

# सेंट्रल ट्रांसमिशन यूटिलिटी 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)

संदर्भ/Ref: CTU/E/00/10<sup>th</sup>/CMETS-ER

दिनांक/Date: 08-09-2022

वितरण सूची के अनुसार/ As per Distribution List

विषय/ Subject: पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए 10<sup>वीं</sup> परामर्श बैठक के कार्यवृत्त (सीएमईटीएस-ईआर) / Minutes of 10<sup>th</sup> Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

महोदय/महोदया/ Sir/ Ma'am,

पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए 10<sup>वीं</sup> परामर्श बैठक 30<sup>th</sup> अगस्त, 2022 को वीडियो कॉन्फ्रेंस के माध्यम से आयोजित की गई थी। इस संबंध में बैठक के कार्यवृत्त संलग्न है। यही CTUIL की वेबसाइट ([www.ctuil.in](http://www.ctuil.in) >> [ISTS Planning and Coordination](#) >> [Consultation Meeting for ISTS](#) >> [Eastern Region](#)) पर भी उपलब्ध है।

The 10<sup>th</sup> Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER) was held on 30<sup>th</sup> August, 2022 through video conferencing. In this regard, please find enclosed minutes of the meeting. The same is available on CTUIL website ([www.ctuil.in](http://www.ctuil.in) >> [ISTS Planning and Coordination](#) >> [Consultation Meeting for ISTS](#) >> [Eastern Region](#))

धन्यवाद/ Thanking you,

भवदीय / Yours faithfully,

for राजेश कुमार  
08/09/2022

(राजेश कुमार) / (Rajesh Kumar)

महाप्रबंधक/ General Manager

**A. वितरण सूची / Distribution List:**

<b>1. Chief Engineer (PSP&amp;A-II)</b> Central Electricity Authority Sewa Bhawan, R.K.Puram New Delhi-110066	<b>2. Member Secretary</b> Eastern Regional Power Committee 14, Golf Club Road, Tollygunge Kolkata-700033
<b>3. Director (SO)</b> Power System Operation Corporation Ltd. 9th Floor, IFCI Towers, 61, Nehru Place, New Delhi-110 016	<b>4. Executive Director</b> Eastern Regional Load Despatch Centre 14, Golf Club Road, Jubilee Park, Golf Gardens, Tollygunge, Kolkata, West Bengal - 700095
<b>5. CMD</b> Damodar Valley Corporation DVC Towers, VIP Road Kolkata-700054	<b>6. CMD</b> Odisha Power Transmission Corporation Ltd. (OPTCL) Bhoinagar Post Office, Jan path Bhubaneswar-751022
<b>7. CMD</b> Bihar State Power Transmission Company Ltd. (BSPTCL) Vidyut Bhavan, 4 <sup>th</sup> floor, Bailey Road Patna-800021	<b>8. CMD</b> Jharkhand Urja Sancharan Nigam Limited (JUSNL) Engineering Building, HEC, Dhurwa Ranchi -834004
<b>9. Principal Chief Engineer cum Secretary</b> Power Department Government of Sikkim Gangtok, Sikkim	<b>10. Managing Director</b> West Bengal State Electricity Transmission Company Ltd. (WBSETCL) Vidyut Bhavan, 8 <sup>th</sup> Floor, A-Block Salt Lake City, Kolkata-700091
<b>11. Director (Projects)</b> Power Grid Corporation of India Ltd. "Saudamini", Plot No. 2, Sec-29, Gurugram Haryana-122001	<b>12. Managing Director</b> Haldia Energy Limited (HEL) 2A, Lord Sinha Road, First Floor, Kolkata, West Bengal - 700 071, Email: <a href="mailto:haldiaenergy@rpsq.in">haldiaenergy@rpsq.in</a>
<b>13. Chairman</b> CESC Limited CESC House, Chowringhee Square Kolkata – 700001 Email: <a href="mailto:cesclimited@rpsq.in">cesclimited@rpsq.in</a>	

## **Minutes of 10<sup>th</sup> Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)**

GM (CTUIL) welcomed the participants to the meeting. He informed about the interim Rolling Plan of ISTS for 2027-28 to be published by CTU in Sept 2022 which has been prepared based on the transmission system requirement for 2027-28 timeframe. In this regard, list of ISTS schemes which are likely to be considered in these studies has been shared among stakeholders of ER. He requested all the stakeholders to share their observations/comments/suggestions (if any) at the earliest so that the same may be incorporated in the studies and said report. He further informed that CTU has shared the segregation of GNA quantum for all the STUs into two categories viz. within the region & outside the region, as per the CERC's GNA Regulation with all the stakeholders of ER. He requested all the stakeholders to share their observations (if any) at the earliest. He also informed that in line with the GNA Regulations, CTU shall be sharing the draft detailed procedure shortly.

List of the participants is enclosed at **Annexure-I**. Agenda wise deliberations and decisions are given below:

### **1. Confirmation of minutes of the previous meeting**

CTU informed that the minutes of the 9<sup>th</sup> CMETS-ER held on 29-07-2022 were issued vide letter dated 18-08-2022. As no comments have been received, the minutes were considered to be confirmed as circulated.

### **A. Application related matters in Eastern Region (ER)**

CTU informed that no open access application has been received in the month of July 2022 with connectivity/drawl/injection in ER.

### **B. ISTS expansion schemes in Eastern Region**

### **2. Revised connectivity for New Laxmikantpur 400/132kV S/s and split bus arrangement at Laxmikantpur S/s**

2.1. CTU informed that in the 9<sup>th</sup> CMETS-ER held on 29-07-2022, following was deliberated in regard to connectivity for Laxmikantpur 400/132kV S/s:

- (a) WBSETCL and CESC would provide the required data to HEL.
- (b) HEL to provide their decision on the LILO of Haldia – Subhasgram 400kV D/c line at 400/132kV New Laxmikantpur substation, prior to the next CMETS-ER meeting.
- (c) The detailed scope of works would be finalized after receipt of the comments from HEL.

2.2. HEL stated they have received the study results from WBSETCL for the establishment of New Laxmikantpur S/s and shared the studies with their OEM. The study was carried out for 2024-25 timeframe. However, the studies were carried out for only peak demand scenario. The OEM has cautioned them to

check for all the possible load-generation scenarios (viz. low generation, single unit operation, high generation etc. for various drawl conditions at New Laxmikantpur) before allowing the connectivity of HEL generation project to New Laxmikantpur. Accordingly, he requested WBSETCL for additional data viz. seasonal demand for active and reactive power drawl at New Laxmikantpur S/s. Further, the details of bus splitting arrangement at Laxmikantpur 220kV S/s may also be provided by WBSETCL so as to see the impact of load throw off on the generators.

- 2.3. WBSETCL stated that HEL should not see this LILO for islanded mode of operation of HEL generation. The power from Haldia generation project would be evacuated to Subhasgram S/s after meeting the demand of New Laxmikantpur. The power factor of load in the Laxmikantpur area is about 0.94.
- 2.4. CTU clarified to HEL that bus splitting is not proposed at New Laxmikantpur 400/132kV substation but at the existing 220/132kV S/s so as to distribute the load drawl between existing Laxmikantpur 220/132kV and the planned New Laxmikantpur 400/132kV S/s. Regarding seasonal variations in load, suitable load factors could also be utilized for study purpose if actual data could not be arranged.
- 2.5. After detailed deliberations, following was agreed:
  - (a) WBSETCL to share the demand data for various scenarios as requested by HEL
  - (b) HEL to carry out requisite studies and to provide their decision on the LILO of Haldia – Subhasgram 400kV D/c line at 400/132kV New Laxmikantpur substation, prior to the next CMETS-ER meeting, so that the scheme can be finalized at the earliest.

### **3. Augmentation of transformation capacity at Subhasgram (POWERGRID) S/s and other intra-state substations of WBSETCL**

- 3.1. CTU informed that in the 9<sup>th</sup> CMETS-ER held on 29-07-2022, installation of new 400/220kV, 500MVA ICT (6<sup>th</sup>) was agreed on technical grounds. The matter was referred to ERPC meeting for resolution on the cost sharing mechanism between CESC and WBSETCL. It is understood that in the 46<sup>th</sup> TCC & ERPC meeting held on 5<sup>th</sup> & 6<sup>th</sup> Aug 2022 (minutes awaited), CESC has agreed for installation of new 400/220kV, 500MVA ICT (6<sup>th</sup>) at Subhasgram (POWERGRID) S/s along with associated ICT bays at their own cost in similar manner as that of the existing 400/220kV ICTs of CESC at Subhasgram (POWERGRID) S/s.
- 3.2. CESC confirmed the deliberation of the ERPC meeting, and mentioned that they have approached POWERGRID for installation of the said ICT on deposit work basis.
- 3.3. ERLDC mentioned that OLTC is an important element, and the new ICT may be installed alongwith OLTC. They further mentioned that peak loading on Subhasgram ICTs have already violated 'N-1' limit in the last summer and

requested for expeditious installation of ICT for reliable power supply in and around Kolkata area

- 3.4. CTU further enquired CESC about the timeline for implementation of the said ICT.
- 3.5. CESC stated that after receipt of offer from POWERGRID, they would inform the same. However, as per preliminary discussion, the implementation timeframe would be about 18 months excluding the time taken for award (about 3-4 months).
- 3.6. Accordingly, following was agreed in the meeting:
  - (a) Installation of new 400/220kV, 500MVA (6<sup>th</sup>) ICT at Subhasgram (POWERGRID) S/s along with associated ICT bays and OLTC by CESC at their own cost. Requisite space in this regard shall be provided to CESC at Subhasgram (POWERGRID) ISTS S/s.
  - (b) The timeframe for implementation would be shared by CESC at the earliest.

#### **4. Eastern Region Expansion Scheme-XXX (ERES-XXX)**

- 4.1. CTU informed that in the 7<sup>th</sup> CMETS-ER meeting, augmentation of ICT at Gangtok 132/66kV S/s under ERES-XXX scheme was agreed with the following scope of works:
  - a) Paralleling of 132/66kV, 50MVA regional spare ICT available at Rangpo (POWERGRID) S/s with any of the existing 132/66kV, 2x50MVA ICTs at Gangtok (POWERGRID) S/s as permanent arrangement along with suitable isolation arrangement, upgradation of bay equipment, and necessary ICT protection, if necessary.
  - b) Installation of new 132/66kV, 100MVA ICT in place of single 50MVA ICT (not in parallel connection) along with upgradation of bay equipment, if necessary, and release of regional spare 50MVA ICT.
- 4.2. CTU informed that, as mentioned in the 8<sup>th</sup> CMETS-ER held on 30-06-2022 a joint survey has been carried out by a committee comprising of officials from CTUIL and POWERGRID to ascertain the feasibility of implementation of above mentioned works inter alia including installation of 50MVA ICTs in parallel, feasibility of transportation of new 100MVA ICT to Gangtok etc. Major outcomes of the joint visit are mentioned below:
  - (a) Major constraints in respect to transportation of 100MVA ICT to Gangtok (POWERGRID) S/s like load bearing capacity of bridges, clearance in tunnels, sharp turns, steep roads etc.
  - (b) Space constraints for installation of new 100MVA ICT in the Gangtok (POWERGRID) S/s.
  - (c) Issues in paralleling of 50MVA ICTs such as:
    - Space constraint for installation of Isolators for ICT

- Compromising with the protection of ICTs (paralleled)
  - Long shutdown required for implementing this scheme
  - Less transformation availability under N-1 outage of ICT
- 4.3. It was mentioned that, keeping above in view the committee has recommended that the installation of new 132/66kV, 1x100MVA ICT is not feasible at Gangtok (POWERGRID) S/s, and also there are technical difficulties in paralleling of 50MVA ICTs. Therefore, the most optimal solution is to install the spare ICT (presently stationed at Gangtok) as 3<sup>rd</sup> 132/66kV 50MVA ICT at Gangtok. The conversion of existing 132kV TBC bay as 132kV ICT bay for 3<sup>rd</sup> ICT and construction of new 66kV ICT bay in Hybrid/Outdoor GIS with suitable modification in the gantry structure of 66kV side and new 132kV TBC bay in Hybrid/Outdoor GIS may also be required. All the said scope of works can be accommodated in the existing space of Gangtok S/s.
- 4.4. ERLDC and ERPC mentioned that efforts may be made for expeditious installation of 3<sup>rd</sup> ICT at Gangtok S/s in view of system requirement and to meet the N-1 reliability criteria. Augmentation of transformation capacity is required to improve power supply situation and reliability is capital city of Gangtok.
- 4.5. ERLDC enquired about the replenishment of 50MVA ICT spare as there are five (5) nos. of 132/66kV, 50MVA ICTs in Sikkim. It was suggested that the spare ICT may be procured and stationed suitably in Sikkim itself.
- 4.6. It was decided that the matter regarding replenishment of spare 132/66kV, 50MVA ICT in ER may be discussed separately at ERPC level.
- 4.7. After detailed deliberations, following revised scope of works under the ISTS scheme viz. Eastern Region Expansion Scheme-XXX (ERES-XXX) was agreed for implementation with timeframe of 18 months from date of allocation, however, best efforts shall be made by licensee for early commissioning:
- (a) Installation of existing spare 132/66kV, 1x50MVA ICT (already stationed at Gangtok) as 3<sup>rd</sup> ICT at Gangtok (POWERGRID) S/s along with conversion of existing 132kV TBC bay as 132kV ICT bay for 3<sup>rd</sup> ICT and construction of new 66kV ICT bay in Hybrid/Outdoor GIS with suitable modification in the gantry structure of 66kV side.
  - (b) Construction of new 132kV TBC bay in Hybrid/Outdoor GIS.
- 5. Status of downstream 220kV or 132kV network by STUs from the various commissioned and under-construction ISTS substations in ER**
- 5.1. CTU informed that numbers of ISTS sub-stations have been commissioned and some are under construction for which the downstream system is being implemented by the STUs. Based on the information provided by the states, updated information on planned/under-construction downstream system is given at **Annexure-II**.
- 5.2. STUs were once again requested to provide the update prior to meeting itself so as to save time. All STUs agreed for the same.

**6. Status of 400kV substations being implemented by STUs in ER under intra-state schemes to be connected through ISTS**

- 6.1. CTU informed that various 400kV substations have been approved in the intra-state strengthening schemes in ER having interconnection with ISTS grid involving LILO of ISTS lines or direct connection to ISTS substations. Status of intra-state substations and associated lines as updated by STUs in the meeting is given at **Annexure-III**.
- 6.2. STUs were once again requested to provide the update prior to meeting itself so as to save time. All STUs agreed for the same.

**7. Status of space allocated at various ISTS substations to STUs for implementation of line bays under intra state system) for their intra state lines**

- 7.1. CTU informed that space at various ISTS substations have been allocated to STUs for creation of line bays for termination of their new intra-state lines. List of such ISTS substations as per available information is given at **Annexure-IV**. Status of the bays allocated at ISTS S/s as updated by STUs in the meeting is given at **Annexure-IV**.
- 7.2. STUs were once again requested to provide the update prior to meeting itself so as to save time. All STUs agreed for the same.

**8. Communication planning for downstream network connecting with ISTS network**

- 8.1. CTU informed that meter readings from several locations (mostly STU nodes) in each region are intermittent and having communication issues as the meters at the state nodes are not having secure & reliable communication links and are operational on public domain communication links like GPRS. Hence connectivity of such STU nodes shall be ensured on captive OPGW network for receiving the data successfully.
- 8.2. Further, for the reliable communication of SCADA data, connectivity of nodes should be planned on OPGW network. In this regard, minutes of meeting dated 16-09-2015 chaired by Secretary (Power), Govt of India on reliable communication and Data Acquisition System is also enclosed at **Annexure-V**.
- 8.3. In view of the above, while connecting STU downstream network with ISTS network, following needs to be ensured for reliable data communication:
- For connectivity of STU nodes by LILO of ISTS line, OPGW to be laid on LILO portion along with suitable Fiber Optic Terminal Equipment (FOTE - used for data communication using OPGW) at LILO station for integration with existing FOTE at ISTS nodes.
  - For connectivity of STU nodes to ISTS station through new transmission line, OPGW to be laid on the proposed line along with suitable FOTE at new STU stations.

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**Annexure-I****List of participants of 10<sup>th</sup> Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)**

Sl. No.	Name	Designation	Organization	Email id
1.	Sh. Rajesh Kumar	GM	CTU	rajeshkumar@powergrid.in
2.	Sh. Manish Ranjan Keshari	Manager	CTU	manish.keshari@powergrid.in
3.	Sh. Shyam Sunder Goyal	Manager	CTU	shyam.goyal@powergrid.in
4.	Sh. Anupam Kumar	Manager	CTU	i.anupamk@powergrid.in
5.	Sh. Kaushal Suman	Manager	CTU	k.suman@powergrid.in
6.	Sh. Abhilash Thakur	Engineer	CTU	abhilash.28@powergrid.in
7.	Sh. Amit Kumar	Engineer	CTU	emailamit0014@gmail.com
8.	Sh. P.P. Jena	EE	ERPC	ppjena.erpcc@gov.in
9.	Sh. Alikpantha De	EE	ERPC	alick.erpcc@gov.in
10.	Sh. Saugato Mondal	DGM	ERLDC	saugato@posoco.in
11.	Sh. Saurav Kr Sahay	Chief Manager	ERLDC	saurav.sahay@posoco.in
12.	Sh. Chandan Mallick	Manager	ERLDC	chandan.mallick@posoco.in
13.	Sh. Shabari Pramanick	Manager	ERLDC	shabari.pramanick@posoco.in
14.	Sh. Gautam Nayak	CE SLDC, WB	WBSLDC	ce.wbsldc@gmail.com
15.	Sh. Debashis Chaki	CE, CPD	WBSETCL	cpd.wbsetcl@gmail.com
16.	Sh. Subodh Kumar Datta	ED (System)	DVC	subodh.datta@dvc.gov.in
17.	Sh. Sandip pal	CE(SYSTEM)	DVC	sandip.pal@dvc.gov.in
18.	Sh. Swarup Kumar Pal	Sr. Div. Engg.	DVC	swarup.pal@dvc.gov.in
19.	Sh. S. K. Panigrahi	CGM, Corp. Planning	OPTCL	sgm.cp@optcl.co.in
20.	Sh. Ashok Kumar Samantaray	Consultant (GRIDCO)	GRIDCO	ashok.k.samantaray@gmail.com
21.	Sh. P K Das	CGM (PP)	GRIDCO	sgm.pp.@gridco.co.in
22.	Sh Chinmay Kumar Das		GRIDCO	
23.	Sh. Gagan Kumar	E. Ex. E. SLDC	BSPTCL	gagankmishra@gmail.com
24.	Sh. Ratan Kumar	CE (Project)	BSPTCL	ce.trans664@gmail.com
25.	Sh. Sunil Kr Gupta	ESE, SLDC	BSPTCL	sunil2008iitd@gmail.com
26.	Sh. Kumar Prasant	CE STU	BSPTCL	stubsptcl2019@gmail.com
27.	Ms. Renu Kumari	AEE SLDC	BSPTCL	jnv.renu801@gmail.com
28.	Sh. Deepak Kumar	CE	NBPDCL	cttettecom2.nbpdc@gmail.com
29.	Sh. Sudipta Mukherjee	ED (Gen)	HEL	sudipta.mukherjee@rpsg.in
30.	Sh. Chiranjiv Bhomi	GM	HEL	
31.	Sh. Sandip Pal	VP (SO)	CESC Limited	sandip.pal@rpsg.in

## Annexure-II

## Status of Downstream Transmission Network in ER

Sl. No.	ISTS S/s	State	Voltage ratio, Trans. Cap	Downstream Voltage level (kV)	Unutilised bays	Status of ISTS bay	STU lines for unutilised bays	Status of Lines	
								Date of Award	Completion schedule
1.	Chaibasa	Jharkhand	400/220kV, 2x315MVA	220	2	Existing bay	Chaibasa (POWERGRID) – Jadugoda (JUSNL) 220kV D/c		Will be taken up in future. No firm plan as of now.
2.	Daltonganj	Jharkhand	400/220/132kV, 2x315MVA+ 2x160MVA	132	2	Existing bay	Daltonganj (POWERGRID) – Chatarpur 132kV D/c	22-10-2019	Expected by 31-03-2023.
3.	Dhanbad	Jharkhand	400/220kV	220	4	Existing bay	LILO of 1 <sup>st</sup> circuit of 220kV Dumka – Govindpur D/c line at Dhanbad (23km)	Bid evaluation is in progress. Price bid opened. Additional funds are required, proposal sent to state govt. for approval	Expected by Dec 2023.
							LILO of 2 <sup>nd</sup> circuit of 220kV Dumka – Govindpur D/c line at Dhanbad		
4.	Keonjhar	Odisha	400/220kV, 2x315MVA	220	2	Existing bay	Keonjhar (POWERGRID) – Turumunga (OPTCL) 220kV D/c		Expected by Dec 2022.
5.	Subashgram	West Bengal	400/220kV, 3x315MVA	220	2	Existing bay	Subashgram (POWERGRID) – Baraipur 220kV D/c line		220kV Baraipur substation charged. 132kV downstream delayed due to RoW. Expected by Oct 2022.
6.	Rajarhat	West Bengal	400/220kV, 2x500MVA	220	2	Existing bay	Rajarhat (POWERGRID) – New Town AA2C 220kV D/c		Cable laying has completed. cable termination work is going

Sl. No.	ISTS S/s	State	Voltage ratio, Trans. Cap	Downstream Voltage level (kV)	Unutilised bays	Status of ISTS bay	STU lines for unutilised bays	Status of Lines	
								Date of Award	Completion schedule
									on which is expected by Sep 2022. Line would be charge upon completion of same. Substation is expected by Dec 2022.
7.	Sitamarhi (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	132	2	Existing bay	LILO of Benipatti - Pupri 132kV S/c at Sitamarhi (New)		Expected by Mar 2023
8.	Saharsa (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	132	2-ISTS (addln.4 by state)	Existing bay	Saharsa (New) - Saharsa 132kV D/c line formed by LILO of Saharsa - Banmankhi and Saharsa - Uda Kishanganj 132kV S/c line		04 nos. of bays are under construction by BSPTCL at Saharsa (New). Two bays are expected in Oct 2022, and balance two in Dec 2022.
9.	Banka	Bihar	400/220/132kV, 2x500MVA + 2x200 & 1x315MVA	220	2	Under Bidding	Banka (POWERGRID) – Goradih (Sabour New) 220kV D/c line	Funds tied up. Tender open on 30 <sup>th</sup> Aug	Expected by Mar '24

## Annexure-III

**Status of 400kV & 220kV substations being implemented by STUs in ER under intra-state schemes to be connected to ISTS**

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
<b>A Bihar (to be implemented by BSPTCL/BGCL)</b>				
<b>I</b>	<b>Bakhtiyarpur GIS</b>	400/220/132kV, 2x500MVA + 2x160MVA	26.11.2019	Progressively from Oct'22 to Dec'22.
a)	LILO of both circuits of Barh – Patna (PG) 400kV D/c (Quad) line-1 at Bakhtiyarpur 400 kV 2xD/C	400kV 2xD/c	26.11.2019	Line ready to be charged matching with Bakhtiyarpur S/s.
<b>ii</b>	<b>Chappra (New)</b>	400/220/132kV, 2x500MVA + 2x200MVA	Funds not yet tied up	SOR rates increased. Cabinet approval to be taken up.
a)	LILO of 400 kV Barh (NTPC) - Motihari (DMTCL) D/C (Quad) transmission line at Chappra	400kV 2xD/c	Funds not yet tied up	SOR rates increased. Cabinet approval to be taken up.
<b>B Odisha (to be implemented by OPTCL)</b>				
<b>I</b>	<b>Digapahandi</b>	400/220kV, 2x500MVA	Tendering activity to be taken up shortly along with Pandiabili-Digapahandi 400kV D/c line	2025-26
a)	Digapahandi – Therubali – Jeypore 400kV D/c line	400kV D/c	To be taken after tending of Digapahandi S/s	2025-26
<b>II</b>	<b>Therubali</b>	400kV switching station along with 420kV, 1x125MVAr bus reactor	Survey completed. Land schedule is under preparation	2026-27
<b>III</b>	<b>Bhadrak</b>	400/220kV, 2x500MVA	Tendering is in hold	2024-25

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
a)	LILO of Baripada – Duburi and Baripada – Pandiabili 400kV line sections at Bhadrak	400kV D/c	Tendering in progress	2024-25
<b>IV</b>	<b>Paradeep*</b>	400/220kV, 2x500MVA		24 months
a)	Paradeep – Duburi 400kV D/c line	400kV D/c	Line package awarded May'22 and substation package send to government for approval	24 months
<b>V</b>	<b>Paradeep*</b>	765/400kV, 2x1500MVA	Survey completed. Land schedule is under preparation	2026-27
a)	Angul (POWERGRID) – Paradeep (OPTCL) 765kV D/c line	765kV D/c	Survey completed. Land schedule is under preparation	2026-27
<b>VI</b>	<b>Begunia</b>	765/400kV, 2x1500MVA	Kept in abeyance	Kept in abeyance
a)	Angul – Begunia 765kV D/c line	765kV D/c	Kept in abeyance	Kept in abeyance
b)	LILO of Pandiabil – Digapahandi 400kV D/c line at Begunia	400kV D/c	Kept in abeyance	Kept in abeyance
<b>C</b>	<b>Jharkhand (to be implemented by JUSNL)</b>			
<b>I</b>	<b>Chandil (New)</b>	400/220kV, 2x500MVA	Bid opened on 13-07-2022. Technical Evaluation of entire scope has been started.	24 months
a)	PVUNL – Chandil 400kV D/c (Quad) line	400kV D/c (Quad)		
b)	Chandil – Chaibasa (POWERGRID) 400kV D/c (Quad) line	400kV D/c (Quad)		
c)	Chandil – Dhanbad 400kV D/c (Quad) line	400kV D/c (Quad)		
<b>II</b>	<b>Koderma</b>	400/220/132/33kV, 2x500MVA + 2x200MVA + 2x80MVA		
a)	PVUNL – Koderma 400kV D/c (Quad) line	400kV D/c (Quad)		
<b>III</b>	<b>Latehar</b>			

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
a)	Patratu – Latehar 400kV D/c line	400kV D/c	Forest Stage-I clearance is awaited.	Feb 2023
b)	Latehar – Chandwa (POWERGRID) 400kV D/c line	400kV D/c	All clearances have been obtained. Works for 20km is pending due to theft of line.	Dec 2022
<b>IV</b>	<b>Jasidih</b>	400/220kV, 2x500MVA	-	No firm plan now. To be taken up in future.
a)	Koderma (JUSNL) – Jasidih 400kV D/c (Quad) line	400kV D/c (Quad)	-	
b)	Jasidih – Dumka 400kV D/c (Quad) line	400kV D/c (Quad)	-	
<b>V</b>	<b>Mander</b>	400/220kV, 2x500MVA	-	
a)	LILO of Patratu – Ranchi (New) 400kV D/c line at Mander	400kV 2xD/c	-	
<b>VI</b>	<b>Dumka (New)</b>	400/220kV, 2x500MVA	-	
a)	Dumka (New) – Dhanbad (ISTS) 400kV D/c (Quad) line	400kV D/c (Quad)	-	
<b>D</b>	<b>West Bengal (to be implemented by WBSETCL)</b>			
<b>I</b>	<b>Laxmikantpur GIS<sup>#</sup></b>	400/132kV, 2x315MVA	Land identified. In process of acquisition. Expected by Dec 2024	
a)	LILO of Haldia – Subhasgram 400kV D/c line at Laxmikantpur	400kV D/c	-	Expected by Dec 2024
<b>II</b>	<b>Falakata</b>	220/132kV, 2x160MVA	Initial civil works have been started	Mar 2024
a)	LILO of Birpara – Alipurduar 220kV D/c line at Falakata substation	220kV 2xD/c		Mar 2024

*\* As per inputs from OPTCL: Paradeep 765/400kV S/s shall be established at a different location from the already under-construction Paradeep 400/220kV S/s, accordingly, 400kV 2xD/c line shall be established between two substations.*

*# The 400kV infeed to Laxmikantpur 400/132kV S/s is under discussion in the item no 3. Based on the deliberations, the lines would be updated, if required.*

## Annexure-IV

**Space allocated at various ISTS substations to STUs for implementation of line bays under intra state system for their intra state lines**

Sl. No.	Substation/ Location	Space for	Date of award of line and bays	Completion Schedule	Agreed in CMETS-ER
1.	Angul (POWERGRID)	2 nos. 765kV lines bays for termination of Angul (POWERGRID) – Paradeep 765kV D/c line (including suitable switchable line reactors)		Survey is going on. Expected by 2025-26	1 <sup>st</sup>
2.	Rourkela (POWERGRID)	2 No. 220kV lines bays for termination of Rourkela (POWERGRID) – Tarkera 220kV D/c (HTLS) line		Would be taken up after reconductoring of 1 <sup>st</sup> D/c line.	1 <sup>st</sup> & 7 <sup>th</sup>
3.	Keonjhar (POWERGRID)	2 No. 220kV lines bays for termination of Keonjhar (POWERGRID) – Tikarpada 220kV D/c line	NIT yet to be taken up	Expected by 2024-25	1 <sup>st</sup>
4.	Maithon (POWERGRID)	2 No. 220kV lines bays for implementation of Maithon (POWERGRID) – Asansol 220kV D/c line		Survey completed.	7 <sup>th</sup>

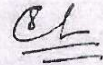
No.14/6/2015-Trans  
 Government of India  
 Ministry of Power  
 Shram Shakti Bhawan, Rafi Marg,  
 New Delhi-110001  
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Dated 16<sup>th</sup> September, 2015

Office Memorandum

Subject: Minutes of the meeting chaired by Secretary (Power), Govt. of India on Reliable Communication and Data Acquisition System upto 132 kV Sub Stations by PGCIL and below 132 kV level upto 33 kV level by CEA.

The undersigned is directed to forward herewith a copy of the minutes of meeting chaired by Secretary, Ministry of Power on 24.7.2015 on the subject cited above, for information and further necessary action.

  
 (S. Venkateshwarlu)  
 Under Secretary (Trans)  
 E-mail: [transdesk-mop@nic.in](mailto:transdesk-mop@nic.in)  
 Tele-fax: 23325242

To,  
 1. Chairperson, CEA, New Delhi  
 2. CMD, Power Grid Corporation of India Ltd. (PGCIL), Gurgaon (Haryana).

Copy to: PPSs to Secretary (Power)/JS (Trans)/Director (Trans), Ministry of Power, New Delhi.



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**Minutes of the meeting taken by Secretary (Power) on 24.7.2015 regarding Reliable Communication and Data Acquisition System for sub-stations of (i) upto 132 kV level; and (ii) below 132 kV and upto 33 kV.**

List of participants is at Annex-I.

2. Secretary (Power) initiated the discussions. The need for reliable communication at 33 kV, 66 kV and 132 kV substations was felt in the wake of devastation caused by Hudhud cyclone in AP in October, 2014. Ministry of Power had entrusted the work of upto 132 kV to PGCIL and below 132kV upto 33kV voltage level to CEA. Secretary (Power) asked CEA to present its point of view on providing reliable communication system for substations of below 132 kV and upto 33 kV.

3 (i) Chairperson, CEA initiated the presentation and informed that based on MOP's letter dated 28.1.2015, CEA had prepared a proposal/Scheme of V-SAT communication network at each 33kV and 66kV substation and broadband connectivity over existing copper telephone connections at the substations, wherever the same is available, with estimated cost of Rs. 2445 crore. Subsequently, the then Special Secretary, MOP advised CEA to modify the proposal in a way that primary connectivity should be optical fiber based communication, backed up by V-SAT connection at each 33kV & 66kV substation. The Scheme was prepared with estimated cost of Rs. 26,178 crore. However, CEA opined that such large expenditure may not be optimally utilized, as large bandwidth provided by optical fiber may remain unutilized.

(ii) CEA informed that cost of about Rs. 27,000 crore of the revised scheme covers laying of optical fiber of about 5 lakh km line length, connecting around 30,000 substations of 33kV & 66kV voltage level. It was stated that depending on requirement, different communication means e.g. Optical fiber, V-SAT, GPRS, leased telephone connection, MPLS-VPN connection, etc. may be required at 33kV & 66kV substations across the country. Therefore, instead of implementing one form of communication system across the country, actual requirement of communication system at different 33kV & 66kV substations of States/UTs be considered. Regarding grid management, it was informed that with the proposed availability of optical fiber at 132kV level, the power flow at outgoing 33kV feeders from 132kV substations can be monitored in real time. After detailed deliberations, it was decided that actual requirement of communication system at different 33kV & 66kV substations of States/UTs be considered by CEA. The State power utilities need to assess their communication requirements and CEA would collate all the requirements and inform MOP to decide further course of action within 2 months.

(Action : CEA, States/UTs)

(iii) Provision of reliable communication system at 33kV & 66kV substations across the country would be based on actual requirement of communication system at different 33kV & 66kV substations, as assessed by the States/UTs.

(Action : CEA, States/UTs)

4. As regards to Reliable Communication and Data Acquisition System for sub-stations of 132 kV level and above, JS(Trans) informed that Detailed Project Report

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10/7/15

has been prepared by PGCIL. The importance of reliable communication from sub-stations was highlighted at the level of 132 kV sub-stations for not only "grid management" but also for restoration of normalcy during emergencies situations arising due to natural disasters. A presentation was made by PGCIL and the following points emerged:

(i) PGCIL informed that around 1,09,313 kms of Fiber Optic(OPGW) network is envisaged in DPR for providing reliable communication from 3561 nos. sub-stations upto 132 kV level along with RTUs and DC Power Supply as per requirement at an estimated cost of Rs. 4.234 crore.

(ii) PGCIL further informed that around 40,000 kms of OPGW network has already been established by them under ULDC, Microwave Replacement and Fiber Optic Expansion Projects. Further, around 50,000 kms OPGW network is under implementation under various projects for data and voice communication for SCADA/EMS, PMU, WAMS applications. PGCIL suggested the implementation strategy for the project as proposed in DPR i.e. implementation of OPGW network by concerned State for their respective portion and PGCIL to execute the Central Sector portion. In both the cases, implementation needs to be completed within 36 months from the date of investment approval.

(Action : PGCIL, States/UTs)

(iii) For Reliable Communication upto 132 kV level, POWERGRID informed that OPGW based Fiber Optic Communication is most suitable communication for meeting the requirement of Power System Communication as OPGW replaces existing earthwire. Further, it uses available right of way, providing enormous bandwidth. As regards implementation strategy, it was agreed that methodology proposed by POWERGRID is acceptable. However, for few States having issues in taking up the OPGW network implementation, POWERGRID need to extend the technical support.

(Action : PGCIL, States/UTs)

(iv) Secretary (Power) advised that necessary action may be initiated for project approval and funding. It was decided that funding options through PSDF and Multilateral funding with funding from the States, may be explored.

(Action :MOP/ CEA / States)

(v) POWERGRID expressed the view that considering importance of reliable communication in various applications and difficulties in installation of OPGW under O&M stage, the provision of OPGW in place of one of the earthwire(s) should be kept in all the upcoming lines so that OPGW is installed during construction of line. The same was agreed upon and Secretary (Power) advised Chairperson, CEA to issue necessary guidelines in this regard urgently.

(Action : PGCIL, States/UTs)

5. The meeting ended with vote of thanks to the Chair.



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Date/time of the meeting: 24.7.2015 at 10.00 am  
Venue: Ministry of Power, Conference Room, Shram Shakti Bhawan,  
New Delhi-110001.

**List of Participants**

**Ministry of Power**

1. Shri Pradeep Kumar Pujari, Secretary (Power) - In the chair
2. Smt. Jyoti Arora, Joint Secretary (Trans)
3. Shri Ghanshyam Prasad, Director (Trans)
4. Shri S. Venkateshwarlu, Under Secretary (Trans)

**Central Electricity Authority (CEA)**

5. Shri Major Singh, Chairperson
6. Shri ShyamDhar Dubey, Member (PS)  
Email : [memberpscea@nic.in](mailto:memberpscea@nic.in)/[ceahpi@yahoo.com](mailto:ceahpi@yahoo.com)  
Mobile: 8527243555
7. Dr.Somit Das Gupta, Member (E&C)  
Email : [somit.d@nic.in](mailto:somit.d@nic.in)/Mobile: 9810172297
8. Shri Pankaj Batra, CE(RA)  
Mobile: 9350981062/ Email: [pan\\_batra@hotmail.com](mailto:pan_batra@hotmail.com)
9. Shri Naresh Bhandari, Director (PCD)  
Mobile: 9899061449/Email: [nbnareshbhandari@gmail.com](mailto:nbnareshbhandari@gmail.com)

**Power Grid Corporation of India Limited (PGCIL)**

10. Shri I.S.Jha, Director (Projects)  
Phone : 0124-2571730/Fax:0124-2571932
11. Shri Sunil Agrawal, GM (LD&C)  
Email : Mobile: 7042195068
12. Shri H.H. Sharan, Addl. GM (LD&C)  
Mobile: 9873549014/Email: [sharan@powergridindia.com](mailto:sharan@powergridindia.com)

**World Bank**

13. Ms. Mohua Mukherjee  
Mobile: 9810561075
14. Shri Rajendra Singh  
(When in Delhi) Mobile: 9968291293, Phone : +12022500504
15. Smt. KavitaSaraswat  
Mobile: 9811108572

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