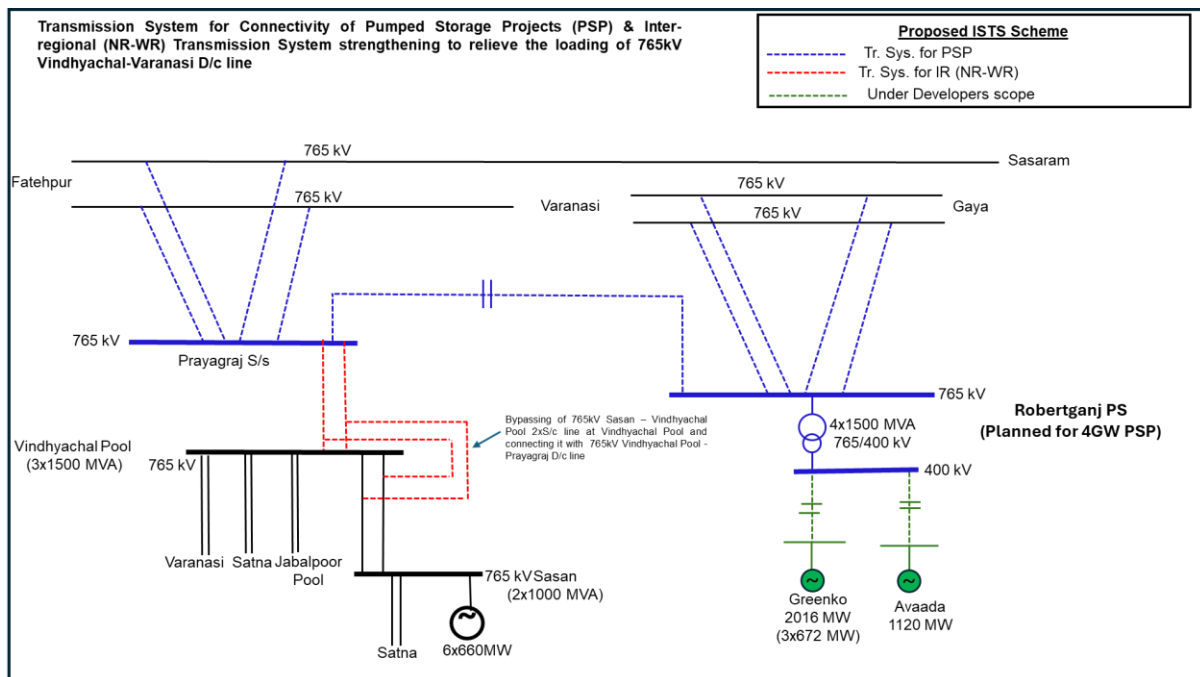
The connectivity applications of cumulative quantum of 5152 MW from two developers i.e. M/s Greenko (6 nos. of applications with cumulative quantum of 4032 MW) & M/s Avaada WB (1

application of 1120MW) near Robertganj area in Sonbhadra district, Uttar Pradesh was discussed in the 31st CMETS-NR meeting held on 27.06.24. As per the schedule indicated in the applications, these PSP projects are expected to be commissioned progressively from Nov'26 upto Mar'28.

Accordingly comprehensive transmission scheme was planned by CTU including the future requirements.

Transmission system for evacuation of power from Pumped Storage Projects was agreed in 34th CMETS-NR held on 20.09.2024. & 36th CMETS-ER meeting held on 29.10.2024.

The detail proposal as received from CTU is enclosed at **Annexure B.2.3**. The SLD of the proposed scheme is given below:



CTU may explain. TCC may discuss.

2.4 LILO of both circuits of 400kV Sipat-Ranchi D/c line (an ISTS line) for establishment of 400/132/33kV Kunkuri S/s by CSPTCL under intra-state scheme—CSPTCL/CTU

CSPTCL is planning construction of new 400/132 KV Substation Kunkuri (Village-Harradand), District – Jashpur (C.G.). 01 No. 400 KV ISTS line viz. 400 KV Sipat (NTPC) - Ranchi D/c line is passing nearby the location identified for 400 KV SS Kunkuri (Village-Harradand). As per preliminary survey tentative route length of construction of LILO of this line at proposed 400 KV SS Kunkuri (Village-Harradand) is 8.00 KM & forest involvement of this LILO line is nil.

CSPTCL vide letter dtd 24.07.2024 has requested CEA & CTUIL for permission for LILO of aforesaid 400 KV Sipat (NTPC) - Ranchi D/c line at proposed 400 KV SS Kunkuri (Village-Harradand).

A meeting was held on dtd 13.11.2024 amongst CEA, CTUIL, Grid-India & CSPTCL. Further, CEA, vide email dtd 25.11.2024 has conveyed Minutes of the meetings held on 13.11.2024 and intimated that “ CSPTCL’s proposal of LILO of establishment of Kunkuri 400/132 KV (intra-

state) S/s by LILO of both circuits of 400 KV Sipat-Ranchi D/c line (an ISTS line) was agreed with the condition that the proposal should be presented before both the RPCs i.e. WRPC and ERPC by CSPTCL.”

In 222nd OCC meeting, OCC consented to the proposal of LILO of both circuits of 400 kV Sipat - Ranchi D/C for establishment of 400/132 kV S/S at Kunkuri.

TCC may concur.

2.5 Connectivity issues for upcoming projects of Damodar Valley Corporation

Ministry of Power has given target towards setting-up Koderama Thermal Power plant (KTPS II -2x800 MW), Raghunathpur Thermal Power plant (RTPS II-2X660MW) & Durgapur Thermal Power Plant (DTPS- 1X800 MW) all of them are brown field projects. All the three projects are required to be set-up within 2027-29 ((i) RTPS- PH II , 1st unit by Nov 2027 (ii) KTPS-PH II , 1st unit by Feb 2028 (iii) DTPS (1X800MW) , by Aug 2028) as per timeline set by MOP.

The connectivity issues were discussed in the 52nd ERPC meeting held on 06th Sept 2024 and the following decision was made:

1. “ERPC opined that all possible measures should be taken to avoid bottling up of power evacuation from generating stations.
2. In view of ROW issues and unnecessary burden on consumers, ERPC recommended for optimal utilization of existing transmission network for power evacuation rather than construction of DTL.
3. CTU was directed to conduct a joint study with DVC and update the outcome in next CMETSER for deliberation.”

The issues were discussed in subsequent CMETS – ER meeting and the summary of the subsequent CMET-ER meeting along with concerns of DVC is depicted below:-

1. RTPS Ph-II:

In 35th CMETS-ER, CTU proposed two alternatives for Connectivity of RTPS Ph-II

Alt-1: Rearrangement of Existing ISTS interconnections of RTPS Ph-I

Alt-2: ISTS connectivity at Bishnupur can be established through RTPS Ph-II – Bishnupur 400kV D/c line as Dedicated Transmission Line (DTL).

- In case Alt-1 is adopted, there will not be any interconnection between the Ph-I & Ph-II at 400kV level by any means. CTU argued that the Ph-I Generating Station is an ISTS connected Generator as per the GNA Regulations. However, Ph-II will be a Dual connected Generator and allowing connection between an ISTS and a dual connected generations would lead to techno-commercial and operational issues such as – (a) ISTS connected generation getting indirectly connected to intra-state system through dual connected generator; (b) increase in fault level at STU system; (c) overloading of STU network in base case & contingency i.e. in case of complete disconnection from ISTS, both generators would be momentarily get connected to STU network jeopardizing the STU system etc.
- Thus as per Alt-1, CTU agreed to provide ISTS connectivity by shifting the existing 400kV RTPS-Ranchi PG D/c (Quad Moose) from Ph-I Bus to Ph-II Bus without having any electrical interconnection with Ph-I Bus at 400kV level.

- DVC has chosen the Alt-1 to interconnect RTPS Ph-II with the existing ISTS interconnection of Ph-I. However, DVC has requested for allowing interconnection of the Ph-I & Ph-II Buses for the sake of reliability of Power evacuation. Meanwhile, CTU has held the processing of the application on ground of getting clarification on the above from CERC for which they have filed rejoinder against the petition filed by DVC on Scheduling of DVC Stations (279/MP).

2. KTPS Ph-II:

CTU proposed the following in respect of the above Application:

- The Ph-II of KTPS can be connected either to GAYA PG through existing 400kV KTPS-Gaya PG D/c (Quad) or to Biharsariff PG through existing 400kV KTPS-Gaya PG D/c (Quad). But in Both cases the Ph-II generating Station to be kept separated from Ph-I Generating Station on the same ground as in case of RTPS issue .
- In order to address the reliability of evacuation system to ISTS from Ph-II Generating Project, it was proposed by CTU subsequently to shift one Ckt each of 400kV KTPS-Gaya PG D/c & 400kV KTPS-B'sariff PG D/c lines to the Ph-II Bus.
- DVC argued against the above plan proposed by CTU citing the issues of Reliability aspects, unnecessary financial burden as highlighted in RTPS case.
- DVC & ERLDC were of the opinion that as per approved scheme of DVC one tie breaker is provided between Phase-I & Phase-II and in case of technical & Grid reliability DVC shall be allowed to switch ON the tie breaker with the permission of ERLDC which CTU denied citing the GNA Regulation.

3. DTPS:

The Durgapur Thermal Power Station (DTPS) will be a dual connected Generator as 241 MW will be evacuated through STU network of DVC comprising of 2 nos of 400/220kV 2X315MVA ICTs. DVC Sought ISTS connectivity of DTPS (1X800MW) through construction of DTL upto the nearest ISTS node at 400kV Parulia PG. However, the same will require a little reorientation of connected existing lines at Parulia PG Bus, which is at present operating at Split mode.

- CTU has proposed ISTS connectivity of DTPS(1X800MW) to Bishnupur PG Switching Station through construction of new DTL from 400kV DTPS(DVC) – Bishnupur(ISTS) D/c in line with earlier discussion while disposing DVC 's application of 400MW ISTS connectivity (appl no2200000805 dt 08-05-2024, 2200001572 dt 18-12-2024).
- The proposal of connectivity at Bishnupur was not acceptable to DVC since it requires construction of lines through forest and restricted areas and will lead to severe ROW issues. Eventually, Transmission project will get delayed and chances will be there that it may not get completed prior to expected COD (Aug 2028) of the Station.
- In view of the above, an alternate proposal has been prepared by DVC for interconnection at Parulia PG (ISTS). CTU subsequently has agreed for a Joint Study meeting involving WBSETCL, DVC, Powergrid, ERLDC & ERPC to carry our preliminary study and site survey for feasibility of the proposed scheme.

With the above deliberations and future discussion on GNA connectivity for Koderma, Raghunathpur & Durgapur the following is proposed to be discussed-

- Provision for electrical inter-connection between Ph-I & Ph-II of both KTPS and RTPS may be allowed in view of system reliability aspects, economy and ease of implementation.

- In case of DTPS, connectivity may be allowed to the nearest ISTS node at 400kV Parulia PG.

DVC may explain. TCC may discuss.

2.6 Implementation of Crisis Management Plan (CMP) and Disaster Management Plan(DMP) in Power Utilities--CEA

As per the Crisis Management Plan (CMP) of the Government of India prepared by the Cabinet Secretariat, each Central Nodal Ministry is required to prepare a detailed Crisis Management Plan for dealing with crisis situations falling in the areas of their responsibility. Accordingly, the Ministry of Power prepare DMP and CMP for the power sector in association with Central Electricity Authority. The CMP for power sector is reviewed periodically by Secretary (Security), Cabinet Secretariat. In the latest review meeting, the following points related to DMP & CMP were emphasized:

- i. Power Utilities shall prepare Disaster Management Plan (DMP) and Crisis Management Plan (CMP) separately for their organisation.
- ii. The Plan report shall cover the management of different crisis scenarios as enlisted in the Ministry of Power Crisis Management Plan.
- iii. Sensitize and motivate both public and private sector power utilities to conduct mock drills on regular basis and submit the quarterly report.
- iv. Mock drills should be conducted based on the crisis/ disaster situations to which they are most vulnerable based on their geographical locations.
- v. The report shall also indicate the response of the various teams, observations, and effectiveness for handling the emergency situation and the scope for improvements (new learnings, Dos, and Don'ts), etc.
- vi. Involvement of other agencies such as District- level authorities/ NDRF/ SDRF during the mock drill exercises conducted.
- vii. Acquisition and deployment of ADS to neutralise the threat arising from out of UAVs.
- viii. Mark the critical power sector facilities as Red or Yellow zone in Digisky portal in consultation with DGCA, to prevent unauthorized flying of drones over these facilities.
- ix. DRIPS (Disaster Resource Inventory for Power Sector) Portal has been developed by CEA to enable transparent, co-ordinated approach for sharing the resources among the Power Utilities in any disaster/crisis situation. All the utilities are requested to register on the portal and update their inventory on monthly basis along with maintenance schedule.
- x. The details of local district authorities/ revenue authorities/ law and order authorities/fire etc., should be collated/ updated and made available in all the Utilities and in the townships.
- xi. Sharing the calendar of mock drills to be conducted by power utilities for next year.

This agenda is put up before TCC/ERPC for information and compliance.

TCC may note for compliance.

2.7 Approval for HTLS Project implementation in Jharkhand: JUSNL

The DPR of the said project was first submitted and deliberated in 207th OCC dated 15.09.2023.

In 222nd OCC Meeting, JUSNL updated:

- 132 KV Namkum - Sikidri and 132 kV Jaduguda-Ramchandrapur have been withdrawn from the proposal of HTLS reconductoring due to availability of more T/Ls to the NAMKUM GSS.
- 220 kV Maithon Dumka T/L (73.3 km) is also proposed for HTLS reconductoring as present loading pattern is violating N-1 contingency.
- 132kV D/C Chandil - Golmuri Transmission Line S/C was added to the existing list of HTLS Project T/L
- OCC agreed to the proposal of JUSNL for HTLS reconductoring of following transmission lines:
 1. Adityapur(Gamariya) to Ramchandrapur 132 KV D/C
 2. Hatia old - Hatia new 132 KV D/C
 3. Dumka 220/132 to Dumka/Maharo 132KV DC
 4. Adityapur - Rajkharsawa 132 KV S/C
 5. Rajkharsawa - Chandil line via kandra 132 KV S/C
- For reconductoring of 220 kV Maithon - Dumka & 132kV D/C Chandil - Golmuri T/L, JUSNL was advised to share the relevant study reports within a month for consideration of the proposal.

JUSNL vide email dated 17.01.2025 submitted the study reports for the remaining two lines. The report is enclosed at **Annexure B.2.7**.

JUSNL may update. TCC may discuss.

2.8 Bus split operationalization at NTPC Kahalgaon: ERPC Secretariat

As decided in 219th OCC Meeting, a committee comprising of members from ERPC and ERLDC visited NTPC Kahalgaon on 17-10-2024 to assess the status of Bus splitting at 400 kV level and way forward for operationalization of 400 KV Bus sectionalizer.

Following works need to be done to complete the installation of ICT 3 & 4:

1. Determination of underground cable conduit path for 400/132 kV ICT-3, 4 and 5 allocated for stage 2 supply.
2. Excavating the existing cable and relaying from Stage-1 132kV to New Stage-2 132 KV switchyard, where ICT 3 & 4 will be connected.
3. Laying of additional 22.8 ckt. km control cable for STs.
4. Jumpering of ICTs in 132kV & 400kV level.
5. Bay equipment testing.
 - NTPC apprised that determination of underground power cables is one of the major challenges to proceed further with laying of cables between two 132kV switchyards. The tentative time to complete the ICT commissioning is **25th May 2025**.
 - Meanwhile in view of increased fault level of NTPC Kahalgaon and to facilitate interim arrangement of standby ISTS connectivity to Godda Thermal Power project of M/s Adani Power (Jharkhand) Ltd. (APJL) with Indian grid, Bus splitting at 400KV Kahalgaon needs to be done on priority.

223rd OCC Deliberation:

NTPC informed:

- ✓ Bay is ready for the new ICT at 400 kV Kahalgaon switchyard.
- ✓ Visit by M/S GE is planned next week for breaker testing.

- ✓ Though cable route has been identified, laying of 132 kV power cable has not yet been completed.
 - ✓ Persistent contractual discord is hindering the desired progress in activities.
- ERLDC raised concern on operating 400 kV bus in Kahalgaon at high fault level.

223rd OCC Decision

- In view of continued operation of 400 kV bus in synchronized mode under high fault level condition, OCC observed lack of seriousness on the part of NTPC for implementing the bus splitting scheme as recommended .
- OCC referred the issue to upcoming TCC/ERPC meeting for deliberation.

NTPC may update. TCC may discuss.

2.9 Implementation of Patna Islanding scheme

The Patna islanding scheme would be formed with Units of NPGCL along with loads of Patna city.

As per **223rd OCC** deliberation:

ERLDC updated:

- ✓ The feeder list shared by Bihar has adequate load quantum in line with the proposed islanding logic.
- ✓ BOQ preparation is under progress in coordination with M/S Siemens. Once the quotation is received, cost implications will be finalized in DPR.

OCC Decision

- OCC consented to the islanding logic as proposed by ERLDC for implementation in the NPGC units to be islanded with loads of Patna city.
- OCC referred the issue to upcoming TCC for deliberation.
- OCC advised Bihar SLDC to submit the finalized DPR with cost implications in TCC meeting. ERLDC was advised to coordinate and assist Bihar in DPR preparation.

ERLDC vide mail dated 31.01.2025 has shared Draft DPR along with BOQ on the islanding scheme with SLDC Bihar for necessary approval.

ERLDC may present the scheme in brief. TCC may discuss.

2.10 Update on Augmentation of transformation capacity at Subhasgram & Rajarhat GIS (POWERGRID)(400/220kV S/S: 2x500MVA) to ensure reliable power supply at Kolkata

✦ Subhasgram

- The need for augmenting the transformation capacity at Subhasgram, Kolkata, was first discussed during the **45th TCC** meeting on **06.08.2022** in Siliguri, West Bengal.
- Subsequently, considering the urgency of augmenting ICT capacity to meet the increasing demand in the Kolkata area, it was decided during the 50th TCC/ERPC meeting on

10.08.2023 at Lonavala to utilize the regional spare 500 MVA ICT located at Maithon as 7th ICT at Subhasgram. This ICT was transported and commissioned in June 2024, thereby enhancing the transformation capacity for the Kolkata area.

✦ **Rajarhat**

- ✓ Similarly, considering the loading of Rajarhat ICTs (2x500 MVA) which also caters to part of Kolkata's load, there was a need of augmentation. To address this, a 3rd ICT was planned at Rajarhat.
- ✓ During the deliberations in the 222nd OCC meeting held on 23.12.24, West Bengal SLDC representative expressed deep concern regarding a potential power crisis at Rajarhat (PG) in 2025-2026, based on the current loading pattern in and around the Kolkata area. It was also emphasized the need to prioritize the installation of a 3rd 400/220KV,500MVA ICT at Rajarhat (PG) with the same urgency as Subhasgram (PG) to prevent a recurrence of similar critical situations in the future.
- ✓ It was further highlighted that if the proposed 3rd ICT is not operational by the summer of 2026, severe congestion is likely to affect the ICTs at Rajarhat (PG). Additionally, it was noted that the state assembly elections are expected to take place in 2026, adding to the significance of addressing this issue promptly.
- ✓ Powergrid ER-II updated in the meeting that tender for procurement of the 3rd ICT has been annulled twice and **currently re-tendering** is under progress. **Bid opening** is scheduled tentatively in **Feb 2025**, thereafter, commissioning of the ICT will take **18 months**. It is expected to be commissioned by end of **2026** or first half of **2027**.
- ✓ In view of the above, an alternative arrangement may be thought off to ensure 3rd ICT at Rajarhat before 2026 Summer.
- ◆ WB SLDC and WBSETCL raised deep concern on the inordinate delay in 3rd ICT commissioning at Rajarhat (PG) despite being accorded formal approval in 21st CMETS-ER in July 2023 with a completion target of 21 months (April, 2025).
- 223rd OCC viewed the matter seriously and agreed with the concern expressed by West Bengal on the lack of credible progress by Powergrid in procurement of 3rd ICT at Rajarhat.
- OCC referred the issue for deliberation in TCC forum.
- **Powergrid was advised to present a comprehensive plan including reasons of delay along with timeline of tendering, supply, transportation and installation activities for 3rd ICT commissioning at Rajarhat (PG) in the upcoming TCC meeting.**

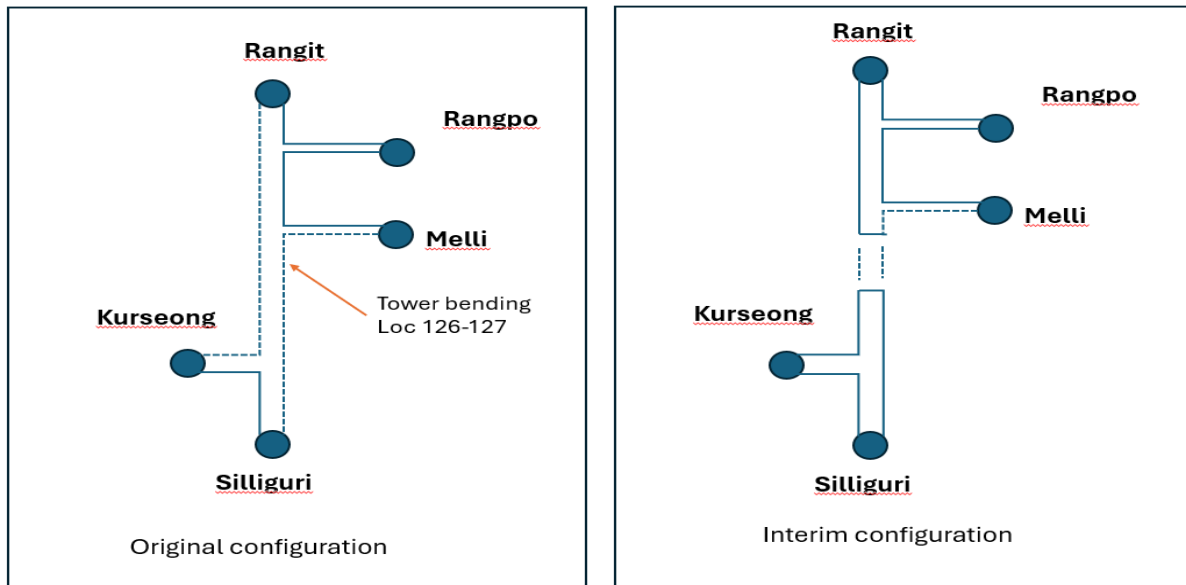
POWERGRID may update the status. TCC may deliberate.

2.11 Update on Restoration of 132kV Rangit-Kurseong & 132kV Siliguri-Melli-Rangpo lines

- Due to incessant rain and several landslides, towers at loc. 125-128 of 132 kV Rangit-Kurseong and 132 kV Siliguri-Melli got badly affected.
- Considering the difficulties & time requirements due to hilly terrain for restoration of the said portion, it was decided that part of the healthy line of 132 kV Siliguri-Melli will be reconfigured as 132 kV Siliguri-Kurseong ckt2 as a second source of Kurseong and

another healthy portion of 132 kV Siliguri-Melli will be reconfigured as 132 kV Rangit-Melli for a second source of Melli.

- POWERGRID intimated that it would take 15-20 Days to restore the original configuration after rectifying damaged towers.



As per 222nd OCC deliberation:

Powergrid ER-II apprised:

- Short pilling for the tower 126-127 is not feasible in the area due to lack of adequate soil strength. The required soil strength is of 8-9 unit however it has been found to have below 4.5 unit.
- Thus, nearby locations have been surveyed with higher soil strength to hold the tower.
- New towers have been diverted from Berhampore and Dalkhola.
- New route for shifting of tower no-127 & 126 has been carried out as it is not possible to reassort the line in same tower foundation.
- Restoration of the said line with diverted route will be completed by 15.03.2025.
- OCC advised Powergrid ER-II to expedite restoration activity of original configuration of 132 KV D/C Siliguri-Melli & Rangit-Kurseong Lines to the best feasible extent.
- OCC requested Govt. of West Bengal to extend all possible administrative assistance to Powergrid ER-II for resolving the persistent ROW issues.
- WBSETCL was advised to coordinate with Powergrid ER-II in lowering the existing OPGW of 132 kV WBSETCL lines below the span 126-127 shall be routed underground via approach cable and overhead Powergrid lines shall provide lightning protection to these 132 kV lines of WBSETCL.

Powergrid may update.

2.12 Update on actions taken to prevent repeated tripping of 132 kV Chuzachen-Rangpo D/C: ERPC Secretariat

- 132 kV Chuzachen-Rangpo D/C tripped more than 10 times since May'24 causing total generation loss occurred at Chuzachen HEP (110 MW) due to sequential tripping of both lines in three instances.
- In most of the trippings, phase to phase fault was reported with a distance of around 12 km from Rangpo.
- A joint committee with members from Powergrid, Chuzachen HEP and Sikkim transmission wing, Dept. of Power (Sikkim) was constituted for joint site inspection. The committee submitted its report after visiting the site on 01.10.2024.
- Committee observations during the visit were as below:
 - ✓ Critical tree infringement and bamboo trees between loc. 27-29 along the corridor.
 - ✓ Severe infringement along with several flashover marks on the conductor and burnt trees along the corridor.
 - ✓ Less ground clearance b/w loc. 28-29 for Ckt-1 (4.1 meter instead of minimum requirement of 6.1 meter).
- The Committee recommended two new towers to be constructed between loc. 28-29 and 35-36 (one each) and hill cutting along the periphery of tower no. 27 to improve ground clearance.
- Considering the severity of less ground clearance and potential of damage to human life, the recommended measures need to be implemented on an immediate basis.

The issue was deliberated in last several OCC meetings wherein OCC advised Sikkim to expedite in implementation of Committee recommendations i.r.o increasing ground clearance by construction of a new tower(between loc. 28-29) and hill cutting (around tower no. 27). OCC also advised to update the same to ERPC/ERLDC every week.

Sikkim may update.

2.13 Exorbitant High Electricity Bill for drawal of startup power for commissioning activities of Buxar TPP- STPL

SBPDCL has raised Start-up power bill for Commissioning Activities of Unit no.1 of Buxar Thermal Power plant (2X 660 MW) (BTPP) amounting to Rs 436.8 Crore approx. for the period of 235 days w.e.f 11.05.24 to 31.12.24, for consuming 9312000 kWh (9.3 MUs). The start-up power bill is showing meter reading at GSS-Naubatpur end (source end) of 400 kV Transmission line and bill is extremely high due to generation of reactive power, attributed to the reduced load and long length of 126 KM of the transmission line.

A meeting on the subject cited issue was held under the Chairpersonship of Member (E&C), CEA on 14.01.2025 at CEA, New Delhi. In the meeting, SBPDCL requested STPL to submit their representation with available facts for their consideration. CEA advised that SBPDCL

may consider the concern of STPL regarding high energy bills and may approach BERC for notifying tariff of start-up power.

STPL may elaborate. TCC may guide.

2.14 Purchase of power from Naitwar Mori Hydro Electric Project (NMHEP), 60 MW (2X30 MW) in Uttarakhand: SJVN

- ✓ **SJVN Limited**, a Navratna CPSE under administrative control of Ministry of Power, Govt. of India is a joint venture of the Government of India (GOI) and the Government of Himachal Pradesh (GOHP).
- ✓ SJVN has commissioned the 60 MW Naitwar Mori Hydro Electric Power Station (NMHPS) on the River Tons in Uttarkashi District, Uttarakhand, on December 4, 2023. This run-of-the-river project is designed to generate 265.50 MUs annually in a 90% dependable year. The generated power is being evacuated via a dedicated 38 km transmission line connected to the HPPTCL network, which further links to the ISTS network at the 400kV/220kV Substation in Gumma, Himachal Pradesh.
- ✓ **In its first year of operation, NMHPS is expected to achieve a gross generation of 315 MU, surpassing its Design Energy, with a Capacity Utilization Factor (CUF) of 60%.** Furthermore, minimal forced outages during its operation reflect the project's operational efficiency. However, as of now, SJVN has not tied up this power with any beneficiaries, and it is being sold in the Power Exchange.
- ✓ As per Memorandum of Understanding (MoU), 12% of the net energy shall be given to Government of Uttarakhand (GoUK) free of cost. SJVN in a position to offer the power generated by NMHPS to any beneficiary or those DISCOMs interested in procuring green power for fulfilling its Renewable Purchase Obligation (RPO).
- ✓ The levelized tariff of the generated power is around Rs 12/kWh. However, after considering the RoE on lower side and optimizing the Loan component the tariff of NMHEP has been worked out around Rs 7/kWh.
- ✓ Constituent members are requested to consider purchase of power indicating the quantum of power required from this Hydro project. Further, in case beneficiaries are not intended to give consent for purchase of power @ Rs. 7/ kWh, SJVN requests the beneficiaries to suggest the maximum rates which may be paid by them for purchase of power from the Project.

SJVN may explain. TCC may discuss.

2.15 Consideration of Partial Outages of Generating Stations in calculation of DSM Accounts: NTPC

Vide CERC Notification No. L-1/260/2021/CERC, Dated: 5th August, 2024, Clause 8 - Charges for Deviation, Sub-Clause (12) states as follows:

Quote

(12) Notwithstanding anything contained in Clauses (1) to (11) of this Regulation, in case of forced outage or partial outage of a seller, the charges for deviation shall be @ the reference charge rate

for a maximum duration of eight time blocks or until the revision of its schedule, whichever is earlier.

Unquote

The said notification has been effective from 16.09.2024. However, in case of partial outage, "Deviation rate @ reference charge" has not yet been incorporated in the DSM calculation, as evident from the DSM statements published by ERPC. The same may please be incorporated.

In this issue, as a reference NPGCL has submitted few cases of partial outage of their unit and intimated that other generators of NTPC are submitting the partial outage data to ERLDC on regular basis and further requested to incorporate the same in the DSM.

Deliberation in the 52nd CCM

- NTPC raised the issue of consideration of partial outage of generating stations in DSM calculations and stated that the same is not being considered in DSM accounting of ERPC.
- ERPC secretariat intimated that due to unavailability of partial outage data the account was not revised as the data of partial outage.
- ERLDC intimated that the partial outage data in respect of ER ISGS as received from the concerned generating stations has been forwarded to ERPC recently.
- It was deliberated that in the present regulation, the provision of verification of the outage data is not clearly outlined. Member Secretary, ERPC opined that a proper methodology shall be adopted for verification and finalization of the events of partial outage before considering the events for DSM calculations.
- Committee advised NTPC to share the procedure being followed in the other region in this regard. The issue may be placed in 53rd TCC Meeting for deliberation and for further advice.

NTPC may update.TCC may discuss.

2.16 Dual reporting (2+2) of ISTS stations to Main RLDC and Backup RLDC: ERPC Secretariat

- ✓ Presently SCADA data channels are reporting in main and backup mode (1+1) with 1 main channel to RLDC and 1 backup channel to Backup RLDC. To increase the redundancy in the system Grid-India requested that both main and backup channels should report to RLDCs as well as back up RLDCs (in dual mode). In this regard meetings were held among POWERGRID, Grid-India, CTU and CEA dated 09.05.2023 and 27.06.2023 (MoM attached at **Annexure-B.2.16.1**) where dual reporting of SCADA Channels to main RLDC & Backup RLDC were deliberated.
- ✓ Further, CERC has issued Guidelines on "Interface Requirements" under the CERC (Communication System for inter-State transmission of Electricity) Regulations, 2017 (Attached at **Annexure-B.2.16.2**) in Jan'24. Which also mandated that users shall provide communication interfaces with multiple ports, cards, gateways etc. to avoid failure of single hardware element.
- ✓ To meet this requirement for new ISTS stations, CTU has started to include this requirement in the RFP inputs for the TBCB projects from Aug'23 onwards. For the existing substations CEA-PCD vide letter dtd.22.07.2024 (attached at **Annexure-B.2.16.3**) also confirms these requirement of 2+2 channels to main and backup RLDC.
- ✓ For existing ISTS sub stations, CTU has requested all the TSPs e.g. POWERGRID, Adani, Sterlite, Indigrd, Aparava, Renew Power etc. to provide status for readiness of 2+2

channels upto RLDC. As per inputs received POWERGRID, Indgrid, Sterlite existing SAS gateway / RTUs needs upgradation or replacement. Further TSPs stated that this requirement has cost implications, and they require a separate scheme to upgrade their existing substations.

- ✓ As per discussions held within CTU (Engg & Communication departments), the Engg team suggested that as SAS upgradation comes under substation related work, this type of work can be carried out under O&M /AddCap as no separate transmission schemes are generally required at element level.
- ✓ Agenda in this regard was also sent by CTU to NPC for deliberation and seeking their views and issuing guidelines, however NPC is of the view, that this agenda first needs to be put up in RPC level for consensus of all stakeholders. Thereafter CTU has forwarded the same to all the RPCs vide letter dtd. 11.09.2024 (attached at **Annexure-B.2.16.4**)
- ✓ Further, as per decision of 14th and 15th ERTeST meeting, POWERGRID has completed the PoC test for Jamshedpur S/s and has submitted the draft test report. The draft PoC report is attached as **Annexure-B.2.16.5**. The proposed architecture is attached in **Annexure-2.16.6**.
- ✓ For this purpose, four channels are to be configured - one channel for RTU-1/gateway-1 reporting to ERLDC Main-1, second for RTU-1/gateway-1 to ERLDC Main-2, third for RTU-2/gateway-2 to ERLDC Main-1 and the fourth for RTU-2/gateway-2 to ERLDC Main-2 The aspect of dual channel reporting has been discussed in 14th and 15th Test Meeting, CTUIL communication planning meeting.
- ✓ These four channels are in addition to the two existing channels reporting to the present SCADA system at ERLDC MCC and ERLDC BCC. The existing channel will remain in service till taken over by New SCADA implementation in Eastern region which is expected to be completed by March 2026.

Key points for deliberation:

- Forum is requested to deliberate this requirement of SAS/RTU Upgradation/ Replacement for existing substations in **Additional Capitalization for RTM** substations and under **Change in Law of TSA** for the **TBCB** substations in line with CERC order on petition no. 94/MP/2021
- All ISGS/IPPs/private transmission licensees are requested to check feasibility for dual channel provisions at respective ends to ensure that the requirements for dual reporting of RTUs/SAS gateways can be achieved before commissioning of the upcoming SCADA/EMS upgradation project. An email communication to all utilities have been shared from ERLDC. List of dual reporting feasibility is attached as **Annexure B.2.16.7**

16th TeST Decision

- TeST committee technically consented to the proposal and referred to TCC/ERPC meeting for finalization of the implementation mode with consensus of all ER constituents. CTU was advised to furnish detailed cost estimate and BOQ of the scheme in upcoming TCC meeting for deliberation.
- TeST committee advised all generating utilities to ensure the prompt availability of additional analog and digital signals to ERLDC in line with IEGC 2023.
- TeST Forum advised all ISTS transmission licensees and ISGS/IPP generating utilities to assess the feasibility of dual-channel reporting to ERLDC and confirm their progress to ERPC and ERLDC.

- Further, all utilities were advised to promptly initiate actions to replace old RTUs under the following conditions and communicate the same to ERPC and ERLDC:
 - RTUs with limitations in reporting all required analog/digital data to ERLDC.
 - RTUs with obsolete technology or those that have completed their useful life of 7 years (as per CERC Tariff Regulation 2024–29).
 - RTUs still reporting in the IEC 101 protocol and not supporting the IEC 104 protocol.

CTU may explain. TCC may discuss.

2.17 Laying of OPGW on Transmission lines in Eastern Region :CTU

Revised OPGW list for laying of 48F OPGW on these links is tabulated below:

S.N.	Description	Link Length (km)	Design Attenuation (dB)	Actual Attenuation (dB)	Year of Commissioning	FOTE Requirement
1	400kV Prayagraj (Allahabad)–Sasaram	214.42	53.61	71.82 ↑ (+18.21)	2004	Covered in Congestion Scheme
2	400kV Farakka – Sagardighi II -Jeerat	(84.71+219.45)304	59.21	73.43 ↑ (+14.62)	2004	1 no STM-64 for Sagardighi. (Farakka, Jeerat covered in Congestion Scheme)
3	400kV Indravati-Rengali-Talcher	377.31	94.33	122.22↑ (+27.89)	2005	2 nos. STM-16 One each at Indravati, Rengali. (Talcher covered in AGC scheme.)
4	400kV Malda - Purnea & 400kV Purnea - Binaguri	367.34 (176.89+190.47)	52.73	75.10↑ (+22.37)	2004	1 no. STM-64 for Malda. (Binagudi, Purnea covered in Congestion Scheme)
5	400kV Binagauri-Bongaigaon	239.81	25.94	78.94↑ (+53)	2004	No requirement at Bongaigaon as per POWERGRID input.
	Total=	Approx. 1503 km				2 nos.- STM 16 2 nos. STM 64

16th TeST Decision

- To ensure continued reliability and performance of the communication infrastructure, TeST committee technically agreed to OPGW replacement on aforementioned 5 links that have completed their designated useful lifespan(15 years) as per CERC norms .
- TeST committee referred the proposal to CCM for commercial vetting.

- TeST committee suggested that the requirement of DTPC as proposed by WBSLDC may be considered.

In 52nd CCM

- ♦ WBSETCL submitted that DTPC at Sagardighi end may be included in the scope of the work.
- ♦ The Commercial committee agreed with the proposed cost estimate of **Rs. 84.74 Crore** and referred for concurrence of 53rd TCC & ERPC. **Committee advised Powergrid/CTU to explore inclusion of DTPC at Sagardighi in the present scope and submit the cost implication of the same in the forthcoming TCC Meeting.**
- It is now informed that Farakka-Sagardighi-Subhashgram OPGW link is commissioned on dt. 18.12.2024. Accordingly, OPGW laying requirement on 400kV Farakka-Sagardighi II-Jeerat may be further deliberated.
- **After successful commissioning of Farakka-Sagardighi-Subhashgram OPGW link**, if OPGW on 400kV Farakka Sagardighi II-Jeerat and associated FOTE at Sagardighi may not be required, the estimated cost gets revised to **Rs. 67.28 crores.**(revised scheme from CTU attached at **Annex B.2.16**)
- After RPC recommendation, scheme will be put up for approval of NCT.

CTU may explain. TCC may discuss.

2.18 Agenda Items referred by sub-committees for concurrence/approval.

SI No.	Proposal	Cost Implication	Decision of Sub-Committee
1.	Replacement of Old Data Concentrator Unit (DCU) for AMR, in compliance with regulations.: Powergrid ER-II.	Rs. 1,23,42,375/- (Rs. One crore twenty-three lacs forty-two thousand three hundred seventy-five only) excluding taxes	<ul style="list-style-type: none"> ➤ 223rd OCC consented the proposal. ➤ 52nd Commercial Committee agreed with proposed Cost estimate.
2.	Proposal for keeping SAS at Durgapur S/S under Package-Y as spare at SAS Lab of Rajarhat—Powergrid ER-II	₹ 45,00,000 /-(Rupees Forty Five Lakhs) (Tentative)	<ul style="list-style-type: none"> ➤ 222nd OCC accorded in-principle approval to the proposal. ➤ 52nd Commercial Committee agreed with the proposed cost estimate.
3.	Upgradation of Substation Automation System at Rangpo 400/220/132KV Substation: Powergrid ER-II	Tentative Cost Implication of ₹60,00,000/- (Rupees Sixty Lakh) excluding GST.	<ul style="list-style-type: none"> ➤ 222nd OCC accorded in-principle approval to the proposal. ➤ 52nd Commercial Committee agreed with the proposed cost estimate.

4.	Conducting VAPT assessment for AMR Asset in ERLDC (in Compliance of Cyber security guidelines): Powergrid ER-II	₹ 2,60,000 /- (Rupees Two Lakh Sixty Thousand) excluding GST	<ul style="list-style-type: none"> ➤ 222nd OCC accorded in-principle approval to the proposal. ➤ 52nd Commercial Committee agreed with the proposed cost estimate.
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TCC may concur.

2.19 Support Service for Protection Database Project of ER : ERPC Secretariat

In 51st TCC & ERPC Meeting, the proposal of continuing support service for the Protection Database Project of ERPC with the original vendor was discussed and approved. The support service will expire on March-25. It is pertinent to mention that as per clause 14(3a) of CERC(IEGC)-2023, RPCs are required to maintain a centralized database of relay and protection settings of their concerned region.

To ensure reliable and up-to -date database, continuation of support service of the project is necessary. As the software service is proprietary in nature, it is proposed to renew the support service of the protection database with the vendor for FY 2025-26.

It is further proposed that PDMS(Protection Database Management System) portal may be enhanced to include features such as sorting relay settings by type, generating summary reports for quick reference, and enabling automated checks for deviations from the standard protection philosophy. These enhancements will facilitate timely audits, ensure adherence to protection standards, and help to prevent incidents caused by incorrect settings. This agenda was discussed in 143rd PCC Meeting held on 20th Jan 2025 and members agreed for the modification/enhancement in the existing database portal.

TCC may discuss and concur.

2.20 Implementation of MTDL at 55 % of Intra-state Generators

Operation of intra-state thermal generating plants in MTDL at 55% of MCR was discussed in the 52nd TCC Meeting, held in Goa on 05.09.2024, in line with CEA (Flexible Operation of coal based Thermal Generating Units) Regulations, 2023. In the deliberation, it had emerged that it is the need of hour due to high RE penetration mainly during solar hours. State sector generators, which are technically capable of running at 55%, can also participate in TRAS ancillary market without hampering state interest.

In 52nd TCC meeting it was decided that:

- States shall take up 55% MTDL Flexible Operation of Thermal Units with Respective SERC & make it mandatory to participate in maintaining Grid Stability as well as Security during any Grid disturbance event.
- All States to approach respective SERC for specific compensation mechanism for part load operation to support Grid at the time of need & subsequent participation of Intra-state generators in TRAS Market.

TCC may discuss.

2.21 Provision of construction power supply for stage-II from existing commercialized units of Nabinagar Stage-I. – NTPC

- ◆ In the 52nd TCC & ERPC Meeting NTPC & SBPDCL were advised to settle the issues bilaterally and shall submit the final metering arrangement at Nabinagar to ERPC/ERLDC.
- ◆ SBPDCL and NTPC are now agreed for the modalities. The metering scheme and modalities may please be approved.

In **52nd CCM**, NTPC updated that SBPDCL has given their consent for drawl of Construction Power for stage-II of NPGCL from NPGCL stage-I switchyard.

- Commercial Committee advised NTPC to submit the acceptance letter received from Bihar Discom to ERPC.
- Also NTPC was requested to submit detailed metering scheme for accounting of the energy drawal for said construction work in coordination with ERLDC in the forthcoming TCC Meeting.

Committee referred the agenda to 53rd TCC for discussion and further advice.

NTPC may update. TCC may deliberate.

2.22 Recovery of Outstanding Dues from Government of Sikkim– WBSEDCL.

- ◆ The Energy and Power Department of the Government of Sikkim has an agreement with WBSEDCL for the purchase of power at a tariff based on the generation cost of the Rammam Hydel project operated by WBSEDCL. In line with this arrangement, the Government of Sikkim has been drawing power from WBSEDCL on a regular basis but has been reluctant to settle the bills since 2017.
- ◆ Additionally, WBSEDCL previously purchased power from the Government of Sikkim on a consumer basis until **June 2023**. The volume of power purchased by WBSEDCL was significantly less compared to the amount of power sold to the Government of Sikkim.
- ◆ After accounting for adjustments related to purchases and sales, as well as surprise payments made by Sikkim for November and December 2021, the current outstanding dues as on 31.12.2024 from the Government of Sikkim amount to approximately Rs. 99.80 Crores. This figure includes a Late Payment Surcharge (LPSC) of **Rs. 43.84 Crores**. The issue was raised in **42nd Commercial Sub-Committee** Meeting as well as in **43rd & 52nd TCC & ERPC** Meeting.
- ◆ **However, there has been no positive response or payment from the Government of Sikkim thus far.**
- ◆ Till date WBSEDCL has made several attempts to resolve this issue but has found no satisfactory remedy.
- ◆ In view of the prolonged nature of this issue and the substantial outstanding amount, **WBSEDCL is again seeking intervention from the ERPC platform with a request to take necessary actions to address the issue with the appropriate higher platform like CEA & MOP.**
- ❖ **Deliberation in 52nd CCM:**
 - WBSEDCL highlighted the issue of outstanding dues by WBSEDCL from Power Dept, Sikkim.
 - Representative from Power Dept, Sikkim intimated that the requisition for fund has been placed before Govt of Sikkim however they are yet to receive the fund.
 - Committee raises concern on the huge outstanding amount of WBSETCL by Sikkim and

advised Sikkim representative to expedite the process for getting the fund from Govt of Sikkim.

- Committee further referred the issue to 53rd TCC/ERPC Meeting to draw the attention of higher authority from Sikkim.

WBSEDCL may explain. Sikkim may respond.

2.23 Withdrawal of RTDA charges for power scheduled from Dagachu, Bhutan to WBSEDCL

- WBSEDCL vide its letter dtd 20th Sep 2023 give consent to schedule/off-take 126 MW power from Dagachu HPS within their allotted GNA quantum. Same letter was shared with CERC also on 23rd Sep 2023 for grant of deemed GNA so that power from Dagachu HPS can be scheduled to WBSEDCL under its GNA contract w.e.f. 01st Oct 2023.
- Simultaneously, TPTCL took up the matter with NLDC for smooth scheduling of power under GNA regime w.e.f 01st Oct 2023. Due to non-availability of necessary software for granting deemed T-GNA to TPTCL on behalf of Dagachu, HPS for import of power to India, NLDC provided access to WBES to create contract from TPTCL-Dagachu HPS to WBSEDCL for scheduling of power to WBSEDCL under GNA of West Bengal w.e.f 01st Oct 2023. As power is scheduled to WBSEDCL under its GNA, WBSEDCL has been making payment to CTUIL for off-take of power from Dagachu HPS.
- Post that TPTCL in close coordination with NLDC as well as CTUIL, applied for grant of GNA for injection of power from Dagachu HPS project w.e.f 01st April 2024. On 14th March 2024 CTUIL granted GNA from 1st April 2024 to TPTCL for Dagachu project Bhutan.
- On 22.11.2024, ERPC raised bill of Rs 77.70 lakhs under differential RTDA charges for period June 2023 to September 2023.
- TPTCL had requested ERPC to withdraw the bill of Rs 77.70 lakhs on pretext that WBSEDCL had already paid the requisite GNA charges to CTUIL including the period of March 2024, for supply of power from Dagachu to WBSEDCL. TPTCL had made the payment under protest in order to avoid any LPS but seeks this opportunity for withdrawal of these charges and any such charges in future.

In 52nd CCM:

- TPTCL elaborated the issue and requested for withdrawal of RTDA charges for the month of March-24 and further requested for withholding of issuance of RTDA accounts of TPTCL from Oct-23 to Feb-24.
- ERPC Secretariat stated that the RTDA charges was calculated in accordance with the CERC Sharing Regulation 2023.
- NLDC representative submitted that the scheduling of TPTCL(Dagachu) was carried out under T-GNA for the period from Oct-23 to March-24. Due to non-availability of necessary software for granting deemed T-GNA to TPTCL for import of power of Dagachu HPS to India, NLDC provided access to WBES with an understanding that the power is being scheduled through T-GNA.
- It was clarified by ERPC Secretariat that the transmission deviation of a generating station is calculated in excess of GNA capacity only and therefore in absence of any GNA to TPTCL for import of power from Dagachu HPS, the whole quantum of power scheduled through T-GNA is considered as deviation.

- After detail discussion, Commercial Committee advised that NLDC may clarify the scheduling process of Dagachu HPS power during the period from Oct-23 to March-24 to TPTCL. Further Committee referred the issue to TCC for further deliberation.

TCC may guide.

2.24 Follow up of the previous TCC/ERPC Decisions:

Serial No	Issue	Decision taken in the previous TCC/ ERPC Meetings																								
1	Spare Reactor procurement under Eastern Regional Pool as per CEA norms	<p>217th OCC consented to the proposal of reactor spares as follows:</p> <table border="1"> <thead> <tr> <th>STATE</th> <th>VOLTAGE</th> <th>SIZE</th> <th>STORAGE PLACE</th> </tr> </thead> <tbody> <tr> <td>WEST BENGAL</td> <td>400 KV</td> <td>125 MVAR</td> <td>DURGAPUR SS</td> </tr> <tr> <td>80 MVAR</td> <td>BINAGURI SS</td> <td></td> <td></td> </tr> <tr> <td>SIKKIM</td> <td>220 KV</td> <td>31.5 MVAR</td> <td>NEW MELLI SS</td> </tr> <tr> <td>JHARKHAND</td> <td>400 KV</td> <td>125 MVAR</td> <td>NEW RANCHI SS</td> </tr> <tr> <td>ODHISSA</td> <td>400 KV</td> <td>63 MVAR</td> <td>ROURKELLA SS</td> </tr> </tbody> </table> <p>Assessing merit of the proposal, 52nd ERPC concurred estimated expenditure of Rs. 55.67 Crores (exclusive of GST but including transportation cost) towards procurement of spare reactors in ER pool by Powergrid ER-II as per CEA spare norms.</p> <p>Powergrid may update.</p>	STATE	VOLTAGE	SIZE	STORAGE PLACE	WEST BENGAL	400 KV	125 MVAR	DURGAPUR SS	80 MVAR	BINAGURI SS			SIKKIM	220 KV	31.5 MVAR	NEW MELLI SS	JHARKHAND	400 KV	125 MVAR	NEW RANCHI SS	ODHISSA	400 KV	63 MVAR	ROURKELLA SS
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ODHISSA	400 KV	63 MVAR	ROURKELLA SS																							
2	Upgradation of AMR system Network into Layer-3 in Eastern Region (Addition to Scope for AMR Phase-5)	<p>To implement a proper structured network of AMR, the existing AMR network needs to be upgraded in Layer3.</p> <p>Project Timeline (tentative):</p> <table border="1"> <thead> <tr> <th>Procurement of Hardware</th> <th>Installation & Configuration of the hardware</th> <th>Testing and GoLive</th> <th>AMC Support</th> </tr> </thead> <tbody> <tr> <td>03 months (M1 to M3)</td> <td>02 months (M4 to M5)</td> <td>01 month (M6)</td> <td>36 months (M7 to M42)</td> </tr> </tbody> </table> <table border="1"> <tr> <td>Installation, Configuration, Testing & Go-Live (without Taxes)</td> <td>46,86,162</td> </tr> </table>	Procurement of Hardware	Installation & Configuration of the hardware	Testing and GoLive	AMC Support	03 months (M1 to M3)	02 months (M4 to M5)	01 month (M6)	36 months (M7 to M42)	Installation, Configuration, Testing & Go-Live (without Taxes)	46,86,162														
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Installation, Configuration, Testing & Go-Live (without Taxes)	46,86,162																									

		03 years comprehensive AMC Support (without Taxes)	92,36,593
		<p>52nd ERPC Decided as below-</p> <ul style="list-style-type: none"> • ERPC granted in-principle consent to the proposal and approved the estimated cost of Rs.46.86 lakhs (without Taxes) for AMR upgradation project while the AMC cost component needs to reexamined. • Powergrid ER-II was advised to negotiate the cost of comprehensive AMC support with concerned vendor and submit the negotiated value in CCM for concurrence. • Meanwhile Powergrid ER-II should proceed with installation, commissioning and testing activities of existing AMR network upgradation to Layer-3. <p>Powergrid may update.</p>	
3	Scheme for deployment of SDH equipment and amplifier at Alipurduar S/s of Eastern Region	<p>Scope of the scheme (Estimated cost: Rs. 65,00000/- (Sixty-Five lacs) only)</p> <ul style="list-style-type: none"> • Deployment of FOTE (SDH Equipment) and amplifier solutions at Alipurduar S/s end for OPGW based communication and Teleprotection for 400kV lines from PHEP-II, PHEP-I and Jigmeling of Bhutan to Alipurduar, India: <ul style="list-style-type: none"> • a)1 set of STM-4 SDH equipment along with panel supporting minimum five directions with MSP (Multiplex Section Protection 1+1) & equipped with E1 and Ethernet interfaces. • b)6 sets of 175 km Amplifiers solutions: 2 directed towards Punatsangchhu-II(PHEP-II), 2 directed towards Punatsangchhu-I(PHEP-I) and 2 directed towards Jigmeling. • POWERGRID to coordinate with Bhutan ends while procuring the equipment to avoid any noncompatibility issues. • The 225 km solution proposed under the scheme shall work with STM-4 equipment freed on upgradation to STM-16. • The STM-4 equipment freed on upgradation to STM-16 will be compatible with Bhutan end as suggested by CEA.” <p>52nd ERPC Meeting approved estimated cost of Rs. 65 lakhs (inclusive of taxes) for procurement of SDH equipment along with amplifier at Alipurduar S/S of Eastern region.</p> <ul style="list-style-type: none"> • In view of uninterrupted data communication with Bhutan, Powergrid was advised to expedite the installation of proposed SDH at Alipurduar S/S. <p>Powergrid may update.</p>	
4	Update on Implementation of Bus Bar protection at 220 KV Substations.	<p>The issue of busbar protection at 220 kV Ramchandrapur S/s, 220 kV Tenughat S/s was also highlighted in many of the PCC Meetings but no progress has been made in order to make them functional.</p> <p>BSPTCL: 220 kV Biharsharif S/s</p> <p>JUSNL: 220 kV Ramchandrapur S/s, 220 kV Chaibasa S/s</p>	

		<p>TVNL: 220 kV Tenughat S/s (electromechanical relay)</p> <p>In 52nd TCC Meeting</p> <ul style="list-style-type: none"> ❖ JUSNL updated that Bus bar Protection at 220 kV Ramchandrapur S/s & 220 kV Chaibasa S/s shall be implemented by December-2024. ❖ BSPTCL submitted that they are constructing new control room at 220 kV Biharsharif S/s which shall be completed by end of 2024. During shifting of the equipment from Old S/S to New S/S, bus bar Protection shall be implemented. <p>BSPTCL & JUSNL may update.</p>										
5	<p>Monitoring of reconductoring of WBSETCL portion of ISTS lines being reconducted under ERES-44 Scheme</p>	<p>Reconductoring of transmission lines of Chukha Transmission System were agreed for reconductoring with HTLS under ERES-44. Now, the said ERES-44 scheme has been agreed in the 24th meeting of NCT.</p> <p>Reconductoring of intra-state LILO portion of Birpara (POWERGRID) – Alipurduar (POWERGRID) 220 kV D/c line at Falakata (WBSETCL) and Dalkhola – Malda 220 kV D/c line at Gazol(WBSETCL) shall be carried out by WBSETCL matching with HTLS conductor of the main ISTS line in the matching time frame.</p> <p>For effective utilization of reconducted lines, it was noted in the NCT that WBSETCL portion of some lines (LILO sections) also need to be completed matching with ISTS scheme.</p> <p>WBSETCL may update.</p>										
6	<p>Proposal for procurement of Spare ICT (Both 500 MVA & 315 MVA) for Eastern Region</p>	<p>In line with earlier approval it is proposed to concur in-principal approval of 02 No's ICT as proposed in 208th OCC for further concurrence in forthcoming TCC/ERPC: -</p> <table border="1"> <thead> <tr> <th>STATE</th> <th>VOLTAGE</th> <th>SIZE</th> <th>STORAGE PLACE</th> </tr> </thead> <tbody> <tr> <td rowspan="2">WEST BENGAL</td> <td rowspan="2">400/220/33 KV</td> <td>500 MVA</td> <td>MAITHON</td> </tr> <tr> <td>315 MVA</td> <td>BINAGURI</td> </tr> </tbody> </table> <p>After detailed deliberation, 51st TCC:</p> <ol style="list-style-type: none"> 1. Agreed to proceed with the procurement of the 500 MVA ICT. 2. Advised Powergrid to explore the possibility of sourcing a 315 MVA spare ICT (refurbished) from other regions for potential use in emergency situations within ER. <p>In 51st ERPC Meeting:</p> <ol style="list-style-type: none"> 1. The proposal for procuring the 500 MVA ICT was approved by ERPC. 2. ERPC instructed Powergrid to explore the feasibility of 	STATE	VOLTAGE	SIZE	STORAGE PLACE	WEST BENGAL	400/220/33 KV	500 MVA	MAITHON	315 MVA	BINAGURI
STATE	VOLTAGE	SIZE	STORAGE PLACE									
WEST BENGAL	400/220/33 KV	500 MVA	MAITHON									
		315 MVA	BINAGURI									

		acquiring a refurbished 315 MVA spare ICT from other regions, which could be utilized in the Eastern Region during emergency situations and update the status in the upcoming OCC Meeting of ERPC. Powergrid may update.
7	Status update on restoration of Teesta-V HEP(NHPC) & Teesta-III HEP(SUL)	In the 52 nd TCC Meeting, NHPC intimated that: Restoration work is going on in war footing basis at Teesta-V but significant damage has been caused to the GIS substation in recent landslide, thus the revival process shall be delayed. Tentative restoration by March 2025. SPTL representative on behalf of SUL submitted that two DPRs pertaining to restoration activity have been placed before CEA. Part-I of the DPR submitted on 05.04.2024 and Part-II on 24.06. 2024, which are under consideration of CEA. Restoration activities planned in Part-I and Part-II are likely to be completed by Jun 2025 & April 2028 respectively.

2.25 Status of upcoming Thermal Generation Projects: ERPC Secretariat

Generating unit	Update as per 52 nd TCC meeting
North Karanpura TPP U#3(660 MW)	North Karanpura TPP unit#3 COD will be tentatively by Q4 of 2024-25.
Barh stage-I U#3 (660 MW)	Barh stage-I U#3 (660 MW) will be declared commercial tentatively by Q4 of 2024-25.
Patratu	Synchronization by by Dec,2024 & COD shall be tentatively done by Q4 of FY 2024-25.
Buxar TPP(SJVN)	Representative from Bihar updated that Unit#1 and Unit#2 is likely to be synchronized by December, 2024 & April 2025 respectively.

All concerned Thermal GENCOs may update.

2.26 Default details of constituents pertaining to Deviation, Reactive, Fees and Charges, Opening of LC and Interest due to delayed payment of deviation charges- ERLDC

A. Default details of constituents pertaining to Deviation, Reactive, Fees and Charges.

The details of major defaulters as on 16.01.2025 considering the ERPC bills dated 15/01/25 (Wk- 30/12/24 to 05/01/25) for DSM charges, Reactive charges and Legacy dues are tabulated below. Pending Reconciliation Statements pertaining to DSM, Reactive, Fees and Charges are also mentioned below -

Jharkhand:

	JBVNL
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DSM (in Cr)	₹ 76.97 Cr /-
Reactive	₹ 1.61 Lakhs
LC for DSM	No Valid LC available
Legacy dues (as on 16.01.25)	0
Reconciliation of Statements of	DSM: Pending from Q2 of FY 2020-21
	Reactive: Pending from Q1 of FY 2019-20
	FnC: Pending from Q1 of FY 2021-22

Bihar:

	Bihar
DSM (in Cr)	₹ 109.02 Cr /-
Reactive	₹ 10.46 Lakhs
LC for DSM	No Valid LC available

Sikkim:

	Sikkim
DSM (in Cr)	₹ 28.67 Cr /-
Reactive	Nil
Due date of expiry of LC	NA
Legacy dues (as on 16.01.25)	₹ 1.15 Cr
Reconciliation of Statements of	DSM: Pending from Q2 of FY 2019-20
	Reactive: Pending from Q1 of FY 2019-20
	FnC: Pending from Q1 of FY 2021-22

Information about the change in outstanding amounts pertaining to DSM, following the 51st CCM, which was held on 13.08.24, is tabulated below:

Entity	Outstanding as on 31.07.24 (as per 51st CCM)	Amount Receivable by Pool after 31.07.24 till 16.01.25	Amount Received by pool after 31.07.24 till 16.01.25	Present outstanding as on 16.01.25

Jharkhand	110.76	25.66	59.45	76.97
Bihar	123.94	45.08	60	109.02
Sikkim	28.84	-0.17	0	28.67

Further, the details of other pool members are enclosed as **Annexure B.2.26.1** and **Annexure B.2.26.2**.

- ✓ In 52nd CCM, West Bengal representative requested ERLDC to release the weekly receivable amount in one go rather than in multiple tranches. ERLDC clarified that based on the receipt/availability, the fund is disbursed to the concerned utilities uniformly proportionate to their receivables.
- ✓ The Committee advised all the concerned constituents to clear their outstanding dues at the earliest and referred this to TCC.

Concerned Utilities may update.

B. Opening of LC by ER Constituents for DSM Payments.

The details of LC amount required to be opened, as per ERLDC letter dated 29/04/2024 (and reminder dated 26/06/2024), for default in FY 2023-24 by ER constituents is given in table below:

SI No	ER Constituents	LC Amount (110% of Average weekly Deviation Charge liability) in ₹	Due date of expiry	Remarks
1	BSPTCL	₹ 3,70,50,927	NA	No Valid LC
2	JUVNL	₹ 2,65,67,573	NA	No Valid LC
3	DVC	₹ 2,03,05,615	NA	No Valid LC
4	Sikkim	₹ 55,16,800	NA	No Valid LC
5	NTPC	₹ 8,14,71,412	NA	No Valid LC
6	CHUZACHEN	₹ 3,91,733	NA	No Valid LC
7	GMR	₹ 5,27,184	NA	No Valid LC
8	NVVN-Nepal	₹ 1,96,45,399	NA	No Valid LC
9	BRBCL	₹ 17,88,965	NA	No Valid LC
10	ECR	₹ 7,40,236	NA	No Valid LC
11	IBEUL	₹ 27,67,148	NA	No Valid LC
12	Tashiding	₹ 42,887	NA	No Valid LC

In 52nd Commercial Meeting, Sikkim update that the requisite LC has been opened.

Concerned Utilities may update.

3. PART-C: ITEMS FOR INFORMATION

3.1. Review of Automatic Under Frequency Load Shedding (AUFLS) scheme in Eastern Region

In 223rd OCC Meeting,

❖ BSPTCL(Bihar SLDC) updated:

Pending 500 MW load relief in AUFLS shall be implemented by FEB 2025 and SCADA integration of the new feeders will also be done shortly.

❖ OPTCL affirmed of sharing the list of feeders by mid of Feb 2025.

❖ WBSLDC assured that entire alooted load relief quantum under their jurisdiction will be implemented with UFR by end of Feb 2025.

OCC advised all SLDCs/STUs and concerned DISCOMs:

▪ To ensure availability of sufficient load relief (MW) in each of the four stages as follows:

Constituent	Stage-1	Stage-2	Stage-3	Stage-4	Total
Bihar	315	379	442	442	1577
Jharkhand	87	105	122	122	437
DVC	172	207	241	241	861
Odisha	306	367	428	428	1530
West Bengal	497	597	696	696	2486
Sikkim	5	6	7	7	25
Total	1383	1660	1937	1937	6916

Stages-I & II, being first line of defence in AUFLS ,should be given first priority in maintaining required load relief quantum.

- All pending installation and testing of UFRs in Stages-I & II must be completed by Feb 2025.
- To identify new feeders for implementing AUFLS in stage III & IV who have successfully implemented AUFLS in stage I & II by shifting load quantum from stage III & IV. List of new identified feeders in stage III & stage IV of AUFLS must be share with ERPC by all SLDCs.
- To ensure SCADA data mapping for all newly identified UFR feeders at ERLDC level & in case of non-availability of SCADA data, anticipated timelines for making availability of SCADA data must be communicated for all applicable UFR feeders.
- To ensure periodic testing of UFRs for ascertaining their healthiness in coordination with ERLDC and submit report to ERPC/ERLDC.

TCC may note.

3.2. Prospects of existing 132 kV D/C PTPS-DVC Patratu Tie Line 5C&6C:DVC

- ◆ This has reference to the subject matter regarding the status of the existing 132 kV D/C PTPS-DVC Patratu Tie Line 5C&6C, as outlined in DVC's correspondence with JUSNL on 28.06.24, and the deliberations during the meeting held on 31.07.2024. The operation of these circuits, which are controlled by ERLDC, is crucially supported by ERPC's administrative oversight to ensure smooth load flow.
- ◆ In light of this, below are the key points for consideration, further deliberation and resolution.:
- The 132 kV JUSNL PTPS-DVC Tie Circuits 5C/6C (84, 85) were commissioned in 1972 to address the emergent power requirements of both organizations (DVC & JUSNL) during exigencies. Historically, these lines have been utilized for bidirectional power transmission, ensuring steady supply as needed.
- The Patratu and North karnpura DVC substations are directly connected to the Ramgarh Substation in a radial configuration. The Patratu-PTPS Tie Lines #85 (5C) & #84 (6C) play a critical role in maintaining grid connectivity and providing an alternative power source for the Patratu Substation. This connectivity is vital for esteemed consumers such as CCL, Railways, NTPC Mines, JSPL, etc., who rely heavily on these networks for their power needs. The availability of these Tie Circuits significantly enhances system stability in the region, thereby improving the overall grid profile.
- With the ongoing construction of 3x800 MW Super Critical Thermal Units at PTPS, Patratu, under the joint venture of NTPC and PVUNL, the existing switchyard is planned to be relocated to the newly constructed PGCIL Katia Substation for power evacuation. Given the importance of the 132 kV D/C PTPS-DVC Patratu Transmission Line 5C&6C, DVC expresses concern regarding the final connectivity at the JUSNL end. It is imperative that JUSNL develops a concrete plan for the construction of bays for the termination of the Patratu-PTPS Tie Lines #85 (5C) & #84 (6C) at the Katia Substation, following the establishment of the powerhouse at Patratu.
- As per the Minutes of the Meeting dated 31.07.2024, JUSNL has agreed in principle to divert the DVC Line to the newly under-construction 220/132/33 kV GSS within the premises of the 400/220 kV GSS Katia Patratu. JUSNL needs to conduct a technical feasibility study regarding the construction of the diversion of the Transmission Line and the establishment of 2 Nos. 132 kV bays at the newly under-construction GSS Katia Patratu.
- ❖ In 218th OCC Meeting, consent was accorded for the proposal of DVC for termination of 132 kV D/C PTPS-DVC Patratu Tie Line 5C&6C at the Katia substation.
- ❖ OCC also referred the matter to TCC for information.

TCC may note.

3.3. Preponement of commissioning of new 220/132KV, 1X200MVA (4th) ICT at Ara (POWERGRID) S/s: POWERGRID ER-I

- I. Implementation timeframe for 'installation of new 220/132KV, 1X200MVA (4th) ICT at Ara (POWERGRID) S/s' under 'Eastern Region Expansion Scheme-XXXVI (ERES-XXXVI)' was 18 months from the issue of OM by CTUIL i.e. 20.10.2024 as per CTUIL Office Memorandum vide ref. no C/CTU/AI/00/12th CCTP dated 21.04.2023.
- II. However, said ICT was put into commercial operation w.e.f. 18.08.2024 for improving the performance, safety & security of the grid and considering load requirement at Ara. Trial Run certificate issued by GRID-INDIA.

52nd Commercial Committee noted the early commissioning of 4th ICT at Ara(PG) S/s and referred it to 53rd TCC & ERPC for information.

TCC may note.

3.4. Installation of 5th 400/220 KV 315 MVA ICT in place of existing old 50 MVAR (3x16.6 MVAR single phase units) ISTS Reactor at 400 kV Jeerat S/s of WBSETCL

- At present the total installed capacity of 400/220 KV ICTs at Jeerat 400 KV SS of WBSETCL is 4X315 MVA. The defective 4th 315 MVA ICT which was out of system for over 2 years has been replaced with a Regional pool spare 315 MVA ICT & put into service on 14th April-2024.
- To cater the load growth at Jeerat 400 KV SS at 400/220 KV level maintaining (N-1) condition, augmentation of 400/220 KV ICT capacity from 4X315 MVA to 5X315 MVA is necessary at an early date.
- Clear space for construction of 220 KV bay for 5th ICT is available at Jeerat SS but there is no space for construction of new 400 KV bay & installation of 5th ICT.
- Due to space constraint, it is hereby proposed to use the 400 KV bay & equipment space of existing 50 MVAR (3X16.6 MVAR single phase units) Bus reactor which is at present operating with another 3-Ph 50 MVAR reactor in group control, both of which were installed under ISTS scheme a long time ago.
- Feasibility for keeping the 3-Ph 50 MVAR reactor in service by alternative arrangement is being explored by WBSETCL. WBSETCL is also considering the possibility for installation of a 3-Ph 125 MVAR Bus Reactor in place of the age old 50 MVAR 3-Ph Reactor depending on VAR compensation requirement as per system study.
- Considering the above facts proposal for installation of 5th ICT at Jeerat 400 KV SS was placed in the 29th CMETS-ER on 27.03.2024 Region for consideration and approval. It was decided that since the existing ISTS bus reactors (50MVA (3x16.67MVA single phase units) & 50MVA 3-Ph) are to be disconnected and the vacated ISTS bay and space is to be used for installation of 5th ICT.
- As per deliberation in **217th OCC**:
 - ❖ West Bengal STU intimated:
 - A joint site inspection was carried out on 28th June 2024 & one location has been identified for shifting 50 MVAR Bus reactor.
 - Shifting of Bus reactor involves construction of new 400 KV Bus-coupler bay & the freed 400 KV bus reactor Bay shall be deployed for commissioning of the new 315 MVA 400/220 kV ICT. However, the commercial aspects are not yet sorted.
 - ❖ PowerGrid ER-II submitted:

- Due to space constraints, only feasible option is to replace the old reactors by a single 125 MVAR reactor it's final commissioning will take around 3-4 months.
 - Two existing 50 MVAR reactors to be de-capped and 125 MVAR reactor shall be installed in its place as ISTS asset under RTM.
 - When the subject reactor shall be taken out of service while commissioning the new 315 MVA ICT, deemed availability shall be required from RPC for claiming O&M charges.
- ERLDC suggested to have the new Bus coupler ready before dismantling of existing one.

TCC may note.

3.5. Erosion of Riverbank of Teesta River in Mingley Village near Tower no. 91 of 400 kV Teesta III – Kishanganj D/C transmission Line - SPTL

The matter was discussed in 52nd TCC Meeting and TCC advised SPTL to either relocate the position of tower or construct some embankment around the tower area so that breakdown of Tower no. 91 of 400 kV Teesta-III – Kishanganj D/C transmission line due to erosion of river bank can be avoided.

SPTL requested the office of the Chief Secretary, Sikkim in September 2024 to intervene in the matter and direct the concerned authorities to include the protection works for river bank at Tower -91 in the Detailed Project Report (DPR) for River Training Works from Zema at Lachen under Mangan District up to Rangpo under Pakyong District and Melli under Namchi District, Sikkim.

Subsequently, the Chief Engineer, Water Resources Department (WRD), Government of Sikkim in October 2024 requested The Executive Engineer, Sikkim Investigation Circle, Central Water Commission to include the said location in the DPR preparation.

As the permanent protection works at the riverbank will take time, SPTL is continuously monitoring the situation at the river bank and is planning to carry out protection works in the immediate tower length of the bank to divert the flow of water away from the bank and arrest further scouring at the base of the slope as per requirement. The works are planned to be started in February 2025 subject to low discharge in Teesta River. For permanent protection at the riverbank, SPTL is also pursuing with Government of Sikkim (GoS) and Central Water Commission (CWC).

TCC may note.

3.6. Fees and charges of ERLDC

The reconciliation statements of FnC payments by registered users of ERLDC have been sent up to the period of Q1 of FY 2024-25. The same is also available at FnC portal <https://fc.posoco.in/FnCWeb/#/landing>. Many of the users are yet to sign the reconciliation statement. The constituents were requested to verify /check the same & comment (if any) to ERLDC at the earliest.

The status of reconciliation is enclosed in **Annexure 3.6**.

3.7. Statements of Pool accounts:

The reconciliation statements of DSM, Reactive, TRAS, SRAS and SCUC charges are being issued by ERLDC on quarterly basis and statements are being sent to the respective constituents and

also being uploaded at ERLDC website at <https://erldc.in/market-operation/dsmreconciliation/>. The status of reconciliation as on 16.01.2024 is enclosed in **Annexure- 3.7.1 and 3.7.2.**

Constituents are requested to take necessary action for the signing of pending reconciliation statements.

3.8. For TGNA payments made to CTU

The reconciliation statements of TGNA payments of Q-2 for FY 24-25 has been sent to CTU on 25.10.2024 and also uploaded the same at ERLDC website at <https://erldc.in/market-operation/ctu/>.The constituent was requested to verify /check the same & comment (if any) to ERLDC at the earliest.

The status of reconciliation is enclosed in **Annexure- 3.6.**

3.9. For Payments made to TGNA Applicants

The reconciliation statements of TGNA payments for the period of Q-2 for FY 24-25 have been sent to the GRIDCO, APPCPL, DALMIA CEMENT (BHARAT) LIMITED (RCW) , HPX, IEXL, IPCL, NALCO(OD), PXIL, ITC Limited Corporate Office Kolkata, BSPHCL, AEL, NVVN, PTC, PCW, UCL ULTSLDCD47, UCL Cuttack, GMRETL, JSL, TSL, NEFA, UCL WB, Vedanta SEZ and TPTCL on dated 25.10.2024 and also uploaded the same at ERLDC website at <https://erldc.in/open-access/reconciliation-applicant/>.The constituents were requested to verify /check the same & comment (if any) to ERLDC at the earliest.

The status of reconciliation is enclosed in **Annexure-3.6.**

3.10. List of Assets commissioned in the recent past in Eastern Region (ER)

A	<i>Strengthening of OPGW Network within the ER Grid and Connectivity with other Region</i>	DOCO	Remarks	Region
1	765kV Jharsuguda-Dharmjaygarh OPGW Link (148.603 KM) along with 2nos. of SDH equipment and 4 nos. OLIC at Jharsuguda and Dharmjaygarh end	31-08-2024	DOCO Letter Dtd. 08-10-2024	ODP
2	Durgapur - Farakka OPGW Link (OPGW Network - 157.745 km)	23.06.2024	DOCO Letter Dtd. 01.08.2024	ER-II
3	Durgapur - Sagardighi OPGW Link (OPGW Network - 133.572 km) & Farakka-Purnea OPGW Link (OPGW Network - 179.643 km)	25.06.2024	DOCO Letter Dtd. 01.08.2024	ER-II
B	<i>Upgradation of SCADA/RTUs/SAS in Central Sector stations and Strengthening of OPGW network in Eastern Region</i>	DOCO	Remarks	Region

4	Upgradation of SAS (Substation Automation System Hardware/License upgradation) at 09 locations (Chaibasa 400 KV, Gaya 765 KV, Kishenganj 400 KV, New Ranchi 765 kV, Chandwa 400 KV, Daltonganj 400 KV, Banka 400 kV, Lakhisarai 400 KV, Sasaram 765KV HVDC) and Implementation of BCU Based Substation Automation System (SAS) at 02 locations (Ara 220KV & Purnea 220KV)	21.12.2023	DOCOC Letter Dtd. 25.07.2024	ER-I
5	Upgradation of SAS (Substation Automation System Hardware/License upgradation) at 02 locations (220/132KV Birpara, 220KV New Melli SS)	31.03.2023	DOCOC Letter Dtd. 05.09.2024	ER-II
6	Upgradation of SAS (Substation Automation System Hardware/License upgradation) at 05 locations (765/400kV Angul, 400/220 kV Bolangir, 400/220 kV Keonjhar, 765/400 kV Sundargarh, 400/220 kV Pandibili)	10-02-2023	DOCOC Letter Dtd. 03.10.2024	ODP
7	Rangpo-Dikchu HPS OPGW Link (OPGW Network – 32.176 km) and Upgradation of 01 no RTU at 400/220 kV Binaguri SS	12.09.2024	DOCOC Letter Dtd. 26.11.2024	ER-II
8	Upgradation of 01 no RTU at 132/66 kV Gangtok SS	04.08.2024	DOCOC Letter Dtd. 26.11.2024	ER-II
C	<i>Eastern Region Expansion Scheme (ERES) - XXXVI</i>	DOCOC	Remarks	Region
9	Installation of new 220/132 kV, 1x200MVA (4th) ICT along with associated bays & 132KV Cables at Ara (POWERGRID) Substation	18.08.2024	DOCOC Letter Dtd. 19.09.2024	ER-I
D	<i>Eastern Region Expansion Scheme (ERES) - XXVII</i>	DOCOC	Remarks	Region
10	Installation of 420 kV, 1 X 125 MVAr Bus Reactor along with associated bays at Alipurduar (POWERGRID) Substation	26-09-2024	DOCOC Letter Dtd. 24-10-2024	ER-II

E	<i>Eastern Region Expansion Scheme (ERES) - XXXI</i>	DOCO	Remarks	Region
11	Installation of new 420 kV, 1 X 125 MVAr Bus Reactor along with associated bays at Jamshedpur (POWERGRID) Substation	08-10-2024	DOCO Letter Dtd. 20-11-2024	ER-I

TCC may note.



सेंट्रल ट्रांसमिशन यटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)

(A Government of India Enterprise)

Ref: CTU/E/00/Angul-Srikakulam

Date: 20-01-2025

Member Secretary

Eastern Regional Power Committee (ERPC)

14, Golf Club Road, Tollygunge

Kolkata-700033

Subject: New SR-ER inter-regional ISTS link for deliberation in the forthcoming meeting of ERPC – reg.

Dear Sir,

As you are aware, the proposal of Angul – Srikakulam 765kV 2nd D/c line (inter-regional) under ISTS was agreed in the 34th Consultation Meeting for Evolving Transmission Schemes in Southern Region (CMETS-SR) held on 24th Sep 2024 and 37th CMETS-ER held on 29th Nov 2024.

Details of the said scheme as per requisite format are annexed herewith. It is requested that ERPC may forward their views in respect of the above ISTS scheme at the earliest, so that the transmission scheme may be taken up promptly for consideration in the NCT meeting along with the views of ERPC.

Thanking you.

Yours faithfully,

M. Gupta
20/1/25
(Manju Gupta)
Dy. COO (CTUIL)

Encl: As Above

Copy to:

<p>1. Chief Engineer (PSP&A-I) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi – 110066</p>	<p>2. Chief Engineer I/c (PSP&A-II) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi – 110066</p>
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ISTS Network Expansion scheme for views of Southern Region Power Committee (SRPC) and Eastern Region Power Committee (ERPC)

1. Inter-Regional Strengthening between SR Grid and ER Grid

The present peak demand of SR as on March, 2024 is 68,094 MW and expected peak demand of SR as per the 20th EPS during 2029-30 timeframe is about 97.5 GW. The present TTC for import of power from NEW grid to SR Grid is about 24,500 MW and it is expected to be enhanced to 25,000 MW with the commissioning of Narendra-Pune 765kV D/c line. The present limiting constraint for import of power from ER to SR is Angul-Srikakulam 765kV D/c line and from WR to SR is Nizamabad 765/400kV, 1500MVA ICT under contingency. Southern Region has already imported about 22 GW from NEW grid during the peak demand period in March, 2024. Further, the import requirements is expected to increase further during 2029-30 timeframe.

Further, as per MNRE OM dated 01.11.2023, Green Hydrogen / Ammonia demand (by 2030) in Southern Region is about 23,450 MW. This demand is expected to be over and above the peak demand projections of 97.5 GW as per 20th EPS in 2029-30 timeframe. Therefore, total demand is expected to be over 120 GW. The existing / under implementation Inter Regional links between NEW Grid and SR Grid shall not be adequate to meet the above demand. Therefore, the ISTS / STU transmission requirements need to be identified including additional Inter-regional links for meeting the demand including Green Hydrogen / Green Ammonia manufacturing alongwith additional RE potential sites in SR, if any.

Accordingly, as per the mandate in the 50th SRPC meeting held on 16.03.2024, Joint Studies were conducted from 2 - 4th May, 2024 at Hyderabad for identification of Inter-Regional links between NEW-Grid & SR-Grid and ISTS network strengthening in SR to facilitate import of additional power for meeting demand by 2029-30 time frame. The proposals agreed during the Joint Study meeting were submitted to SRPC which were deliberated in the 52nd SRPC meeting held on 03.08.2024 wherein it was decided that the shortest link(s) may be implemented at the earliest. Accordingly, it was agreed 765 kV Parli New (WR) - Bidar D/c link and 765 kV Angul(ER) - Srikakulam 2nd D/c link may be taken-up.

Further, the Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh was discussed in the 33rd CMETS-SR for ISTS proposals held on 25.07.2024 and the Angul – Srikakulam 765 kV 2nd D/c link shall be required for supply of power to Green Hydrogen / Ammonia projects at Kakinada under Phase-I (3000 MW).

Following was decided during the 52nd SRPC meeting for above IR links :

- ✓ *SRPC approved the two inter regional links 765 kV Parli-Bidar D/C & 765 kV Angul-Srikakulam D/C. SRPC recommended that both the links shall be considered under National Component as 765 kV Parli-Bidar link would be used for RE evacuation and 765 kV Angul-Srikakulam link would be used to meet the GH&GA loads.*

- ✓ CTUIL would furnish the formal proposal to SRPC Secretariat and comments would be collected through mail and separate SRPC meeting may not be required.

Further, in the meeting held on 19.04.2024 under the chairmanship of Hon'ble Minister of Power and NRE, it was decided that Transmission charges for the Transmission system built for supply of power to Green Hydrogen / Green Ammonia manufacturing hubs may be declared as National Component.

The Inter-Regional Strengthening between SR Grid and ER Grid i.e. is Angul – Srikakulam 765 kV 2nd D/c line (about 275 km) is discussed and agreed in the 34th CMETS-SR held on 24.09.2024. The scheme was also deliberated and agreed in the 37th CMETS-ER held on 29.11.2024. During the 37th CMETS-ER, in addition to the Angul – Srikakulam 765 kV 2nd D/c line, 330 MVAR bus reactor at Angul 765/400kV S/s was also agreed for implementation.

Details of the scheme is summarized as below:

(i) Inter-Regional Strengthening between SR Grid and ER Grid

Sl. No.	Items	Details									
1.	Name of Scheme	Inter-Regional Strengthening between SR Grid and ER Grid									
2.	Scope of the scheme	<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Scope of the Transmission Scheme</th> <th>Capacity /km</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Angul – Srikakulam 765 kV 2nd D/c line (about 275 km) with 240 MVAR SLR at both ends on both circuits</td> <td> ~ 275 km • 765kV line bays – 2 nos. GIS (at Srikakulam) • 765kV line bays – 2 nos. AIS (at Angul) • 765 kV, 240 MVAR SLR at Srikakulam – 2 nos. (6x80 MVAR switchable units) • 765 kV, 240 MVAR SLR at Angul – 2 nos. (6x80 MVAR switchable units) </td> </tr> <tr> <td>2.</td> <td>1x330 MVAR, 765kV bus reactor (3rd) at Angul Substation</td> <td> • 765kV bus reactor – 1 no. (3x110 MVAR switchable units) • 765kV bus reactor bay – 1 no. </td> </tr> </tbody> </table>	Sl. No.	Scope of the Transmission Scheme	Capacity /km	1.	Angul – Srikakulam 765 kV 2 nd D/c line (about 275 km) with 240 MVAR SLR at both ends on both circuits	~ 275 km • 765kV line bays – 2 nos. GIS (at Srikakulam) • 765kV line bays – 2 nos. AIS (at Angul) • 765 kV, 240 MVAR SLR at Srikakulam – 2 nos. (6x80 MVAR switchable units) • 765 kV, 240 MVAR SLR at Angul – 2 nos. (6x80 MVAR switchable units)	2.	1x330 MVAR, 765kV bus reactor (3 rd) at Angul Substation	• 765kV bus reactor – 1 no. (3x110 MVAR switchable units) • 765kV bus reactor bay – 1 no.
Sl. No.	Scope of the Transmission Scheme	Capacity /km									
1.	Angul – Srikakulam 765 kV 2 nd D/c line (about 275 km) with 240 MVAR SLR at both ends on both circuits	~ 275 km • 765kV line bays – 2 nos. GIS (at Srikakulam) • 765kV line bays – 2 nos. AIS (at Angul) • 765 kV, 240 MVAR SLR at Srikakulam – 2 nos. (6x80 MVAR switchable units) • 765 kV, 240 MVAR SLR at Angul – 2 nos. (6x80 MVAR switchable units)									
2.	1x330 MVAR, 765kV bus reactor (3 rd) at Angul Substation	• 765kV bus reactor – 1 no. (3x110 MVAR switchable units) • 765kV bus reactor bay – 1 no.									
3.	Depiction of the scheme on Transmission Grid Map	Annexure-I									
4.	Upstream/downstream system associated with the scheme	Not applicable									

Sl. No.	Items	Details
5.	Objective / Justification	<p>The present peak demand of SR as on March, 2024 is 68,094 MW and expected peak demand of SR as per the 20th EPS during 2029-30 timeframe is about 97.5 GW. The present TTC for import of power from NEW grid to SR Grid is about 24,500 MW and it is expected to be enhanced to 25,000 MW with the commissioning of Narendra-Pune 765kV D/c line. The present limiting constraint for import of power from ER to SR is Angul-Srikakulam 765kV D/c line and from WR to SR is Nizamabad 765/400kV, 1500MVA ICT under contingency. Southern Region has already imported about 22 GW from NEW grid during the peak demand period in March, 2024. Further, the import requirements is expected to increase further during 2029-30 timeframe.</p> <p>Further, as per MNRE OM dated 01.11.2023, Green Hydrogen / Ammonia demand (by 2030) in Southern Region is about 23,450 MW. This demand is expected to be over and above the peak demand projections of 97.5 GW as per 20th EPS in 2029-30 timeframe. Therefore, total demand is expected to be over 120 GW. The existing / under implementation Inter Regional links between NEW Grid and SR Grid shall not be adequate to meet the above demand. Therefore, the ISTS / STU transmission requirements need to be identified including additional Inter-regional links for meeting the demand including Green Hydrogen / Green Ammonia manufacturing alongwith additional RE potential sites in SR, if any.</p> <p>Accordingly, as per the mandate in the 50th SRPC meeting held on 16.03.2024, Joint Studies were conducted from 2 - 4th May, 2024 at Hyderabad for identification of Inter-Regional links between NEW-Grid & SR-Grid and ISTS network strengthening in SR to facilitate import of additional power for meeting demand by 2029-30 time frame (MoM of Joint Studies attached at Annexure-II). The proposals agreed during the Joint Study meeting were submitted to SRPC which were deliberated in the 52nd SRPC meeting held on 03.08.2024 wherein it was decided that the shortest link(s) may be implemented at the earliest. Accordingly, it was agreed 765 kV Parli New (WR) - Bidar D/c link and 765 kV Angul(ER) - Srikakulam 2nd D/c link may be taken-up (MoM of 52nd SRPC attached at Annexure-III).</p> <p>Further, the Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh was discussed in the 33rd CMETS-SR for ISTS proposals held on 25.07.2024 and the Angul – Srikakulam 765 kV 2nd D/c link shall be required for supply of power to Green Hydrogen / Ammonia projects at Kakinada under Phase-I (3000 MW).</p> <p>Following was decided in the 52nd SRPC meeting for above IR links :</p> <ul style="list-style-type: none"> ✓ <i>SRPC approved the two inter regional links 765 kV Parli-Bidar D/C & 765 kV Angul-Srikakulam D/C. SRPC recommended that both the links shall be considered under National Component as 765 kV Parli-</i>

Sl. No.	Items	Details
		<p><i>Bidar link would be used for RE evacuation and 765 kV Angul-Srikakulam link would be used to meet the GH&GA loads.</i></p> <p>✓ <i>CTUIL would furnish the formal proposal to SRPC Secretariat and comments would be collected through mail and separate SRPC meeting may not be required.</i></p> <p>Further, in the meeting held on 19.04.2024 under the chairmanship of Hon'ble Minister of Power and NRE, it was decided that Transmission charges for the Transmission system built for supply of power to Green Hydrogen / Green Ammonia manufacturing hubs may be declared as National Component.</p> <p>The Inter-Regional Strengthening between SR Grid and ER Grid i.e. is Angul – Srikakulam 765 kV 2nd D/c line (about 275 km) is discussed and agreed in the 34th CMETS-SR held on 24.09.2024 (MoM attached at Annexure-IV). The scheme was also deliberated and agreed in the 37th CMETS-ER held on 29.11.2024 (MoM attached at Annexure-V). During the 37th CMETS-ER, in addition to the Angul – Srikakulam 765 kV 2nd D/c line, 330 MVA bus reactor at Angul 765/400kV S/s was also agreed for implementation.</p>
6.	Estimated Cost	Rs. 2580 Crore
7.	Impact on the total Annual Transmission charges in % along with the existing ATC	<p>A. ATC (considering Levelized Tariff @15% of estimated cost): Rs. 387 Crore</p> <p>B. Present ATC: Rs. 45903.10 Crore *</p> <p>C. A/B (%): 0.843 %</p>
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	24 months
10.	Inclusion of any wild life/protected area along the transmission line route	No major National Park, Wildlife Sanctuary or other protected areas observed. However, for details of forest/protected areas, survey is required to be done.
11.	System Study for evolution of the proposal	Transmission System was agreed in the Joint Study meeting of SR held from 2 - 4 th May, 2024, 52 nd SRPC held on 03.08.2024, 34 th CMETS-SR held on 24.09.2024 and 37 th CMETS-ER held on 29.11.2024.

**Total YTC allowed for Oct'24, as per notification of transmission charges payable by DICs for Billing Month of December, 2024 dated 25.11.2024 published on NLDC website.*

Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District. Uttar Pradesh

S. No.	Items	Details
1.	Name of Scheme	Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District. Uttar Pradesh
2.	Scope of the scheme	<ul style="list-style-type: none"> • Establishment of 4x1500 MVA 765/400 kV Robertsganj Pooling Station* near Robertsganj area in Sonbhadra distt. (Uttar Pradesh) along with 2x240 MVA 765 kV & 2x125 MVA 400 kV bus reactors <p>Future provisions at Robertsganj PS (excl. scope for present scheme): Space for</p> <ul style="list-style-type: none"> ➤ 765/400kV ICTs along with bays- 2 nos. ➤ 765 kV line bays along with switchable line reactors – 6 nos. ➤ 765kV Bus Reactor along with bay: 1 no. ➤ 400 kV line bays along with switchable line reactor –6 nos. ➤ 400kV line bays : 4 nos ➤ 400 kV Bus Reactor along with bays: 1 no. ➤ 400kV Sectionalization bay: 2 sets <p>*along with provision of 80MVA spare reactor (Single phase), 110MVA (Single phase) & 500MVA spare transformer unit (Single phase)</p> <ul style="list-style-type: none"> • 400kV line bays (4 nos.) for connectivity of PSP generation project (M/s Avaada & M/s Greenko) at Robertsganj PS • LILO of both circuits of 765 kV Varanasi- Gaya 2xS/c line at Robertsganj PS along with 240MVA switchable line reactor at each ckt of Robertsganj PS end of 765 kV Robertsganj PS - Gaya 2xS/c line (after LILO) (LILO Length ckt1 ~ 65 km, LILO Length ckt2 ~ 75 km) • Establishment of 765 kV Prayagraj S/s* near Prayagraj(Uttar Pradesh) along with 2x330 MVA 765 kV Bus reactors <p>Future provisions at Prayagraj S/s (excl. scope for present scheme): Space for</p> <ul style="list-style-type: none"> ➤ 765/400kV ICTs along with bays- 4 nos. ➤ 765 kV line bays along with switchable line reactors – 4 nos. ➤ 765kV Bus Reactor along with bay: 1 nos. ➤ 400 kV line bays along with switchable line reactor –4 nos. ➤ 400kv line bays : 2 nos. ➤ 400 kV Bus Reactor along with bays: 2 no. ➤ 400kV Sectionalization bay: 1 set <p>*along with provision of 110MVA spare reactor (Single phase) & 500MVA spare transformer unit (Single phase)</p>

S. No.	Items	Details
		<ul style="list-style-type: none"> • LILO of 765 kV Fatehpur-Varanasi S/c line at Prayagraj (LILO length ~15km) • LILO of 765 kV Fatehpur-Sasaram S/c line at Prayagraj (LILO length ~14km) • Robertsganj PS – Prayagraj S/s 765 kV D/c line along with 330 MVar line reactor at each circuit of Robertsganj end of Robertsganj PS – Prayagraj S/s 765 kV D/c line (~185 km) <p>Details of Transmission scheme is enclosed in Annexure-I.</p>
3.	Depiction of the scheme on Transmission Grid Map	Attached at Exhibit-I
4.	Upstream/downstream system associated with the scheme	<p>765/400kV Varanasi, Fatehpur, Gaya & Sasaram are existing substation of POWERGRID.</p> <p>765/400kV Varanasi(PG) S/s interconnected to Balia(PG), Kanpur(PG), Fatehpur (PG), Vindhyachal Pooling (PG) & Gaya (PG) (to be LiLoed at proposed Robertsganj PS) S/s at 765kV level and Allahabad(PG), Sarnath (UPPTCL), Jaunpur (UPPTCL), Sasaram (PG) & Sahupuri (UPPTCL) at 400kV level.</p> <p>765/400kV Fatehpur(PG) S/s is interconnected to Agra(PG), Ghiror (under bidding), Varanasi (PG) (to be LiLoed at proposed Prayagraj S/s) & Sasaram (PG) (to be LiLoed at proposed Prayagraj S/s) at 765kV level and Allahabad(PG), Panki(UPPTCL), Mainpuri(PG), Singrauli (NTPC), Unchahar (NBPPL), at 400kV level.</p> <p>765/400kV Gaya (PG) S/s is interconnected to Balia(PG) & Varanasi(PG) (to be LiLoed at proposed Robertsganj PS) S/s at 765kV level and Chandauti (PG), Koderma (PG), Maithon (PG), Chandwa (Jharkhand Pool) (NKTL) & North Karanpura (NTPC) (presently Under Construction), at 400kV level.</p> <p>765/400kV Sasaram(PG) S/s is interconnected to Fatehpur (PG) (to be LiLoed at proposed Prayagraj S/s) at 765kV level and Varanasi (PG), Biharsharif (PG), Nabinagar-I (NTPC), Daltonganj (PG), at 400kV level.</p>

S. No.	Items	Details
5.	Objective / Justification	<ol style="list-style-type: none"> 1. The present scheme comprises Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District. Uttar Pradesh 2. In the 34th CMETS-NR meeting held on 20.09.2024 It was mentioned that connectivity applications of cumulative quantum of 5152 MW from two developers i.e. M/s Greenko (6 nos. of applications with cumulative quantum of 4032 MW) & M/s Avaada WB (1 application of 1120MW) near Robertganj area in Sonbhadra district, Uttar Pradesh was discussed in the earlier 31st CMETS-NR meeting held on 27.06.24. As per the schedule indicated in the applications, these PSP projects are expected to be commissioned progressively from Nov'26 upto Mar'28. 3. In the 31st CMETS-NR meeting, CMETS-NR, it was informed that to deliberate on planning of transmission System for evacuation of Power from Pumped Storage Plants, a meeting under Chairmanship of Chairperson, CEA was held on 28.05.2024. In the above meeting, it was decided that CTUIL while granting Connectivity to PSPs shall mention that PSPs shall not operate in generating mode during high RE generation period and if required, PSPs may inject power during high RE generation period based on margin available in the system. However, detailed analysis must be done based on the combination of sources at that node. 4. M/s Greenko vide letter dated 21.05.24 informed that in the initial phases of PSP development, it is envisaged as a Stand-alone storage project, the PSP project will draw power from renewable generation sources or conventional generation sources located at different location(s) in the grid for charging the pump storage plant and thereafter power will be injected into the grid for supplying power to the different beneficiaries connected to different location(s) in the grid. During PSP operation, typically during peak solar time (mainly between 11AM to 2 PM), the PSP project shall be able to draw power to the extent of 4032 MW (6X672MW) corresponding to pumping capacities of all six units. While, during generation hours which will be typically during non-solar or low solar hours, the maximum generation possible shall be to the extent of 3660 MW (6x610MW). For evolving the transmission scheme, the above mentioned maximum values of drawl and Generation may be considered. Same was also discussed in 31st CMETS-NR meeting. 5. CEA in the above CMETS-NR meeting confirmed that the Sonbhadra area may be considered as a potential zone for pumped storage projects. Accordingly, the transmission system for connectivity of M/s Greenko & M/s Avaada at Roberstganj PS shall be considered as common transmission system. 6. M/s Avaada & Greenko clarified in the meeting that they shall operate PSP units in synchronous condenser mode as per the reactive power requirement of the grid. Further, M/s Greenko and M/s Avaada shall also keep future provision of

S. No.	Items	Details
		<p>Bus Reactor so that in case of future requirement the same can be installed by the applicant.</p> <p>7. Accordingly, in the above CMETS-NR meeting, connectivity applications of M/s Avaada & Greenko were agreed for grant, and it was deliberated that the transmission scheme for Pump Storage plants in Sonbhadra district is presently under discussion. The scheme is currently tentative, which shall be finalized in subsequent CMETS-NR and other region (ER) CMETS meeting among CEA, CTUIL, Grid India & Stakeholders. The detailed transmission system shall be informed upon finalization and approval of the scheme. Further, NR-WR inter regional scheme to relieve loading of 765 kV Vindhyachal – Varanasi D/c line shall also be required for connectivity of Pumped Storage Projects in Sonbhadra district. M/s Greenko vide letter 10.09.24 requested that now they are moving forward with three applications (3x672MW) for their project out of earlier six nos. of applications (6x672MW), based on which 3 nos. applications of M/s Greenko were closed. As per the connectivity applications, M/s Greenko has provided generation schedule progressively from Nov'26 to Apr'27 and M/s Avaada has provided generation schedule of Dec'28</p> <p>8. In view of the above, studies were carried out considering PSPs in drawl mode in Solar Max scenarios & injection mode in Peak load scenarios (evening peak). All India Study files for various scenarios (solar maximized, evening peak and night off peak) were circulated to NR stakeholders on 12.09.24.</p> <p>9. In view of schedule of generation projects and for optimal utilization of transmission scheme, comprehensive tr. scheme is planned considering M/s Greenko and M/s Avaada PSP evacuation requirement (Maximum injection 3136MW, Maximum Drawl: 2730MW) including future requirement. Recently an additional PSP application of M/s Avaada for connectivity of 596 MW (Max Injection: 520 MW Max Drawl:596 MW) with generation schedule of Jun'29 was also granted at Robertsganj PS. However, in view of transmission being lumped elements, the planned scheme can cater upto 4 GW PSP connectivity quantum.</p> <p>10. In the 34th CMETS-NR meeting, Grid-India stated to review the reactive compensation of 765kV Robertsganj PS – Prayagraj S/s D/c line. CTU stated that with proposed line reactors (240MVAR line reactor on both ends), Reactive compensation is bit on higher sider (~90%), therefore 330MVAR line at one of the end may be considered for above line based on studies. Accordingly, 330MVAR line reactor is considered at Robertsganj PS end for 765kV Robertsganj PS – Prayagraj S/s D/c line.</p> <p>11. Grid-India enquired that line reactors may be reviewed w.r.t. line length of each sections formed after proposed LILO arrangements i.e. LILO of 765 kV Fatehpur-Varanasi S/c line at Prayagraj & LILO of 765 kV Fatehpur-Sasaram S/c line at Prayagraj. Grid-India stated that 765kV Fatehpur – Prayagraj section may get overcompensated with existing line reactor</p>

S. No.	Items	Details
		<p>configuration. CTU stated that after proposed LILO arrangement, reactive compensation is about 89% on 765kV Fatehpur – Prayagraj section (140 kms). Grid-India enquired about feasibility of removing 330MVAR existing line reactor at Fatehpur end or its replacement with 240MVAR line reactor. CTU stated that considering prevailing high voltage condition in NR (in some off peak scenarios), removal or replacement of 330MVAR line reactor at Fatehpur end may worsen the high voltage problem, however line length is tentative and will be reviewed in Gati Shakti portal. In the case of reduction of line length considerably, decision may be taken on removal/replacement of 330MVAR line reactor at Fatehpur end of 765kV Fatehpur – Prayagraj section (140 kms). CTU further stated that on all other line sections formed after LILO arrangement at Prayagraj S/s, reactive compensation is in order.</p> <p>12. CEA stated that both the PSP projects are under advance stage, however DPR is yet to approve. On the query of CEA on additional generation considered at 400kV level, CTU informed that at present comprehensive scheme is planned for 4GW PSP potential and with connectivity quantum more than 4GW, adequacy of agreed transmission scheme shall be reviewed further. CEA and UPPTCL also agreed on the proposal.</p> <p>13. Subsequently, Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District. Uttar Pradesh was also deliberated and agreed in 36th CMETS-ER meeting held on 29.10.2024</p> <p>14. Considering above deliberations and receipt of connectivity application of Pumped Storage Projects in Sonbhadra District in Uttar Pradesh, transmission system for evacuation of power from Pumped Storage Projects was agreed in 34th CMETS-NR & 36th CMETS-ER meeting</p>
6.	Estimated Cost	Rs. 4141 Cr.
7.	Need of phasing, if any	Not Applicable
8.	Implementation timeframe	24 months from allocation of project (except for 2 nos. of 400kV line bays required for connectivity to M/s Avaada PSP with implementation timeframe of 31.12.28)
9.	System Study for evolution of the proposal	<p>Studies discussed and agreed in following meeting</p> <ul style="list-style-type: none"> • 34th CMETS-NR meeting held on 20.09.24 (Minutes of meeting attached in Annexure-II) • 36th CMETS-ER meeting held on 29.10.24 (Minutes of meeting attached in Annexure-III) <p>Load flow results is attached at Exhibit-II</p>

Exhibit-I

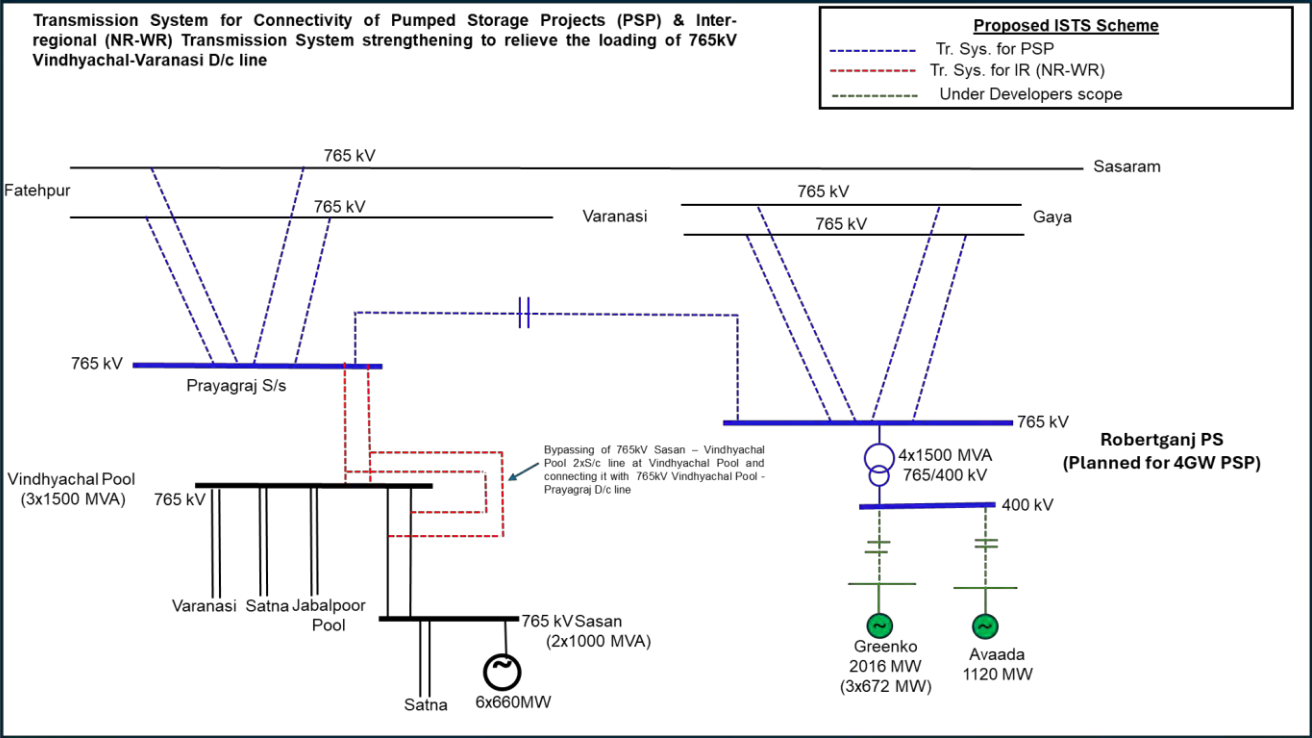
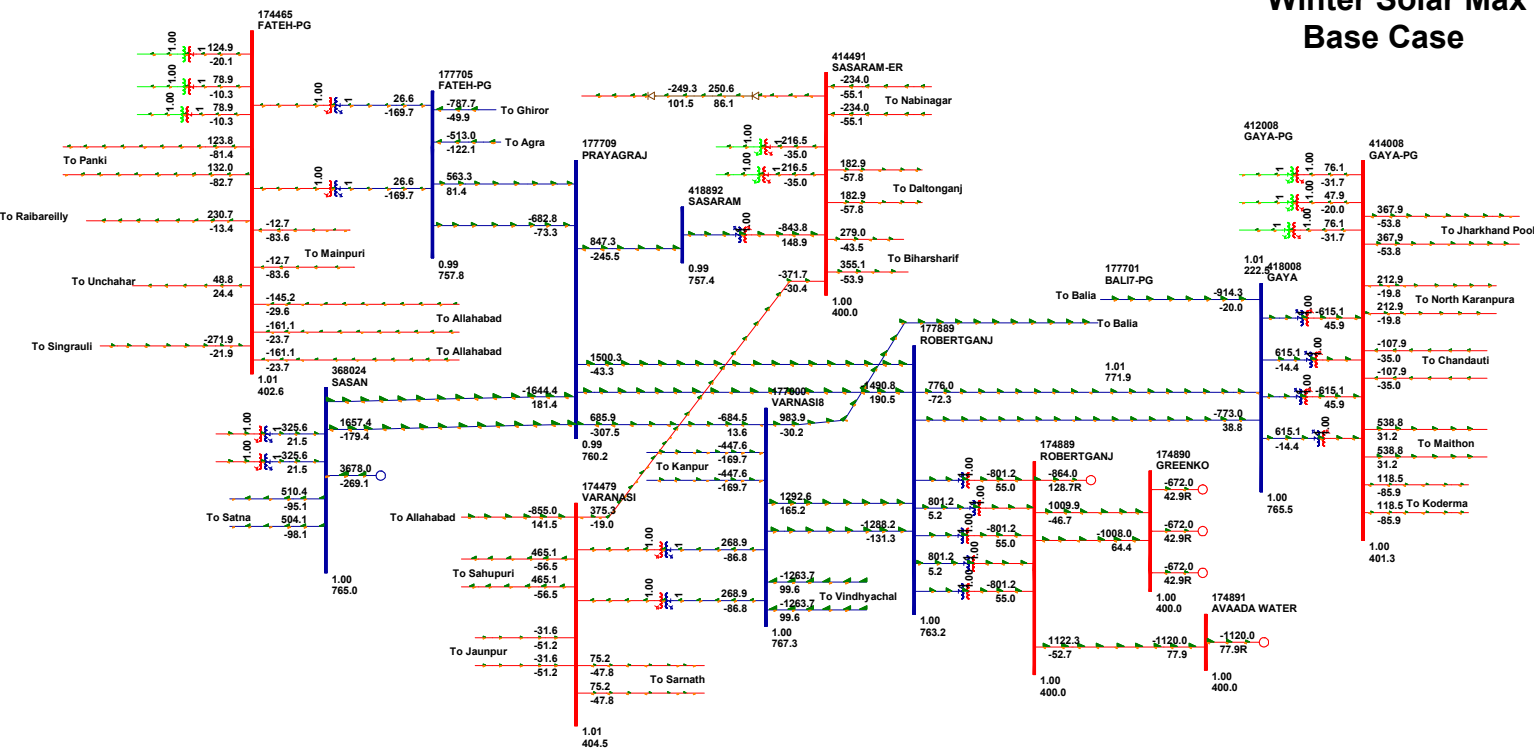


Fig : Transmission system for evacuation of power from Pumped Storage Projects in Sonbhadra District. Uttar Pradesh

Winter Solar Max Base Case



Transmission System for connectivity of Pumped Storage Projects in Sonbhadra District in UP

Sl. No.	Description of Transmission Element	Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)
1	<p>Establishment of 4x1500 MVA 765/400 kV Robertsganj Pooling Station near Robertsganj area in Sonbhadra distt. (Uttar Pradesh) along with 2x240 MVAr 765 kV & 2x125 MVAr 400 kV bus reactors</p> <p><u>Future provisions:</u></p> <ul style="list-style-type: none"> ➤ 765/400kV ICTs along with bays- 2 nos. ➤ 765 kV line bays along with switchable line reactors – 6 nos. ➤ 765kV Bus Reactor along with bay: 1 no. ➤ 400 kV line bays along with switchable line reactor –6 nos. ➤ 400kV line bays : 4 nos. ➤ 400 kV Bus Reactor along with bays: 1 no. ➤ 400kV Sectionalization bay: 2 sets 	<p>Robertsganj PS - AIS</p> <ul style="list-style-type: none"> • 765/400 kV 1500 MVA ICT- 4 nos. (13x500 MVA including one spare unit) • 765 kV ICT bays-4 no. • 400 kV ICT bays- 4 no. • 240 MVAr Bus Reactor-2 no. (7x80 MVAr, including one spare unit) • 765 kV Bus reactor bays-2 no. • 125 MVAr Bus Reactor-2 nos. • 400 kV Bus reactor bays- 2 no. • 400kv line bays– 4 nos. (for PSP interconnection)
2	<p>LILO of both circuits of 765 kV Varanasi- Gaya 2xS/c line at Robertsganj PS along with 240MVAr switchable line reactor at each ckt of Robertsganj PS end of 765 kV Robertsganj PS - Gaya 2xS/c line (after LILO)</p>	<p>a. Line Length ckt1 ~ 65 km (LILO length 65 km)</p> <p>b. Line Length ckt2 ~ 75 km (LILO length 75 km)</p> <ul style="list-style-type: none"> • 765 kV line bays-4 nos. (at Robertsganj PS end) • 240 MVAr switchable line reactors at Robertsganj PS end – 2 nos. • Switching equipment for 240 MVAr switchable line reactors at Robertsganj PS end – 2 nos.
3	<p>Establishment of 765 kV Prayagraj S/s near Prayagraj(Uttar Pradesh) along with 2x330 MVAr 765 kV Bus reactors</p> <p><u>Future provisions</u></p> <p>Space for</p> <ul style="list-style-type: none"> ➤ 765/400kV ICTs along with bays- 4 nos. ➤ 765 kV line bays along with switchable line reactors – 4 nos. ➤ 765kV Bus Reactor along with bay: 1 nos. ➤ 400 kV line bays along with switchable line reactor –4 nos. ➤ 400kv line bays : 2 nos. ➤ 400 kV Bus Reactor along with bays: 2 no. ➤ 400kV Sectionalization bay: 1 set 	<p>Prayagraj S/s -AIS</p> <ul style="list-style-type: none"> • 330 MVAr Bus Reactor-2 nos. (7x110 MVAr, including one spare unit) • 765 kV Bus reactor bays-2 no.

4	LILO of 765 kV Fatehpur-Varanasi S/c line at Prayagraj	Line Length ~15 km (LILO length 15km) <ul style="list-style-type: none"> • 765 kV line bays -2 nos.(at Prayagraj S/s end)
5	LILO of 765 kV Fatehpur-Sasaram S/c line at Prayagraj	Line Length ~14 km (LILO length 14km) <ul style="list-style-type: none"> • 765 kV line bays-2 nos..(at Prayagraj S/s end)
6	Robertsganj PS – Prayagraj S/s 765 kV D/c line along with 330 MVA line reactor at each circuit of Robertsganj end of Robertsganj PS – Prayagraj S/s 765 kV D/c line	Line Length – (~185 km) <ul style="list-style-type: none"> • 765 kV line bays at Robertsganj PS – 2 nos. • 765 kV line bays at Prayagraj S/s – 2 nos. • 765 kV, 330 MVA switchable line reactors at Robertsganj PS – 2 nos. • Switching equipment for 765kV 330 MVA switchable line reactors at Robertsganj PS – 2 nos. • 110 MVA (765 kV) spare reactor single phase unit at Robertsganj PS end – 1 no.



झारखण्ड ऊर्जा संचरण निगम लिमिटेड

JHARKHAND URJA SANCHARAN NIGAM LIMITED

(CIN No. – U40108JH2013SGC001704)

Regd. Office – JUSNL (SLDC) Building, Kusai Colony, Doranda, Ranchi – 834 002

E-mail: uldc.jusnl@gmail.com Web: www.jusnl.inLetter No.³⁰..... GM (SLDC)/JUSNLDated ^{14.01.2025}.....

From,

Arun Kumar
General Manager (SLDC)

To,

Member Secretary,
Eastern Regional Power Committee,
14, Golf Club Road, Tollygunge,
Kolkata, West Bengal – 700 033.
e-mail id: mserpc-power@nic.in

Sub: Regarding submission of study report of 132 kV D/C Chandil – Golmuri Trans. Line S/C LILOed at Mango GSS and 220 kV D/C Dumka (Madanpur) GSS to Maithon (PGCIL) Trans. Line for HTLS Project of JUSNL.

Ref.: 1. Email of ERPC, dated 12.10.2023,
2. This Office Letter No. 528, dated 04.12.2024,
3. This Office Letter No. 586, dated 26.12.2024, and
4. This Office Letter No. 06, dated 03.01.2025.

Sir,

With reference to the above subject, the following mentioned Transmission Lines have been proposed for HTLS reconductoring under HTLS Project of JUSNL:

1. 132 kV D/C Chandil – Golmuri Transmission Line S/C LILOed at 132/33 kV Mango GSS, and
2. 220 kV D/C Dumka (Madanpur) GSS to Maithon (PGCIL) Transmission Line

As per Minutes of Meeting of 222nd OCC Meeting (ERPC) held on dated 23.12.2024 at Kolkata, West Bengal, the study reports of the above said transmission lines are being submitted with a request to kindly consider the above said transmission lines for HTLS reconductoring under HTLS Project of JUSNL.

Encl.: As Above.

Yours faithfully

(Arun Kumar)
General Manager (SLDC)

Assessment Report of 220 kV D/C Maithon (PG) – Dumka (Madanpur) Transmission Line

➤ Description of Transmission Line:

- 220 kV D/C Maithon (PG) – Dumka (Madanpur) Transmission Line
- Total Towers - 244
- Total Length - 73.29 KM

➤ Source of 220/132 kV Dumka (Madanpur) GSS:

1. Maithon (PG) GSS
2. TTPS via Govindpur GSS

➤ Downstream of 220/132 kV Dumka (Madanpur) GSS:

1. 220/132/33 kV Jasidih GSS
2. 220/132/33 kV Godda GSS
3. 132/33 kV Pakur GSS
4. 132/33 kV Dumka GSS
5. 220/132/33 kV Govindpur GSS

➤ Observation:

At present, Average load of 220 kV D/C Maithon (PG) – Dumka (Madanpur) Transmission Line is approx. 300 MW and Peak load is approx. 433 MW, which will not hold in N-1 condition. (Load Pattern enclosed)

➤ Recommendation:

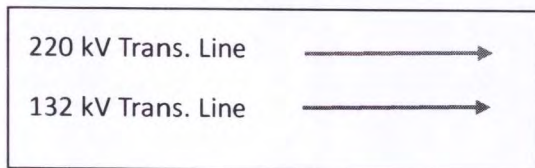
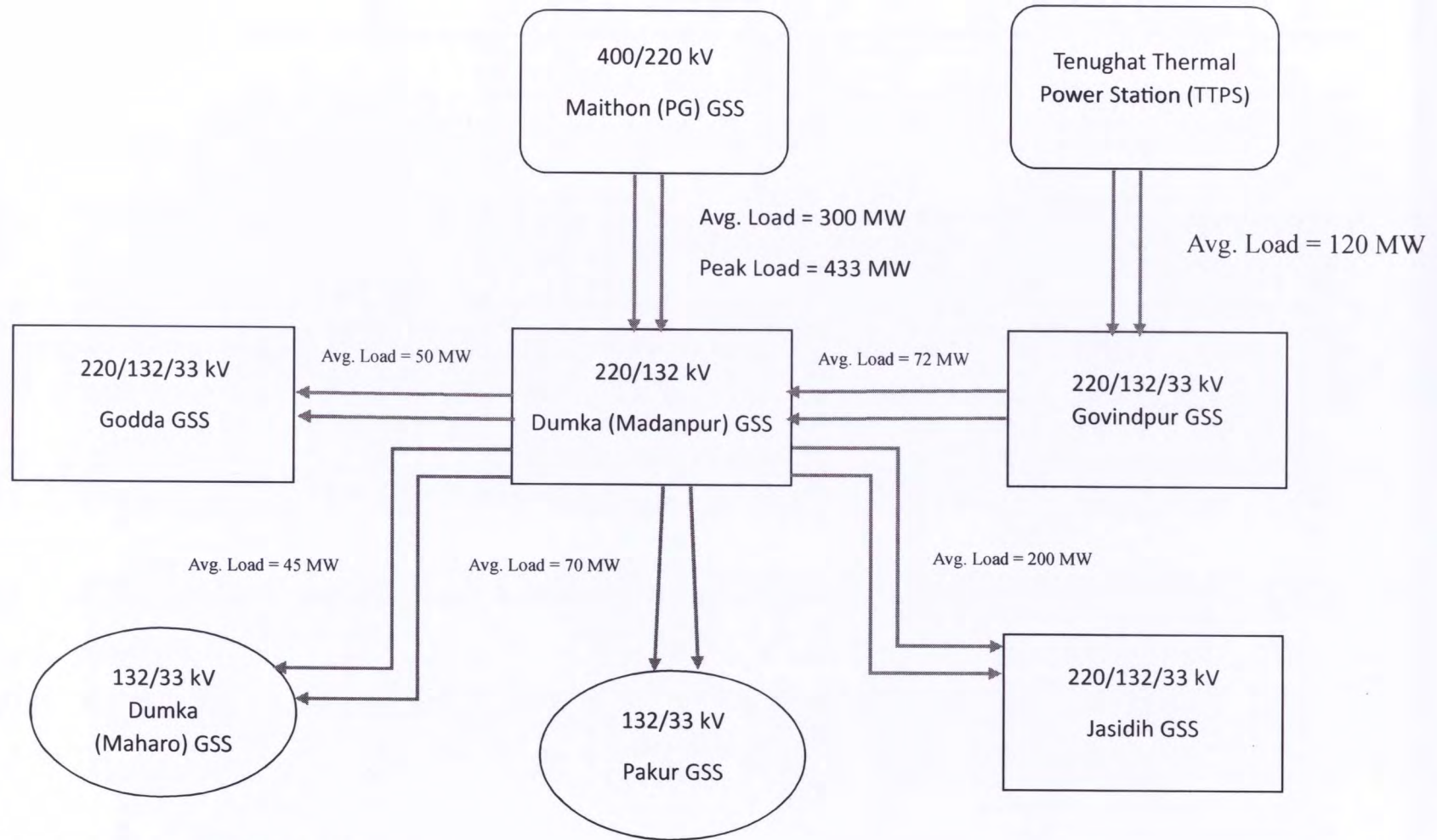
220 kV D/C Maithon (PG) – Dumka (Madanpur) Transmission Line may be reconducted with HTLS Conductor as both Circuits are at their maximum capacity.

In view of above, 220 kV D/C Maithon (PG) – Dumka (Madanpur) Transmission Line may be included in the list of Transmission Lines in HTLS Project of JUSNL funded by PSDF for implementation of reconductoring of Existing Line by HTLS Conductor for Relieving Congestion in JUSNL under Jharkhand State.

Ban

Dr

Single Line Diagram of 220 kV D/C Maithon (PG) – Dumka (Madanpur) Transmission Line



Bar

Dr

Assessment Report of 132 kV D/C Chandil - Golmuri TL S/C LILOed at Mango GSS

➤ Description of T/L:

- 132 kV D/C Chandil - Golmuri Transmission Line S/C LILOed at 132/33 kV Mango GSS
- Total Towers - 111 Nos.
- Total Length - 32 KM

➤ Source of 220/132 kV Chandil GSS:

1. 220/132 kV Ramchandrapur GSS
2. 400/220 kV Namkum (Ranchi PG) GSS
3. Santhaldih Thermal Power Station (STPS)

➤ Source of 132/33 kV Golmuri GSS:

1. 220/132 kV Chandil GSS
2. 220/132 kV Ramchandrapur GSS via 132/33 kV Jadugoda GSS

➤ Observation:

At present, Average load on 132kV S/C Chandil - Golmuri T/ Line and 132kV S/C Chandil - Mango T/L is approx. 100 MW and Peak load is approx. 128 MW, which will not hold in N-1 condition.

➤ Recommendation:

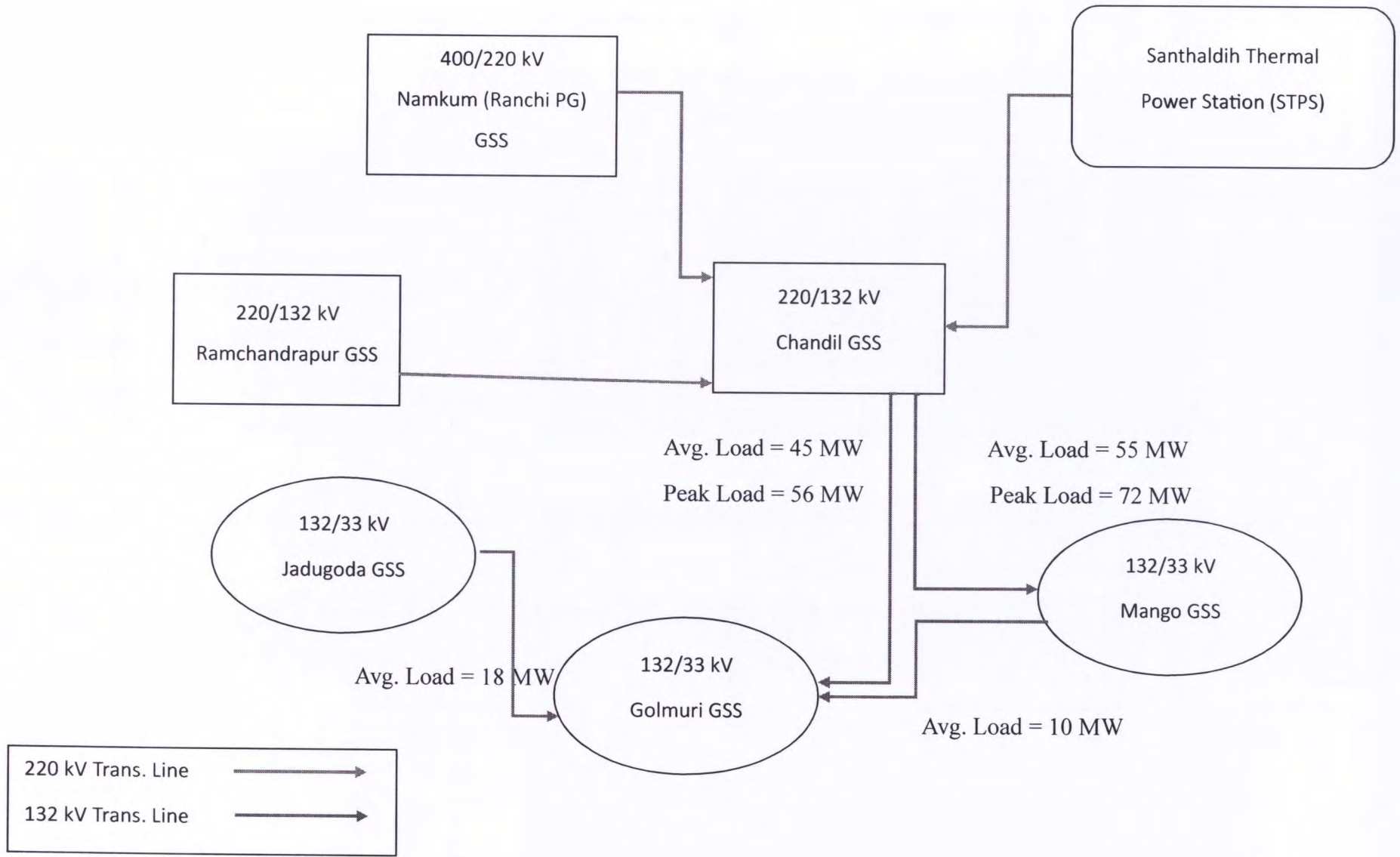
There is need of reconductoring of ACSR Panther Conductor with HTLS Conductor in 132 kV D/C Chandil - Golmuri Transmission Line S/C LILOed at 132/33 kV Mango GSS as this transmission line is at it's maximum capacity.

In view of above, 132 kV D/C Chandil - Golmuri Transmission Line S/C LILOed at 132/33 kV Mango GSS may be included in the list of T/Ls in HTLS Project of JUSNL funded by PSDF for implementation of reconductoring of Existing Line by HTLS Conductor for Relieving Congestion in JUSNL under Jharkhand State.

Bar

Dr

Single Line Diagram of 132 kV D/C Chandil - Golmuri TL S/C LILOed at Mango GSS



Ban

An

Minutes of the Meeting(Virtual mode) held on 09.05.2023 (Tuesday)regarding dual reporting of RTU, PMU, VOIP, AGC etc. applications

A meeting on the subject was held on 09.05.23 at 11:00 AM with participants from CEA, RLDCs, CTUIL, Grid-India, and POWERGRID. List of the participants is enclosed at Annexure-I. 2. At the outset Sr. .DGM (CTU) welcomed the participants and explained the agenda to all the participants. He requested all the participants to contribute their valuable suggestion for agenda to reach at some conclusion.

Agenda: Dual reporting of RTU, PMU, VOIP, AGC etc. applications on 2+2 channel to main RLDC and Backup RLDC

Presently, one data channel and one voice channel are routed for reporting to main RLDC and similarly one data & one Voice channel is reporting at backup RLDC.

It is proposed by GRID INDIA that to increase of the redundancy in the system at least two data channels and two voice channels shall be routed for reporting to main RLDC and another two data & two Voice channels shall report at backup RLDC.

A detailed deliberation in meeting dated 05/04/23 was done among RLDCs, POWERGRID, CEA for evolving a common planning philosophy for all regions.

In the meeting GRID INDIA stated that as per communication regulation 2017/IEGC dual channel reporting for all communication applications from each ISTS station is required for both main and back up RLDCs. This requirement has also been conveyed by ED, NLDC to ED, GA & C vide letter dtd.16.03.2020

It was stated in the meeting that present channel configuration operational at different RLDCs for main and back up CC respectively is as follows:

- a) NRLDC:1+1 & 2+1(for few stations)
- b) SRLDC:1+1
- c) WRLDC:2+1
- d) ERLDC:1+1
- e) NERLDC:1+1

POWERGRID stated that they are designing the ISTS Communication system with 1+1 channel configuration i.e. one channel for main RLDC and one channel for back up RLDC.

However, CEA recommended as follows: Manual of Communication Planning in Power System Operation clause 4.1.2 states:- “To ensure redundancy with route diversity, each communication channel (working path) planned for the Users shall be provided with alternate channel (protection path) in different routes, i.e., the working path and protection path should be resource disjoint. For last mile connectivity to load dispatch center(s), additional redundancy in different route may be considered. In case of failure of the working path, the protection path shall be available for the required communication services.”

Therefore, dual redundancy may be planned for both main and back-up load dispatch centers.

At present following services are working on ISTS communication network:

- i.** SCADA
- ii.** PMU
- iii.** Tele protection
- iv.** Telecontrol
- v.** AGC
- vi.** Voice
- vii.** Automated Metering Application
- viii.** Telemetry
- ix.** Video conferencing
- x.** ICCP (between control centers)
- xi.** PDC
- xii.** PDC to PDC
- xiii.** Supervision of communications System
- xiv.** Video Surveillance
- xv.** Data Sync between MCC & BCC

The above applications need to be deliberated for dual redundancy requirement.

POWERGRID shall implement this redundancy for both main and backup Regional load dispatch center(s) in all the regions wherever possible with the existing resources in coordination with GRID INDIA.

In case of any additional requirement for implementation of redundancy POWERGRID may update the details region wise i.e. availability of SAS gateway ports, spare ethernet ports in existing FOTE, new FOTE if any etc. . POWERGRID shall quantify these requirements along with tentative costs on Regional basis.

The action to be taken up by TSPs, IPPs, ISTS, ISGS besides POWERGRID also needs to be discussed.

Deliberations: CGM(SRLDC) explained that Main and Backup control centre is old terminology and now Main-I & Main-II control centre terminology is being used and at each control centre one main & one backup channel is required. Grid India(NRLDC) explained that at present data is being transmitted to respective main & Backup RLDCs using 101 protocol through terminal server/DCPC for old RTUs and by using 104 protocol for SAS. Grid India agreed to share this detail in a week time. Further, POWERGRID informed that RTUs are being replaced with SAS (104 PROTOCOL) as soon as their life is completed. POWERGRID shall share the plan for replacement of RTUs communicating on 101 Protocol.

POWERGRID queried that in CEA planning manual, only route redundancy is mentioned and no where port redundancy is stated. Hence it needs to be clarified whether port level redundancy is also required. CEA clarified that path should be resource disjoint and so both path and ports should be resource disjoint. POWERGRID (NR-ULDC), stated that there is constraint of ports for dual redundancy of SCADA data in the RTUs procured under sub-station package and agreed for upgradation of same subject to approval. POWERGRID further clarified that RTUs with sufficient ports for dual redundancy are being planned recently as requested by ED(NLDC) -GRID INDIA vide letter dated 16.03.2020.

At present PMU data is reporting to single location i.e. Main RLDC as per current planning under URTDSM project. Grid India further stated that PMU data is transmitted on dual channel through switch to main RLDC. Grid India require multi ports at PMU for dual redundancy. Further redundant communication between SLDC PDC to RLDC PDC, RLDC PDC to Main/backup NLDC PDC shall also be required.

Tele protection & Telecontrol are operated by TSPs and should be in dual redundancy.

For AGC services dual redundancy is already considered & being implemented by TSPs . Dual channels to Main and Backup NLDC are required for AGC.

For Voice dual redundancy is also required. For the same, exchange to exchange dual redundancy shall be planned. Exchanges are placed at all SLDCs & RLDCs. At present Substation to Exchange link level protection is already available.

For AMR dual redundancy is also required. At present single channel is reporting to RLDC. For video conferencing Grid India is requested to justify the requirement of dual redundancy as per industry practice as mentioned in 'Manual For Communication Planning' as suggested by CEA.

For ICCP dual redundancy is required for main RLDC to Backup RLDC, Main RLDC to main SLDC, Main RLDC to backup SLDC, Backup RLDC to Main SLDC, Backup RLDC to backup SLDC as planned under new SCADA system.

For PDC to PDC dual redundancy is also required. CTU requested Grid India to share the architecture of new SCADA, PDC communication, ICCP.

Supervision of communication channels & Video Surveillance are not used by Grid India. However, TSPs/ CTU may plan as per their requirement.

For data sync dual redundancy between MCC and BCC is also required.

ERLDC, Grid India suggested that planning for terminal equipment(SDH/PDH)at dual redundancy is also required. However, it is suggested that dual redundancy of terminal equipment may be planned for critical locations such as AGC, SPOFs(Single point of failures).

As per discussion, following applications are summarised below for dual redundancy up to existing and upcoming control centres of Grid India.

- i. SCADA
- ii. PMU
- iii. AGC
- iv. Voice
- v. Automated Metering Application
- vi. ICCP (between control canterers)
- vii. PDC to PDC
- viii. Data Sync between MCC & BCC

Conclusion

1. Grid India shall share the data for all the RTUs/SAS , their connectivity type(single or dual redundancy) & all other relevant data for all the TSPs(IPPs, ISGS, TBCB,RTM etc.) within a week time.
2. POWERGRID shall analyse the existing system for dual redundancy and implement the dual redundancy with existing resources wherever possible.
3. POWERGRID shall further state the additional requirements of ports/cards/equipment etc. along with cost for implementation of dual redundancy to above mentioned services on priority where dual redundancy cannot be implemented because of resource constraints. Same shall be discussed at respective RPC forum and shall be finally approved in NCT.

Annexure-I

List of participants of the meeting

- **CEA**

1. Sh. Prateek Srivastava, Assistant Director, PCD
2. Sh. Akshay Dubey,
3. Ms. Priyam, Dy. Director, PSPA-I

- **CTUIL**

1. Sh. Shiv Kumar Gupta, Sr.DGM, CTUIL
2. Sh. Tej Prakash Verma, Ch.Mgr., CTUIL
3. Kalpana Shukla,DGM, CTUIL
4. Kaushal Suman, Manager, CTUIL

- **Powergrid**

1. Sh. Ajaya Kumar P, Sr.GM, ULDC
2. Sh. Satish Kr Sahare, GM, ULDC
3. Smt. Shyama Kumari, DGM, GA&C
4. Sh. Kapil Gupta, DGM, GA&C
5. Sh. Mahesh M, Ch. Mgr, ULDC
6. Sh. Narendra Kumar Meena, Ch. Mgr. ULDC
7. Sh. Santanu Rudrapal, Ch. Mgr, ULDC
8. Sh. Vishal Badlas, Mgr, GA&C
9. Sh. Kashif Bakht Muhammad Nabi, Dy. Mgr, ULDC
10. Sh. Ashish Kumar Das, Asst Mgr, ULDC

- **GRID- India**

1. Sh. MK Ramesh, CGM, SRLDC
2. Sh. Harish Kumar Rathour, GM, NLDC
3. Sh. Sanjeev, GM, WRLDC
4. Sh. L. Murlikrishna, Sr. DGM
5. Sh. Ankur Gulati, DGM, NRLDC
6. Sh. Sakal Deep, Engineer, NERLDC
7. Sh. Koti Naveen
8. Sh. Ananthakrishnan
9. Sh. Rakesh
10. Sh. Sudeep M
11. Bijender Singh Chhoer
12. P Dounge

RNOD (Recoded Notes of the discussion) of the virtual meeting held on 27.06.2023 (Tuesday) regarding dual redundancy of RTU, PMU, VOIP, AGC etc.

A meeting on cited subject was held on 27.06.2023 at 10:30 A.M. with the participants from CEA, RLDCs, CTUIL, GRID-India and POWERGRID. The list of the participants is enclosed at Annexure-I. At the outset Sr. GM (CTUIL) welcomed the participants and stated the requirement of two channels each at main and backup control centres, already discussed in the meeting held on 09.05.2023 and confirmed by PCD(CEA) subsequently. In view of this CTU requested the participants to provide their valuable views/suggestions for each application for the said redundancy.

Deliberation:

CTU stated that at present one data channel and one voice channel are routed for reporting to main RLDC and similarly one data & one voice channel is reporting at backup RLDC. However, during the meeting held on 09.05.2023, GRID-India requested for at least two data channels and two voice channels for reporting to each RLDC i.e. main RLDC and backup RLDC, to increase the redundancy in the system.

Further CTU stated to deliberate on all the data and voice applications being used from stations to control centres (CC) and among CCs viz SCADA, PMU, AGC, VOIP etc.. CEA suggested that the redundancy shall be developed in a phased manner and the constraints on the existing communication network shall be explicitly reviewed and taken up accordingly.

Detailed deliberations were held among GRID-INDIA-RLDCs, POWERGRID, CEA, CTU for the same and ISTS communication system was proposed for different services with redundancy:

1. SCADA
2. PMU
3. AGC
4. VOIP
5. Automated Metering Application(AMR)
6. ICCP (Between control centers)

7. PDC to PDC

8. Data sync between MCC & BCC

GRID-INDIA has submitted the data regarding present status of redundancy of these services which is enclosed as Annexure-I. POWERGRID has also submitted the data of utilization of optical fiber network for some links of Eastern region which is enclosed as Annexure-II. CTU again requested POWERGRID to provide requisite data for the implementation of said redundancy scheme.

It was also felt to analyze the enhancement required for the above mentioned 8 services on 2+2 redundancy as discussed below:

1. **SCADA** :- Currently SCADA is reporting through 1+1/2+1/2+2/1+0 (radial) channel in different regions. For 2+2 redundancy of SCADA data, it requires extra ethernet ports at RTU, SAS Gateway & FOTE along with suitable bandwidth in optical fiber network. CTU stated that POWERGRID shall provide data of utilized and spare ethernet ports for existing RTUs, SAS Gateways and FOTE and shall also assess the data for additional requirement of the said redundancy. POWERGRID agreed the same.
2. **PMU** :- POWERGRID stated that presently one port of central sector PMUs is split into two channels at MUX (SDH) level from where onwards one channel reports to NTAMC (PG) and other reports to PDC (RLDC). GRID-India stated that as at present there is no plan of backup PDC, hence PMU data may be sent to PDC at RLDC in 1+1 mode only. Accordingly, one additional channel is required from PMUs to RLDCs. POWERGRID is requested to check availability of additional port on PMU and FOTE along with bandwidth requirement for configuration of additional backup channel to RLDC. POWERGRID agreed the same.
3. **AGC** :- GRID-India-NLDC stated that currently 2 channels are reporting from generators up to HMI of the station and there after through fibre optic network to NLDC Main Control Centre (MCC). GRID-India explained that a separate RTU is provided to integrate the generator data and route it further through the existing FOTE. This is in addition to existing RTU/SAS Gateway reporting to RLDCs.. As per redundancy requirements of control centre, 2 additional channels for AGC from generator station (in addition to the SCADA data) are required for data reporting to Backup Control Centre (BCC). GRID-INDIA also

stated that AGC signal to generator is being planned from RLDC in future. POWERGRID is requested to check availability of ports on RTU (both SCADA and Generation), SAS Gateway of AGC system and FOTE for implementation of same. POWERGRID agreed the same.

4. **VOIP** :- POWERGRID stated that currently VOIP is communicating through single channel only. GRID-India stated that they require redundancy on Port level and additional port shall be required at VOIP phone, exchange & FOTE. As present VOIP exchange has completed its life, it is suggested that requisite features for VOIP phones & exchange shall be included during system upgradation/ replacement. POWERGRID agreed to provide relevant data for the same.
5. **AMR** :- GRID-India stated that new AMR architecture is in planning phase and they will provide required inputs after looking in architecture.
6. **ICCP** :- GRID-India stated that currently ICCP (Between NLDC, RLDC and SLDC) is working on 2 communication channels for main-to-main control center and 2 communication channels for backup to backup control center only. For redundancy, GRID-India requires 4 extra channels, 2 channels for main RLDC to backup SLDC communication and 2 channels for backup RLDC to main SLDC communication. POWERGRID is requested to provide additional requirements (if any) for implementation of same. POWERGRID agreed the same.
7. **PDC to PDC** :- GRID-India stated that at present '1' channel is provided between PDC(SLDCs) to PDC (RLDC), for redundancy in PDC(SLDCs) to PDC(RLDC) communication additional 1 channel is required as discussed in PMU above.
8. **Data Sync between MCC & BCC** :- GRID-India stated that presently 1 channel is working for data sync between Main Control Center and Backup Control Center i.e. main SLDC to backup SLDC, main RLDC to backup RLDC, main NLDC to backup NLDC, further it is required to provide 1 additional channel for redundancy.

As per above discussion POWERGRID is requested to provide the requisite data for implementation of redundancy of services as discussed above within 21 days. POWERGRID agreed for the same. Meeting ended after vote of thanks by SR.GM(CTU).

List of participants of the meeting

- **CEA**

1. Sh. Prateek Srivastava, Assistant Director, PCD
2. Ms. Priyam, Dy. Director, PSPA-I

- **CTUIL**

1. Sh. H.S. Kaushal, CGM, CTUIL
2. Sh. Shiv Kumar Gupta, Sr.DGM, CTUIL
3. Sh. Tej Prakash Verma, Ch.Mgr., CTUIL
4. Sh. Divesh Kamdar, AET, CTUIL

- **POWERGRID**

1. Sh. Satish Kr Sahare, GM, ULDC
2. Smt. Shyama Kumari, DGM, GA&C
3. Sh. Kapil Gupta, DGM, GA&C
4. Sh. Mangesh Shriram Bansod, DGM, IT
5. Sh. Sundeep Kumar Gupta, Ch. Mgr, GA&C
6. Sh. Narendra Kumar Meena, Ch. Mgr. ULDC
7. Sh. Santanu Rudrapal, Ch. Mgr, ULDC
8. Sh. Vishal Badlas, Mgr, GA&C
9. Sh. Hemanth Kumar, Asst. Mgr, ULDC

- **GRID- India**

1. Sh. Harish Kumar Rathour, GM, NLDC
2. Sh. Aukur Gulati, Ch. Mgr, NRLDC
3. Sh. Sakal Deep, Engineer, NERLDC
4. Sh. Akhil Singhal, NERLDC
5. Sh. P. Dounge, NERLDC
6. Sh. Amba Prasad Tiwari, NERLDC
7. Sh. Mohneesh Rastogi, NLDC
8. Sh. Ganesh, SRLDC
9. Sh. Rakesh, SRLDC
10. Sh. Ashutosh Pagare
11. Sh. Koti Naveen, WRLDC

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

No.- L-1/210/2016/CERC

CORAM:

**Shri Jishnu Barua, Chairperson
Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri P. K. Singh, Member**

Date of Order: 19th January, 2024

In the matter of:

Approval of Guidelines on “Interface Requirements” under the Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017.

Order

The Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 (hereinafter referred to as the ‘Communication Regulations’) were published on 29.05.2017 in the Gazette of India Extraordinary (Part-III, Section-4, No. 218).

2. Regulation 7.4, read with Regulation 14.2 of the Communication Regulations requires NLDC to prepare Guidelines on “Interfacing Requirements” in consultation with the stakeholders and submit the same for approval of the Commission.

3. Accordingly, NLDC has submitted the Guidelines on “Interfacing Requirements” after stakeholder consultation for approval of the Commission.

- 3.4. The communication media being used for data transfer and data rate shall be in accordance with the Central Electricity Authority(Technical Standards for Communication System in Power System Operations) Regulations, 2020.

4. Communication Interface

The Users shall support at least the following facilities and plan for communication interfaces accordingly at the time of implementation:

1. Real time data exchange including AGC/Control signal with Control Centre (Main & Backup).
2. Phasor data exchange
3. Meter data exchange
4. Protection signal transmission (SPS, Direct Tripping and Permissive Tripping Carrier Signal etc.)
5. Voice communication
6. Video Communication

Other requirements, if any, users may include while designing the local communication interface requirement.

The required communication interfaces shall be provided for both sending and receiving ends based upon jurisdiction/ownership. All the interfaces shall be provided with audio-visual status indication to indicate its normal operation as per relevant standards.

Users shall have functionality to support any of the interfaces given below based on requirement of data flow as per CEA/CERC guidelines from their respective end to control centres.

Interfaces are classified as following: -

1. Remote Station Interfaces
2. Control Centre Interfaces
3. Terminal Equipment Interfaces

4.1. Remote Station

“Interfacing Requirements” in respect of terminal equipment, Remote Terminal Unit (RTUs)/ Substation Automation System (SAS), Supervisory Control and Data Acquisition System (SCADA), Phasor Measurement Unit (PMU) /Phasor Data Concentrators (PDC), Automatic Generation Control

(AGC), Station Protection / System Protection Schemes (SPS), Automatic Meter Reading (AMR), Advanced Metering Infrastructure (AMI), etc. and for data communication is decided based on communication protocol used for transfer of data between user and respective control centres through dedicated and redundant communication channel with route diversity.

Remote end equipment like RTUs, PMUs, SAS, Metering Gateways, Meter Data Collection Unit, PLCs for AGC etc. shall report through communication protocol which is supported at the reporting Control Centre.

While designing the interface requirement of the remote locations, all the interfaces required for data (power system parameter, meter data, AGC/Control Signal), voice, video, protection signal shall be considered and shall be compatible with respective control centre as well as intervening Communication System equipment.

A typical General Arrangement drawing for a Remote Station is enclosed as ***Annexure-III***.

The interfaces shall be designed to operate under single contingency failure condition. Equipment should support interfaces with multiple ports, cards, gateways etc. and configured in redundant mode so that failure of single hardware element, i.e. communication port, card, gateway etc. of the users shall not lead to failure of data communication. Communication system shall be designed as per planning criterion to be notified by CEA.

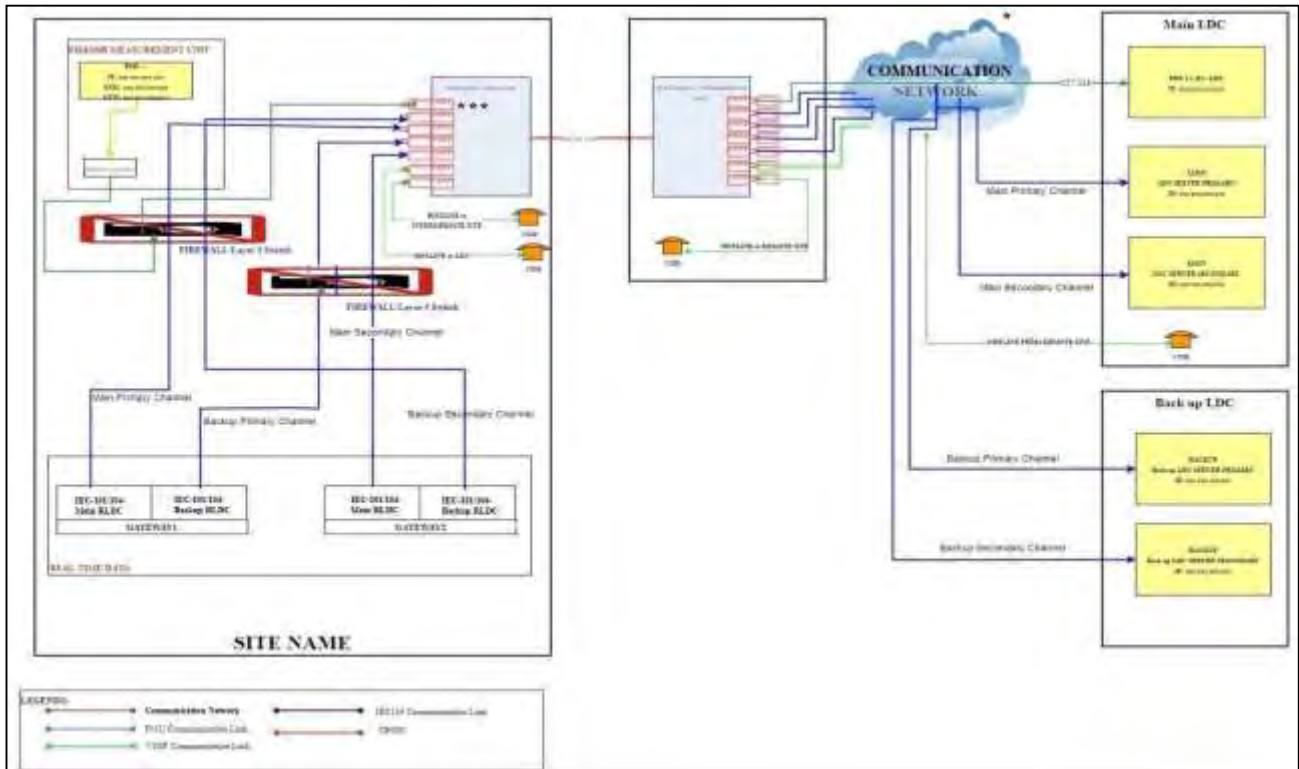
Availability of communication links shall be maintained as per the CERC Communication Regulations, 2017. Further, the communication channel provided/configured for the real time data communication shall be made error free and shall not lead to intermittency in real time data at respective Control Centre.

4.1.1. Remote Terminal Unit (RTU)/Substation Automation System (SAS)/PLCs

“Remote Terminal Units” (RTU) / Substation Automation System (SAS) is the device suitable for measuring, recording and storing the consumption of electricity or any other quantity related with electrical system and status of the equipment in real time basis and exchanging such information with the data acquisition system for display and control.

The RTU/SAS System /device should communicate with Control Centre front end system in either

Typical Remote Station General Arrangement Diagram having IEC-101/104 RTU





Annexure-2.16.3

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली संचार विकास प्रभाग

Power System Communication Development Division

सेवा में / To,

Chief Operating Officer, CTUIL,
Saudamini Plot, Gurgaon

Subject: Requirement of Dual redundancy of communication services – regd

Reference: CTU email dated 07.06.2024

CTU vide above mentioned reference has forwarded SRPC's email seeking clarifications in respect of requirement of dual redundancy of communication services for the existing stations (TBCB/RTM).

- 1.1. In this regard, it may be noted that ensuring redundancy with route diversity is the requirement stipulated in CEA's Manual of Communication Planning in Power System Operation. Further, it was proposed by GRID INDIA that to ensure redundancy with route diversity, at least two data channels and two voice channels shall be routed for reporting to main RLDC and another two data & two Voice channels shall report at backup RLDC.
- 1.2. Also, with issuance of Guidelines on "Interface Requirements" under the CERC (Communication System for inter-State transmission of Electricity) Regulations, 2017, it has been made amply clear that suitable redundancy at port, card and gateway level needs to be ensured to avoid any single point of failure which may lead to interruption in real-time grid operation.
- 1.3. CTUIL has already convened meetings amongst POWERGRID, POSOCO, CTUIL and CEA (PCD) on 09.05.2023 and 27.06.2023, for examining the availability of two channels each from the ISTS stations to Main & Back-up Control Centers and to deliberate on the need for the same. Various applications of data, phasor and voice were deliberated during these meetings and requirement of the dual redundancy for different communication services used for ISTS was agreed as below:
 - i. SCADA
 - ii. PMU
 - iii. AGC

- iv. Voice
- v. Automated Metering Application
- vi. ICCP (between control canterers)
- vii. PDC to PDC
- viii. Data Sync between MCC & BCC

- 1.4. This called for modifications in the existing ISTS infrastructure, besides inclusion of the same in the scope of the upcoming TBCB/ RTM schemes.
- 1.5. The technical inputs for RfP of the upcoming TBCB/RTM schemes have been updated based on decision taken in meeting convened by PCD, CEA on 28.06.2023, to ensure the compliance of dual redundancy.
- 1.6. For the existing system, CTUIL, Powergrid and Grid India were requested to coordinate in identifying the immediate measures/upgradations to be undertaken to ensure the dual channel reporting, for the identified communication applications, from each ISTS station to main and back up RLDCs.

**Signed by ^{भवदीय} Suman Kumar
Maharana
Date: 22-07-2024 14:20:59**

(एस.के.महाराणा / S. K. Maharana)
मुख्य अभियन्ता /Chief Engineer (PSCD)

Copy to:

1. Member Secretary, SRPC



सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कारपोरेशन ऑफ इण्डिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
(A wholly Owned Subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

Ref: C/CTU/COMM

Date: 11/09/2024

To,
As per distribution list

Sub: Regarding RPCs view on the agenda to be put up in upcoming 15th NPC meeting.

Dear Sir/Madam,

This is with reference to the agenda sent by CTUIL for the upcoming 15th NPC meeting (Agenda attached at **Annexure-I**). NPC after reviewing the agenda suggested CTU to seek the views of RPCs on the following two agenda:

A.3. Methodology for replacement of old ISTS communication elements e.g. OPGW and FOTE who have lived their useful life as per CERC tariff regulation.

A.4. Dual reporting of ISGS/RE Remote stations to RLDC Main and Backup Control centers.

In view of the above, RPCs are requested to give their valuable views/comments/suggestions within fortnight in order to take up the same for the deliberation in the subject NPC meeting.

Thanking you,

Yours faithfully,

(H.S. Kaushal)
Sr. GM (CTUIL)



सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कारपोरेशन ऑफ इण्डिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
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(A Government of India Enterprise)

List of Addresses:

1.	Member Secretary, Northern Regional Power Committee 18-A, Qutab Institutional Area, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110 016	2.	Member Secretary, Southern Regional Power Committee 29, Race Course Cross Road Bangalore – 560 009
3.	Member Secretary, Western Regional Power Committee MIDC area, Marol, Andheri East, Mumbai -400093	4.	Member Secretary, Eastern Regional Power Committee 14, Golf Club Road, Tollygunge Kolkata-700033
5.	Member Secretary, North Eastern Regional Power Committee (NERPC) Meghalaya State Housing Finance Co-operative Society Ltd. Building Nongrim Hills, Shillong, Meghalaya – 793003		

Handwritten signature in blue ink.

Proof of Concept (PoC) of Dual Channel Redundancy for SCADA Data reporting to ERLDC SCADA\EMS system

Contents

- 1. Background 1
- 2. Network Architecture 1
 - 1. Annexure – I is being shared as attachment which contains the following Network architecture for ready reference: - **Error! Bookmark not defined.**
- 3. Conclusion..... 3

1. Background

As per MoM of 14th Test Sub-Committee meeting of ERPC held on 24.04.2024 the following decision was made:

"TeST committee advised PowerGrid to carry out POC on pilot basis for dual reporting via SCADA to ERLDC (main and backup). PowerGrid agreed to carry out the POC at Berhampur station."

Based on this, POC for dual channel reporting to ERLDC SCADA\EMS system was conducted during RTU upgradation and migration from IEC 101 to IEC 104 protocol work of Jamshedpur_PG station as RTU team was present there during testing time.

2. Network Architecture

- A. **Present Network architecture** for Data reporting to ERLDC SCADA\EMS system via
 - i. Main Channel to ERLDC MCC Kolkata (IP Series: 172.16.0.0; Subnet Mask: 255.255.252.0)
 - ii. Backup Channel to ERLDC BCC New Delhi (IP Series: 172.17.0.0; Subnet Mask: 255.255.252.0)

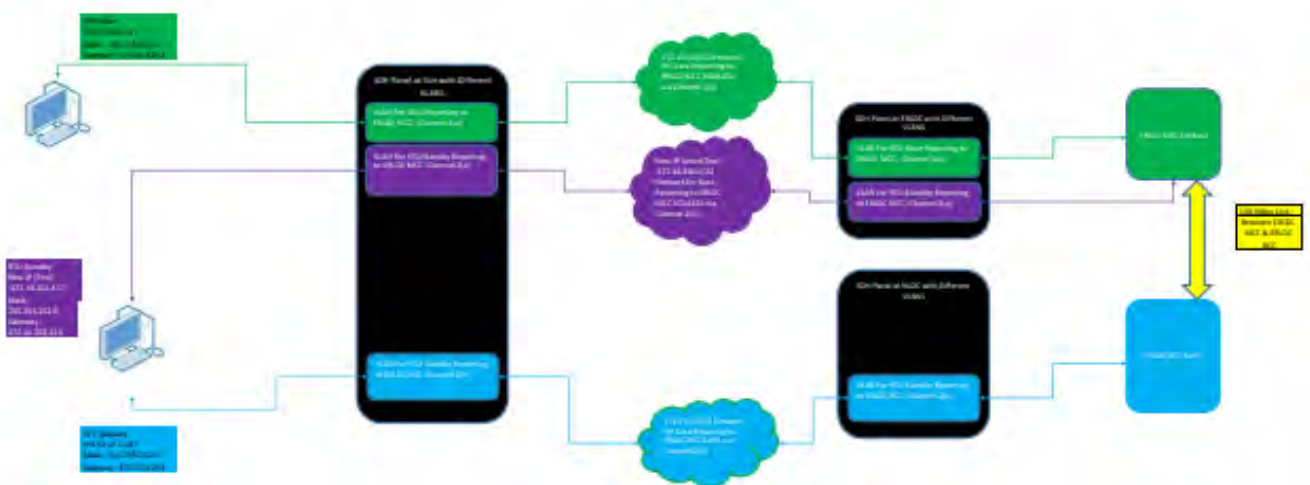


B. **Proposed Network architecture** for Dual Channel reporting to ERLDC MCC & BCC SCADA\EMS system. IP series for Dual channel reporting of Data to ERLDC SCADA\EMS system is detailed below: -

- i. **Main Channel "1(a)"** for Data reporting by **RTU Main** to ERLDC MCC Kolkata (IP Series: 172.16.0.0; Subnet Mask: 255.255.252.0) (Already Existing for all Central Sector RTUs)
- ii. **Main Channel "1(b)"** for Data reporting by **RTU Main** to ERLDC BCC New Delhi (IP Series: 172.17.200.0; Subnet Mask: 255.255.252.0) (Newly Proposed)
- iii. **Standby Channel "2(a)"** for Data reporting by **RTU Standby** to ERLDC MCC Kolkata (IP Series: 172.16.200.0; Subnet Mask: 255.255.252.0) (Newly Proposed)
- iv. **Standby Channel "2(b)"** for Data reporting by **RTU Standby** to ERLDC BCC Kolkata (IP Series: 172.17.0.0; Subnet Mask: 255.255.252.0) (Already Existing for all Central Sector RTUs)

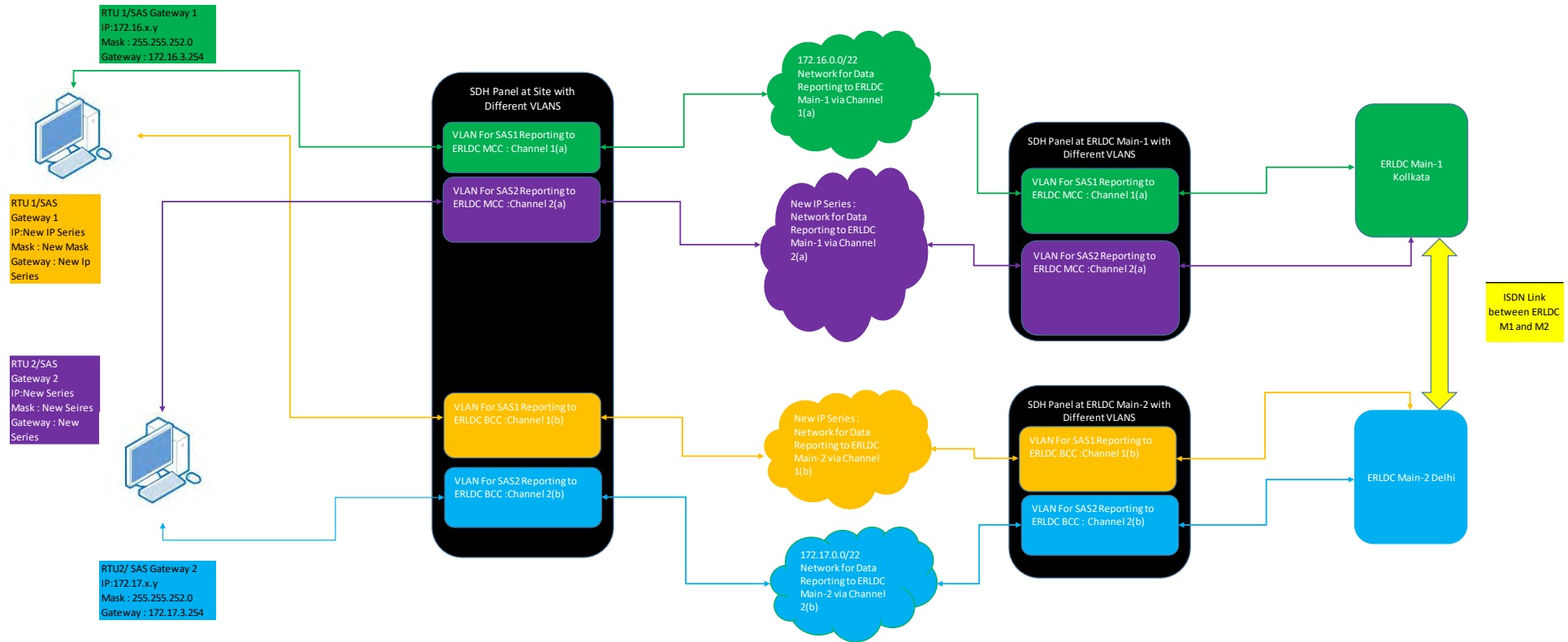


C. **Test Setup for Proof of Concept** as per Proposed Network architecture in 2.1.(a) for Data reporting to ERLDC.



3.Conclusion

- a. Proof of Concept of Dual Channel Redundancy was completed successfully for Jamshedpur_PG station on 29.08.2024 on joint effort by POWERGRID ULDC and ERLDC SCADA Team.
- b. Testing of Data reporting redundancy was done by 3 of the 4 channels configured in RTU: -
 - 1) 172.16.1.137: - Main Channel 1(a) for Data reporting to MCC ERLDC by RTU Main.
 - 2) 172.17.1.137: - Standby Channel 2(b) for Data reporting to BCC ERLDC by RTU Standby.
 - 3) 172.16.201.137: - Standby Channel 2(a) for Data reporting to MCC ERLDC by RTU Standby.
 - 4) 172.17.201.137: - Since the PoC is done successfully for Standby Channel 2(a); There will not be any issue in Data reporting by RTU Main via Channel 1(b) to ERLDC BCC after configuration in: -
 - i. Configuration in ERLDC BCC SCADA for Main Channel 1(b) (i.e., reporting by RTU Main to ERLDC BCC) (which is envisaged in Upcoming SCADA).
 - ii. Configuration at SDH Level by PowerGrid ULDC Team for Channel 1(b) to BCC ERLDC (which is up to NLDC in present scenario and will be up to NERLDC Guwahati in Upcoming SCADA)



Substation/Power Plant	Utility	Update on Dual Channel reporting feasibility
NTPC Farakka	NTPC	
NTPC Kahalgaon	NTPC	
NTPC Barh	NTPC	
NTPC BRBCL	NTPC	
NTPC KBUNL	NTPC	
NTPC NPGC	NTPC	
NTPC North Karanpura	NTPC	
NTPC Darlipalli	NTPC	
NTPC Talcher Stage I	NTPC	
NTPC Talcher Stage II	NTPC	
NHPC Rangit	NHPC	
NHPC Teesta V	NHPC	
MPL	Tata Power	
APNRL	Adhunik	
Chujachen HPS	IPP	
Rongnichu HPS	IPP	
Dikchu HP	IPP	
Jorethang HPS	IPP	
Tashiding HP	IPP	
Teesta III	IPP	
EUL	IPP	
GMR	IPP	
JITPL	IPP	
Motihari and Darbhanga	DMTCL	
Dhanbad	NKTL	
Any other ISTS/IPP/ISGS		

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CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED
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(A Government of India Enterprise)

Annexure-2.17

Ref. No. C/CTU/COMM/TCCERPC/53rd

Date: 03.02.2025

To
Member Secretary,
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata-700033

Kind Attn: Shri N.S Mondal

Sub: Scheme for laying of OPGW on ISTS lines in Eastern Region

Dear Sir,

CTU has studied the existing ISTS communication system based on the inputs and feedback received from POSOCO and other constituents. This agenda of replacing the OPGW was deliberated in 6th CPM of ER region held on 27.08.2024 and 7th CPM meeting of ER region held on dt-17.01.2025. Deliberations for this agenda was also held in the 14th ERTeST meeting held on 24.04.2024 and 16th ERTeST meeting held on dt. 22-01-2025 and accordingly the following scheme is being proposed by CTUIL as under:

'Scheme for laying of OPGW on ISTS lines in Eastern Region'.

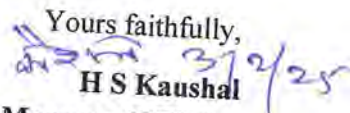
In line with MoP office order no. 15/03/2017-Trans-Pt (1) dated 09.03.2022 regarding "Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)- reg", as per clause 5 for Category (B) Communication Schemes/Packages proposed by CTUIL for upgradation/modification of existing ISTS Communication System shall be put up to RPC for their views. RPC to provide their views on the Schemes/Packages proposed by CTUIL within 45 days of receipt of the proposal from CTUIL.

Clause 5 for category (B) is stipulated below:

"Communication Schemes/Packages proposed by CTUIL for upgradation/modification of existing ISTS Communication System, standalone projects, adoption of new technologies shall be put up to RPC for their views. RPC to provide their views on the Schemes/Packages proposed by CTUIL within 45 days of receipt of the proposal from CTUIL."

In consideration of above, it is requested that ERPC may forward their views in respect of the scheme attached herewith at the earliest, so that the scheme may be taken up promptly for consideration in the NCT meeting along with the views of ERPC.

Thanking you,

Yours faithfully,

H S Kaushal
Sr. General Manager (CTUIL)

Encl: a/a

Scheme for laying of OPGW on ISTS lines in Eastern Region

S. No.	Items	Details
1.	Scope of the scheme	<p>(i) Laying of 48F OPGW on the following transmission lines for total length of approx. 1503 kms:</p> <p>(a) 400kV Prayagraj (Allahabad)–Sasaram (214.42 km)</p> <p>(b) 400kV Farakka –Sagardighi II -Jeerat (304.16 km)</p> <p>(c) 400kV Indravati-Rengali-Talcher (377.31 km)</p> <p>(d) 400kV Malda - Purnea & 400kV Purnea -Binaguri (367.36 km)</p> <p>(e) 400kV Binagauri-Bongaigaon (239.81 km)</p> <p>(ii) Supply and installation of two no. STM-64 FOTE one each at Sagardighi and Malda and two no. STM-16 FOTE one each at Indravati and Rengali.</p>
2.	Depiction in diagram	N.A
3.	Objective / Justification	<p>OPGW on above mentioned lines have been installed & commissioned by POWERGRID during the period 2004-2005. The links were commissioned by POWERGRID telecom dept (PDT).</p> <p>These links are being utilised for sensitive and critical grid management data to RLDC/NLDC from sub-stations and SLDCs.</p> <p>POWERGRID told that useful life of these links of 15 years is completed as per CERC norms. Further, POWERGRID informed that the OPGW and fiber condition is deteriorating day by day. Optical Attenuation has increased beyond the design limits as mentioned. The detail of lines is enclosed as Annexure I.</p> <p>In view of above, POWERGRID proposed to replace the existing OPGW on these lines .</p> <p>However, it is proposed to lay new 48F OPGW along with required FOTEs as mentioned above on the free peak of these lines.</p> <p>Further, the scheme shall be taken up as a new scheme for laying of OPGW on the above mentioned links rather than replacement of OPGW as the existing OPGW was laid under PDT project and not under the ISTS scheme. After implementation of the above scheme, the shared usage of the existing PowerTel links for ISTS purpose shall be discontinued and PowerTel usage for the new ISTS OPGW links, if any, shall be governed by CERC norms.</p>
4.	Estimated Cost	Deliberation at Sr. No. 7 may be referred.

5.	Implementation time frame	30 months from date of allocation.
6.	Implementation agency	To be implemented by POWERGRID in RTM mode
7.	Deliberations	<p>This agenda of replacing the OPGW was deliberated in 6th CPM of ER region held on 27.08.2024(MoM attached as Annexure II) and 7th CPM meeting of ER region held on dt-17.1.2025(Minutes awaited).</p> <p>Deliberations for this agenda was also held in the 14th ERTeST meeting held on 24.04.2024(MoM attached as Annexure III) and 16th ERTeST meeting held on dt. 22-01-2025(Minutes awaited).</p> <p>However, ERLDC has informed via email dated 28.01.2025 that Farakka-Sagardighi-Subhashgram OPGW link is commissioned on dt. 18.12.2024. Accordingly, OPGW laying requirement on 400kV Farakka-Sagardighi II-Jeerat may be further deliberated.</p> <p>The estimated cost of the scheme with mentioned scope is Rs. 84.74 crores. However, if OPGW on 400kV Farakka-Sagardighi II-Jeerat and associated FOTE at Sagardighi is not required due to commissioning of Farakka-Sagardighi-Subhashgram OPGW link then the estimated cost shall be revised to Rs. 67.28 crores.</p> <p>After RPC recommendation, scheme will be put up for approval of NCT approval.</p>

STATUS OF REACTIVE CHARGES

AS on 16-01-25

Figures in ₹ Lakhs

Name of Parties	Net outstanding upto 2023-24	Receivable Amount by pool	Received Amount by pool	Payable Amount by pool	Paid Amount by pool	Outstanding Amount Receivable(+Ve) / Payable by pool(-Ve)
Bhutan	0	41.94018	41.16429	97.841	97.841	0.78
Bangladesh	0	8.84828	8.24185	0.01327	0.01327	0.61
Nepal	0	15.80907	12.89632	5.59695	5.59695	2.91
NEA-Bihar	0	0.9905	0.9905	2.15775	2.15775	0.00
BSPHCL	0	13.46412	0	234.56389	231.56012	10.46
JUVNL	0	105.11191	102.78627	0.7167	0	1.61
DVC	0	5.26943	5.26943	54.15706	54.15706	0.00
GRIDCO	0	1.36253	0.64608	197.1041	195.44544	-0.94
SIKKIM	0	0.08008	0	4.07652	3.10829	-0.89
WBSETCL	0	76.62776	0	54.52071	16.54257	38.65
JITPL	0	0.00145	0.00145	1.24673	1.24673	0.00
Alipurduar	0	0.32631	0.24451	0	0	0.08
Sasaram	0	0.23505	0.2173	0.00355	0	0.01
MPL	0	0.0002	0.0002	0	0	0.00
APNRL	0	0.77785	0	1.15491	1.15051	0.77
BRBCL	0	0	0	1.67122	1.67122	0.00
JLHEP	0	0.17362	0.0016	0.0029	0.0029	0.17
Chuzachen	0	0.04904	0.04865	0.70752	0.70752	0.00
TUL	0	0	0	0	0	0.00
Rongnichu	0	0.47041	0.38439	0.24967	0.24527	0.08
THEP	0	0.41545	0.083	0.02742	0.03302	0.34
Dikchu	0	0.0005	0.0005	0.05507	0.05507	0.00
ECR	0	5.24387	5.09467	1.3879	1.3879	0.15
GMR	0	0.364	0.364	1.22645	1.22645	0.00
IND_Bharat	0	2.27774	2.20384	6.51905	6.44515	0.00
NHPC	0	0	0	12.99952	12.99952	0.00
NTPC	0	0	0	775.62696	775.62696	0.00

Receivable:

Received:

'- ve' Payable by ER pool

Receivable by ER POOL

Received by ER POOL

'- ve' Payable by ER pool

Payable by ER POOL

Paid by ER POOL

'+ ve' Receivable by ER pool

DSM account Reconciliation Status of ER constituents

Annexure-3.7.1

Name of The Utility	2019-20				2020-21				2021-22				2022-23				2023-24				2024-25	
	Q1 (17.07.19)	Q2 (21.10.19)	Q3 (13.01.20)	Q4 (15.04.20)	Q1 (15.07.20)	Q2 (23.10.20)	Q3 (20.01.21)	Q4 (28.04.21)	Q1 (06.07.21)	Q2 (07.10.21)	Q3 (11.01.22)	Q4 (18.04.22)	Q1 (15.07.22)	Q2 (21.10.22)	Q3 (19.01.23)	Q4 (28.04.23)	Q1 (28.07.23)	Q2 (19.10.23)	Q3 (25.01.24)	Q4 (24.04.24)	Q1 (30.07.24)	Q2 (28.10.24)
BSPHCL	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
JUVNL	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
DVC	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
GRIDCO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
WBSETCL	YES	YES	YES	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO
SIKKIM	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NTPC	YES	YES	YES	YES	YES	YES	YES	YES	Yes	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
NHPC	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	NO	NO
MPL	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES	NO
APNRL	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHUZACHEN(GATI)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
NVVN(Ind-Bng)	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
NVVN(Ind-Nep)	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
NVVN (Bhutan)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	YES	YES	YES
NVVN-NEA Bihar	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	YES
GMR	YES	YES	YES	YES	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
JITPL	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	YES	YES	NO
IBEUL (JSW Energy)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	NO	NO
TPTCL (DAGACHU)	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	YES	YES	NO	NA
JLHEP(DANS ENERGY)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES	NO	YES	YES	YES
BRBCL	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	YES	YES	NO	YES
POWERGRID (ER-I)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES	NO
POWERGRID (ER-II)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO	NO
TUL (TEESTA-III)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	NO	NO	YES	YES	NA	NA
DIKCHU	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NA	NA	NA
SHIGA (TASHIDING)	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	YES	YES
Rongnichu	NA				NA				NA				YES	NO	NO	NO	NO	NO	YES	YES	NO	NO

- (1)The dates in the bracket indicates the date of sending the Reconciliation statements by ERLDC to utilities.
- (2) YES Indicates that signed reconciliation statement received by ERLDC
- (3) NO Indicates that signed reconciliation statement is not received by ERLDC

Reactive Account Reconciliation Status

Annexure3.7.21

Name of The Utility	2019-20				2020-21				2021-22				2022-23				2023-24				2024-25	
	Q1 (17.07.19)	Q2 (21.10.19)	Q3 (13.01.20)	Q4 (15.04.20)	Q1 (15.07.20)	Q2 (23.10.20)	Q3 (20.01.21)	Q4 (28.04.21)	Q1 (06.07.21)	Q2 (07.10.21)	Q3 (11.01.22)	Q4 (18.04.22)	Q1 (15.07.22)	Q2 (21.10.22)	Q3 (19.01.23)	Q4 (28.04.23)	Q1 (28.07.23)	Q2 (19.10.23)	Q3 (25.01.24)	Q4 (24.04.24)	Q1 (30.07.24)	Q2 (28.10.24)
BSPHCL	YES	NA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
JUVNL	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
DVC	YES	N/A	N/A	N/A	YES	NO	NO	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
GRIDCO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
WBSETCL	YES	YES	NO	NO	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SIKKIM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NTPC	NA																		YES	NO	YES	YES
NHPC																			YES	YES	NO	NO
MPL																			NA	NA	YES	NO
APNRL																			NO	NO	NO	NO
CHUZACHEN(GATI)																			YES	YES	NO	NO
NVVN(Ind-Bng)																			YES	YES	YES	YES
NVVN(Ind-Nep)																			YES	YES	YES	YES
NVVN (Bhutan)																			NA	YES	YES	YES
GMR																			NO	NO	YES	YES
JITPL																			NO	YES	NO	NO
INBEUL																			NO	NO	YES	NO
TPTCL (DAGACHU)																			NO	NO	NO	NO
JLHEP(DANS ENERGY)																			NO	YES	NO	NO
BRBCL																			YES	YES	NO	YES
POWERGRID (ER-I)																			NO	NO	NO	YES
POWERGRID (ER-II)																			NO	YES	YES	NO
TUL (TEESTA-III)																			NA	NA	NO	NO
DIKCHU																			NA	NA	NO	NO
SHIGA (TASHIDING)																			NO	YES	NO	NO
OPGC																			NA	NA	YES	YES
Rongnichu	YES	YES	NO	NO																		

TRAS Account Reconciliation Status

Name of The Utility	2023-24				2024-25	
	Q1 (28.07.23)	Q2 (19.10.23)	Q3 (25.01.24)	Q4 (24.04.24)	Q1 (30.07.24)	Q2 (28.10.24)
NTPC	YES	YES	YES	YES	YES	YES
BRBCL	YES	YES	YES	YES	YES	YES
MPL	YES	YES	NO	YES	YES	NO

SRAS Account Reconciliation Status

Name of The Utility	2022-23		2023-24				2024-25	
	Q3 (19.01.23)	Q4 (28.04.23)	Q1 (28.07.23)	Q2 (19.10.23)	Q3 (25.01.24)	Q4 (24.04.24)	Q1 (30.07.24)	Q2 (28.10.24)
NTPC	YES	YES	YES	YES	YES	YES	YES	YES
MPL	YES	YES	YES	YES	YES	YES	YES	NO
NHPC	YES	NO	NO	NO	YES	YES	NO	NO
BRBCL							YES	YES

SCUC Account Reconciliation Status

Name of The Utility	2024-25	
	Q1 (30.07.24)	Q2 (28.10.24)
NTPC	YES	YES
BRBCL	YES	YES
MPL	YES	NO