



सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

Dated: 18th May, 2026

सेवा में/ To,

संलग्न सूची के अनुसार/ As per list attached

विषय: दूरसंचार, स्काडा और टेलीमेट्री उपसमिति की 30 वीं बैठक।**Subject: 30th meeting of Telecommunication, SCADA & Telemetry Sub Committee-reg.**

उत्तर क्षेत्रीय विद्युत समिति की दूरसंचार, स्काडा और टेलीमेट्री (टेस्ट) उप-समिति की 30 वीं बैठक दिनांक 10.04.2026 को 11:00 बजे **सम्मेलन कक्ष**, एन.आर.पी.सी, **नई दिल्ली** में आयोजित की गई। बैठक में कार्यवृत्त इस पत्र के साथ संलग्न है। यह उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट ([Northern Regional Power Committee](#)) पर भी उपलब्ध हैं।

30th meeting of Telecommunication, SCADA & Telemetry (TeST) Sub-committee of NRPC was held on 10.04.2026 at 11:00 am in conference room, NRPC, New Delhi. Minutes of the meeting are enclosed herewith. The same are available on NRPC website at [Northern Regional Power Committee](#).

भवदीय

(अंजुम परवेज)/ (Anzum Parwej)

अधीक्षण अभियंता /Superintending Engineer

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**Minutes of
30th Meeting of Telecommunication, SCADA & Telemetry (TeST) Sub- Committee**

1 Confirmation of Minutes

- 1.1 29th meeting of TeST sub-committee was held on 27.11.2025 and the minutes were issued on 31.12.2025.

Following amendments were requested by HPPTCL vide email dated 07.02.2026 and were agreed to:

Agenda	Minutes of 29th TeST meeting	Amendment requested
15. Latest Power maps (132 kV and above) and Fiber Optic maps of STU network (Agenda by CTU).	15.3. HPPTCL stated that they have OPGW map updated till 2023 and agreed to share the same.	15.3. HPPTCL stated that they have Power map updated till 2023 and agreed to share the same.

- 1.2 HPPTCL stated that they have power maps updated till 2023 and agreed to share the same.
 1.3 MS, NRPC, requested HPPTCL to update OPGW & power maps and share them with CTU at the earliest.
 1.4 POWERGRID representative suggested that SLDCs share the latest power maps with NRLDC, so for the time being, NRLDC may share the latest power maps available with them.
 1.5 NRLDC agreed to discuss with their System Operation Department and share latest power maps accordingly
 1.6 Following amendments were requested by NRLDC vide email dated 12.02.2026 and were agreed to:

Agenda	Minutes of 29th TeST meeting	Amendment requested
3. Redundant RTU Communication for Main / Backup RLDC (Agenda by NRLDC)	3. Decision of the forum: <ul style="list-style-type: none"> • NRLDC to provide a complete list of RTUs where SCADA data channels are not reporting in main and backup mode (1+1) with one main channel to RLDC and one backup channel to Backup RLDC, to respective entities. (Action: NRLDC)	3. Decision of the forum: <ul style="list-style-type: none"> • NRLDC to provide a complete list of RTUs where SCADA data channels are not reporting in main and backup mode (2+2) with one main & one standby channel to RLDC and one backup & one backup standby channel to Backup RLDC, to respective entities. (Action: NRLDC)

Decision of the forum:

- a. HPPTCL to share the available power maps updated till 2023 and update the OPGW & power maps and share them with CTU at the earliest.
- b. NRLDC to share the latest power maps available with them with CTU.
- c. Sub-committee accepted the amendments and confirmed the minutes.

2 Status of action taken on decisions of 29th TeST meeting of NRPC (Agenda by NRPC Secretariate)

Status of action taken on decisions of 29th TeST meeting and deliberation in meeting is attached as **Annexure - I**

3 Follow-up of issues from previous TeST Meetings- Status update (Agenda by NRPC Secretariate)

Status of action taken on decisions of 29th TeST meeting and deliberation in meeting is attached as **Annexure – II**

4 Persistent Telemetry Failure of Lucknow 400kV Substation reporting at NRLDC (Agenda by NRLDC)

- 4.1 NRLDC highlighted persistent telemetry issues at Lucknow 400 kV Substation despite upgradation to IEC-104 protocol, along with a continuous decline in availability. It was informed that the main gateway has been continuously down for more than a month.
- 4.2 Despite multiple follow-ups, emails, and letters, no significant improvement has been observed. NRLDC emphasized that this substation is critical for real-time drawal calculation of the UP control area.
- 4.3 UPSLDC representative also raised concerns regarding the persistent telemetry issue and informed the forum that data has been frozen for the last two days.
- 4.4 POWERGRID representative informed that earlier issues were observed with IEC-101 protocol, following which telemetry was upgraded to IEC-104. However, problems persist due to gateway issues, as gateways tend to hang and require frequent restarting. As a temporary measure, one gateway has been kept off to ensure relatively stable telemetry through the other, but issues still continue.
- 4.5 POWERGRID representative further informed that replacement of gateways is required for a permanent solution.
- 4.6 NRLDC representative highlighted that the control room is facing operational challenges in issuing necessary codes due to unreliable telemetry and indicated that, going forward, codes may not be issued for substations without reliable telemetry, except in emergency situations.
- 4.7 MS NRPC emphasized the criticality of the substation & expressed serious concern over the prolonged persistence of the issue and directed POWERGRID to resolve the telemetry issues at the earliest.
- 4.8 MS NRPC also suggested that Lucknow 400 kV Substation be considered for Communication System Audit in the current financial year.

Decision of the forum:

- a) POWERGRID was advised to resolve the persistent telemetry issues at Lucknow 400 kV Substation at the earliest, considering the criticality of the substation for real-time drawal calculation and grid operation. (Action : POWERGRID)

- b) Communication System Audit to be conducted at Lucknow 400 kV Substation.
(Action : NRPC Secretariate)

5 Communication Outage Planning (Agenda by NRPC)

- 5.1 NRPC representative apprised the forum about the Communication Outage Planning process initiated from October 2025 in accordance with the approved SOP and explained the monthly outage planning schedule.
- 5.2 NRPC representative informed that the first Communication Outage request was received from POWERGRID for February 2026. Accordingly, the first and second Communication Outage Planning Meetings were held on 27.01.2026 and 25.02.2026 for deliberation and approval of proposed outages for February and March 2026, respectively.
- 5.3 NRPC representative stated that during the meetings, it was observed that OPGW link outages generally arise due to diversion, crossings and diamond creation works and are often associated with approved transmission line outages in OCC meetings. Accordingly, it was deliberated that such outages may also be discussed as communication outages along with other proposed outages, in Communication Outage Planning Meetings.
- 5.4 NRPC representative further informed that the aforesaid matter was also discussed in the 240th OCC Meeting held on 17.02.2026 under Agenda Item A.15 in line with Clause 7.3(iv) of CERC Communication Regulations, 2017. It was decided that associated OPGW link outages may be furnished in the remarks section while availing transmission outages, until such time, as provision for inclusion of communication outages is incorporated in the OMS portal. In this regard, POWERGRID representative informed that the process has already been adopted and such linked communication outages are being mentioned in the remarks section of OMS portal.
- 5.5 NRPC representative also informed that SOP provision regarding emergency communication outages was discussed, wherein Entities/Users/Owners may directly apply to NRLDC/NR-NMT with intimation to NRPC on D-2 basis.
- 5.6 MS, NRPC advised the members to actively participate in the Communication Outage Planning process and submit outage data in a timely manner to ensure effective implementation of the mechanism as mandated under CERC Regulations.
- 5.7 MS, NRPC also advised to take up the matter in upcoming NRPC and TCC for sensitization of members.

Decision of the forum:

- a) Members to furnish details of OPGW link outages in the remarks section while availing transmission outages. (Action : All entities as mentioned in SOP)
- b) Members to actively participate in the Communication Outage Planning process and submit outage data in a timely manner to ensure effective implementation of the mechanism under CERC Regulations. (Action : All entities as mentioned in SOP)
- c) NRPC Secretariate to take up the matter in upcoming TCC and NRPC meeting.
(Action : NRPC Secretariate)

6 Database for Communication Outage Planning (Agenda by NRPC)

- 6.1 NRPC representative apprised the forum about the comprehensive database of communication equipments and links received from NR-NMT.
- 6.2 NRPC representative mentioned that during the Communication Outage Planning Meetings, it was observed that in some cases the nomenclature of link owner/asset was incorrect. Therefore, the communication equipments and links in the database are required to be verified by the respective owners, i.e. STUs and TSPs.
- 6.3 It was informed that the database shall be circulated to the concerned STU and TSP personnel through email for verification.
- 6.4 MS. NRPC advised STUs and TSPs to verify the database and provide necessary corrections/updates.

Decision of the forum:

- Database of communication equipments and links to be circulated to STUs and TSPs for verification. (Action : NRPC Secretariate)
- STUs and TSPs were advised to verify the details of communication equipments and links in the database and provide necessary corrections/updates for preparation of a comprehensive database for Communication Outage Planning. (Action : All STUs and TSPs)

7 Communication System Audit (Agenda by NRPC)

- 7.1 NRPC representative apprised the forum that, as decided in the meetings of the Communication Audit Sub-Group, communication system audits for 7 sites were conducted during FY 2025–26. It was further informed that compliance reports from Meerut, Tehri PSP, and NTPC Dadri are still awaited.
- 7.2 POWERGRID and THDC informed that they have sent the compliance report. NTPC Dadri also submitted their compliance report.
- 7.3 MS NRPC emphasized the importance of timely submission of compliance reports and advised concerned entities to close the observations raised during the communication audits at the earliest.
- 7.4 NRLDC representative informed that since Communication Audit was initiated for the first time in the Northern Region, ISTS substations were taken up during FY 2025–26. It was further informed that Intra-State Substations will also be included in the current financial year.
- 7.5 NRLDC suggested that SLDCs may identify substations/plants under their control area for inclusion in future audits, which can be discussed in upcoming Communication Audit Sub-Group meetings.
- 7.6 MS, NRPC advised states to identify and propose suitable sites in the Communication Audit Sub-Group meetings, noting that all States are represented in the Sub-Group. It was also mentioned that the Sub-Group may finalize additional sites as deemed appropriate.

Decision of the forum:

- a) SLDCs to identify and propose suitable intra-state substations/plants in the Communication Audit Sub-Group meeting for inclusion in future audits.

(Action : SLDCs)

8 Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region (Agenda by CTU)

- 8.1 CTU Representative apprised the agenda for OPGW installation on the existing lines of ISTS in Northern Region. As per the CEA letter dtd. 22.05.2024, all lines 110 kV and above shall have Optical Ground Wire along with necessary terminal equipment for speech transmission, line protection, and data channels. As per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 primary path for tele-protection shall be on point-to-point Optical Ground Wire and alternative path shall be either on Power Line Carrier Communication or predefined physically diversified Optical Ground Wire paths
- 8.2 CTU informed that scheme was in principle approved in 55th TCC/ 80th NRPC meeting held on 17.07.2025/ 18.07.2025. Thereafter comprehensive scheme was deliberated in 9th and 10th CPM of NR held on 19.08.2025 and 31.12.2025. Further additional links were provided by POWERGRID vide mail dtd 27.03.2026 for inclusion in the comprehensive scheme which were discussed in online meeting held on 06.04.2026 amongst CTU, POWERGRID and STUs.
- 8.3 Summary of scheme as per deliberation in the above meetings and inputs received from stakeholders is given below:

ISTS

S. No	TSP	OPGW (Km)	FOTE (Nos.)	Estimated Cost (Cr.)
1	POWERGRID	5392.33	68	342.265
2	POWERLINK	856.3	0	47.09
3	NRSS XXXI (B) Transmission Ltd	149	0	8.195
4	PKTCL	66.381	0	3.65
Grand Total		6464	68	401.2 (approx.)

BBMB/STU

S. No	Utility	OPGW (Km)	FOTE (Nos.)	Cost (Cr.)
1	BBMB	576.2	3	Through BBMB/STU Schemes
2	RRVNL	124.61	6	
3	UPPTCL	221.736	9	
4	PTCUL	113.54	1	
Grand Total		1036	19	

- 8.4 All the TSPs and STUs have confirmed the length, other system details and ownership as considered in the said scheme and same shall be put up for approval in NRPC.
- 8.5 CEA PCD stated that as per CEA letter dtd. 22.05.2024, all lines 110 kV and above shall have Optical Ground Wire along with necessary terminal equipment for speech transmission, line protection, and data channels and also as per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 primary path for tele-protection shall be on point-to-point Optical Ground Wire and alternative path shall be either on Power Line Carrier Communication or predefined physically diversified Optical

- Ground Wire paths. All STUs must lay OPGW on the transmission lines of 110 kV and above as per regulation for grid operations and its stability.
- 8.6 CTU informed that implementation timeframe for ISTS scheme is considered as 36 months (considering hilly terrain) and FOTE under ISTS scheme for other TSPs links are also under the scope of POWERGRID as end stations ownership is of POWERGRID.
 - 8.7 In the meeting, implementation methodology was discussed for mixed ownership of ISTS and STU lines and it was finalized that for ISTS portion of scheme, respective TSP to implement their scope and STUs portion scheme to be implemented by respective utilities under their schemes for their portion in matching time frame of ISTS scheme.
 - 8.8 Implementation of BBMB portion was not concluded in the 30th TeST meeting because BBMB representative informed that they need to confirm from their management regarding work under their scope. NRPC asked BBMB to confirm from their management and inform in the TCC / NRPC meeting.
 - 8.9 POWERLINK requested POWERGRID for laying OPGW on POWERGRID portion as done in the Eastern region scheme. POWERGRID agreed to the proposal of POWERLINK for installation of OPGW on the complete transmission lines by POWERLINK where mixed ownership of POWERLINK and POWERGRID.
 - 8.10 The finalized detailed scheme for Installation of OPGW & associated communication systems on the existing lines of ISTS is attached at **Appendix-I**. STUs scope is also identified and attached at **Appendix-II**.
 - 8.11 Members approved the scheme and recommended for upcoming TCC and NRPC Meetings. However, since implementation of BBMB portion was not concluded in the 30th TeST meeting, it was decided to be taken up in upcoming TCC and NRPC Meetings.
 - 8.12 Accordingly, Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region” was deliberated in 57th TCC and 82nd NRPC held on 17th and 18th April, 2026 wherein it was approved by forum.

Decision of the forum:

- a) Forum approved the “Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region” and agreed for put up in 57th TCC and 82nd NRPC meeting.
- b) Accordingly, respective system owners i.e., TSPs and STUs to implement the proposed scheme.
- c) Implementation of BBMB portion was not concluded in the 30th TeST meeting, it was decided to be taken up in in 57th TCC and 82nd NRPC meeting.

9 Upgradation of FOTE at ISTS Locations due to Bandwidth congestion in Northern Region (Agenda by CTU)

- 9.1 CTU explained the agenda and scheme that NMT brought out bandwidth congestion in some of the FOTE of NR which requires upgradation/replacement in 27th and 28th TeST meeting held on 21.04.2025 and 23.07.2025 respectively. This agenda was deliberated in 10th CPM of NR held on 31.12.2025. CTU has studied these nodes for bandwidth congestion and summary of these nodes showing bandwidth utilization is attached at Annexure-VII of agenda. Bandwidth congestion of some links as seen from UNMS is also attached at Annexure-VIII of agenda. Considering critical grid operations, these FOTES experiencing high bandwidth congestion and may be upgraded/replaced.
- 9.2 CTU informed that the FOTE locations which are already covered in the Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region has been removed from the FOTE upgradation scheme to optimize the cost & quantity.

- 9.3 During the deliberation POWERGRID suggested to take FOTE (STM-64) at Neemrana to complete link. Forum agreed to the same.
- 9.4 Detailed scheme along with list of nodes where upgradation of FOTE is considered is attached at **Appendix-III**.
- 9.5 Accordingly, scheme for upgradation of FOTE at ISTS Locations due to Bandwidth congestion in Northern Region was deliberated in 57th TCC and 82nd NRPC held on 17th and 18th April, 2026 wherein it was approved by forum.

Decision of the forum:

- a) One FOTE (STM-64) is added for Neemrana S/s. Forum agreed with the scheme for upgradation of FOTE at ISTS Locations due to Bandwidth congestion in Northern Region to be put up in 57th TCC and 82nd NRPC meeting.

(Action: CTU)

10 Completion Certificate of Successful Commissioning of ISTS Communication Elements (Agenda by CTU)

- 10.1 CTU explained the agenda that Various Communication schemes for ISTS network are being prepared by CTU which requires information of already commissioned communication elements for optimised and timely planning of ISTS Communication System.
- 10.2 CTU requested NRLDC to provide a copy of Completion Certificate of Successful Commissioning of ISTS Communication Elements from Jan'26 onwards to CTU for information and database updating purpose.
- 10.3 NRLDC agreed to provide a copy of Completion Certificate of Successful Commissioning of ISTS Communication Elements from Jan'26 onwards to CTU.

Decision of the forum:

NRLDC to provide a copy of Completion Certificate of Successful Commissioning of ISTS Communication Elements from Jan'26 onwards to CTU.

(Action : NRLDC)

11 Replacement of Fiberhome make Communication Equipment (Agenda by POWERGRID)

- 11.1 POWERGRID apprised that Fiberhome make communication equipment was installed by POWERGRID during 2012–13 and its useful life has already been completed. POWERGRID has informed that Fiberhome make communication equipment has been replaced at POWERGRID sites and network has been upgraded with additional / redundant communication equipment. It was further informed that the AMC had been extended for one year in line with the 27th meeting and the same is valid up to October 2026.
- 11.2 POWERGRID stated that the communication equipment of UPPTCL, PSTCL, RRVPNL, BBMB and PTCUL is still connected to the POWERGRID system, due to which POWERGRID is unable to fully replace its equipment, as data of these States is being routed through POWERGRID equipment to their respective SLDCs. POWERGRID further informed that the AMC cost is more than Rs. 2 crore and requested the States to replace their equipment at the earliest.

- 11.3 MS, NRPC enquired about the status of replacement from the concerned constituents.
- 11.4 UPPTCL informed that procurement and installation of the equipment has been completed and only shifting of data to the new system remains, which is expected to be completed by June 2026. UPPTCL further stated that there would be no requirement for further extension of AMC.
- 11.5 PSTCL informed that out of 39 sites, equipment at 29 sites has already been replaced and the remaining 10 sites are expected to be completed within six months.
- 11.6 RRVPNL and BBMB were requested to complete the replacement work by September 2026.
- 11.7 PTCUL informed that the replacement work has been included under its Reliable Communication Package.
- 11.8 work has been included under its Reliable Communication Package.
- 11.9 **Decision of the forum:**
UPPTCL, PSTCL, RRVPNL, BBMB and PTCUL to adhere with the timelines and expedite replacement of Fiberhome equipments.
(Action : UPPTCL, PSTCL, RRVPNL, BBMB and PTCUL)

12 Scope of OPGW Supply & installation for LILO portion at Parbati-III under the scheme approved in 20th NCT (Agenda by POWERGRID)

- 12.1 POWERGRID informed that the LILO portion at Parbati-III (2.23kms) shall be completed by them.
- 12.2 MS, NRPC mentioned that the matter is linked with OPGW installation for Parbati-II and Parbati-III stations and therefore needs to be completed on priority within matching timelines.
- 12.3 NHPC also raised concern regarding delay in the commissioning of OPGW Communication Network by POWERGRID/INDIGRID as it is affecting Commissioning of Line Differential Protection and AGC System of Parbati Complex.
- 12.4 It was noted that IndiGrid has indicated a timeline of end of June 2026. Accordingly, POWERGRID was advised to complete the work by June 2026, preferably by including it under an ongoing project.
- 12.5 MS, NRPC advised both IndiGrid and POWERGRID to strictly adhere to the timeline.
- 12.6 POWERGRID further informed that the FOTE equipment at Sainj was to be installed by HPPTCL, as decided in the 72nd NRPC Meeting. However, they are in discussion with POWERGRID for supply and installation of OPGW at LILO portion and communication equipment at Sainj since June' 2024, BDD dept. of POWERGRID has raised some payment issue for making design and estimate with HPPTCL, which they have not reverted back. POWERGRID stated that HPPTCL needs to take a decision in the matter and get the work implemented by their own or if HPPTCL still wants this works to be carried out through POWERGRID , then timely signing of MOU and deposit of payment may be done. In the

meantime, POWERGRID requested Indigrid to create joint box at LILO point and POWERGRID will connect Parbati NHPC plants directly to avoid further delay and once HPPTCL will lay OPGW and install communication equipment, same will be optically interlinked.

12.7 MS, NRPC stated that HPPTCL needs to complete the installation of FOTE equipment within matching timelines corresponding to the works being carried out by POWERGRID and IndiGrid. If required, HPPTCL to co-ordinate with HPPCL and ensure timely commissioning.

Decision of the forum:

- a) POWERGRID to complete the LILO portion at Parbati-III (2.23kms) by June 2026
(Action: POWERGRID)
- b) INDIGRID to complete the their portion of OPGW by June 2026
(Action: Indigrid)
- c) HPPTCL/HPPCL to complete installation of equipment at Sainj by June 2026
(Action: HPPTCL/ HPPCL)

13 Selection of Peak for OPGW laying under multi-circuit section (i.e. TN-01 to TN-15) of 400 kV M/C Kurukshetra–Dhanansu/Nakodar Transmission Line (Agenda by POWERGRID)

13.1 POWERGRID apprised that under Communication Schemes as approved under 11th NCT, OPGW laying works on 400 kV Kurukshetra–Jalandhar Line is envisaged.

13.2 It may be noted that spans from TN-02 to TN-15 are multi-circuit towers (shared with 400kV Kurukshetra–Jind CKT-I & II) and there is an existing OPGW on Kurukshetra–Jind CKT-I (top) / Kurukshetra-Jalandhar/ (LILO at Dhananshu) CKT-I (bottom) side peak (Towers 02– 15) and earthwire is on Kurukshetra–Jind CKT-II (top) / Kurukshetra-Jalandhar/Nakodar CKT-II (bottom) side peak.

13.3 Accordingly, OPGW laying works have to be carried out on the side of Kurukshetra–Jind CKT-II (Top) / Kurukshetra–Jalandhar (LILO at Nakodar) CKT-II (Bottom) for OPGW drum no. 01 (Kurukshetra Gantry to TN-12) and drum no. 02 (TN-12 to TN-24).

13.4 POWERGRID requested that in view of above-mentioned availability of earthwire peak over multi-circuit towers and considering the technical feasibility, OPGW laying may be considered on the peak of Kurukshetra–Jind CKT-II (Top) / Kurukshetra–Jalandhar/Nakodar CKT-II (Bottom) side.

13.5 POWERGRID stated that although the approved scheme pertains to the 400 kV Kurukshetra–Jalandhar line, availability and non-auto/shutdown may be considered for Kurukshetra–Jind CKT-II / Kurukshetra–Jalandhar–Nakodar CKT-II lines during execution of OPGW installation work under the approved scheme.

13.6 Forum agreed

Decision of the forum:

Availability and non-auto/shutdown may be considered for Kurukshetra–Jind CKT-II / Kurukshetra–Jalandhar–Nakodar CKT-II lines during execution of OPGW installation work of OPGW laying works on 400 kV Kurukshetra–Jalandhar Line.

14 Issues being faced by NMT Team at UNMS Control Centre (Agenda by POWERGRID)

S.No.	Issue/Challenge	Details/Remarks	Action Required	Discussions
1	Nodal Officer Nomination	Need for a single point of contact from each State/IPPs/ISTS for coordination and resolution of issues	States/IPP/ISTS to nominate nodal officers (DTL/UP/HP/RV/PNL have shared nodal persons)	States/IPP/ISTS to nominate nodal officers NRPC Secretariate to write letter in this regard.
2	Lack of Updated Network Details of State Constituents	During the initial UNMS implementation, EMS/Node integration was carried out based on the information available at that time. Since then, additional Forte systems/equipment may have been added to the state networks. Therefore, a revised state-wise list of Nodes/EMS is required to enable their integration into UNMS.	States to provide updated equipment/node data.	States to provide updated equipment/node data. NRPC Secretariate to write letter in this regard.
3	JKPTCL Communication System Integration	Temporary setup (laptop with NMS) is unreliable and often goes offline.	Permanent integration solution is needed.	POWERGRID is floating tender to resolve this issue. Expected completion is 4-5 months
4	Access Issue at PTCUL Kashipur	In line with approved maintenance philosophy for UNMS system, UNMS engineers have been deployed at each SLDC to operate and manage the UNMS system. Engineers are available and working at all SLDC locations, however there are challenges are being faced at Kashipur (PTCUL), for access and work permissions to operate the UNMS console.	Gate pass and work permissions to UNMS engineer for Operation and maintenance of UNMS System is to be provided	PTCUL informed that there is space constraint for their own officers also. NMT stated that furniture has also been provided in UNMS. He further stated that only a small space needs to be given to engineers MS, NRPC asked PTCUL to provide space to POWERGRID so that their engineers may manage UNMS system from there.

Decision of the forum:

- a) States/IPP/ISTS to nominate nodal officers (Action: States/IPP/ISTS)
- b) States to provide updated network Details of States (Action: States)
- c) POWERGRID to ensure integration of JKPTCL Communication System with UNMS within 4-5 months (Action : POWERGRID)
- d) PTCUL to provide space and work permissions to POWERGRID at PTCUL Kashipur (Action: PTUCL)

15 Extension of the ULDC -II AMC (Agenda by UPSLDC)

Discussed in Agenda 16

16 Delay in Execution of ULDC Phase-III Project (Agenda by PBSLDC)

16.1 Agenda items regarding ULDC Phase-III were taken up together for deliberation.

- 16.2 Representative from UPSLDC stated that consent for extension of AMC for a period of 6 months had already been provided; however, the revised timeline for commissioning of ULDC Phase-III has not yet been communicated. It was highlighted that due to the delay in finalizing the AMC extension, the associated costs have increased considerably.
- 16.3 POWERGRID representative informed that all constituents were advised to plan for a 6-month extension under all possible scenarios. He further stated that efforts are being made to complete the project within this timeframe.
- 16.4 He further informed that FAT, which commenced in July and involved around 800 test cases, was expected to be completed within one month but instead took nearly six months. Further, M/s GE is currently the only agency with adequately trained manpower capable of executing the work independently.
- 16.5 POWERGRID informed that first control centre of ULDC Phase-III has been commissioned at Damodar Valley Corporation (DVC) in Eastern Region, and current focus is on completion of works at DTL, HVPNL, Himachal, and PSTCL. It was targeted to complete three control centers by March; however, delays have occurred due to multiple technical issues. At BBMB also, commissioning could not be completed as planned due to technical challenges, and it was observed that after resolving issues, GE is redeploying manpower.
- 16.6 It was also informed that a meeting was held with M/s GE and M/s Siemens, wherein it was agreed to complete the commissioning activities within six months. At DTL and Haryana locations, the system has been partially commissioned, with communication links reporting in listening mode; however, full functionality required for parallel operation is yet to be achieved.
- 16.7 Representative from UP further informed that out of a total of 1061 RTUs, only 10 have been completed, around 70 have started reporting, while work has not yet commenced for 101 RTUs. Material also has not been dispatched. Clarification was also sought regarding applicability of penalty provisions.
- 16.8 MS, NRPC advised POWERGRID to communicate clear and firm timelines for completion of activities to all constituents on a constituent-wise/state basis.
- 16.9 POWERGRID clarified as per the contractual provisions, penalty shall be levied on account of delay attributable to M/s GE and same shall be dealt with separately as per the completion of works. He informed that discussions at top management level with GE are underway, and a firm timeline is expected to be communicated to all states shortly. He further mentioned that consent for AMC extension has been received from all states except Haryana.
- 16.10 MS, NRPC emphasized that in view of the challenges being faced by the constituents at multiple levels, the commissioning activities should be expedited and firm timelines should be communicated at the earliest. She further advised that weekly review meetings may be conducted with M/s GE and all concerned stakeholders to closely monitor progress and resolve issues in a time-bound manner.

Decision of the forum:

- a) POWERGRID to **expedite all pending commissioning activities of ULDC Phase-III** in a time-bound manner to ensure early operationalization of the system.
(Action : POWERGRID)
- b) POWERGRID to **communicate clear and firm timelines for completion of activities to all constituents on a constituent-wise basis**, and the same timelines shall also be shared with M/s GE to ensure alignment among all stakeholders.
(Action : POWERGRID)

- c) Regular **weekly review meetings** to be conducted by POWERGRID with M/s GE and all concerned constituents to closely monitor progress, address bottlenecks, and ensure adherence to the agreed timelines

(Action : POWERGRID)

- d) POWERGRID to **expedite extension of the AMC for existing SIEMENS SCADA system**, as requested by constituents, to ensure continuity of present SCADA system until the new system is fully commissioned.

(Action : POWERGRID)

- e) HVPNL to confirm requirement of extension of AMC of ULDC Phase-II, to POWERGRID.

(Action : HVPNL)

17 Regarding information in respect of ULDC Phase-III scheme (Agenda by BBMB)

- 17.1 As per Minutes of 29th TeST Meeting, Agenda No. 26. wherein, POWERGRID informed that action has already been taken up to meet contractual compliances on Cyber Security. All approved documents have been shared with SLDCs. Cyber security related tests has been conducted at GE factory and Audit report and their compliance report shall be shared with all states.

Decision of the forum:

Cyber security Audit reports and their compliance to be shared with all states

(Action : POWERGRID)

18 Regarding Extension of AMC for ULDC Phase-II and Expediting Commissioning Activities of ULDC Phase-III (Agenda by HVPNL)

Discussed in Agenda 16

19 Delivery of pending Hardware (Amended) in ULDC Phase-III (Agenda by HVPNL)

- 19.1 HVPNL apprised that amended quantities under ULDC Phase-III conveyed to PowerGrid in August 2024 in respect of HVPNL have still not been delivered by M/s GE, nor has any delivery timeline been provided.
- 19.2 POWERGRID enquired which items have still not been delivered. HVPNL informed that DCPC has not been received which is critical hardware. POWERGRID mentioned that it will be delivered within this month.

Decision of the forum:

POWERGRID to ensure delivery of pending hardware by April end.

(Action: POWERGRID)

20 Regarding RTU and SIC panels delivered at BBMB stations under ULDC Phase-III Scheme (Agenda by BBMB)

- 20.1 BBMB apprised regarding RTU and SIC panels delivered at BBMB stations under ULDC Phase-III Scheme.
- 20.2 POWERGRID informed that an agreement has been reached with GE and BBMB and matter has been resolved.

Decision of the forum:

Forum agreed to close the agenda item

21 Regarding implementation of URTDSM Phase-II (Agenda by BBMB)

- 21.1 POWERGRID mentioned that URTDSM Phase -II is being implemented for ISTS/ central sector only as decided in 16th NPC meeting.
- 21.2 POWERGRID further informed that they are not considering any provisions for States and BBMB, such as Remote Console or PDC. He further enquired from BBMB regarding the extent of utilization of the URTDSM Phase-II system, including the number of PMUs being reported and the overall usage of the system. He stated that BBMB may propose upgradation in the next NRPC meeting. He further mentioned that if BBMB requires full-fledged upgradation, POWERGRID may undertake the same, with the associated cost to be borne by BBMB.
- 21.3 BBMB enquired about the existing equipment at BBMB stations. POWERGRID informed that AMC of existing system is till Dec' 2026 and POWERGRID may further extend as per contractual provisions for 2 more years.
- 21.4 PSTCL mentioned that new PMUs are proposed at 15-20 locations of PSTCL in line with regulatory requirements. He further enquired about AMC of these new PMUS, whether their AMCs will also be extended and their financial and technical aspects. POWERGRID mentioned that integration of additional PMUs at states are already covered in the AMC.
- 21.5 POWERGRID mentioned that upgradation of state PDCs is very important. For present, new PMUs may be integrated with the existing PDCs; however, in the long run, upgradation of the systems by the states would be required due to obsolescence issues. POWERGRID further requested all State SLDCs to deliberate on the upgradation of their PDCs and communicate their requirements so that the same may be included in the project. Regarding AMC, POWERGRID informed that extension would be available for two years. However, several end-of-life and end-of-support issues also exist, which can only be resolved through system upgradation.

Decision of the forum:

Members noted

AA1 Allocation of fiber pairs from OPGW laid on 220kV Kashang-Wangtoo T/L of HPPTCL for communication requirements of Tidong HEP (Agenda by HPPTCL)

- 1.1 HPPTCL apprised the agenda and enquired whether allocation of fibers by CTU/STU is required in this case. AD, CEA clarified that there is no requirement for allocation, as fiber sharing can be undertaken in accordance with the Fiber Sharing Guidelines.
- 1.2 POWERGRID clarified that this link was installed under ULDC scheme and cost recovery is being done through CERC tariff mechanism. However it is not maintaining the OPGW and concerned State utility is maintaining the same.
- 1.3 HPPTCL enquired HPSEB regarding the fiber sharing. HPSEB mentioned that they had not received any prior intimation for sharing of fibers. However, HPSEB agreed to allow sharing of six fibers. HPPTCL enquired if they can share four fibers only instead of six.
- 1.4 AD, CEA replied that if there is shortage of fibers then 4 may be used however, to make the system robust and as per guidelines 6 fibers are to be shared.

- 1.5 MS, NRPC also mentioned that 6 fibers are essential as per fiber sharing guidelines.

Decision of the forum:

HPSEB/ HPPTCL to share 6 fibers with Tidong HEP. However, if there is a shortage of fibers, then 4 fibers may be shared.

(Action : HPPTCL/ HPSEB)

AA2 Implementation of Backup Backup Control regarding. (Agenda by BBMB)

- 2.1 BBMB apprised that some of the channels of RTUs at BBMB stations are not reporting at the Backup Control Centre of Punjab State Transmission Corporation Limited, Patiala.
- 2.2 POWERGRID mentioned that these issues had not been communicated earlier. He further stated that AMC is already in place for the concerned RTUs. POWERGRID further mentioned that BBMB's main control centre is at Chandigarh, while the backup control centre is at Patiala, and the issue may be related to communication or RTU-related problems. It was informed that such issues may be resolved with the assistance of the AMC team available at the control centre. POWERGRID further stated that all the reported cases would require detailed analysis, and necessary action would be taken accordingly.

Decision of the forum:

Members noted

AA3 Implementation of Backup methodology with Backup Control Centre of NRLDC Regarding (Agenda by BBMB)

- 3.1 BBMB enquired that whether connectivity of BBMB Main Control Centre, Chandigarh and PSTCL Backup Control Centre, Patiala with NERLDC, Guwahati (Backup Control Centre of NRLDC) is established.
- 3.2 NRLDC replied that presently NRLDC backup control center is in Kolkata and both BBMB control centers (Main and Backup) are reporting to it. When NERLDC, Guwahati Control Centers be commissioned, connectivity will be established to both control centers of BBMB.

Decision of the forum:

Members noted

AA4 Persistent and Inordinate Delay in Completion of OPGW Communication Network by POWERGRID/INDIGRID Affecting Commissioning of Line Differential Protection and AGC System of Parbati Complex (Agenda by NHPC)

- 4.1 Already discussed in Agenda 12.

AA5 Challenges in execution of VOIP system upgradation (PAN India Single Package). (Agenda by POWERGRID)

- 5.1 POWERGRID apprised that project for upgradation of existing VOIP system is being implemented by POWERGRID on PAN India basis under single package to maintain the system uniformly across the region. Project is being executed through M/s Orange Business Services India Technology Private Limited with contractual time schedule of 14 month i.e. up to Feb'2027.
- 5.2 POWERGRID further mentioned that under the said package around 9000 nos. of remote sub-station locations are also envisaged for Pan India based on the CTUIL's BOQ for estimate and project approval, however site list and site addresses for remote locations are

not available, which may cause delay in the survey, supply and subsequently installation works at these sites.

- 5.3 CTU mentioned that location was provided to them by RLDCs and SLDCs. RLDCs can provide central sector data and SLDCs can provide state sector data. He further mentioned that hotline communication is grid requirement, so RLDCs and SLDCs may provide requisite information to POWERGRID. NRLDC mentioned that they have provided data for ISTS stations of Northern Region to POWERGRID, however they will re-verify the data and again send the information to POWERGRID and CTUIL.
- 5.4 POWERGRID further requested CTU to provide statewide breakup of locations, so that POWERGRID may further coordinate with SLDCs/states for confirmation.

Decision of the forum:

- a) NRLDC and SLDCs to provide requisite data for central sector and state sector respectively

(Action : NRLDC and SLDCs)

- b) CTU to provide statewide breakup of locations to POWERGRID

(Action : CTU)

**AA6 Site readiness for Commissioning of SCADA/EMS System (ULDC Phase-III)
(Agenda by POWERGRID)**

- 6.1 POWERGRID informed that SCADA/EMS Upgradation Project (ULDC Phase-III) for Northern Region SLDCs and RLDC is being executed by them through M/s GE Vernova. Under the said package, FAT has been completed for all Equipment which was envisaged in original contract. Materials have also been delivered at all Control centre, installation and commissioning activities are going on full swing, however certain issues are being faced at NRLDC, SLDCs for commissioning of SCADA System and NRLDC and constituents are requested to kindly support to resolve the space related issues on priority.
- 6.2 NRLDC, New Delhi: Space is not available for installation of Sever Panel which may further delay the entire project as final testing will be done on NRLDC system and all associated SLDCs and Backup SLDCs system. Dismantling of existing SCADA system (back up of SR) then shifting and recommissioning is required which may take another 30-45day time minimum, then only new GE SCADA system will be installed and ICCP testing with SLDCs can be started.
- 6.3 **DTL, Bamnauli (Backup control centre):** POWERGRID informed that building renovation works are still not completed at Bamnauli, no power supply source is available at site, DTL to provide power supply source for powering up of UPS, Communication equipment at Back up SLDC control centre. New XLPE cable need to be laid from nearby Bamnauli sub-station building to SLDC building, DTL informed that cable laying and their connectivity shall be completed by end of April' 2026. POWERGRID further mentioned that centralized air conditioning has been installed in the Control Centre, Server Room, and UPS/ACDB Room, however, it is not yet to be operationalised, further, location for DG set is still not finalised by DTL even after multiple visits by GE team.
- 6.4 **JKPTCL, Gladani (Jammu):** POWERGRID informed that civil works are going on at main control centre and presently supplied control centre hardware materials and VPS, etc are stored in GE's rented warehouse which was delivered three months back at Jammu. Without readiness of control centre, it would be very difficult to commissioning main and back up JKPTCL SCADA system.
- 6.5 **PTCUL, Dehradun:** POWERGRID mentioned that new building is being constructed at Dehradun and which is also serious concern for commissioning of SCADA System.

Structural works has been completed, plastering works going on and dust free environment is required for IT/Hardware items to avoid damage of costly servers, equipment otherwise OEMs would not provide warranty/guarantee support. However, PTCUL informed that we have mail POWERGRID that their building is almost ready and work can be carried out on SCADA control centre floor, site conditions is also dust free at control room area. POWERGRID informed that all materials have been delivered except UPS system and FAT is going on for UPS.

Decision of the forum:

States to ensure Site readiness for Commissioning of SCADA/EMS System (ULDC Phase-III)

AA7 Proposal of Replacement of SAS at 765/400kV Ajmer Substation under ADDCAP (Table Agenda by POWERGRID)

- 7.1 POWERGRID apprised that at 765/400kV Ajmer Substation, SCADA / SAS system are over seven years old and have reached the end of their useful life. The operating systems in these SCADA setups are outdated and not cyber security compliant. Additionally, these systems are facing numerous issues and require upgrades to ensure smooth operation and monitoring of the substation. The existing SCADA systems (including old computers) are Windows 7-based and are no longer supported from OEM.
- 7.2 Hence, replacement of SCADA / SAS system is proposed for 765/400kV Ajmer substation.
- 7.3 POWERGRID apprised that proposal for replacement of SCADA / SAS system for 765/400kV Ajmer Substation with a tentative cost estimate of ₹ 60 Lakhs (excluding Tax) under ADD-CAP (2024-29) is submitted to the forum for approval.
- 7.4 Members agreed with proposal of POWERGRID.

Decision of the forum:

Forum approved for replacement of SAS at 765/400kV Ajmer Substation, to be put up in the upcoming TCC and NRPC meeting.

AA8 Proposal of Replacement of SAS at 400/220kV Kankroli Substation under ADDCAP (Table Agenda by POWERGRID) :

- 8.1 POWERGRID apprised that SCADA / SAS system are over seven years old and have reached the end of their useful life. The operating systems in these SCADA setups are outdated and not cyber security compliant. Additionally, these systems are facing numerous issues and require upgrades to ensure smooth operation and monitoring of the substation. The existing SCADA systems (including old computers) are Windows 7-based and are no longer supported from OEM.
- 8.2 Hence, replacement of SCADA / SAS system is proposed for 400/220kV Kankroli substation.
- 8.3 Members agreed with proposal of POWERGRID.

Decision of the forum:

Forum approved for replacement of SAS at 400/220kV Kankroli substation, to be put up in the upcoming TCC and NRPC meeting.

ANNEXURE-I

Status of action taken on decisions of 29th TeST meeting of NRPC (Agenda by NRPC Secretariate)

S. No	Agenda	Decision of 29 th TeST Meeting	Minutes of 30 th TeST Meeting
9	Inconsistent Real-Time Data from Tanda NTPC Station	NTPC and UPPTCL shall conduct a site survey at Tanda NTPC to identify the exact cause of the real-time data inconsistencies and communication outages. Based on the findings, an action plan may be prepared, and corrective actions shall be implemented at the earliest.	<p>UPPTCL representative informed that a joint survey was carried out along with NTPC. During the survey, it was observed that the 48V charger was tripping intermittently and the FOTE card was found faulty. Subsequently, the optical card was replaced and the issue related to communication was resolved.</p> <p>NRLDC representative confirmed that the issue has been resolved.</p> <p>SAS Gateway related issue to be resolved by NTPC Tanda</p>
10	Intermittent Telemetry Data from ICTs at Meerut (PG) Substation	UPSLDC and NRLDC shall continue to monitor the telemetry data and coordinate to ensure correct data reporting.	<p>NRLDC representative informed the committee that the HV side power flow of ICT-4 at Meerut Substation had reported zero readings on 2–3 occasions during the past month, while the LV side continued to indicate normal power flow.</p> <p>NRLDC representative suggested that POWERGRID may coordinate with the RTU engineer to identify and rectify the issue.</p> <p>MS, NRPC advised POWERGRID to resolve the telemetry issue at the earliest.</p>
12	GE N60 model PMUs in the Phasor Data Concentrators (PDCs) is causing Multiple operational challenges.	POWERGRID to take up the matter with GE and resolve the issue at the earliest and communicate the forum accordingly.	<p>POWERGRID representative informed the sub-committee that operational issues related to GE N60 model PMUs in the PDCs have been resolved.</p> <p>MS, NRPC enquired about the nature of the issue.</p> <p>POWERGRID representative clarified that the issue was related to firmware, which has now been updated.</p>

13	Furnishing of inputs for maintaining database of fiber usage as per Fiber sharing guidelines	All the TSPs and STUs to provide the details as requested by CTU for comprehensive database preparation as per the format attached at Annexure-I.I	<p>CTU representative informed that details regarding fiber usage/sharing and Latest Power maps (132 kV and above) & Fiber Optic maps have been received from Sterlite and Indigrd.</p> <p>HPPTCL representative informed that details pertaining to four lines transferred from HPSEB are not available. Further, he informed that they have asked for clarification from HPSEB and POWERGRID regarding OPGW Ownership, Maintenance Arrangements and Fiber Data.</p> <p>POWERGRID representative stated that they will provide the clarification as required by HPPTCL. He further stated that the data pertaining to lines laid under Central Sector shall be provided within a week.</p>
15	Latest Power maps (132 kV and above) and Fiber Optic maps of STU network	All the STUs to share the Latest available Power maps (132 kV and above) and Fiber Optic maps of STU network with CTU.	<p>HPSEB representative stated that, for assets under HPSEBL, they will share the fiber usage data along with Latest Power maps and Fiber Optic maps.</p> <p>HVPSNL, UPSLDC, RRVPSNL, DTL, PTCUL & PSTCL representatives to share the data as per Annexure I.I along with Latest Power maps and Fiber Optic maps.</p> <p>MS, NRPC stated that NRPC Secretariate will write a letter to all the states in this regard.</p>
17	Establishment of Redundant Communication Network for Centre Sector and RRVPSNL	A separate meeting shall be convened amongst NRPC, NRLDC, RRVPSNL (STU), Rajasthan SLDC, CTU, POWERGRID and NMT to finalize the desired scheme.	<p>A separate meeting was conducted on 12.01.2026 and the following decisions were taken:</p> <ol style="list-style-type: none"> a. Rajasthan to share the fibers on the links as per 11th NCT minutes for integration and commission of installed equipment under the scheme. b. Rajasthan SLDC/RRVPSNL to provide details of it's assessment of scheme, intra-state communication network to CTU and the present usage of OPGW fibers on their existing transmission network (in prescribed format- Annexure-I.I) for any probable fiber

			<p>sharing proposal.</p> <ul style="list-style-type: none"> c. CTU to assess the additional fiber-sharing requirement, based on which Rajasthan shall share the required fibers. d. Fiber sharing modifications in scheme to be placed in upcoming TeST Subcommittee meeting and NRPC for information (By CTU/POWERGRID). e. Rajasthan to ensure integration of its intra-state communication network with NMS/UNMS as per regulation. <p>RRVPNL representative stated that they had already agreed to provide the power maps and OPGW fiber usage data. He further stated that certain issues pertaining to some links were causing delay in the matter.</p> <p>POWERGRID representative stated that RRVPNL may provide go-ahead for the sites, as POWERGRID equipment has already been commissioned. Regarding the issues in the links, he informed that only one link remains pending and the same is expected to be completed within a week.</p> <p>CTU mentioned that they require details of link from RRVPNL as deliberated in special meeting.</p> <p>MS, NRPC advised RRVPNL to provide the presently available data.</p> <p>RRVPNL representative informed that they will share the requisite details to CTU as decided in special meeting held on 12.01.2026.</p>
AA 3	Regarding OPGW connectivity to Baglihar HEP	A separate meeting to be convened amongst NRPC, NRLDC, J&K (SLDC), JKSPDC, CTU, POWERGRID and NMT. Accordingly, JKSPDC to take up agenda to NRPC with detailed scheme with inputs of POWERGRID and CTU.	<p>A Meeting was conducted on 12.01.2026.</p> <p>It was decided that JKSPDC to formulate separate scheme and take up OPGW installation on LILO portion of Baglihar HEP</p>

AA 4	Implementation of Process Bus technology in Substations	Matter to be taken to Protection Sub Committee for deliberation	Matter to be taken in the upcoming Protection Sub Committee for deliberation
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ANNEXURE-II

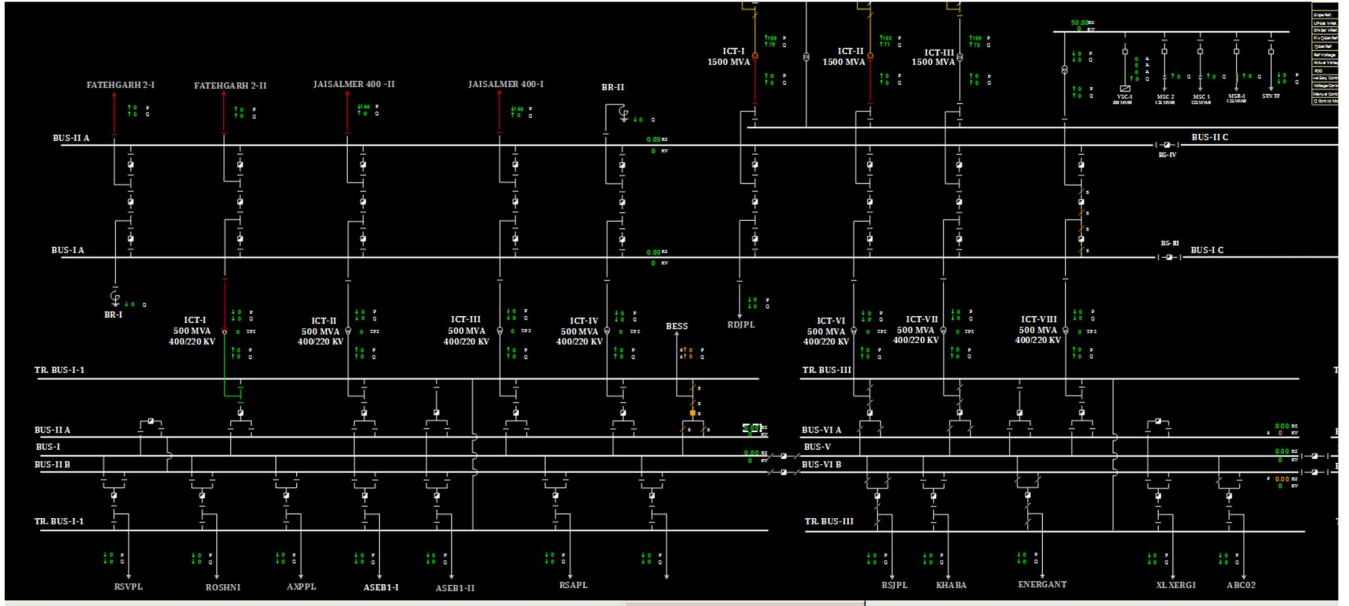
S No.	Agenda	Decision of 29 th TeST Meeting	Status of action taken
2	J&K Telemetry Issues	POWERGRID to expedite installation of OPGW to ensure connectivity of J&K. Until OPGW connectivity is fully operational, POWERGRID to explore alternate communication options, including GPRS and other services, so that connectivity with ULDC Phase-III is in matching timeframe i.e., March 26. POWERGRID to ensure OPGW installation by June 2026.	POWERGRID informed the committee that RTU installation is currently in progress. OPGW connectivity is expected to be fully operational by the end of October 2026. Data through GPRS will be available by June 2026, subject to timely provision of SIM cards by J&K. MS, NRPC, asked J&K to provide the SIM cards timely and emphasized that POWERGRID must strictly adhere to the revised timelines for OPGW connectivity.
3	Redundant RTU Communication for Main / Backup RLDC	<p>NRLDC to provide a complete list of RTUs where SCADA data channels are not reporting in main and backup mode (1+1) with one main channel to RLDC and one backup channel to Backup RLDC, to respective entities.</p> <p>All entities shall ensure redundancy in communication for both the Main and Backup RLDC for their respective stations as per list provided by NRLDC.</p> <p>POWERGRID to begin configuration of ports in Synergy RTUs so that 2 main and 2 backup channels report to RLDCs as well as back up RLDCs with available free ports.</p>	<p>NRLDC representative informed the committee that they have provided a complete list (through e-mail) of RTUs/SAS reporting at NRLDC to respective entities, containing the following details (as available with NRLDC):</p> <ul style="list-style-type: none"> • RTU Name / Location • Current status of Main, Standby, Backup and Backup Standby channels • RTU / SAS make • Firewall details <p>The aforementioned List of RTUs SAS Gateways reporting to NRLDC is attached as Annexure-II.I.</p> <p>MS, NRPC emphasized the criticality of real-time telemetry and redundancy and inquired whether CTU has any centralized scheme for this. CTU clarified that in earlier meetings it was decided that a centralized scheme is not required; all entities are expected to proceed with this individually.</p> <p>MS NRPC further asked all respective entities to take timely action to ensure redundancy in SCADA channels as per the list provided by NRLDC.</p> <p>NRLDC representative also informed that POWERGRID has not yet started the configuration of available spare ports in Synergy RTUs.</p> <p>POWERGRID representative stated that they will organize a separate meeting with Synergy</p>

			<p>and NRLDC and will commence the configuration.</p> <p>MS NRPC advised that NRPC Secretariate may convene a separate meeting in this regard with NRLDC, CTUs and all TSPs to review the present status of configuration. Thereafter, NRLDC may present the consolidated status as an agenda item in the TeST meetings.</p>																				
4	Display of DC/Schedule of Generating Stations in SCADA Display	<p>Punjab, Haryana, Uttarakhand and J&K to complete integration within mentioned timelines :</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>State</th> <th>Status</th> <th>Remarks & Timelines</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Punjab</td> <td>Available</td> <td>Punjab SLDC representative informed that integration has been completed and the same has been communicated to NRLDC. NRLDC confirmed that data is being received correctly, except for a few discrepancies which have already been communicated to the SLDC.</td> </tr> <tr> <td>2</td> <td>Haryana</td> <td>Available</td> <td>SLDC representative informed that integration has been completed. NRLDC stated that the same will be verified and confirmation will be provided to Haryana SLDC.</td> </tr> <tr> <td>3</td> <td>Uttarakhand</td> <td>Not Available</td> <td>SLDC representative informed that SAMAST has been implemented and firewall configuration is currently in progress. Uttarakhand requested a timeline of one month for completion. MS NRPC expressed serious concern over the delay and asked Uttarakhand SLDC to complete the work within 15 days.</td> </tr> <tr> <td>4</td> <td>Jammu & Kashmir</td> <td>Not Available</td> <td>Integration not yet started; proposal for SAMAST has been J&K informed that the tendering process for SAMAST is currently in progress. It was further informed that Baglihar will be integrated through RTU. For Baglihar, it is to be taken up separately on priority with JKSPDC, to be completed within one month.</td> </tr> </tbody> </table>		Sl. No.	State	Status	Remarks & Timelines	1	Punjab	Available	Punjab SLDC representative informed that integration has been completed and the same has been communicated to NRLDC. NRLDC confirmed that data is being received correctly, except for a few discrepancies which have already been communicated to the SLDC.	2	Haryana	Available	SLDC representative informed that integration has been completed. NRLDC stated that the same will be verified and confirmation will be provided to Haryana SLDC.	3	Uttarakhand	Not Available	SLDC representative informed that SAMAST has been implemented and firewall configuration is currently in progress. Uttarakhand requested a timeline of one month for completion. MS NRPC expressed serious concern over the delay and asked Uttarakhand SLDC to complete the work within 15 days.	4	Jammu & Kashmir	Not Available	Integration not yet started; proposal for SAMAST has been J&K informed that the tendering process for SAMAST is currently in progress. It was further informed that Baglihar will be integrated through RTU. For Baglihar, it is to be taken up separately on priority with JKSPDC, to be completed within one month.
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1	Punjab	Available	Punjab SLDC representative informed that integration has been completed and the same has been communicated to NRLDC. NRLDC confirmed that data is being received correctly, except for a few discrepancies which have already been communicated to the SLDC.																				
2	Haryana	Available	SLDC representative informed that integration has been completed. NRLDC stated that the same will be verified and confirmation will be provided to Haryana SLDC.																				
3	Uttarakhand	Not Available	SLDC representative informed that SAMAST has been implemented and firewall configuration is currently in progress. Uttarakhand requested a timeline of one month for completion. MS NRPC expressed serious concern over the delay and asked Uttarakhand SLDC to complete the work within 15 days.																				
4	Jammu & Kashmir	Not Available	Integration not yet started; proposal for SAMAST has been J&K informed that the tendering process for SAMAST is currently in progress. It was further informed that Baglihar will be integrated through RTU. For Baglihar, it is to be taken up separately on priority with JKSPDC, to be completed within one month.																				
5	Non-availability of Real-Time data from PTCUL	PTCUL to take up the matter with PSDF on priority	<p>PTCUL representative informed that PSDF funding has been sanctioned on a 90:10 basis, however the BOD proposal approval is still pending.</p> <p>MS NRPC advised PTCUL to initiate the necessary actions without further delay.</p>																				
6.	Non-Reliable Telemetry from RRVPN Sub-stations	RRVPN to expedite the integration process and complete work of 22 SAS stations and replacement of 132 obsolete RTUs by March 2026	<p>RRVPN representative informed the forum that out of 22 SAS, 8 have already been commissioned.</p> <p>It was further informed that 5 SAS will be commissioned by May 2026, while the remaining 9 are planned to be commissioned by October 2026.</p> <p>Regarding replacement of 132 obsolete RTUs, RRVPN informed that bid evaluation is in process and the purchase order is expected to be placed in April 2026.</p>																				

					MS NRPC emphasized the importance of timely completion of the works and advised RRVPN to expedite the integration and replacement activities in line with the agreed timelines.
7.	Non-availability of Telemetry from HVPNL Sub-stations	HVPNL was advised to implement rate contract with vendors for AMC similar to POWERGRID to address AMC-related delays and expedite restoration of telemetry.			HVPNL representative informed the forum that the proposal for establishing a rate contract is under process and is currently under the approval stage and its implementation may take approximately one year. MS NRPC advised HVPNL to expedite the approval process considering the importance of timely AMC support and the need to minimize delays in telemetry restoration.
8.	Communication channel redundancy/ Telemetry Issues to NRLDC	Sl. No.	Name of RTU	Owner	Remarks/Updates
		1	KISHANGANGA	NHPC	NHPC informed the forum that the issue has now been resolved. NRLDC confirmed that data is now being received through both channels
		2	PARBATI-2	NHPC	Indgrid informed the forum that the required material has been supplied at site and the execution work is scheduled to commence from 16th April 2026. It was further informed that the work is planned to be completed by June 2026. MS NRPC emphasized the importance of timely completion of the project considering its critical nature and advised to adhere strictly to the committed timelines.
		3	PARBATI-3	NHPC	Indgrid informed the forum that the required material has been supplied at site and the execution work is scheduled to commence from 16th April 2026. It was further informed that the work is planned to be completed by June 2026. MS NRPC emphasized the importance of timely completion of the project considering its critical nature and advised to adhere strictly to the committed timelines.
		4	Salal	NHPC	NHPC informed the forum that the issue has now been resolved. NRLDC confirmed that data is now being received through both channels.
		5	Budhil	IPP	Budhil was not present in the meeting. MS, NRPC also stated that NRPC Secretariate may write a letter to Budhil in this regard.
		6	Bhiwadi HVDC	POWERGRID	Second gateway Faulty for which upgradation required through M/s Siemens (Germany) as the same is a proprietary system. Powergrid further informed that the quotations submitted are on the higher side and have been provided without supporting documentary evidence justifying the pricing. The matter has been escalated for price negotiations with the OEM. Target completion: June 2026

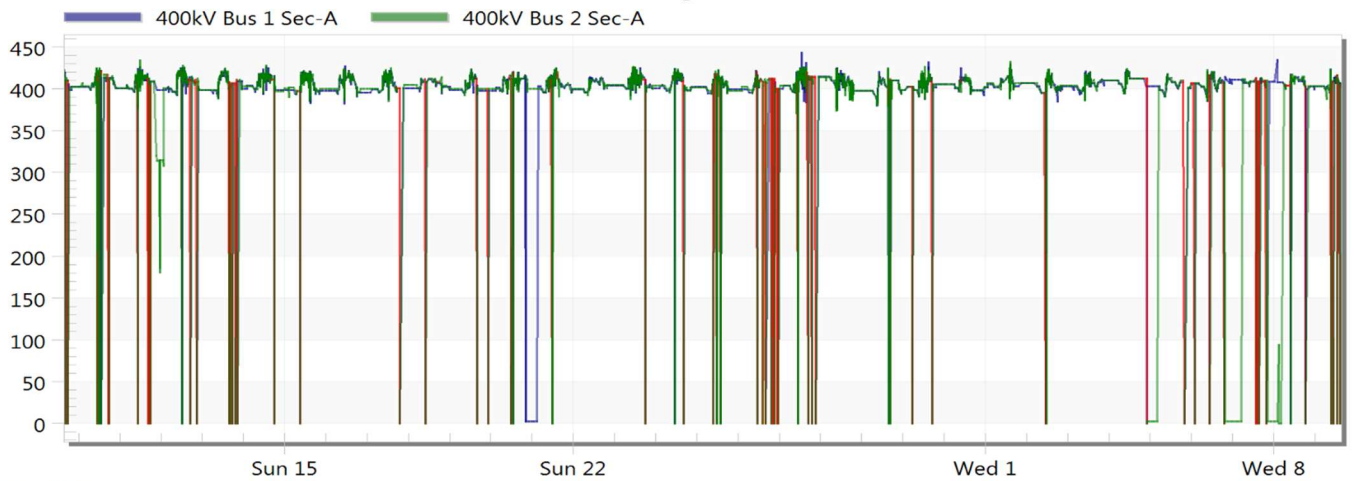
				MS NRPC advised that the matter be pursued with the OEM at the appropriate level so that it can be resolved without undue delay.	
		7	Bhiwadi 400 101	POWERGRID	NRLDC confirmed that data is now being received through both channels.
		8	Jhajjar	IPP	NRLDC informed that the communication path became ready on 09/02/2026, and the gateway configuration is still pending verification. POWERGRID informed that a communication engineer will be deputed to support the data reporting at NRLDC and to resolve the issue.
		9	Shree Cement	Shree Cement	POWERGRID informed that fiber laying work is being carried out on live line conditions, with the expected completion timeline of June 2026. It was further informed that the required non-auto recloser code becomes available after 14:00 hrs, due to Solar hours. Due to this POWERGRID is facing constraints in manpower deployment during these hours. NRLDC advised POWERGRID to discuss the requirement of non-auto recloser code in the upcoming OCC meeting for necessary resolution.
		10	Chamera 3	NHPC	NHPC informed that there is an MPLS-related issue affecting telemetry, and the resolution may take approximately 1–2 weeks. MS NRPC expressed concern over the delay and emphasized the need for expeditious resolution to ensure uninterrupted telemetry availability.
		11	Fatehgarh 3	POWERGRID	NRLDC highlighted that the issue (400 kV gateways occasionally report zero) has been recurring for the past 4 months, despite multiple emails and letters, with no noticeable improvement. NRLDC also presented snapshots of SLD and voltage trends, clearly indicating the occurrence of the issue. MS NRPC informed that she has also come across the same issue while observing Fatehgarh-III SLD in SCADA and noted that such instances are misleading, as all bays appear open along with zero power flow. POWERGRID informed that the issue is related to gateway configuration and is being taken up with the OEM for early resolution. MS NRPC expressed serious concern over the persistence of the issue for more than 4 months and asked POWERGRID to resolve the issue at the earliest.
14	Nomination of Nodal officers for coordination with Regional Network Monitoring Team of UNMS (Agenda by UNMS and CTU)	All the members/ constituents to nominate nodal officer for coordination in their organization and share the details with NMT and CTU.			Delhi, UP, HP and Rajasthan have provided the nominations. Haryana, Punjab, Uttarakhand, BBMB, J&K and TSPs to provide the nominations. MS, NRPC suggested that NRPC Secretariate may write letter in this regard to all states and TSPs so that necessary action is taken in this matter.

16	Updated Status of schemes approved in various NCT	Updated Status of schemes approved in various NCT attached in Minutes	Update scheme is attached as Annexure II.II
27	Regarding storage of Logs of URTDSM System	POWERGRID informed that the technical approval has been completed. The work order is expected to be issued within 15 days, and the implementation is likely to be completed within 2-3 months.	POWERGRID representative informed that by end of May 2026 the work will be awarded and Oct – Nov 2026 the work is expected to be completed.



Thu April 9 2026 10:52:25

Fatehgarh 3



Mar 2026

RTUs/SAS Gateways reporting Real-Time SCADA data at NRLDC*

Annexure II.I

RTU Location	Ownership	Protocol	Main	Standby	Backup	Backup Standby	RTU/SAS, & MAKE	Firewall	Firewall Licence Expiry Date
Mahendra Garh	ADANI	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Mundra HVDC	ADANI	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Adani Solar Park Pooling	ADANI	IEC-104	Reporting	Configured but not reporting	Not Configured	Not Configured			
Ad Hydro	ADHPL	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
IGSTPP Jhajjar	APCPL	IEC-101	Configured but not reporting	Reporting	Not Configured	Not Configured		Not Configured	
Fatehgarh 4	Apraava	IEC-104	Reporting	Configured but not reporting	Reporting	Configured but not reporting		Siemens RuggedCOM	
Budhil	Greenko	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Sorang	Greenko	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Amargarh	Indigrd	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kadarpur	Indigrd	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Patran	Indigrd	IEC-104	Configured but not reporting	Reporting	Reporting	Not Configured			
Prithla	Indigrd	IEC-104	Reporting	Configured but not reporting	Configured but not reporting	Not Configured			
Sohna Road	Indigrd	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Karcham	JSW	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Chamera-3	NHPC	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Dhauliganga	NHPC	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Kishanganga	NHPC	IEC-101	Configured but not reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Parbati 2	NHPC	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Parbati 3	NHPC	IEC-101	Not Configured	Reporting	Not Configured	Not Configured		Not Configured	
Sewa-2	NHPC	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Uri-2	NHPC	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Bairasaiul	NHPC	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Chamera-1	NHPC	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Chamera-2	NHPC	IEC-104	Reporting	Configured but not reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Dulhasti	NHPC	IEC-104	Configured but not reporting	Reporting	Not Configured	Not Configured			
Salal	NHPC	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Tanakpur	NHPC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Uri-1	NHPC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Narora	NPCIL	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Rapp A	NPCIL	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Rapp B	NPCIL	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Rapp C	NPCIL	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Rapp D	NPCIL	IEC-104	Reporting	Not Configured	Not Configured	Not Configured			
Koldam	NTPC	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Rihand-3	NTPC	IEC-101	Configured but not reporting	Reporting	Not Configured	Not Configured		Not Configured	
Unchahaar-4	NTPC	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Anta	NTPC	IEC-104	Reporting	Reporting	Reporting	Reporting	Synergy Systems & Solutions' Husky RTU		
Auraiya	NTPC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Dadri Gas	NTPC	IEC-104	Reporting	Not Configured	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Dadri Th	NTPC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Faridabad	NTPC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Rihand 1 & 2	NTPC	IEC-104	Reporting	Configured but not reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Singrauli	NTPC	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Singrauli Hydro	NTPC	IEC-104	Reporting	Configured but not reporting	Not Configured	Not Configured			

Unchahaar 1-3	NTPC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Bhiwadi 400	Powergrid	IEC-101	Configured but not reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Bhiwadi HVDC	Powergrid	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Chamba	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Fatehabad	Powergrid	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Gorakhpur	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Kotputli	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Patiala	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Shahjahanpur	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Sohawal	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Varanasi	Powergrid	IEC-101	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Abdulapur	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Agra	Powergrid	IEC-104	Reporting	Reporting	Not Configured	Not Configured		Not Configured	
Ajmer	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Aligarh	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Allahabad	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Amritsar (RTU)	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Amritsar (SAS)	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bagpat	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Bahadurgarh	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Balia 132	Powergrid	IEC-104	Reporting	Not Configured	Not Configured	Not Configured			
Balia 765	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Ballabgarh	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting	Synergy Systems & Solutions' Husky RTU		
Banala	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bareilly 400	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bareilly 765	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting		Configured	
Bassi	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Bhadla (SAS 1)	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Bhadla (SAS 2)	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bhadla2	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bhadla3 400	Powergrid	IEC-104							
Bhadla3 765	Powergrid	IEC-104							
Bhinmal	Powergrid	IEC-104	Reporting	Reporting	Reporting	Configured but not reporting		Configured	
Bhiwadi 400	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Bhiwani	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bikaner	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Bikaner 2	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Chandigarh	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Chittorgarh	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting			
Dadri HVDC	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Dausa	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting		Siemens RuggedCOM RX1500	
Dehradun	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Drass	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Dwarka	Powergrid	IEC-104	Reporting	Configured but not reporting	Reporting	Reporting			
Fatehgarh	Powergrid	IEC-104	Reporting	Configured but not reporting	Configured but not reporting	Not Configured			
Fatehgarh 2	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			

Fatehgarh 3 400	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Fatehgarh 3 765	Powergrid	IEC-104	Reporting	Configured but not reporting	Reporting	Reporting		Siemens RuggedCOM	
Fatehpur	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Gurgaon	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Hamirpur	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Hissar	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Jaipur South	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Jalandhar	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Jauljivi	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Jhatikara	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Jind	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kaithal	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Kalaamb	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kankroli	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kanpur 400	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Kanpur765	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Kargil	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Khalasti	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Khetri	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kishenpur	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Kota	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Koteshwar PG	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kurukshetra	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Kurukshetra New	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Kurushetra TCR	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Lucknow 400	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Lucknow 765	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting			
Ludhiana	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting			
Maharanibagh	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured		Fortinate	
Mainpuri	Powergrid	IEC-104	Configured but not reporting	Reporting	Configured but not reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Malerkotla	Powergrid	IEC-104	Reporting	Configured but not reporting	Reporting	Not Configured			
Mandaula	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Manesar	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Meerut 400	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Meerut 765	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Moga 400	Powergrid	IEC-104	Reporting	Configured but not reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Moga 765	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Nalagarh	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Narela	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting		Configured	
Neemrana	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Orai	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Panchkula	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Phyang Leh	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Pithoragarh	Powergrid	IEC-104	Reporting	Reporting	Configured but not reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Raibareilly	Powergrid	IEC-104	Reporting	Reporting		Not Configured			
Rihand HVDC	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured			

Roorkee	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Saharanpur	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Sambha	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Sikar	Powergrid	IEC-104	Reporting	Reporting	Reporting	Reporting			
Sikar 2	Powergrid	IEC-104	Reporting	Reporting	Configured but not reporting	Reporting		Siemens RuggedCOM RX1500	
Sitarganj	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Sonipat	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Tughlakabad	Powergrid	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Vindhyanchal	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Wagoora	Powergrid	IEC-104	Reporting	Reporting	Reporting	Not Configured			
Wanpoh	Powergrid	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Jagadhari	Railway	IEC-104	Reporting	Not Configured	Configured but not reporting	Not Configured			
Singoli	Renew	IEC-104	Reporting	Not Configured	Reporting	Not Configured			
Sh Cement Byawar	Sh Cement	IEC-101	Reporting	Configured but not reporting	Not Configured	Not Configured		Not Configured	
Rampur	SJVN	IEC-101	Configured but not reporting	Reporting	Not Configured	Not Configured		Not Configured	
Nathpa Jhakri	SJVN	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Koteshwar TH	THDC	IEC-104	Reporting	Reporting	Reporting	Reporting		Configured	
Tehri	THDC	IEC-104	Reporting	Reporting	Reporting	Not Configured	Synergy Systems & Solutions' Husky RTU		
Tehri PSP	THDC	IEC-104	Reporting	Reporting	Reporting	Reporting		Fortinate	

*Above data is as per the details available with NRLDC as on 05/01/2026

ISTS Schemes

Scheme-1.1: ISTS scheme for RTM Projects (POWERGRID)

Sr. No.	Items	Details
1.	Name of Scheme	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region- Scheme 1.1
2.	Scope of the scheme	<p>(i) Supply & installation of OPGW (48F) on transmission lines mentioned in Table A</p> <p style="text-align: center;">Total OPGW (Km): 4168.33</p> <p>(ii) Supply & installation of FOTE (STM-16 with minimum 5 MSP)</p> <p>(including associated system e.g. Repeaters and its shelter, FODP, NMS, Amplifiers, Approach cable, Power supply etc.)</p> <p style="text-align: center;">Total FOTE (No.): 64</p>
3.	Objective / Justification	<p>I. As per the CEA letter dtd. 22.05.2024, all lines 110 kV and above shall have Optical Ground Wire along with necessary terminal equipment for speech transmission, line protection, and data channels. Further as CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 primary path for tele-protection shall be on point-to-point Optical Ground Wire and alternative path shall be either on Power Line Carrier Communication or predefined physically diversified Optical Ground Wire paths.</p> <p>During planning of new Transmission Schemes many existing lines get LILOed at upcoming S/s (ISTS/STU). In view of non-availability of OPGW on the existing lines data and voice requirement for new S/s become critical. Further installation of OPGW in live line condition takes lot of time on exiting lines compared to new transmission lines. The installation of OPGW will also enable seamless data transmission from IEMs to the upcoming 5-minute Automatic Meter Reading (AMR) system.</p> <p>Subsequently CEA vide their letter dtd. 22.11.2024, communicated that all the upcoming lines shall be</p>

		<p>provided with 48 Fiber OPGW to cater to broadband and internet requirements in the rural areas and hinterlands to provide reliable Telecom connectivity.</p> <p>II. Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region was formulated in the 9th and 10th Communication Planning Meeting of Northern Region after getting inputs from all the TSPs and STUs. Some of the lines in the scheme have multiple ownership e.g., State, POWERLINK and POWERGRID. Further some lines are falls under TBCB as well as RTM projects under ISTS.</p> <p>III.As per ownership of transmission lines and substations The scheme is bifurcated owner wise e.g. TSPs (POWERGRID, POWERLINK, SEKURA & PKTCL) and other utility / STU wise (BBMB, RRVPNL, UPPTCL and PTCUL).</p> <p>IV.This scheme for STUs scope is also identified, however same to be implemented by respective STUs in matching timeframe ISTS scheme.</p> <ul style="list-style-type: none"> ➤ Under the proposed scheme-1.1, Lines & Substations are in the ownership of POWERGRID. ➤ FOTE at STU locations for which complete Transmission Line is under ISTS is also considered under this scheme as agreed in 10th CPM meeting.
4.	Estimated Cost	272.45 crore (approx.)
5.	Implementation Schedule	36 months from date of allocation (considering hilly terrain)
6.	Implementation Agency	POWERGRID
7.	Implementation Mode	RTM
8.	Deliberations in different meetings	<p>a. Deliberated in 16th NPC held on 04.07.2025.</p> <p>b. 55th TCC/ 80th NRPC meeting held on 17.07.2025/ 18.07.2025.</p> <p>c. 9th & 10th CPM of NR held on 19.08.2025 & 31.12.2025 respectively.</p>

Table A: List of Transmission lines where OPGW installation is proposed along FOTE locations is given table below:

S. No	Region	Line Name	Total line length(km)	Powergrid Portion(km)	Shared/Multiple ownership with Utility	FOTE Requirement		Repeater
						End A	End B	
1	NR1	220KV BASSI-BAGRU	63.954	35.353	RRVPNL (28.601)	1	0	0
2	NR1	220KV BASSI-IG NAGAR	30.351	22.478	RRVPNL (7.873)	0	0	0
3	NR1	220KV HIRAPURA-IG NAGAR	27.345	24.875	RRVPNL (2.47)	0	0	0
4	NR1	220KV HIRAPURA-SANGANER	220kV Heerapura-Mansarovar, Length: 6.74 Km 220kV Mansarovar - Sanganer, Length: 14.137 Km	0.7 8.097	RRVPNL (6.74) (14.137)	0	0	0
5	NR1	220KV MEERUT-NARA	32.138	2.316	UP (29.822)	1	0	0
6	NR1	220KV MEERUT-SHTBDNGR	33.5	8.234	UP (25.266)	0	0	0
7	NR1	220KV MEERUT-SIMBHOLI	51.428	9.254	UP (42.174)	0	0	0
8	NR1	220KV RAPPB-UDAIPUR	230.297	230.297	-	1	1	1
9	NR1	220KV SIKAR-RATANGARH	76.43	2.83	RRVPNL (73.6)	0	0	0
10	NR1	220KV SIKAR-SIKAR(RJ)	3	3	-	0	1	0
11	NR1	400KV BAGPAT-DEHRADUN	165	165	-	1	1	0
12	NR1	400KV BAGPAT-SAHARANPUR	121	121	-	0	1	0
13	NR1	400KV BASSI-PHAGI (JAIPUR RRVPNL)	48.432	48.432	-	0	1	0

S. No	Region	Line Name	Total line length(km)	Powergrid Portion(km)	Shared/Multiple ownership with Utility	FOTE Requirement		Repeater
						End A	End B	
14	NR1	400KV BASSI-SIKAR	169.8	169.8	-	0	0	0
15	NR1	400KV HISAR-KAITHAL	113.12	113.12	-	1	1	0
16	NR1	400KV MEERUT-BAREILLY	249.518	0 (PG portion (66 Km) to be done by POWERLINK)	POWERLINK (183)	0	1	0
17	NR1	765KV AGRA-JHATIKALA	253.076	253.076	-	1	1	1
18.A	NR1	765KV BHIWANI-PHAGI(JPR) CKT-I	271.51	271.571	-	1	0	1
18.B	NR1	765KV BHIWANI-PHAGI(JPR) CKT-II (separate line)	277.3	277.3	-	0	0	0
19	NR1	765KV MOGA-BHIWANI	273	273	-	1	0	1
20	NR2	220KV Kishenpur-Sarna	103.64	103.64	-	1	1	0
22	NR2	220KV Salal-Kishanpur-III	2	2	-	1	1	0
23	NR2	220KV Sarna-Dasuya	53.07	53.07	-	0	1	0
24	NR2	400 KV Dehar (BBMB) - Rajpura (PSTCL) (LILO Portion)	131.21	14.4	BBMB	0	1	0
25	NR2	400KV Bhiwani (BBMB) - Rajpura (PSTCL) (LILO Portion)	212.51	14.4	BBMB	0	0	0
26	NR2	400 KV Dehar-Panchkula (LILO Portion)	125	9.06	BBMB	0	1	0

S. No	Region	Line Name	Total line length(km)	Powergrid Portion(km)	Shared/Multiple ownership with Utility	FOTE Requirement		Repeater
						End A	End B	
27	NR2	400 KV Panipat-Panchkula (LILO Portion)	155	9.06	BBMB	0	0	0
28	NR2	400kV Ludhiana - Patiala	76.215	76.215	-	1	1	0
29	NR2	400kV NALAGARH-Patiala	93.78	93.78	-	1	0	0
30	NR2	400kV Uri 1 - Uri 2	10.456	10.456	-	1	1	0
31	NR2	220KV Salal-Jammu-I	56.33	56.33	-	0	0	0
32	NR3	220kV AGRA(PG)-BHARATPUR(RRV PNL)	55.858	55.858	-	0	1	0
33	NR3	220kV AGRA(PG)-SIKANDARA(UP)	55.858	55.858	-	0	1	0
34	NR3	220KV ALLD-JHUSI(UP)	28.079	21.879	UP (6.2)	1	0	0
35	NR3	220KV AUR-SIKANDARA	182.176	182.176	-	1	0	0
36	NR3	220KV JHUSI(UP)-PHULPUR(UP)	220KV JHUSI(UP)-Machhlishahar (UP), Length: 72.56 220KV Machhlishahar (UP) - PHULPUR(UP), Length: 50.072	16.686 0.2	UP (56) (49.4)	0	0	0
37	NR3	220KV KANPUR(PG) - RANIYA(UP)-1	1.683	1.683	-	1	1	0
37	NR3	220KV KNP-MAINPURI	10.4	10.4	-	0	1	0
39	NR3	220KV KNP-NAUBASTA	14.86	14.86	-	0	1	0
40	NR3	220KV KNP-PANKI-II	14.86	14.86	-	0	1	0

S. No	Region	Line Name	Total line length(km)	Powergrid Portion(km)	Shared/Multiple ownership with Utility	FOTE Requirement		Repeater
						End A	End B	
41	NR3	220KV KNP-UNCHR-III	144.63	144.63	-	0	1	0
42	NR3	220KV RAIBRLY-CG CITY(UP)	2	2	-	1	1	0
43	NR3	400KV AGRA-BHIWADI	208.98	208.98	-	0	*1	0
44	NR3	400KV BALIA-MAU 400kV	13	13	-	1	1	0
45	NR3	400KV LUCKNOW-UNNAO	73.286	73.826	-	1	1	0
46	NR3	400KV SINGRAULI-FATEHPUR	330.953	330.953	-	1	1	1
47	NR3	765KV ALIGARH-JHATIKARA	158	158	-	1	0	0
48	NR3	765KV KANPUR(GIS)-ALIGARH	327	327	-	1	0	1
49	NR2	400kV NALAGARH-BANALA-I	112.78	46.399	PKTCL (66.381)	0	1	0
50	NR1	400kV Muzaffarnagar – Roorkee (LILO portion)	71	3.73	67.27 (PTCUL)	0	1	0
51	NR1	400kV Roorkee - Rishikesh (LILO portion)	50	3.73	46.27 (PTCUL)	0	0	0
52	NR1	400kV Malerkotla – Amritsar	149	0	-	1	1	0
53	NR3	400kV Muzaffarpur-Gorakhpur	260	0	-	1	1	1
54	NR3	400kV Lucknow-Gorakhpur	245	0	-	0	0	1
55	NR3	400 kV Meerut - Mandola	101.8	0 (54.3 Km of PG portion to	47.5 (POWERLINK)	0	1	0

S. No	Region	Line Name	Total line length(km)	Powergrid Portion(km)	Shared/Multiple ownership with Utility	FOTE Requirement		Repeater
						End A	End B	
				be laid by POWERLINK)				
Total OPGW Length (PG Ownership): 4168.33 Km						Total FOTE 56+8= 64		

- 56 No. of FOTE at ISTS S/s for OPGW on POWERGRID Lines and 8 No. of FOTE at ISTS S/s for OPGW of POWERLINK and INDIGRID. Total 64 FOTE at ISTS stations.
- * STM-64 FOTE is considered at Bhiwadi S/s

Scheme-1.2: ISTS scheme for RTM Projects (POWERLINK)

Sr. No.	Items	Details
1.	Name of Scheme	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region – Scheme 1.2
2.	Scope of the scheme	<p>Supply & installation of OPGW (48F) on transmission lines mentioned in Table B along with approach Cable, FODP etc.</p> <p>OPGW (Km): 735.7 Kms. + 120.5 Kms. (PG portion to be done by POWERLINK)</p> <p>Total OPGW = 856.3 Km</p>
3.	Objective / Justification	<p>I. As per the CEA letter dtd. 22.05.2024, all lines 110 kV and above shall have Optical Ground Wire along with necessary terminal equipment for speech transmission, line protection, and data channels. Further as CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 primary path for tele-protection shall be on point-to-point Optical Ground Wire and alternative path shall be either on Power Line Carrier Communication or predefined physically diversified Optical Ground Wire paths.</p> <p>During planning of new Transmission Schemes many existing lines get LILOed at upcoming S/s (ISTS/STU). In view of non-availability of OPGW on the existing lines data and voice requirement for new S/s become critical. Further installation of OPGW in live line condition takes lot of time on exiting lines compared to new transmission lines. The installation of OPGW will also enable seamless data transmission from IEMs to the upcoming 5-minute Automatic Meter Reading (AMR) system.</p> <p>Subsequently CEA vide their letter dtd. 22.11.2024, communicated that all the upcoming lines shall be provided with 48 Fiber OPGW to cater to broadband and internet requirements in the rural areas and hinterlands to provide reliable Telecom connectivity.</p> <p>II. Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region was formulated in the 9th and 10th Communication Planning Meeting of Northern Region after getting inputs from all the TSPs and STUs. Some of the lines in the scheme have multiple ownership e.g., State, POWERLINK and POWERGRID. Further some lines are falls under TBCB as well as RTM projects under ISTS.</p>

		<p>III. POWERLINK Lines having mixed ownership with POWERGRID, However in the 10th CPM, POWERLINK requested that POWERGRID portion OPGW also to be laid by POWERLINK as agreed in ER Scheme. POWERGRID agreed to the proposal of POWERLINK that OPGW installation on POWERGRID portion in 400kV Bareilly-Meerut (66.18 Km) and 400 kV Meerut -Mandola (54.3 Km) to be done by POWERLINK.</p> <p>IV. As per ownership of transmission lines and substations The scheme is bifurcated owner wise e.g. TSPs (POWERGRID, POWERLINK, SEKURA & PKTCL) and other utility / STU wise (BBMB, RRVPNL, UPPTCL and PTCUL).</p> <p>V. Implementation schedule of this scheme is considered as 36 months i.e. matching with scheme 1.1, because FOTE at the end stations are considered in scheme 1.1 in line with CERC order on Petition no. 94/MP/2021(end stations ownership is of POWERGRID).</p> <p>VI. This scheme for STUs scope is also identified, however same to be implemented by respective STUs in matching timeframe ISTS scheme.</p>
4.	Estimated Cost	47.09 crore (approx.)
5.	Implementation Schedule	<p>*36 Months from date of allocation.</p> <p>*In line with Scheme 1.1 and CERC order on petition 94/MP/2021, Implementation schedule is considered as 36 months.</p>
6.	Implementation Agency	POWERLINK
7.	Implementation Mode	RTM
8.	Deliberations in different meetings	<p>a. Deliberated in 16th NPC held on 04.07.2025.</p> <p>b. 55th TCC/ 80th NRPC meeting held on 17.07.2025/ 18.07.2025.</p> <p>c. 9th & 10th CPM of NR held on 19.08.2025 & 31.12.2025 respectively.</p>

Table B: List of transmission lines where OPGW installation is proposed along FOTE locations are given in Table below

Sr. No.	Line Name	Total Line Length	Total Line Length under POWERLINK	Shared/Multiple ownership with Utility
1.	400kV Muzaffarpur-Gorakhpur	260	260	-
2.	400kV Lucknow-Gorakhpur	245	245	-
3.	400kV Bareilly-Meerut	249.58	183.2	POWERGRID (66.18Km)
4.	400 kV Meerut -Mandola	101.8	47.5	POWERGRID (54.3 Km)

Scheme-1.3: ISTS scheme for RTM Projects (PKTCL)

Sr. No.	Items	Details
1.	Name of Scheme	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region – Scheme 1.3
2.	Scope of the scheme	Supply & installation of OPGW (48F) on 400kV Nalagarh-Banala-I transmission lines along with approach Cable, FODP etc. Total OPGW to be installed = 66.38 Km (PKTCL ownership) Total Line Length: 112.78 Km.
3.	Objective / Justification	I. As per the CEA letter dtd. 22.05.2024, all lines 110 kV and above shall have Optical Ground Wire along with necessary terminal equipment for speech transmission, line protection, and data channels. Further as CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 primary path for tele-protection shall be on point-to-point Optical Ground Wire and alternative path shall be either on Power Line Carrier Communication or predefined physically diversified Optical Ground Wire paths. During planning of new Transmission Schemes many existing lines get LILLOed at upcoming S/s (ISTS/STU). In view of non-availability of OPGW on the existing lines data and voice requirement for new S/s become critical. Further installation of OPGW in live line condition takes lot of time on exiting lines compared to new transmission lines. The installation of OPGW

		<p>will also enable seamless data transmission from IEMs to the upcoming 5-minute Automatic Meter Reading (AMR) system.</p> <p>Subsequently CEA vide their letter dtd. 22.11.2024, communicated that all the upcoming lines shall be provided with 48 Fiber OPGW to cater to broadband and internet requirements in the rural areas and hinterlands to provide reliable Telecom connectivity.</p> <p>II. Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region was formulated in the 9th and 10th Communication Planning Meeting of Northern Region after getting inputs from all the TSPs and STUs. Some of the lines in the scheme have multiple ownership e.g., State, POWERLINK and POWERGRID. Further some lines are falls under TBCB as well as RTM projects under ISTS.</p> <p>III.As per ownership of transmission lines and substations The scheme is bifurcated owner wise e.g. TSPs (POWERGRID, POWERLINK, SEKURA & PKTCL) and other utility / STU wise (BBMB, RRVPNL, UPPTCL and PTCUL).</p> <p>IV.Implementation schedule of this scheme is considered as 36 months i.e. matching with scheme 1.1, because FOTE at the end stations are considered in scheme 1.1 in line with CERC order on Petition no. 94/MP/2021 (end stations ownership is of POWERGRID).</p> <p>V.This scheme for STUs scope is also identified, however same to be implemented by respective STUs in matching timeframe ISTS scheme.</p>
4.	Estimated Cost	3.65 crore (approx.)
5.	Implementation Schedule	*36 Months from date of allocation. *In line with Scheme 1.1 and CERC order on petition 94/MP/2021, Implementation schedule is considered as 36 months.
6.	Implementation Agency	PKTCL
7.	Implementation Agency	RTM
8.	Deliberations in different meetings	a. Deliberated in 16 th NPC held on 04.07.2025. b. 55 th TCC/ 80 th NRPC meeting held on 17.07.2025/ 18.07.2025. c. 9 th & 10 th CPM of NR held on 19.08.2025 & 31.12.2025 respectively.

Scheme-1.4: ISTS scheme for TBCB Projects (NRSS XXXI (B) Transmission Ltd)

Sr. No.	Items	Details
1.	Name of Scheme	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region – Scheme 1.4
2.	Scope of the scheme	Supply & installation of OPGW (48F) on 400kV Malerkotla – Amritsar transmission line along with approach Cable, FODP etc. Total OPGW = 149 Km
3.	Objective / Justification	<p>I. As per the CEA letter dtd. 22.05.2024, all lines 110 kV and above shall have Optical Ground Wire along with necessary terminal equipment for speech transmission, line protection, and data channels. Further as CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 primary path for tele-protection shall be on point-to-point Optical Ground Wire and alternative path shall be either on Power Line Carrier Communication or predefined physically diversified Optical Ground Wire paths.</p> <p>During planning of new Transmission Schemes many existing lines get LILOed at upcoming S/s (ISTS/STU). In view of non-availability of OPGW on the existing lines data and voice requirement for new S/s become critical. Further installation of OPGW in live line condition takes lot of time on exiting lines compared to new transmission lines. The installation of OPGW will also enable seamless data transmission from IEMs to the upcoming 5-minute Automatic Meter Reading (AMR) system.</p> <p>Subsequently CEA vide their letter dtd. 22.11.2024, communicated that all the upcoming lines shall be provided with 48 Fiber OPGW to cater to broadband and internet requirements in the rural areas and hinterlands to provide reliable Telecom connectivity.</p> <p>II. Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region was formulated in the 9th and 10th Communication Planning Meeting of Northern Region after getting inputs from all the TSPs and STUs. Some of the lines in the scheme have multiple ownership e.g., State, POWERLINK and POWERGRID. Further some lines are falls under TBCB as well as RTM projects under ISTS.</p> <p>III.As per ownership of transmission lines and substations</p>

		<p>The scheme is bifurcated owner wise e.g. TSPs (POWERGRID, POWERLINK, SEKURA & PKTCL) and other utility / STU wise (BBMB, RRVPNL, UPPTCL and PTCUL).</p> <p>IV. Implementation schedule of this scheme is considered as <i>36 months i.e. matching with scheme 1.1</i>, because FOTE at the end stations are considered in scheme 1.1 in line with CERC order on Petition no. 94/MP/2021(end stations ownership is of POWERGRID).</p> <p>V. This scheme for STUs scope is also identified, however same to be implemented by respective STUs in matching timeframe ISTS scheme.</p>
4.	Estimated Cost	8.19 crore (approx.)
5.	Implementation Schedule	<p>*36 Months from date of allocation.</p> <p>*In line with Scheme 1.1 and CERC order on petition 94/MP/2021, Implementation schedule is considered as 36 months.</p>
6.	Implementation Agency	NRSS XXXI (B) Transmission Ltd
7.	Implementation Mode	Change in Law
8.	Deliberations in different meetings	<p>a. Deliberated in 16th NPC held on 04.07.2025.</p> <p>b. 55th TCC/ 80th NRPC meeting held on 17.07.2025/ 18.07.2025.</p> <p>c. 9th & 10th CPM of NR held on 19.08.2025 & 31.12.2025 respectively.</p>

Appendix-II

STU/BBMB Schemes

Scheme-2.1: BBMB

Sr. No.	Items	Details
1.	Total OPGW (48F)	576.19 Kms.
2.	Total No of FOTE (STM-16 with minimum 5 MSP) (including Repeaters and its shelter, Amplifiers, FODP approach cable, Power supply etc.)	3 Nos.
3.	Implementation Mode	Through BBMB Scheme
4.	Implementation Schedule	Matching with Scheme-1.1

List of transmission lines where OPGW installation is proposed along FOTE locations is given in Table below

Sr. No.	Line Name	Total Line Length	Line Ownership Under BBMB	Shared/Multiple ownership with Utility	FOTE Requirement	
					END A	END B
1.	Dehar (BBMB) - Rajpura (PSTCL) (except LILO Portion)	131.2	116.35	POWERGRID	1	0
2.	Bhiwani (BBMB) - Rajpura (PSTCL) (except LILO Portion)	212.5	198.11	POWERGRID	1	0
3.	Dehar-Panchkula (except LILO Portion)	125	115.866	POWERGRID	0	0
4.	Panipat-Panchkula (except LILO Portion)	155	145.866	POWERGRID	1	0

Scheme-2.2: RRVPNL

Sr. No.	Items	Details
1.	Total OPGW (48F)	124.61 Kms.
2.	Total No of FOTE (STM-16 with minimum 5 MSP) (including Repeaters and its shelter, FODP, Amplifiers, approach cable, Power supply etc.)	6
3.	Implementation Mode	Through STU Schemes
4.	Implementation Schedule	Matching with Scheme-1.1

List of Transmission lines where OPGW installation is proposed alongwith FOTE locations is given below:

Sr. No.	Line Name	Total Line Length(km)	Line Ownership Under RRVPNL (km)	Shared/Multiple ownership with Utility	FOTE Requirement	
					END A	END B
1.	BASSI(PG)-IG NAGAR	30.351	7.873	POWERGRID (22.478 Km)	0	1
2.	HIRAPURA (220KV GSS)-IG NAGAR	27.345	2.47	POWERGRID (24.875 Km)	1	0
3.	HIRAPURA (400KV GSS)-SANGANER	220kV Heerapura-Mansarovar, Length: 6.74 Km 220kV Mansarovar - Sanganer, Length: 14.137 Km	6.04 6.04	POWERGRID (0.7 Km) (8.097 Km)	1	1
4.	BASSI(PG)-BAGRU	63.954	28.601	POWERGRID (35.353 Km)	0	1
5.	220KV SIKAR-RATANGARH	76.43	73.6	POWERGRID (2.83 Km)	1	0

Scheme-2.3: UPPTCL

Sr. No.	Items	Details
1.	Total OPGW (48F)	135.896 Kms.
2.	Total No of FOTE (STM-16 with minimum 5 MSP) (including Repeaters and its shelter, Amplifiers, FODP approach cable, Power supply etc.)	5
3.	Implementation Mode	Through STU Schemes
4.	Implementation Schedule	Matching with Scheme-1.1

List of transmission lines where OPGW installation is proposed along FOTE locations is given in Table below:

Sr. No.	Line Name	Total Line Length		Line length under ownership of UPPTCL	Shared/Multiple ownership with Utility	FOTE Requirement	
						END A	END B
1.	MEERUT-NARA	32.138		29.822	POWERGRID (2.31 Km)	0	1
2.	MEERUT-SIMBHOLI	52.2		44	POWERGRID (9.254 Km)	0	1
3.	ALLD-JHUSI(UP)	28.07		6.2	POWERGRID (21.879 Km)	0	1
4.	220KV JHUSI(UP)- PHULPUR(UP)	220KV JHUSI(UP)- Machhlishahar (UP):73	122.63	55.874	POWERGRID (16.686 Km) (0.572Km)	0	1
		220KV Machhlishahar (UP) - PHULPUR(UP): 50					
5.	400kv Muzaffarnagar - Roorkee (except LILO portion)	71		0	PTCUL and POWERGRID	1	0

Scheme-2.4: PTCUL

Sr. No.	Items	Details
1.	Total OPGW (48F)	113.54 Kms.
2.	FOTE (STM-16 with minimum 5 MSP) (including Repeaters and its shelter, Amplifiers, FODP approach cable, Power supply etc.)	1
3.	Implementation Mode	Through STU Schemes
4.	Implementation Schedule	Matching with Scheme 1.1

List of transmission lines where OPGW installation is proposed along FOTE locations is given in Table below

Sr. No.	Line Name	Total Line Length	Line Ownership Under PTCUL	Shared/Multiple ownership with Utility	FOTE Requirement	
					END A	END B
1.	400kV Muzaffarnagar - Roorkee (except LILO portion)	71	67.27	POWERGRID (3.73)	0	0
2.	400kV Roorkee -Rishikesh (except LILO portion)	50	46.27	POWERGRID (3.73)	0	1

Appendix-III

Sr. No.	Items	Details
1.	Name of Scheme	Upgradation of FOTE at ISTS Locations due to Bandwidth congestion in Northern Region
2.	Scope of the scheme	<p>Total No of FOTE : 13</p> <p>(STM-16 & STM-64 with minimum 5 MSP) (including associated system e.g. Repeaters and its shelter, FODP, NMS, Amplifiers, Approach cable, Power supply etc.)</p> <p>(11 no. of STM-16 and 2 No. of STM-64)</p> <p>Location of FOTE is mentioned in Table C.</p>
3	Objective / Justification	<p>i. In 27th TeST Meeting held on 21.04.2025 and 28th TeST meeting held on 23.07.2025. NMT brought out bandwidth congestion in some of the FOTE of NR which requires upgradation/replacement. System generated report from UNMS system is attached where Bandwidth Utilization is over 75%. CTU has studied these nodes for bandwidth congestion from UNMS. Considering critical grid operations, these FOTEs experiencing high bandwidth congestion and may be upgraded/replaced.</p> <p>ii. This agenda was further deliberated in the 10th NR CPM (Communication Planning Meeting) regarding upgradation existing bandwidth congestion in critical links of NR. At Allahabad & Varanasi node, requirement of STM-64 FOTE (with minimum 5 MSP) was deliberated in view of inter-regional data transfer towards Main & Backup NLDC and Main and Backup RLDCs. POWERGRID and NMT suggested that upgrading to STM-64 for Allahabad-Varanasi link also requires nearby nodes to be upgraded to STM-64 for utilization of STM-64 bandwidth. It is proposed that to provide congestion free corridor between NLDC/NRLDC – ERLDC/Backup NLDC, STM-64 based path can be created, which cater critical interregional data between ER- NR such as ICCP, AGC etc.</p> <p>iii. The proposed path for NR-ER corridor is given below:</p>

		<p>NRLDC/NLDC (16/64) → (Via Mehrauli → Okhla) → NTPC Badarpur (64) → Ballabgarh (16/64) → Mainpuri → Fatehpur → Allahabad → Sasaram → Biharshariff → Banka → Kahalgaon → Farakka → Baharampur → Jeerat New → Kasba → ERLDC (backup NLDC)</p> <p>In coordinated approach the above path shall also be deliberated in the ERPC TeST meetings and therefore agenda maybe discuss in upcoming NRPC TeST meeting.</p> <p>Further the requirement of STM-64 FOTE upgradation at Tughlakabad, Bhiwadi & Kotputli S/s has been agreed in 10th CPM. FOTE at Tughlakabad, Kotputli S/s are considered in this scheme and FOTE at Bhiwadi S/s is considered in Comprehensive OPGW scheme.</p> <p>iv. Detailed list of nodes showing Link congestion details is attached at Annexure-IX.</p>
4.	Estimated Cost	8.30 Crs.
5.	Implementation Schedule	24 Months from date of allocation
6.	Implementing Agency	POWERGRID
7.	Implementing mode	RTM
8.	Deliberations in different meetings	<p>a. 27th TeST Meeting held on 21.04.2025 and 28th TeST meeting held on 23.07.2025.</p> <p>b. 10th NR CPM held on 31.12.2025</p>

Table C- List of Stations where FOTE is to be upgraded/replaced

S. No.	Substation Name	Proposed FOTE(STM-16/64)	Remark
1.	Ballabgarh_02	0	To be reviewed with the interregional scheme
2.	LUCKNOW400_SDH-01	0	Already considered in comprehensive scheme
3.	Sohwal	STM 16(5 MSP)	
4.	Bagpat	0	Already considered in comprehensive scheme
5.	Merrut01	STM 16(5 MSP)	
6.	Dehradun PG	0	Already considered in comprehensive scheme

7.	Patiala PG	0	Already considered in comprehensive scheme
8.	Bhiwani	0	Already considered in comprehensive scheme
9.	Bhiwani 2	STM 16(5 MSP)	
10.	BBMB_DADRI_HR	STM 16(5 MSP)	
11.	Shahjahanpur	STM 16(5 MSP)	
12.	Gagal	STM 16(5 MSP)	
13.	Hamirpur 2	STM 16(5 MSP)	
14.	Ludhiana_PG	0	Already considered in comprehensive scheme
15.	Rep Jalandhar	STM 16(5 MSP)	
16.	Hamirpur PG	STM 16(5 MSP)	
17.	Tughlakabad 400	STM 64(5 MSP)	
18.	Ballia_400	0	Already considered in comprehensive scheme
19.	Abdullapur PG	STM 16(5 MSP)	
20.	BHIWADI_SDH-02	0	Already considered in comprehensive scheme
21.	KOTPUTLI	STM 64(5 MSP)	
22.	BAREILLY	0	Already considered in comprehensive scheme
23.	Kunihar LDC_HP	STM 16(5 MSP)	
Total No. of FOTE		13	

List of Participants of 30th TeST Sub-Committee Meeting Dated 10.04.2026

NRPC

1. Smt. Rishika Sharan, Member Secretary
2. Sh. Anzum Parwej, Superintending Engineer
3. Sh. Ravi Kant, Executive Engineer
4. Smt. Priyanka Patel, Chief Manager, (POWERGRID), NRPC
5. Sh. Amit Kumar, Assistant Manager (NHPC), NRPC

CEA

6. Sh. Arjun Agarwal, Assistant Director, PSCD

NRLDC

7. Sh. Hemant Kumar Meena, Deputy General Manager
8. Sh. Akhil Singhal, Deputy General Manager
9. Sh. Sumit Kumar, Deputy Manager
10. Sh. Deepak Kumar, Deputy Manager

CTUIL

11. Sh. T. P. Verma, Deputy General Manager
12. Sh. Prakhar Pathak, Engineer

POWERGRID

13. Sh. Mohan Kishor. N, Senior Deputy General Manager (GA&C)
14. Sh. Pardeep Singh, Senior Deputy General Manager, NR-II
15. Sh. Narendra Kumar Meena, Deputy General Manager (ULDC)
16. Sh. Anoop Kumar Verma, Deputy General Manager (UNMS), NMT
17. Sh. Ghanshyam Meena, Manager, NR-I

DTL

18. Sh. Shyam Kumar Tiwari, Assistant Manager (T)
19. Sh. Virendra Kumar, Assistant Manager(T), H/W

HPPTCL

20. Sh. Virender Kumar, Addl. GM(P&C)
21. Sh. Abhishek Puri, Assistant Engineer (E)

HPSEBL

22. Sh. Adarsh Kumar, Junior Engineer (Comm)

HVPNL

23. Sh. Sushil Kumar, Superintending Engineer
24. Sh. Sukh Pal, Executive Engineer
25. Sh. Anshu Jain, Assistant Engineer

INDIGRID

26. Sh. Abhishek Kukreja, Head Regulatory
27. Sh. Somnath Mukherjee, Asso. Regulatory

NHPC LTD.

28. Sh. Manish Kumar Singh, Manager (E)
29. Smt. Preeti Diwakar, Manager (E)

NTPC LTD.

30. Sh. Shiv Bhavan, DGM Tanda

PBSLDC

31. Sh. Saurabh Gupta, Senior Executive Engineer
32. Sh. Surinder Singh, Assistant Executive Engineer

POWERLINKS TRANSMISSION LTD.

33. Sh. Sandeep Kumar Shukla, Group Head (Procurement, IT & BE)

PSTCL

34. Sh. Rajan Singh, Senior Executive Engineer

PTCUL

- 35. Sh. Arun Kumar Gupta, Executive Engineer
- 36. Sh. Pradeep Kumar, Executive Engineer

RRVPL

- 37. Sh. Ajeet Singh Banshiwal, Superintending Engineer
- 38. Sh. Pravin Kumar Jagisot, Superintending Engineer
- 39. Sh. Rajiv Sogani, Executive Engineer
- 40. Sh. Naveen Nikhil Pandey, Assistant Engineer (Automation)

UPPTCL

- 41. Sh. Deepak Gupta, Assistant Engineer

UPSLDC

- 42. Sh. Amit Narain, Superintending Engineer
- 43. Sh. Ashok Kumar, Executive Engineer

BBMB

- 44. Sh. Charanjeet Kr Bhatiya, Assistant Director
- 45. Ms. Supreet Ghai, Assistant Director

ADANI

- 46. Sh. Jigesh Kumar Patel, Manager (ENOC Operations)
- 47. Sohan Lal, Manager (ENOC Operations)