



सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग- II

Power System Planning & Appraisal Division-II

सेवा में /To

As per list of Addresses

विषय: ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की चालीसवीं बैठक का कार्यवृत्त -- के संबंध में

Subject: Minutes of the 40th Meeting of National Committee on Transmission (NCT) –regarding.

महोदया (Madam) / महोदय (Sir),

The 40th meeting of the "National Committee on Transmission" (NCT) was held on 15th April 2026 at New Delhi. The minutes of the meeting are enclosed herewith.

भवदीय / Yours faithfully

(बी.एस.बैरवा / B.S. Bairwa)

मुख्य अभियन्ता एवं सदस्य सचिव, (एन.सी.टी.)/
Chief Engineer & Member Secretary (NCT)

List of Addresses:

1.	Chairperson, Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	2.	Member (Power Systems), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.
3.	Member (Economic & Commercial), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	4.	Additional Secretary (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh Abhay Bakre, Mission Director/ Shri Rajesh Kulhari, Joint Secretary, MNRE Atal Akshay Urja Bhawan Opposite CGO Complex gate No. 2, Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Floors Nos. 5-10, Tower 1, Plot Nos. 16, IRCON International Tower, Institutional Area, Sector 32, Gurugram, Haryana - 122001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9 (1st Floor), Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016
9.	Sh. Stephen Fernandes, Chief Electrical Engineer Goa Electricity Department & Chairman, WRPC	10.	Sh. Sanjeev Kumar Sood, Director (Technical), Punjab State Transmission Corporation Limited
11.	Sh. S.R Narasimhan Expert Member	12.	Shri. T Sivakumar (Chairperson, TCC and Managing Director, TANTRANSCO) TANTRANSCO Building,6th Floor,144, Anna Salai, Chennai - 600 002
13.	Shri Manoj Kumar Singh, IAS, Chairperson, ERPC and CMD, BSPHCL Vidyut Bhawan-I, 1 st Floor, Bailey Road, Patna- 800001	14.	Sh. Metbah Lyngdoh, Chairman, NERPC & Hon'ble Minister of Power, Shillong, Meghalaya

Special Invitee

1. Chief Engineer (PCD), CEA
2. Chief Engineer (PSETD), CEA
3. CEO, RECPDCL
4. CEO, PFCCL

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Minutes of the 40th meeting of National Committee on Transmission (NCT)

1 Confirmation of the minutes of the 39th meeting of National Committee on Transmission

- 1.1 The minutes of the 39th meeting of NCT held on 17.03.2026 were issued on 25.03.2026 vide CEA letter no. CEA-PS-12-13/3/2019-PSPA-II Division/ I/62529/2026
- 1.2 No comments were received on the minutes. Members confirmed the minutes.

2 Status of the transmission schemes noted/approved/recommended to MoP in the 38th & 39th meeting of NCT:

2.1 Status of the transmission schemes noted/approved/recommended to MoP in the 38th meeting of NCT

Sr. No	Name of the Transmission Scheme	Noted/ Recommended/ Approved	Mode of Implementation	BPC	Award/ Gazette notification
1.	Transmission Network Expansion Scheme in Western Region to cater to pumped storage potential near Satara (up to 4500 MW): Part A	Recommended	TBCB	PFFCL	Gazette notification by MoP on 24.03.2026
	Transmission Network Expansion Scheme in Western Region to cater to pumped storage potential near Satara (up to 4500 MW): Part B	Approved	RTM		
2.	ERES-47: Nawada –	Recommended	TBCB	RECPDCL	Gazette notification by

	Durgapur – Jeerat (New) 765kV corridor				MoP on 24.03.2026
3.	Transmission scheme for evacuation of power from Sunni Dam HEP (382 MW) & Luhri Stage-I (210 MW)	Recommended	TBCB	RECPDCL	Gazette notification by MoP on 24.03.2026 Gazette notified by CEA in ref. to 8 th NCT meeting has been de-notified on 02.04.2026.

2.2 Status of the transmission schemes where modification was suggested in the 39th meeting of NCT

S. Nos.	Scheme where modifications were suggested	Status
1.	Proposed location of Kakinada GIS substation	Modification in the implementation timeframe was informed to BPCs vide MoM dated 25.03.2026

3 Modifications in the earlier approved/recommended transmission schemes:

3.1 Modification in Scheme for Installation of OPGW & associated communication systems on the existing ISTS lines in WR Region

3.1.1 Representative of CTUIL stated that as approved in the 38th Meeting of NCT, the scheme "Installation of OPGW & associated communication systems on the existing ISTS lines in WR Region" was awarded to JTCL. In the scheme, the length of 765 kV D/C Jabalpur (PG) - Dharamjaygarh (PG) was considered as 279.64 kms. JTCL (Indigrid) vide e-mail dtd. 19.03.2026 informed that the length of this line is 379.64 kms. Accordingly, the cost of scheme and length of OPGW awarded to JTCL to be modified.

3.1.2 Member (E&C) enquired whether the change in line length has been duly verified. CTUIL and Grid-India mentioned that the actual length has been verified.

3.1.3 After detailed deliberations, NCT approved the modification in the line length as detailed below:

A. Scope of Works: Supply and installation of OPGW (48F) along with required accessories, approach cables, required Fiber Optic Terminal Equipment (FOTE), required repeater stations, required NMS and amplifiers/optical interfaces etc. for commissioning of optical fibre links on ISTS lines which are as follows:

		Length as per 38 th NCT MoM	Revised length			
Sl.No.	Owner of the Line	48F OPGW (Length in Km)	48F OPGW (Length in Km)	STM-16 FOTE (Nos.)	STM-64 FOTE (Nos.)	Repeater Station
A.7	JTCL/Indigrid*	514.75	614.75	4	0	2

B. Details of the scheme

			Cost as per 38 th NCT MoM	Revised Cost	
Scope	Implementing Agency	Implementation Mode	Cost Estimate (Approx.) in Crs	Cost Estimate (Approx.) in Crs	Implementation Timeline
For Scope A.7	JTCL/Indigrid*	RTM	31.829	37.329	30 months from the date of allocation.
Total Cost of the scheme as per 38 th NCT MoM					405.852 Crs. (Four hundred five crores eighty-five lakhs and twenty thousand only) (approx.) [total OPGW length 6676.1Kms (approx.)]
Modified Total cost of the scheme					411.352 Crs. (Four hundred eleven crores thirty-five lakhs and twenty thousand only) (approx.) [total OPGW length 6776.1Kms (approx.)]

*JTCL: Jabalpur Transmission Company Ltd.

4 New Transmission Schemes

4.1 Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)

- 4.1.1 Representative of CTUIL stated that the transmission scheme for evacuation of 6GW RE power from Bikaner V PS was discussed in 39th NCT meeting held on 17.03.26. In the NCT meeting, it was deliberated that Connectivity applications for 6GW on Bikaner-V S/s may be granted for the non-solar hours margins available at four substations (Bikaner-I to Bikaner-IV PS) instead of creating Bikaner-V S/s. Developers may be given the choice to choose the substation based on their feasibility, subject to the condition that BESS must be included by the developers with the RE Generation. In the meeting, it was decided that a meeting may be convened shortly with the connectivity applicants of Bikaner-V PS to deliberate on the issue.
- 4.1.2 Accordingly, CEA has conducted a meeting on 25.03.26 to discuss the feasibility of alternate connectivity to the RE developers who have been granted in-principal connectivity through Bikaner V transmission scheme and to identify and mitigate any issue arising out of such proposal of utilizing the existing transmission system (under Bikaner -I to Bikaner-IV PS) instead of creating a new transmission corridor.
- 4.1.3 In that meeting, Chairperson, CEA informed that as per deliberations held in NCT meeting Bikaner-V Transmission Scheme seems to be non-feasible. Therefore, developers who have been granted in-principal connectivity under Bikaner-V transmission scheme may be given priority in getting connectivity during non-solar hours from existing or under-construction transmission schemes of Bikaner complex i.e. Bikaner-I, II, III, IV pooling stations. This will ensure early connectivity to the RE developers i.e. by Decemer-2026 (for Bikaner-III) or April-2027 (for Bikaner-IV). Developers were requested to furnish their techno-economic feasibility in relocating their connectivity from Bikaner-V (solar hours) to Bikaner-I/II/III/IV (Non-solar hours access) to CEA within 15 days.
- 4.1.4 Chief Engineer (PSPA-I), CEA informed that no developer has agreed to shift their connectivity from Bikaner-V to Bikaner-I to IV.
- 4.1.5 Expert Member, Shri S.R. Narasimhan stated that there were broadly five issues on the agenda item which needed further analysis and deliberations by the NCT. Some of the issues have come up after the 39th NCT meeting on 17th March 2026 which should be kept sight of. These are enumerated below.
- a) In the 39th NCT meeting on 17th March 2026, he forwarded a detailed suggestion on the Non-Wires Alternative (NWA) to transmission viz. Battery Energy Storage System (BESS). The BESS alternative appeared more techno economic compared to the transmission system indicated in the agenda. The BESS (with Grid Forming Inverters) could be planned as a transmission asset and built through Tariff Based Competitive Bidding (TBCB) to avoid any

issues such as lack of buyers for stand-alone storage or off-solar hours peak power. Further on the 20th March 2026, CERC has also amended the Terms and Conditions of Tariff Regulations for 2024-29 period whereby a generating station or transmission asset under section 62 can install energy storage system at their power plant or substation. Technical and commercial framework for the same has been provided in the Regulations. So, extending this logic, the BESS asset in lieu of transmission can easily be executed through TBCB with minor modifications to the bidding documents. This could be done quickly.

- b) For the purpose of addressing low Short Circuit Ratio (SCR) and voltage profile, three (3) SynCons have been planned and would come up in subsequent meetings of the NCT. Also, the Load Generation Balance (LGB) considered in the studies assumed 6 GW extra load in Rajasthan over and above the 20th Electric Power Survey (EPS) figures due to the KBINR industrial belt. Also the technical minimum considered for coal stations in the studies was 40% against CEA's 55% assumption in the Long Term-National Resource Adequacy Plan (LT-NRAP) report released on 19th March 2026 by CEA. The studies also assumed that 6000 MW HVDC Barmer-Murbad (Kalamb) would be in service whereas this project has still not been awarded and there would be a 48-54 months commissioning schedule. Further, rather than citing enhancement of Total Transfer Capability (TTC) for a few states like Punjab under this agenda item, it would be better if a comprehensive study for all states' TTC/ATC enhancement through network upgrades is brought before the NCT. Today, nearly 22 states have their General Network Access (GNA) quantum exceeding 70% of the Available Transfer Capability (ATC) making them extremely vulnerable in case of any contingencies.
- c) Looking at the experience of delays in transmission, assuming 100% certainty in new transmission schedules may not be in order. As on date 11 GW of RE connected to ISTS is already facing 90-95% curtailment (4.5 GW in Rajasthan and 6.5 GW in Gujarat) due to delay in commissioning of the planned transmission system. The BESS alternative suggested above can be commissioned quickly in phases.
- d) Recently CERC on 10th April 2026 had passed an order in petition no 666/MP/2025 filed by M/s SUCRL. SUCRL had expressed difficulty in finalizing their land parcel for solar plant due to the coordinates for Bikaner-V substation and the transmission system not yet finalized by the CTU. The Commission had given SUCRL the option to withdraw their connectivity application and similar treatment to all developers who had been granted in principle connectivity at Bikaner-V. The response from all the developer's side on withdrawal is still not clear.
- e) The GNA third amendment segregating connectivity to solar and non-solar

hours may not provide much relief in optimizing transmission costs in terms of new build. Various decisions taken at CEA/CTU level for implementing this amendment such as mandating minimum 2 hour storage, barring injection during solar hours and barring charging from ISTS make it restrictive. The BESS' MW capacity may not be fully utilized while charging (just 40% utilization in case of a 2 hour storage) making the system less flexible. Minimum 5 hour storage (approx. 6 hours charging time) would be needed to reduce new lines build out as also fully utilizing the BESS charge/discharge MW capability. But a 5 hours storage would mean that 100% of solar or RE output is used for charging and the peak non-solar tariff would be of the order of Rs 6.50-7 per kWh making the process of getting buyers difficult.

- 4.1.6 Representative of MNRE stated that the proposed Bikaner-V pooling station offers a comprehensive solution to critical grid integration challenges, enabling the evacuation of approximately 12 GW of RE capacity (6 GW solar and 6 GW non-solar). Recent sectoral shifts (current RE tenders) from plain solar or wind tenders toward Round-the-Clock (RTC), Firm and Dispatchable RE (FORE), Hybrid, and Solar + ESS configurations have introduced which require round-the-clock evacuation capability and that necessitate the immediate implementation of this scheme rather than relying on existing margins for "non-solar hours only" at Bikaner I-IV. He further informed that the developers have already made substantial commitments, including the acquisition of approximately 15,000 acres of land and significant financial investments based on in-principle connectivity grants. He suggested that new technologies i.e. grid forming inverters, etc. may be considered at later stage as it doesn't appear feasible at present.
- 4.1.7 Chief Engineer (PSPA-I), CEA informed that 6 GW demand in Rajasthan (KBINR) is over and above the 20th Electric Power Survey (EPS) figures and this demand will be commensurate to RE planned as part of intra state scheme in GEC-III
- 4.1.8 Representative of CTUIL informed that in-principle connectivity of 6000 MW has been granted at Bikaner-V for solar hours and about 3600 MW connectivity applications have been received for non-solar hours (under RoFR). He also stated that transmission system planning is carried out based on EPS demand as well as STUs feedback on anticipated demand. He stated that 3 nos. of synchronous condensers planned in Rajasthan are required in other complexes of Rajasthan (Ramgarh, Bhadla and Fatehgarh) due to low SCR, in consultation with CEA and Grid-India. In Bikaner complex, SCR is in order and at present no SynCons are envisaged in this complex. Further, Bikaner V scheme improves short circuit strength of overall western Rajasthan complex (specially in Bikaner complex). Regarding location of the proposed Bikaner-V PS, it was clarified that tentative coordinates would only be available upon survey by BPC after approval of the scheme in NCT/MOP.
- 4.1.9 Representative of CTUIL also informed that the scheme is planned for evacuation of 6 GW RE power from Bikaner V PS on EHVAC system which will take less

implementation time than a HVDC system. The proposed transmission scheme also includes the elements from the feedback of Grid-India for resolution of operational constraints like issue of critical loading of 765 kV Bikaner - Moga D/c line (carrying RE power of Bikaner RE complex) as well as issue of higher angular separation (>20 degree) under N-1/N-1-1 contingency (relieving 1.5GW of above line through proposed scheme). This scheme will facilitate resolution of the issue of critical loading of 765kV Aligarh - Greater Noida line (carrying RE power of Fatehgarh/Bhadla RE complex) (relief of about 1 GW on above line). Also, the scheme shall also mitigate issue of higher angular separation (>25 degree) under N-1/N-1-1 contingency in 400kV Bikaner -II-Khetri D/c line (relief of 0.5 GW on above line). Considering above, the proposed transmission corridor is carrying about 9 GW power (6 GW RE power of Bikaner V PS and 3 GW power (majorly RE) to resolve above transmission constraints in Northern region.

4.1.10 Representative from SRPC stated that for BESS as transmission asset, NLDC is yet to issue the procedure for operation.

4.1.11 Member (Power Systems), CEA stated that considering land issues in Panipat area, possibility of proposed substation under GIS instead of AIS may be considered. Representative of CTUIL agreed to examine the matter.

4.1.12 After deliberations, following were decided:

- a) Another meeting may be convened by CEA, with RE developers who have been granted in-principal connectivity through Bikaner V transmission scheme.
- b) CTUIL to analyze implication for the technical minimum requirement of coal stations as 55% instead of 40%.
- c) The scheme may be objective wise segregated (scheme required for RE evacuation of Bikaner V PS and Grid strengthening purpose based on Grid-India feedback).
- d) Outcome of the above shall be discussed in next meeting.

4.2 Transmission System for supply of power to Green Hydrogen/Green Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)

4.2.1 Chief Engineer (PSPA-II), CEA stated that the Transmission System for supply of power to Green Hydrogen/ Ammonia manufacturing potential in the Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s) was recommended in the 22nd meeting of NCT, held at an estimated cost of Rs. 2817 cr. with an implementation timeframe of 36 months. MoP notified the scheme for implementation under the ISTS through TBCB (with PFCCL as BPC) vide Gazette Notification dated 12.09.2024. Mundra I Transmission Limited, the successful bidder for the scheme, has filed a Petition before the Central Electricity Regulatory Commission (CERC) under Section 14 of the Electricity Act, 2003, for grant of transmission license to establish the transmission project on a Build, Own, Operate

and Transfer (BOOT) basis.

- 4.2.2 In the 35th NCT meeting, it was decided to deliberate the matter again after receiving inputs from MNRE regarding the visibility of Green Hydrogen/Green Ammonia (GH/GA) projects in the Mundra region, along with the associated timelines.
- 4.2.3 AESL (the successful bidder), vide letter dated 16.03.2026, requested NCT to recommend the subject transmission scheme to enable the petitioner to place the matter before the Hon'ble CERC for grant of transmission licence, taking into account the applicable planning policy, necessity of the scheme, implementation status already achieved under the completed TBCB process, and the updated inputs of MNRE and CTUIL.
- 4.2.4 The representative of MNRE informed that, at present, there is no visibility of Green Hydrogen/Green Ammonia projects in the Mundra region.
- 4.2.5 The representative of CTUIL mentioned that, as on date, no GNA applications have been received against the planned 3GW capacity under the subject scheme.
- 4.2.6 Expert Member, Shri S.R. Narasimhan stated that if the Green Hydrogen/Green Ammonia projects at Navinal and Kandla do not materialize in the near future, congestion in the Khavda transmission system would further increase, as the planning studies were carried out assuming that the presence of these loads..
- 4.2.7 After deliberations, NCT decided that the transmission scheme "Transmission System for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)" shall be taken up in NCT as and when there is visibility of the demand.

4.3 Implementation timeframe for Inter-State Transmission System (ISTS) projects

- 4.3.1 Representative of CTUIL stated that a realistic implementation timeline would provide clarity to generators, enabling them to incorporate flexibility in the implementation schedule of their generation projects so as to align with the SCoD of the evacuation schemes. This would further facilitate commissioning of transmission schemes within the stipulated timelines. In this regard, CTUIL proposed to benchmark a general implementation schedule of ISTS projects.
- 4.3.2 Chief Engineer (PSPA-II), CEA, stated that the matter was deliberated in the 38th meeting of NCT, wherein NCT opined that the issues such as ROW, land acquisition, difficult terrain etc., vary from scheme to scheme and are difficult to generalize, and hence need to be examined on case to case basis. However, MNRE, vide O.M. dated 30.03.2026, requested CEA to consider and take action on the point "realistic timelines for implementation of transmission projects may be specified in NCT based on past experience, terrain, etc."
- 4.3.3 CTUIL informed that based on the exercise carried out during December, 2025, it was observed that after ignoring the outlier cases of system which were delayed beyond 24 months, about 85% of ISTS projects would have been commissioned

within time frame, if additional 12-18 months was provided for implementation (56 projects would have been commissioned, out of 63 delayed projects). These delays in implementation of the ISTS projects were primarily due to RoW issues, delay in getting forest clearances, land acquisition for sub-station, etc.

4.3.4 NCT opined that the timelines provided to RE developers and the timeline for commissioning of the corresponding transmission system should be aligned for better predictability and coordinated system development. After detailed deliberations, NCT approved the following general implementation schedule of ISTS projects for future transmission schemes:

Sl. No.	Transmission Work	Implementation Timeline (Months)
1	Greenfield AIS/GIS/Hybrid Sub-station (765 kV or 400 kV)	36
2	Greenfield AIS/GIS/Hybrid Sub-station (220 kV or 132 kV)	24
3	HVDC system (Line + Sub-station)	48-54
4	765 kV D/c line (Length < 100 km)	30
5	765 kV D/c line (Length > 100 km)	36
6	400 kV D/c line (Length < 50 km)	24
7	400 kV D/c line (Length > 50 km)	30
8	220 kV or 132 kV line	24
9	Augmentation at Existing AIS Sub-station (400 kV and above)	30
10	Augmentation at Existing AIS Sub-station (220/230 kV and below)	24
11	Augmentation at Existing GIS/Hybrid Sub-station (132 kV and above)	30

- *For hilly and difficult terrains in NER, Sikkim, J&K, Ladakh and Himachal Pradesh, as well as for ISTS lines passing through metro cities, urban areas, or industrial areas, an additional time of 6-12 months may be considered over and above the above timelines, on need- and merit-based assessment.*
- *In case a scheme comprises a combination of the above-mentioned types of transmission works, the qualifying implementation timeline corresponding to the activity with the maximum duration shall be considered for the scheme as a whole. However, in case of exigencies, a compressed implementation schedule may be*

considered on a case-to-case basis.

4.4 Committee Report on Upgradation of Raigarh–Pugalur HVDC System

- 4.4.1 Chief Engineer (PSPA-I), CEA stated that in the 24th meeting of NCT held on 23.10.2024, the scheme “Upgradation of +800 kV, 6000 MW Raigarh - Pugalur HVDC system for enhancement of reverse power capacity up to 6000 MW from existing 3000 MW” was deliberated. In the meeting, it was decided to constitute a committee comprising representatives from CEA, CTUIL, POWERGRID, Grid-India, SRPC and WRPC. The committee was mandated to carry out comprehensive studies and to propose a comprehensive plan, including AC system strengthening in Southern Region and Western Region, along with the total scheme cost.
- 4.4.2 She informed that the final report of the committee regarding upgradation of the Raigarh – Pugalur HVDC for reverse power flow up to 6000 MW from the existing 3000 MW has been prepared, with following recommendations:
- i. The reversal of power up to 6000 MW would be contingent upon implementation of WR-ER Inter-Regional Network Expansion Scheme for grant of connectivity to Thermal Generators in WR, and System strengthening at Karur in SR for additional RE integration.
 - ii. Strengthening at Raigarh end is also being carried out for granting connectivity to thermal generators, and the associated scheme is presently under bidding. As part of the scheme, some additional system strengthening would also be required at the Raigarh end, and the estimated cost for the same is Rs. 458 Cr/ 578 Cr*.

**Estimated Cost of the above system is Rs 458 Cr. (tentative) with the assumption that existing line from RKM up to Raigarh (Kotra) may be utilized for shifting of a 600MW unit of Adani Power (Korba West). The cost would increase to Rs 578 Cr if a new transmission line is required to be implemented from Adani Power (Korba West) to Raigarh (Kotra)-II.*
 - iii. As per the deliberations of the Committee, the AC system strengthening at the Pugalur end is already being taken up as part of grant of connectivity to RE Generators. The scheme is yet to be placed before NCT.
 - iv. Considering the cost of Rs. 1000 Cr as approved by SRPC for upgradation of the HVDC System (including system studies), the total cost for upgradation of the Raigarh - Pugalur HVDC link for reverse power flow up to 6000 MW (from the present level of 3000 MW) would be Rs. **1458 Crore /Rs. 1578 Crore** *(approx.)

**Depending on utilization of the RKM line for shifting of Adani Power Ltd. (Korba West) 1x600MW unit from Raigarh (Kotra) to Raigarh (Kotra-II). The above-mentioned cost is in addition to the cost of the following AC system strengthening scheme at the Raigarh and Pugalur ends:*

 - WR-ER Inter-Regional Network Expansion Scheme (Under Bidding)
 - AC system strengthening at Pugalur end.
 - v. Certain ICT over loadings were observed in the studies, as also highlighted by Grid-India. These ICT loadings are primarily due to injection of surplus RE from intra-state transmission network and shall be addressed in due course as

	Section-1) at Mandsaur S/s for 600 MW RPP of M/s Sprng Green Energy2 Pvt. Ltd. (2200000824)				31.12.2029
2.	Implementation of 2 nos. 220 kV line bays at Shujalpur (PG) S/s	Power Grid Corporation of India Ltd.	Rs. 10.64 Cr	31.03.2026	18 months from the date of award
3.	Eastern Region Expansion Scheme-50: Spare reactor at Sundargarh	Power Grid Corporation of India Ltd.	Rs. 17.91 Cr	31.03.2026	21 months from the date of award
4.	Eastern Region Expansion Scheme-50: Purnea 220/132 kV 4 th ICT	Power Grid Corporation of India Ltd.	Rs. 30.20 Cr	31.03.2026	24 months from the date of award

4.5.2 Members noted the same.

4.6 Implementation of Dynamic Line Rating (DLR) system

4.6.1 Chief Engineer (PSPA-I), CEA stated that in the 19th meeting of NCT held on 29.04.2024, it was directed to expedite pilot project on dynamic line rating (DLR).

4.6.2 She further informed that meetings were held on 14.01.2026 and 16.02.2026 to discuss candidate transmission lines for implementation of Dynamic Line Ratings. In that meeting, POWERGRID stated that they have implemented DLR in the Madurai-Tuticorin 400 kV D/c line (Quad Moose) which was having very high loading at the time of conceptualization of the DLR. The line length is around 95 km and 18 DLR sensors have been installed. However, post DLR implementation, loading on the line has been low and has not even reached its design rating. Therefore, real advantage of DLR have not been realized till date.

4.6.3 She informed that CTUIL and Grid India had suggested that following two lines which are heavily loaded may be considered for implementation of DLR

Sl. No.	Name of the element	Ownership	Length (Km)	Conductor Type	Operational Limit (MVA)	Maximum loading recorded during 1st Jan 2025 to 31st Dec 2025 (Date and Time)	Remarks
1	Jhatikr	DTL +	17	Quad	1962	1275 MW on	1. Linked to RE

	a – Mundk a 400 kV D/c line	POWERG RID		Bersimis		09-06-2025 12:23	evacuation path from Rajasthan and important part of Delhi ring. 2. Line loadings are also on the higher side in planning studies.
2	Jhatikr a – Bamno li 400 kV line	DTL+PO WERGRI D	12	Quad Bersimis	1962	1380 MW on 12-06-2025 14:35	1. Linked to RE evacuation path from Rajasthan and important part of Delhi ring. 2. Line loadings are also on the higher side in planning studies.

4.6.4 Further, following lines had been recommended following ISTS lines (existing and planned) which may be loaded due to high RE integration and may be considered for DLR based on real time loadings in next 2 years.

NR:

- a) 765 kV Khetri-Narela D/c line
- b) 400 kV Jodhpur – Kankroli line
- c) 765 kV Khetri-Jhatikra D/c line
- d) 765 kV Aligarh-G’Noida line
- e) 400 kV RAPP-Shujalpur D/c line

WR:

- f) 765 kV Vataman – Navsari(New) D/c line
- g) Padghe(PG) – Navi Mumbai & Padghe (PG) – Khargar 400kV (quad) line

4.6.5 After deliberations, NCT directed CTUIL to examine the feasibility of implementation with entities involved and take up to the appropriate forum for approval.

4.7 Request to expedite transmission system planning for evacuation of RE power from Vijayapura & Davangere area of Karnataka

4.7.1 Representative of MNRE stated that additional RE potential of 8.2GW (*beyond 500 GW*) was declared by MNRE in the state of Karnataka under the 209.9 GW scheme of 2025-26. Out of this, 1.5 GW was declared at Bijapur (Vijayapura) and 1.25 GW at Davangere. The same was communicated to MoP vide MNRE letters dated 25.06.2025 & 28.08.2025. The planning for the transmission system under ISTS for evacuation of RE power from Bijapur (Vijayapura) & Davangere is still pending.

4.7.2 Representative of CTUIL stated that transmission system for integration and evacuation of additional 1.5 GW RE Potential at Bijapur was planned through 400 kV D/c line from Bijapur to Solapur. However, Solapur and beyond transmission system could not be approved in Western Region. Recently, transmission system for

interconnection at Solapur and beyond is under deliberations in Western Region. After finalization of transmission system at Solapur and beyond, transmission system for integration and evacuation of additional 1.5 GW RE Potential at Bijapur shall be reviewed.

- 4.7.3 He further added that, MNRE has declared RE Potential of 5.25 GW at Davanagere (which includes 1.25 GW of additional potential) and 4.25 GW at Bellary. For integration and evacuation of 9.5 GW RE potential at Davanagere & Bellary area, 765/400/220kV Davanagere PS has been identified for 9.0 GW capacity. Further, RE potential at Bellary has been planned for integration with Davanagere PS. Presently, Davanagere PS and associated transmission system is under various stages of implementation and approval. For grant of Connectivity for additional 0.5 GW RE potential at Davanagere, a new substation will be required.
- 4.7.4 After deliberations, NCT directed CTUIL to holistically re-plan the system.

5 Grid Automation Scheme

5.1 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme “5 min Interface Energy Meter along with AMR system”-For all five regions as PAN India level.

- 5.1.1 Representative of CTUIL stated that a Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has prepared Technical Specifications (TS) of the “5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)” for interstate transmission system at PAN India basis.
- 5.1.2 CTUIL mentioned that the agenda was deliberated and agreed in 50th SRPC meeting held on 16.03.2024, 49th WRPC meeting held on 13.04.2024, 74th NRPC meeting held on 29.06.2024, 26th NERPC meeting held on 05.07.2024, Special Meeting of ERPC held on 07.04.2025 and 15th NPC meeting held on 14.11.2025. Proposal was put up in 31st meeting of NCT held on 14.07.2025 wherein regarding server location and architecture of AMR system, NCT directed CTUIL and Grid India and Cyber security Division to deliberate the matter and submit a comprehensive proposal. Accordingly, CTUIL & Grid India conducted a joint meeting regarding location & architecture of the scheme.
- 5.1.3 The DPR and cost estimate was prepared based on the Meter quantity 13765 Nos. However, considering recently procured 4248 nos. of metes for urgent requirement, the updated cost estimate for AMR Systems & 9517 nos. of IEMs has been proposed. It was also mentioned that AMR in ER is already existing and is under AMC.

5.1.4 Region wise Total project cost is tabulated below:

Region	Estimated Cost Excluding AMC (Rs. in Crs)	Estimated Cost Including AMC (Rs. in Crs)	Total Project Cost Including AMC (Rs. in Crs)

	A	B	C=A+B
NR	70.27	35.82	106.09
WR	62.83	33.58	96.41
SR	60.41	29.11	89.52
ER*	3.12	-	3.12
NER	16.18	12.99	29.17
Total	212.81	111.50	324.31

Note: The above cost excludes IDC & IEDC.

*ER AMR Cost & BoQ to be finalized during engineering.

5.1.5 After detailed deliberations, NCT approved the scheme “Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme “5 min Interface Energy Meter along with AMR system”-For all five regions as PAN India level” under RTM mode as per following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme “5 min Interface Energy Meter along with AMR system”-For all five regions as PAN India level Implementation timeframe: 18 months from the date of allocation	Rs.324.31 crore (approx., Project Cost Rs. 212.81 Cr. & its AMC Cost Rs 111.5 Cr. for 7(1+6) yr AMC).	Under RTM through POWERGRID

5.1.10 Detailed scope of the scheme is given below:

S. No.	Scope of the scheme
1.	Technical Specification for AMR & IEM and including followings: <ul style="list-style-type: none"> Supply & Installation (Incl Replacement of existing IEMs) of AMR compatible 5 min provisioned Interface Energy Meters (configured for 15min Time Block/ as per prevailing regulations or its amendments thereof) for all ISTS interface points across Pan India. Supply and installation of AMR systems in dual LAN configuration at all central locations (excluding certain AMR systems for Eastern Region) along with required systems and accessories including DCU at various stations. AMR Consoles and associated system at CTU for Pan India installed IEMs Database from all Regional AMR. AI enabled system for analysis of meter performance, inventory, fault analysis etc. Streaming online instantaneous MW data at a user configurable rate (minimum 1 min) via AMR system for viewing purposes.

	<ul style="list-style-type: none"> • AMC includes Operations & Maintenance work (including data processing & report generation from AMR, including updating for IEMs installation in the CTU Urja meter portal) for complete AMR system for 7 (1+6) years. – by Implementing Agency. • Online Data storage of Raw Data & processed data for three years and as applicable in line with prevailing applicable regulation. • Ensuring Integration with MDP in coordination with Grid-India in matching timeline. Ensuring integration with necessary H/w & S/w Supply for the existing installed meters/ IEMs with the proposed AMR system <p>Note:</p> <ol style="list-style-type: none"> i. <i>MDP system which is also part of the above TS mentioned shall be implemented by respective RLDC and would match the timeline schedule with IEM & AMR project.</i> ii. <i>Quantity (IEMs Meter/ AMR Systems) is subjected to change during engineering based on Stakeholders' requirements.</i>
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5.2 Unified Real time Dynamic State Measurement System (URTDSM) Phase-II ISTS Project:

- 5.2.1 Representative of CTUIL stated that the said scheme was formulated by POWERGRID and Grid India based on CEA Sub committee report for URTDSM Ph-II- Oct'22, CEA PMU Placement Guidelines Mar'25, RPC, NPC Meetings. In the 15th meeting of NPC, POWERGRID was directed to segregate the proposal for ISTS and STU portions, accordingly as per recent CEA guidelines 2025 for unified PMU placement in Indian Grid, POWERGRID in consultation with Grid India finalised the no of PMUs for URTDSM Phase-II, for deliberation in 16th / 17th NPC meeting.
- 5.2.2 CTUIL proposed Grid Automation scheme “Unified Real time Dynamic State Measurement System (URTDSM) Phase-II ISTS Project” in 39th/ 40th NCT for URTDSM Phase-II having PDCs, analytical servers at 7 Control centers (NLDCs and RLDCs), analytical applications, remote consoles & associated Hardware & Software systems and 1087 new PMUs for central sector (ISTS/ISGS) for WAMS URTDSM system at an estimated cost of Rs. 1132.99 Crores, with an implementation time of 36 months.
- 5.2.3 Also, in view of the criticality of PMU data and URTDSM Phase II award and implementation time of three years (36 Months), forum also deliberated on the need to extend the AMC of URTDSM Phase-I.
- 5.2.4 After detailed deliberations, NCT recommended the scheme “Unified Real time Dynamic State Measurement System (URTDSM) Phase-II ISTS Project” under RTM mode with following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Unified Real time Dynamic State Measurement System (URTDSM) Phase-II ISTS Project Implementation timeframe: 36 months from the date of allocation	Rs. 1132.99 approx. (including AMC for 7 (1+6) years)	Recommended Under RTM through POWERGRID

5.2.5 Detailed scope of the scheme is given below:

S. No.	Scope of the scheme
1.	<ul style="list-style-type: none"> • Supply and Installation of 1087 (approx.) PMUs in Central Sector substations (ISTS, ISGS). • Supply and Installation for Replacement/Establishment of WAMS URTDSM systems including PDCs, Analytical Applications, System planning application and associated control center equipment comprising of software and hardware at 7 Control centers of Grid-India. (Main & backup NLDC and 5 RLDCs) including (1+6) years AMC- by implementing agency. • Remote Consoles at SLDCs for State PMUs reporting. Remote consoles at CEA, NPC, RPCs, CTU & POWERGRID. • Integration of existing PMUs (under URTDSM-Ph-I) and migration of existing historian database in line with the applicable regulations. • AI enabled systems for identified analytical applications. Migrating the URTDSM Ph-I database to URTDSM Ph-II system for necessary input for Artificial Intelligence and generating recommendation for operational and planning purposes- as finalised during engineering stage. • Software Application for Planning- And for analysis of various Load Generation Balance patterns throughout the year (Operating Area Wise, State Wise, Region Wise and All India basis etc) such that the same profiling can be used by CTU for future planning purposes for different time horizons for short term, medium term and long term (2 years, 5 yrs and 10 Years and beyond) and for report generation. Provision for PMU data integration with CTUIL Planning system software for System studies, System planning of ISTS system, in consumable form, through standard protocols along with visualization. <p><i>* Quantity (PMU/ Remote Consoles/ etc.) is subjected to change during engineering based on Grid India inputs in line regulations/ guidelines/ committee reports.</i></p>

6 Status of the bids under process by BPCs

6.1 The BPCs (RECPDCL and PFCCL) have made presentations on the status of under bidding schemes. Summary of the same is given below:

S.N.	Region(s)	RECPDCL	PFCCL
1	Bidding Concluded	1	3
2	Bids Under Evaluation	1	1
3	RfP issued and bids to be submitted	6	7
4	RfP yet to be issued	3	2
5	RfP bid submission on hold	1	0
	TOTAL	12	13

6.2 Members noted the status of the schemes under bidding.

List of participants of the 39th meeting of NCT

CEA:

1. Sh. Ghanshyam Prasad, Chairperson, CEA & Chairman, NCT
2. Sh. Praveen Gupta, Member (E&C)
3. Sh. V.K. Singh, Member (PS)
4. Sh. B. S. Bairwa, Chief Engineer (PSPA-II)
5. Smt. Ammi R Toppo, Chief Engineer (PSPA-I)
6. Sh. S.K. Maharana, Chief Engineer (PCD)
7. Sh. Farooque Iqbal, Director (PSPA-II)
8. Sh. Ganeshwara Rao Jada, Director (PSPA-I)
9. Sh. Pranay Garg, Deputy Director (PSPA-II)
10. Sh. Nitin Deswal, Deputy Director (PSPA-I)
11. Sh. Prateek Jadaun, Assistant Director (PSPA-II)
12. Sh. Rajan Kumar, Assistant Director (PSPM)

MoP:

1. Sh. Sai Baba, Additional Secretary (Trans.)

RPCs:

1. Shri T Sivakumar, MD (TANTRANSCO)
2. Sh. Asit Singh, MS (SRPC)
3. Sh. Len. J.B, SE (SRPC)
4. Sh. P D Lone, SE (WRPC)
5. Sh. P.K.De, SE (ERPC)
6. Chief Engineer/TS, PSTCL
7. CEE, Planning & Coordination, KPTCL
8. EE, KSEBL

MNRE:

1. Sh. Rajesh Kulhari, Joint Secretary
2. Sh. Prasad Chaphekar, Director
3. Sh. Shafiqur Rahman, DGM
4. Sh. Tarun Singh, Scientist E

SECI:

1. Sh. Vineet Kumar, DGM
2. Sh. Prashant Soni, DGM
3. Sh. Prateek Prasun, DGM
4. Sh. Muthuraj R, Sr. Manager
5. Sh. R.K. Agarwal, Consultant

Niti Aayog:

1. Sh. Manoj Kumar Upadhyay, Deputy Advisor

CTUIL:

1. Sh. K.K. Gupta, COO
2. Sh. Vikas Bagadia, Dy. COO
3. Sh. RVMM Rao, CGM
4. Sh. Kishore Kr Sarkar, Sr. GM
5. Smt. Nutan Mishra, Sr. GM
6. Sh. Anil Kumar Meena, GM
7. Sh. Shiv Kumar Gupta, Sr. DGM
8. Sh. Sandeep Kumawat, DGM
9. Sh. Bhaskar Wagh, DGM
10. Sh. T P Verma, DGM
11. Sh. Pratyush Singh, Chief Manager
12. Sh. Venkatesh Gorli, Chief Manager
13. Sh. Kaushal Suman, Chief Manager
14. Sh. Mritunjay Kumar, Chief Manager
15. Sh. Tanay Jaiswal, Engineer
16. Sh. Madhusudan Meena, Assistant Manager

GRID India:

1. Sh. S.C. Saxena, CMD
2. Sh. Rajiv Porwal, Director (SO)
3. Sh. Vivek Pandey, CGM
4. Sh. Priyam Jain, Chief Manager

Expert Member

1. Sh. S. R. Narasimhan

RECPDCL

1. Sh. Anil Kumar Parela, DGM

PFCCL

1. Sh. Naveen Phougat, GM
2. Smt. Nirmala Meena , DGM