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 Addressee

विषयः ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की उनतालीसवी बैठक का कार्यवृत्त - के संबंध में |

Subject: Minutes of the 39th Meeting of National Committee on Transmission (NCT) –regarding.

महोदया (Madam) / महोदय (Sir),

The 39th meeting of the "National Committee on Transmission" (NCT) was held on 17th march, 2026 at New Delhi. The minutes of the meeting are enclosed herewith.

भवदीय / Yours faithfully

Digitally signed by
Bhagwan Sahay Bairwa
Date: 25-03-2026
17:42:38

(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. Abhay Choudhary Expert Member	10.	Managing Director, Jammu Power Distribution Corporation Limited (JPDCL) Gladni Narwal, Jammu, Jammu & Kashmir, India - 180006
11.	Sh. S.R Narasimhan Expert Member	12.	Shri. Shivdas S, Director (Transmission & System Operation) Vydyuthi Bhavanam, Pattom, Thiruvananthapuram, Kerala-695004
13.	Sh. Sabyasachi Roy, Director (Operations), WBSETCL	14.	Chairperson, North Eastern Region Power Committee Hon'ble Minister of Power, Govt. of Assam, Guwahati – 781 006
15.	Chairperson, Western Region Power Committee 2nd Floor, Vidyut Seva Bhavan, P.O. Sunder Nagar, Danganiya, Raipur: 492 013		

Special Invitee

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

Table of Minutes

Minutes of the 39th meeting of National Committee on Transmission (NCT)

1 Confirmation of the minutes of the 38th meeting of National Committee on Transmission

1.1 The minutes of the 38th meeting of NCT held on 25.02.2026 were issued on 09.03.2026 vide CEA letter no. CEA-PS-12-13/3/2019-PSPA-II Division/ I/61631/2026.

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 meeting of NCT:

2.1 Status of transmission schemes approved/recommended:

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 Transmission Network Expansion Scheme in Western Region to cater to pumped storage potential near Satara (up to 4500 MW):Part B	Recommended Approved	TBCB RTM	PFFCL	Gazetted notification by MoP awaited.
2.	ERES-47: Nawada – Durgapur – Jeerat (New) 765kV corridor	Recommended	TBCB	RECPDCL	Gazetted notification by MoP awaited.
3.	Transmision scheme for evacuation of power from Sunni Dam HEP (382 MW) & Luhri Stage-I (210 MW)	Recommended	TBCB	RECPDCL	Gazetted notification by MoP awaited. Denotification of the Gazette notified by CEA in ref. to 8th NCT meeting is in process.

2.2 Status of transmission schemes where modifications was suggested/approved in 38th NCT meeting:

S. No.	Scheme where modifications was suggested	Status
1.	Modification in scope of Transmission System for Integration of Power from RE Projects in Lakadia REZ in Gujarat - Phase II (7500MW)	Informed to BPCs vide MoM dated 09.03.2026

3 New Transmission Schemes

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

3.1.1 Representative of CTUIL stated that at Bikaner-V PS, connectivity of 6 GW (400 kV – 3490 MW, 220 kV – 2510 MW) from various RE developers were received and granted and applicants have fulfilled regulatory compliances. He further informed that earlier, a HVDC system was planned from Bikaner-V PS to Begunia (Odisha in ER) to meet the demand of Green Hydrogen (GH) in Paradeep and Gopalpur areas. However, due to non-receipt of adequate applications from Green Hydrogen developers in Odisha as well as upcoming thermal generations in ER, power transfer requirement from RE pockets of Rajasthan to Odisha in ER is presently not envisaged in 2029-30 timeframe. In a meeting held on 19.12.2024 under the Chairmanship of Chairperson, CEA, it was stated that some RE capacity which could be evacuated through AC system needs to be explored as EHVAC system could be completed in 2-3 years, whereas HVDC system would take 5-6 years.

3.1.2 It was mentioned that transmission scheme is proposed for evacuation of 6GW RE power from Bikaner complex (Bikaner-V PS) in Rajasthan to various load centers of Northern region. 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. Further, the scheme will resolve the issue of critical loading of 765kV Bikaner - Moga D/c & 765kV Aligarh - Greater Noida line. The scheme shall also provide supply to Mohali region to resolve the power deficit situation in Punjab and also improve ATC/TTC limits of Punjab. The scheme shall also feed RE power to other load centres of Delhi, UP and Eastern region to cater to future demand growth

3.1.3 The proposal has been discussed and agreed in 55th TCC/ERPC meeting held on 16-17th Dec’25 and in special meeting of NRPC held on 23.02.26.

3.1.4 Representative of Grid-India emphasized on issues of low SCR in Northern region grid and stated that the oscillations have been observed in the Grid due to the connections of the Inverters in the Indian Grid even when they are not operating.

3.1.5 Expert Member Sh. Narasimhan stated that the area would have predominantly solar generation and 6 GW solar can be safely evacuated with Battery Energy Storage System (BESS) installed at Bikaner. He further mentioned that CTUIL had already highlighted the issue of matching Load Generation Balance during the solar hours and almost 25-55 GW surplus in the 2030-31 time frame. On the other had there has been a serious capacity crunch during the non-solar hours right from 2022 summer to the current 2026 summer season. BESS would address both these constraints simultaneously. Therefore, the entire AC transmission system could be completely avoided.

He further highlighted that, detailed cost analysis indicates that the BESS-based approach is more economical than the conventional AC transmission system, even after accounting for battery replacement costs. The model also generates substantial revenue through energy arbitrage and ancillary services, resulting in net economic benefits and reduced overall system cost. In addition to cost advantages, BESS would improve grid stability by providing fast frequency response, reactive power support, and reducing reliance on additional grid equipment, while also minimizing renewable curtailment and addressing peak demand challenges. He also suggested detailed evaluation of this alternative before finalizing the transmission scheme.

3.1.6 Representative of GRID-INDIA informed that fault level / short circuit ratio (SCR) at some of the ISTS RE pooling buses in Northern Region (Rajasthan RE complex) and Western Region (especially Khavda and Pachora complex) is below minimum threshold of ‘5’ as stipulated in CEA Connectivity Standards. Along with conventional SCR, interaction-factor-based SCR assessment (SCR-IF) also indicates very low system strength at multiple pooling stations.

3.1.7 He also mentioned that in the Rajasthan RE complex, oscillations are being observed on a daily basis. Similar oscillatory behaviour linked to low SCR has also been observed in the Khavda RE complex. Inadequate system strength is one of the major reasons for these oscillations. Commissioning of additional transmission lines will improve the fault level only up to a certain extent, and therefore SCR would reduce further in the near future with addition of new RE generation.

3.1.8 Representative of CTUIL stated that out of 6000 MW connectivity applications for Bikaner-V S/s, applications for quantum of around 3400 MW are received for non-solar hours in ROFR (Right of First Refusal basis) category. In Bikaner complex, about 16.4 GW (ROFR: 11.6 GW, NON-ROFR: 4.8 GW) of connectivity applications are received for non-solar hours connectivity.

3.1.9 It was stated that Bikaner-1 S/s & Bikaner-II S/s are already existing and Bikaner-III S/s and Bikaner-IV S/s are likely to be commissioned in next 1 year, around 20 GW transmission capacity would be commissioned at these substations in Bikaner complex. Further onwards evacuation transmission system from Bikaner-1 to

Bikaner IV S/s shall also facilitate power from Fatehgarh/Bhadla complex in solar hours. These corridors (Bikaner-1 to Bikaner-IV onwards transmission system) will also be utilized in non-solar hours for power transfer from Bhadla/Fatehgarh complex as well as from Bikaner complex.

3.1.10 Representative of Grid-India sated that with the addition of BESS (along with dedicated solar generation for charging) at the existing RE pooling stations under non-solar hour connectivity framework, the quantum of inverter based resources at these pooling stations will increase significantly without commensurate increase in system strength. Therefore, SCR of '5' as per CEA Connectivity Standards and improvement in system strength through deployment of suitable measures such as Synchronous Condensers, Grid-forming inverters (with fast fault current injection capability) or any other technical solution need to be ensured while granting non-solar connectivity to BESS at existing RE pooling stations.

3.1.11 After deliberations, it was opined that connectivity applications for 6GW on Bikaner-V S/s may be granted at the non-solar hours margins available at these four substations (Bikaner I to Bikaner IV) 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 Battery Energy Storage Systems (BESS) must be included by the developers with the RE Generation.

3.1.12 NCT decided that a meeting may be convened shortly with the connectivity applicants of Bikaner-V PS to deliberate on the issue. Based on the outcomes of the meeting, proposed transmission scheme "Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6 GW) (Bikaner Complex) (Bikaner V: 6 GW)" will be again deliberated in the next meeting of NCT.

3.2 Proposed location of Kakinada GIS substation

3.2.1 In the 35th NCT meeting, it was informed that AM Green Ammonia (India) Pvt. Ltd. has submitted application for 2000 MW for grant of GNA at Kakinada. Considering the current connectivity applications and the clear visibility of upcoming developments, it was recommended that the bidding process should be resumed for implementation.

3.2.2 The substation location of Kakinada Substation was finalized at China Jaggampeta & Dharmavaram Village, Gollaprolu & Prathipadu Taluka, Kakinada District, Andhra Pradesh State in the meeting held on 19.05.2025 considering its safer distance from nearby water bodies and flood-prone areas, optimal LILO length of the 765 kV D/c line, comparatively lower land cost and proximity to the proposed green hydrogen / green ammonia facilities.

3.2.3 Subsequently, representations were received from APTRANSCO, NREDCAP, Green Hydrogen Association (GH2 India) and Greenko Energy Projects Private

Limited for reconsideration of the Kakinada Substation location near Uppada or Kothapalli village as various major projects like Green Hydrogen, Green Ammonia, Green Aluminum, Kakinada SEZ, Pharma city and other clean energy industrial developments are coming up in and around the Kakinada port area.

3.2.4 It was further informed that a meeting was also held on 12.02.2026 under Member (Power Systems), CEA to discuss the matter. In the meeting, PFCCL presented alternative locations (A1 – Uppada and A2 – Kothapalli). A1 (Uppada) was found to be falling inside the coastal disaster zone and A2 (Kothapalli) outside the coastal disaster zone. In the meeting, it was decided that PFCCL shall conduct a joint site visit with APTRANSCO and NREDCAP to A1 (Uppada), A2 (Kothapalli) and any additional alternative locations suggested by APTRANSCO/NREDCAP. PFCCL was suggested to assess the land availability (80–88 acres contiguous), flood/low-lying status, coastal hazard zone, RoW feasibility and impact on LILO routing.

3.2.5 Representative of PFCCL informed that they have conducted joint survey visit along with officials of APTRANSCO, NREDCAP and CTUIL on 17.02.2026 and 18.02.2026 for assessment of suitable locations for establishment of 765/400 kV (GIS) Kakinada Substation. To review and finalize the location of proposed 765/400 kV Kakinada GIS S/s, a meeting was again held on 27.02.2026 with participation of CEA, CTU and PFCCL. After deliberation, alternative -A (Village: P. Isukapalle, Taluka: U. Kothapalli, District: Kakinada) was agreed.

3.2.6 Representative of PFCCL informed that land is available and location is also suitable. Regarding coastal area query, he stated that a substation of Andhra Pradesh state is also planned in the vicinity of this location and the location is feasible.

3.2.7 Representative of CTUIL stated that there is an increase of total 1 km LILO length section from the previous approved 20 km, therefore, the cost implication is almost negligible. However, due to water-logging issues, it may require substantial land filling (estimated in the range of 1.5 m to 2.5 m), which would require an extension in the implementation timeframe of the scheme which has been recommended as 24 months as of now.

3.2.8 After detailed deliberations, NCT revised the implementation timeframe of the scheme to 30 months from the date of SPV transfer.

4 Communication Schemes

4.1 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.

4.1.1 Representative of CTUIL stated that as per the deliberation held in 31st NCT 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. During 17th NPC meeting held on 27.02.2026 CTUIL was advised to submit the AMR & 5-minute meter proposal to NCT in line with JC-TS & RPC/NPC approvals, and AMR servers shall be located at RPC/RLDC premises.

4.1.2 It was further mentioned that in the proposal, all the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).

4.1.3 CTUIL informed that total no. of Interface Energy Meters (IEMs) required in PAN India has been worked out as 13765 based on the updated DPR prepared by POWERGRID out of which 1748 IEMs have already been procured and 2500 IEMs are under procurement. Therefore, total IEMs required for all five regions NER, ER, NR, WR & SR as PAN India are 9517. As per the updated DPR-Jan 2026, cost estimate has been revised by CTUIL.

4.1.4 Members opined that as the agenda was received late and there was no sufficient time to go through the details, detailed deliberations shall be carried out on the agenda and the matter shall be taken up in the next meeting of NCT.

4.2 Unified Real time Dynamic State Measurement System (URTDSM) Phase-II ISTS Project:

4.2.1 Representative of CTUIL stated that, as the URTDSM phase-I systems are becoming obsolete and are to be replaced to meet the requirements for Grid management, the URTDMS phase-II project was envisaged. In the 15th NPC meeting held on 14.11.2024, POWERGRID was entrusted to put up proposal for URTDSM phase II ISTS portion to NCT for ISTS portion comprising of 7 no's Control Centers of Grid-India (NLDCs and RLDCs) and 1070 PMUs for Central Sector locations as per CEA Guidelines 2025 for unified PMU placement in Indian Grid.

4.2.2 Accordingly, the scheme "Unified Real time Dynamic State Measurement System (URTDSM) Phase-II ISTS Project" is prepared by POWERGRID in consultation with Grid-India after deliberation in various RPC/NPC forums. The scope of scheme is proposed as below:

a. Supply and Installation of PMUs in Central Sector substations. The updated quantity of PMUs shall be finalized by POWERGID in consultation with Grid-India and accordingly the cost estimate shall be revised.

b. Replacement/Establishment of WAMS system including PDCs, Analytical Applications including system planning modules and associated control center equipment comprising of software and hardware at 7 Control centers of Grid-India. (Main & backup NLDC and 5 RLDCs)

c. Remote Consoles at SLDCs/CEA/RPCs/CTU/POWERGRID.

d. Integration of existing PMUs (under URTDSM-Ph-I) and migration of existing historian

database in line with the applicable regulations.

e. AI enabled systems for identified 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 purpose- as finalised during engineering stage.

4.2.3 Representative of GRID-INDIA informed that a tentative list of PMUs has been shared with POWERGRID. However, final requirement may vary slightly from the indicated number of PMUs. Further, CTUIL and POWERGRID shall also review and finalise the PMU locations in coordination with GRID-INDIA prior to the floating of the tender. The list may be revised based on current system requirements and in accordance with the CEA *"Guidelines on Unified Philosophy for Placement of Phasor Measurement Unit (PMU) in Indian Grid."*. GRID-INDIA also requested for involving them in finalisation of technical specifications, as well as during FAT (Factory Acceptance Test) and SAT (Site Acceptance Test) of the URTDSM Phase-II system.

4.2.4 Members opined that as the agenda was received late and there was no sufficient time to go through the details, detailed deliberations shall be carried out on the agenda and the matter shall be taken up in the next meeting of NCT.

5 Status of ISTS Transmission Projects under bidding

5.1 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
2	Bids Under Evaluation	0	4
3	RfP issued and bids to be submitted	6	7
4	RfP yet to be issued	4	2
5	RfP bid submission on hold	1	1
	TOTAL	**11**	**14**

5.2 Members noted the status of the schemes under bidding.

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List of participants of the 39th meeting of NCT

CEA:

1. Sh. Ghanshyam Prasad, Chairperson, CEA & Chairman, NCT
2. Sh. B. S. Bairwa, Chief Engineer (PSPA-II)
3. Smt. Ammi R Toppo, Chief Engineer (PSPA-I)
4. Smt. Naghma Furqan, Director (PCD)
5. Sh. Farooque Iqbal, Director (PSPA-II)
6. Sh. Ganeshwara Rao Jada, Director (PSPA-I)
7. Sh. M. Srikant Reddy, Deputy Director (PCD)
8. Sh. Pranay Garg, Deputy Director (PSPA-II)
9. Sh. Nitin Deswal, Deputy Director (PSPA-I)
10. Sh. Manjeet Kashyap, Assistant Director (PSPA-I)
11. Sh. Prateek Jadaun, Assistant Director (PSPA-II)

MoP:

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

RPCs:

1. Sh. Asit Singh, MS (SRPC)
2. Sh. Len. J.B, SE (SRPC)
3. Sh. P D Lone, SE (WRPC)

MNRE:

1. Sh. Abhay Bakre, Mission Director
2. Sh. Rajesh Kulhari, Joint Secretary
3. Sh. Shafiqur Rahman, DGM
4. Sh. Tarun Singh, Scientist E

SECI:

1. Sh. Vineet Kumar, DGM
2. Sh. R. K. Agarwal, Consultant

CTUIL:

1. Sh. K.K. Gupta, COO
2. Sh. Kishore Kr Sarkar, Sr. GM
3. Smt. Nutan Mishra, Sr. GM
4. Sh. Anil Kumar Meena, GM
5. Sh. Shiv Kumar Gupta, Sr. DGM
6. Sh. Sandeep Kumawat, DGM
7. Sh. Ajay Dahiya, DGM
8. Sh. Kunal Sagar, DGM
9. Sh. Kaushal Suman, Chief Manager
10. Sh. Tanay Jaiswal, Engineer
11. Sh. Madhusudan Meena, Engineer

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
5. Sh. Prabhankar Porwal, Manager

Expert Member

1. Sh. S. R. Narasimhan
2. Sh. Abhay Choudhary

RECPDCL

1. Sh. Vijay Kulkarni, Sr. GM
2. Sh. Anil Kumar Parela, DGM (Engineering)
3. Sh. Kshitiz Arora, Dy. Executive

PFCCL

1. Sh. Nand Kishor, DGM
2. Smt. Nirmala Meena , DGM