



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 बयालीसवी बैठक का कार्यवृत्त-- के संबंध में ।**Subject: Minutes of the 42nd Meeting of National Committee on Transmission (NCT) –regarding.**

महोदया (Madam) / महोदय (Sir),

The 42nd meeting of the "National Committee on Transmission" (NCT) was held on 07th July, 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. Thiru A. Krishnavel, Director (Operations) & Additional Charge Managing Director TANTRANSCO Building, 6th Floor, 144, Anna Salai, Chennai -600 002
13.	Shri Ajay Yadav, CMD, BSPHCL Vidyut Bhawan-I, 1st 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 42nd meeting of National Committee on Transmission

1 Confirmation of the minutes of the 41st meeting of National Committee on Transmission

- 1.1** The minutes of the 41st meeting of NCT held on 18.05.2026 were issued on 09.06.2026 vide CEA letter no. CEA-PS-12-13/3/2019-PSPA-II Division/ I/65731/2026
- 1.2** No comments were received on the minutes. Members confirmed the minutes.
- 1.3** Members also opined that efforts should be made to issue the minutes of the NCT meetings within 10 days.

2 Status of the transmission/communication schemes noted/approved/recommended to MoP in the 41st 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/ IA	Award/ Gazette notification
1.	Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)	Recommended	TBCB	RECPDCL	Gazette notification issued by MoP on 19.06.2026
2.	Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)- Part E	Recommended	RTM	POWERGRID	Approved by MoP vide OM dated 19.06.2026
3.	ERES-48: Jeerat – Rajarhat – Subhasgram reconductoring	Approved	RTM	POWERGRID	Informed to CTUIL vide letter dated 10.06.2026 CTUIL awarded the works to respective implementing agencies on
4.	Augmentation of Transformation capacity at 765/400 kV Champa PS by installation of 1500 MVA ICT, 765/400 kV (4th ICT on Bus Section-B)	Approved	RTM	POWERGRID	

Sr. No	Name of the Transmission Scheme	Noted/ Recommended / Approved	Mode of Implementation	BPC/ IA	Award/ Gazette notification
5.	Reconductoring of Gooty – Tumkur (Pavagada) 400kV D/c line with HTLS conductor	Approved	RTM	POWERGRID	10.06.2026

2.2 Status of transmission schemes where modifications were suggested/approved in 41st NCT meeting:

S. Nos.	Scheme where modifications were suggested	Status
1.	Modification in future space provisions in the scheme “Transmission system for proposed Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-I)	Informed to the respective BPC vide MoM dated 09.06.2026
2.	Modification in “Transmission system for Integration of Power from RE Projects in Lakadia REZ in Gujarat-Phase II (7500 MW)” due to non-visibility of Green Hydrogen/ Ammonia demand in Kandla area.	Gazette notification issued for modification in the scheme by MoP on 19.06.2026
3.	Modification in the transmission scheme “Transmission System for integration of Krishnagiri REZ Phase-I”	Informed to the respective BPC vide MoM dated 09.06.2026

2.3 Status of communication schemes where modifications were suggested/approved in 41st NCT meeting:

S. Nos.	Scheme where modifications were suggested	Status
1.	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Southern Region	Informed to CTUIL vide letter dated 10.06.2026. CTUIL awarded the works to respective implementing agencies on 10.06.2026
2.	Replacement of 12 no. of FOTE at critical ISTS locations in Southern Region	

3 Modifications in the earlier approved/notified transmission schemes

3.1 Transmission Scheme for supply of power to Green Hydrogen/Ammonia manufacturing potential in Kandla area of Gujarat (Phase-I: 3 GW)

3.1.1 Representative of CTUIL stated that the transmission scheme “Transmission System for Supply of Power to Green Hydrogen/Ammonia Manufacturing Potential in Kandla Area of Gujarat (Phase-I: 3 GW)” was recommended by the NCT in its 21st meeting held on 06.08.2024 to facilitate evacuation and supply of power to the proposed Green Hydrogen/Green Ammonia (GH/GA) projects in the Kandla region. The scheme was subsequently taken up for implementation through the TBCB route. Ministry of Power, vide its gazette notification dated 30.08.2024, notified PFC Consulting Limited (PFCCL) as the Bid Process Coordinator (BPC) for the scheme.

3.1.2 BPC informed that Letter of Intent (LoI) was issued to the successful bidder on 19.02.2025; however, the transfer of SPV remained on hold. Subsequently, the successful bidder expressed its inability to extend the validity of its bid and the associated bid bond.

3.1.3 CTUIL mentioned that earlier GNA applications submitted for GH/GA loads in the Kandla area have been withdrawn, and presently there is no committed load or GNA applications in Kandla area. However, one connectivity application of 500 MW has been received recently on 04.07.2026 and is presently under examination. CTUIL further informed that MoP had requested CTUIL to place the matter before NCT for review of the scheme.

3.1.4 It was also mentioned that, in the 41st meeting of NCT, modification of the scheme “Transmission system for Integration of Power from RE Projects in Lakadia REZ in Gujarat-Phase II (7500 MW)” was recommended, whereby the earlier provision for LILO of the Halvad – Kandla 765 kV D/c line at Lakadia-II S/s (~22 km or 88 ckm) was replaced with the development of Lakadia-II–Halvad 765 kV D/c line, along with associated bays and switchable line reactors.

3.1.5 Representative of MNRE stated that earlier there was limited visibility regarding upcoming GH/GA projects; however, the industry is now actively considering such projects, which may result in new connectivity applications. The Chairperson, NCT suggested that, in case any new connectivity application is received in the region, CTUIL should explore the possibility of connecting the applicant(s) to nearby ISTS Points at appropriate voltage levels, based on MW quantum of application(s) received and in accordance with the prevailing rules.

3.1.6 After deliberations, NCT recommended the following:

- a. De-notification of the scheme “Transmission System for Supply of Power to Green Hydrogen/Ammonia Manufacturing Potential in Kandla Area of Gujarat (Phase-I: 3 GW)” by MoP.
- b. A comprehensive review of the transmission requirement for drawal of power in

the Kandla area, upon emergence of firm GH/GA loads, considering the projected load requirement, phasing of development, and suitable voltage level, to be undertaken by CTUIL.

3.2 Modification in “Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500 MW) and Jamnagar Phase-I (1000 MW)” pertaining to Saurashtra S/s of GETCO

3.2.1 Representative of CTUIL stated that the transmission scheme “Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)” was formulated for integration of about 6.5 GW of RE generation proposed in the Dwarka/Jamnagar areas in Gujarat. The scheme was recommended by NCT in its 37th meeting held on 19.01.2026 and is currently under bidding process through PFCCL, with an implementation timeline of March 2030. The scheme, inter-alia, includes 2 Nos. of 765 kV line bays at the proposed Saurashtra Substation of GETCO.

3.2.2 It was informed that PFCCL had apprised CTUIL that the proposed 765 kV Saurashtra substation of GETCO is now being planned as a GIS substation instead of an AIS substation, as communicated by GETCO. Further, GETCO has finalized the substation location at Sompipaliya, and the project is presently at the NIT stage. Accordingly, CTUIL proposed to modify the scope of the instant scheme by providing the 2 Nos. of 765 kV line bays at the Saurashtra Substation as GIS bays instead of AIS bays. Consequential changes in the nomenclature and scope associated with the Saurashtra Substation have also been proposed.

3.2.3 Further, considering the planned LILO of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line at Jamnagar 2 (Jamjodhpur) S/s (GETCO), it was proposed to install 330MVar Switchable Line Reactor on each ckt of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line at Saurashtra (Sompipaliya) (GETCO) (GIS) end instead of Kalyanpur (GIS) end.

3.2.4 CTUIL informed that the estimated cost of the revised scheme would be about Rs. 7893 Cr as against the approved cost of Rs. 7688 Cr., resulting in an increase of about Rs. 205 Cr. (about 2.66%).

3.2.5 After deliberations, NCT approved the proposed modifications in the scope of the transmission scheme “Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500 MW) and Jamnagar Phase-I (1000 MW)” as under:

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
1.	Establishment	765/400 kV, 1500	Establishment	765/400 kV, 1500

Original Scope			Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	4x1500 MVA, 765/400 kV & 10x500MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor Future provision (space for): 765/400 kV, 1500MVA ICT along with bays- 2 Nos. (on Sec-II) 765 kV line bays along with switchable line reactors – 8 Nos. (4 Nos. on Sec-I & 4 Nos. on Sec-II) 765 kV, 330MVA Bus Reactor along with bay: 2 Nos. (1 on Sec-I & 1 on Sec-II) 400 kV line bays along with switchable line reactors– 12 Nos. (4 Nos. on Sec-I & 8 Nos. on Sec-II) 420 kV, 125MVA Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II)	MVA ICT – 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I & 1 on Sec-II) 400/220kV, 500MVA ICT – 10 Nos. (5 on Sec-I & 5 on Sec-II) 765 kV ICT bays – 4 Nos. 400 kV ICT bays – 14 Nos. 220kV ICT bays – 10 Nos. 765 kV Line bays – 4 Nos. (2 on Sec-I & 2 on Sec-II) 765 kV Sectionalizer bay: 1 -set 400 kV Sectionalization bay: 1- set 220 kV Sectionalization bay: 1 set 1x330 MVA, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I & 1 on Sec-II) 765 kV Bus reactor bay – 2 Nos. 125 MVA, 420 kV reactor- 2 Nos. (1 on	4x1500 MVA, 765/400 kV & 10x500MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor Future provision (space for): 765/400 kV, 1500MVA ICT along with bays- 2 Nos. (on Sec-II) 765 kV line bays along with switchable line reactors – 8 Nos. (4 Nos. on Sec-I & 4 Nos. on Sec-II) 765 kV, 330MVA Bus Reactor along with bay: 2 Nos. (1 on Sec-I & 1 on Sec-II) 400 kV line bays along with switchable line reactors– 12 Nos. (4 Nos. on Sec-I & 8 Nos. on Sec-II) 420 kV, 125MVA Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II)	MVA ICT – 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I & 1 on Sec-II) 400/220kV, 500MVA ICT – 10 Nos. (5 on Sec-I & 5 on Sec-II) 765 kV ICT bays – 4 Nos. 400 kV ICT bays – 14 Nos. 220kV ICT bays – 10 Nos. 765 kV Line bays – 4 Nos. (2 on Sec-I & 2 on Sec-II) 765 kV Sectionalizer bay: 1 -set 400 kV Sectionalization bay: 1- set 220 kV Sectionalization bay: 1 set 1x330 MVA, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I & 1 on Sec-II)

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	220 kV line bays: 3 No. on Sec-I & 3 Nos. on Section-II Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS) (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW Poles on each 400kV bus section) ± 400 MVAr STATCOM with 400kV bay – 2 No. (1 on Sec-I & 1 on Sec-II)	Sec-I & 1 on Sec-II) 400 kV Reactor bay- 2 Nos. 220kV BC Bay-2 No. 400 kV line bay – 1 No. (for interconnection of RE Project at Sec-I) 220kV line bays – 12 Nos. (for interconnection of RE Projects, 6 on Sec-I & 6 on Sec-II)	220 kV line bays: 3 No. on Sec-I & 3 Nos. on Section-II Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS) (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW Poles on each 400kV bus section) ± 400 MVAr STATCOM with 400kV bay – 2 No. (1 on Sec-I & 1 on Sec-II)	765 kV Bus reactor bay – 2 Nos. 125 MVAr, 420 kV reactor- 2 Nos. (1 on Sec-I & 1 on Sec-II) 400 kV Reactor bay- 2 Nos. 220kV BC Bay-2 No. 400 kV line bay – 1 No. (for interconnection of RE Project at Sec-I) 220kV line bays – 12 Nos. (for interconnection of RE Projects, 6 on Sec-I & 6 on Sec-II)
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/c line	95 km	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/c line	95 km
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s	765 kV line bays – 2 Nos. (GIS)	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s	765 kV line bays – 2 Nos. (GIS)
4.	Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line	225km.	Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line	225km.
5.	330MVAr	330 MVAr, 765 kV	330MVAr	330 MVAr, 765 kV

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	Switchable line reactors on each circuit at Kalyanpur (GIS) end of Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line (with NGR bypass arrangement)	switchable line reactor- 2 Nos. Switching equipment for 765 kV line reactor- 2 Nos.	Switchable Line Reactor on each circuit at Saurashtra (Sompipaliya) (GETCO) (GIS) end of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line (with NGR bypass arrangement)	Switchable Line Reactor- 2 Nos. (7x110 MVAR single Phase Reactors including one spare unit for line reactors) 765 kV Switchable Line Reactor Bay - 2 Nos.(GIS)
6.	2 Nos. 765 kV line bays at Saurashtra (near Rajkot) (GETCO) S/s	765 kV line bays – 2 Nos.	2 Nos. 765 kV line bays at Saurashtra (Sompipaliya) (GETCO) (GIS) S/s	765 kV line bay – 2 Nos. (GIS) (2 nos. complete diameters (Main-Tie-Main) to be considered)
7.	Installation of Synchronous Condenser (+300/-200MVA) (Minimum) & Short circuit contribution at PCC of 1200MVA (Minimum) at Jam Kalyanpur (GIS)– 2 Nos. Value of Inertia (MW-s) shall be defined in RfP document.	Synchronous Condenser along with associated 400kV Bay-2 Nos. (one on each Sec-I & II)	Installation of Synchronous Condenser (+300/-200MVA) (Minimum) & Short circuit contribution at PCC of 1200MVA (Minimum) at Jam Kalyanpur (GIS)– 2 Nos. Value of Inertia (MW-s) shall be defined in RfP document.	Synchronous Condenser along with associated 400kV bay-2 Nos. (one on each Sec-I & II)
8.	Creation of 220kV switchyard along with Installation of 3x500MVA,	Creation of 220kV Bus Section-I 220kV BC Bay – 1 No.	Creation of 220kV switchyard along with Installation of 3x500MVA,	Creation of 220kV Bus Section-I 220kV BC Bay – 1 No.

Original Scope			Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	400/220kV ICTs at Jamnagar (GIS) S/s	400/220 kV, 500 MVA ICT – 3 Nos. (on 400kV & 220kV Sec-I) 400 kV ICT bays – 1 No. (2 Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under “Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area” scheme) 220kV ICT bays – 3 Nos.	400/220kV ICTs at Jamnagar (GIS) S/s	400/220 kV, 500 MVA ICT – 3 Nos. (on 400kV & 220kV Sec-I) 400 kV ICT bay – 1 No. (2 Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under “Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area” scheme) 220kV ICT bays – 3 Nos.
9.	4 nos. 220 kV line bays for RE interconnection	220 kV line bays – 4 Nos.	4 Nos. 220 kV line bays for RE interconnection	220 kV line bays – 4 Nos.

Notes:

- i. TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 and 9 on free of cost basis
- ii. GETCO shall provide space for above scope of work at Sl.5 & 6 on free of cost basis
- iii. Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.
- iv. Above Syncons (at Sl. 7) shall be considered as ‘transmission asset’ similar to STATCOM and SVC for its tariff mechanism.

3.3 Modification in “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya (Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW) Part-C” pertaining to Lonikand-I S/s of MSETCL

3.3.1 Representative of CTUIL stated that the transmission scheme “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya

(Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW) Part-C” was formulated for onward evacuation of a cumulative capacity of about 14 GW from Dwarka/Jamnagar and Lakadia areas in Gujarat. The scheme was recommended by NCT in its 37th meeting held on 19.01.2026 and is currently under bidding process through PFCCL. The scheme, inter-alia, includes interconnection with Lonikand-I (MSETCL) S/s.

3.3.2 It was informed that PFCCL had apprised CTUIL regarding the non-availability of space for 2 Nos. 400 kV line bays at Lonikand-I (MSETCL) S/s for termination of the Alephata –Lonikand-I 400 kV D/c line, as conveyed by MSETCL. The matter was subsequently taken up with MSETCL, and a joint site visit was carried out on 10.06.2026 with representatives of CTUIL, MSETCL & PFCCL. Further, a meeting was convened by CEA on 02.07.2026 with representatives of CEA, CTUIL, PFCCL & MSETCL to finalize the line bay configuration (GIS/AIS), location, and transmission line routing within the boundary of Lonikand-I S/s for terminating the proposed Alephata – Lonikand-I 400 kV D/c line. Subsequently, MSETCL had provided their inputs.

3.3.3 PFCCL mentioned that National Centre for Radio Astrophysics (NCRA), an autonomous centre of the Tata Institute of Fundamental Research (TIFR), operates the Giant Metrewave Radio Telescope (GMRT) near Pune. The originally envisaged route of the Nasik–Alephata 765 kV D/c line falls within/near the vicinity of the GMRT facility. As conveyed by NCRA, EHV transmission lines are required to maintain a minimum separation distance of 15 km from GMRT antennas.

3.3.4 Representative of CTUIL stated that, in view of the above constraint, the routing of the Nasik–Alephata 765 kV D/c line was revised by PFCCL. Consequently, the surveyed line lengths have been modified as under:

- a) Alephata–Lonikand-I 400 kV D/c line: reduced from 70 km to 22 km
- b) Nasik–Alephata 765 kV D/c line: increased from 100 km to 145 km

3.3.5 CTUIL further informed that, based on the revised line length of the Nasik – Alephata 765 kV D/c line (~145 km), provision of a 240 MVAR switchable line reactor on each circuit at the Nasik end, along with associated bays and NGR bypass arrangement would be required to ensure adequate reactive power compensation.

3.3.6 Considering the above modifications, the estimated cost of the revised scheme is about Rs. 3418 Cr as against the approved cost of Rs. 2763 Cr., resulting in an increase of approximately Rs. 655 Cr. (about 23.7%).

3.3.7 After deliberations, NCT recommended the proposed modifications in the scope of the transmission scheme “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya (Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW) Part-C” as detailed below:

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of 765/400 kV, 2x1500MVA & 400/220kV, 3x500MVA Alephata S/s with 2x330 MVAR 765kV bus reactor and 2x125 MVAR 400kV bus reactor. [765kV & 400kV Bus sectionalisers to be kept normally closed. May be opened based on Grid conditions] Future provision (space for): ➤ 765/400 kV, 1500MVA ICT along with bays- 4 Nos. (2 on Sec-I & 2 on Sec-II) ➤ 765 kV line bays along with Switchable Line Reactors – 6 Nos. (2 Nos. on Sec-I & 4 Nos. on Sec-II) ➤ 765 kV, 330MVA Bus Reactor along with bay: 2 Nos.	• 765/400 kV, 1500 MVA ICT – 2 Nos. (7x500 MVA single phase units including one spare ICT Unit) (1 on Sec-I & 1 on Sec-II) • 400/220 kV ICTs - 3 Nos. (on Sec-I) • 765 kV ICT bays – 2 Nos. • 400 kV ICT bays – 5 Nos. • 220kV ICT bays – 3 Nos. • 765 kV Line bays – 6 Nos. (4 on Sec-I: Nasik D/c, Pune (Shikrapur) & Padghe S/c & 2 on Sec-II: Pune (Shikrapur) & Aurangabad) • 1x330 MVA, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for	Establishment of 765/400 kV, 2x1500MVA & 400/220kV, 3x500MVA Alephata S/s with 2x330 MVAR 765kV bus reactor and 2x125 MVAR 400kV bus reactor. [765kV & 400kV Bus sectionalisers to be kept normally closed. May be opened based on Grid conditions] Future provision (space for): ➤ 765/400 kV, 1500MVA ICT along with bays- 4 Nos. (2 on Sec-I & 2 on Sec-II) ➤ 765 kV line bays along with Switchable Line Reactors – 6 Nos. (2 Nos. on Sec-I & 4 Nos. on Sec-II) ➤ 765 kV, 330MVA Bus Reactor along with bay: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➤ 400/220 kV, 500MVA ICT along with bays - 7 Nos. (2 on Sec-I & 5 on Sec-II)	• 765/400 kV, 1500 MVA ICT – 2 Nos. (7x500 MVA single phase units including one spare ICT Unit) (1 on Sec-I & 1 on Sec-II) • 400/220 kV ICTs - 3 Nos. (on Sec-I) • 765 kV ICT bays – 2 Nos. • 400 kV ICT bays – 5 Nos. • 220kV ICT bays – 3 Nos. • 765 kV Line bays – 6 Nos. (4 on Sec-I: Nasik D/c, Pune (Shikrapur) & Padghe S/c & 2 on Sec-II: Pune (Shikrapur) & Aurangabad) • 1x330 MVA, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactor) (1 on Sec-I & 1 on Sec-II) • 765 kV Bus Reactor Bay – 2

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	(1 on Sec-I & 1 on Sec-II) ➤ 400/220 kV, 500MVA ICT along with bays - 7 Nos. (2 on Sec-I & 5 on Sec-II) ➤ 400 kV line bays along with Switchable Line Reactors – 10 Nos. (4 on Sec-I & 6 on Sec-II) + 4 nos. 400kV bays (2 nos. on each section) for HVDC Interconnection ➤ 420 kV, 125MVar Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➤ 220 kV Sectionaliser bay: 1- set ➤ 220kV BC & TBC – 1 No. each ➤ 220 kV line bays: 4 Nos. on Sec-I & 8 Nos. on Section-II ➤ Establishment of 6000 MW, ± 800 kV Alephata (HVDC) [LCC] terminal station (4x1500 MW)	bus /line reactor) (1 on Sec-I & 1 on Sec-II) • 765 kV Bus Reactor bay – 2 Nos. • 220kV BC– 1 No. • 220kV TBC – 1 No. • 125 MVar, 420 kV reactor- 2 Nos. (1 on Sec-I & 1 on Sec-II) • 400 kV Reactor bay- 2 Nos. • 400 kV line bays - 2 Nos. (on Sec-I) • 220 kV line bays - 4 Nos. (for MSETCL 220kV lines: Alephata (M) 220kV D/c & Bridgestone 220kV D/c) • 765 kV Sectionaliser bay: 1 -set • 400 kV Sectionaliser bay: 1- set	➤ 400 kV line bays along with Switchable Line Reactors – 10 Nos. (4 on Sec-I & 6 on Sec-II) + 4 nos. 400kV bays (2 nos. on each section) for HVDC Interconnection ➤ 420 kV, 125MVar Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➤ 220 kV Sectionaliser bay: 1- set ➤ 220kV BC & TBC – 1 No. each ➤ 220 kV line bays: 4 Nos. on Sec-I & 8 Nos. on Section-II ➤ Establishment of 6000 MW, ± 800 kV Alephata (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW poles on each 400kV section)	Nos. • 220kV BC– 1 No. • 220kV TBC – 1 No. • 125 MVar, 420 kV reactor- 2 Nos. (1 on Sec-I & 1 on Sec-II) • 400 kV Reactor bay- 2 Nos. • 400 kV line bays - 2 Nos. (on Sec-I) • 220 kV line bays - 4 Nos. (for MSETCL 220kV lines: Alephata (M) 220kV D/c & Bridgestone 220kV D/c) • 765 kV Sectionaliser bay: 1 -set • 400 kV Sectionaliser bay: 1- set

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW poles on each 400kV section)			
2.	Alephata – Lonikand-I 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent) (~70km.)	70 km (140 ckm)	Alephata – Lonikand-I 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent) (~22km.)	22 km (44 ckm)
3.	2 Nos. 400 kV line bays at Lonikand-I (MSETCL) S/s for Alephata – Lonikand-I 400kV D/c line	400 kV line bays – 2 Nos.	2 Nos. 400 kV Outdoor GIS line bays at Lonikand-I (MSETCL) S/s for Alephata – Lonikand-I 400kV D/c line	400 kV Outdoor GIS line bays – 2 Nos. (DM Scheme) along with associated equipment.
4.	LILO of Aurangabad – Pune (Shikrapur) (GIS) 765kV S/c line and Padghe (GIS) – Pune (Shikrapur) (GIS) 765kV S/c line at Alephata S/s (LILO route length ~ 20km.)	LILO route length – 20 km. (80ckm)	LILO of Aurangabad – Pune (Shikrapur) (GIS) 765kV S/c line and Padghe (GIS) – Pune (Shikrapur) (GIS) 765kV S/c line at Alephata S/s (LILO route length ~ 20km.)	LILO route length – 20 km. (80ckm)
5.	Nasik – Alephata 765kV D/c line	100 km (200 ckm)	Nasik – Alephata 765kV D/c line (~145km.)	145 km (290 ckm)

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	(~100km.)			
5a.	-	-	765 kV, 240 MVAR Switchable Line Reactor on each circuit at Nasik end of Nasik – Alephata 765kV D/c line (with NGR bypass arrangement)	240 MVAR, 765 kV Switchable Line Reactor- 2 Nos. 765 kV Switchable Line Reactor Bay - 2 Nos. (for Nasik end). 80 MVAR, 765 kV spare single-phase reactor already approved at Nasik [under “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5GW), Jam Khambhaliya (Phase-II: 5.5GW) and Jamnagar (Phase-I: 1GW) Part-B” for South Olpad – Nasik 765kV D/c line] shall be utilized
6.	2 Nos. 765kV bays at Nasik S/s for Nasik – Alephata 765kV D/c line	765 kV Line bays – 2 Nos.	2 Nos. 765kV bays at Nasik S/s for Nasik – Alephata 765kV D/c line	765 kV Line bays – 2 Nos.

3.4 Modification in “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya (Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW) Part-B”

3.4.1 Representative of CTUIL stated that the transmission scheme “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya (Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW) Part-C” was formulated for onward evacuation of cumulative capacity of 14 GW power from various RE Projects proposed in Dwarka/Jamnagar and Lakadia areas in Gujarat. The scheme was recommended by NCT in its 37th meeting held on 19.01.2026 and is currently under bidding process, with bidding being undertaken by RECPDCL. The scheme inter-alia includes 2 Nos. 400 kV line bays at Pimpalgaon S/s for Nasik – Pimpalgaon (MSETCL) 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent).

3.4.2 It was mentioned that RECPDCL had apprised CTUIL that, based on the survey conducted and the GA & SLD drawings furnished by MSETCL, Pimpalgaon Substation is being developed as a 400 kV GIS substation (DM Scheme) and is presently under construction by MSETCL. Accordingly, it has been proposed that the 2 nos. of 400kV line bays at Pimpalgaon (MSETCL) substation under the instant scheme to be implemented as GIS bays instead of conventional AIS bays.

3.4.3 It was further informed that during the location finalization meeting for Nasik S/s convened by CEA on 13.04.2026, MSETCL clarified that it is planning a 400 kV Musalgaon S/s, which can be connected through LILO of the proposed Nasik – Pimpalgaon (MSETCL) 400 kV D/c line. Accordingly, MSETCL conveyed that there is no requirement of any specific routing of the proposed transmission line via the vicinity of Sinnar TPP / Raymond, as had been requested earlier. MSETCL further indicated that it would implement the LILO portion under the In-STS to provide connectivity to its proposed Musalgaon S/s.

3.4.4 CTUIL informed that, considering the above modifications, the estimated cost of the revised scheme would be about Rs. 3841 Cr. as against the approved cost Rs. 3839 Cr., resulting in an increase of about Rs. 2 Cr. (i.e. 0.052%).

3.4.5 After deliberations, NCT approved the following modifications in the scope of the transmission scheme “Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya (Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW) Part-B”:

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of 765/400 kV,	• 765/400 kV, 1500 MVA ICT – 3 Nos. (10x500 MVA	Establishment of 765/400 kV,	• 765/400 kV, 1500 MVA ICT – 3 Nos. (10x500

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	3x1500MVA & 400/220kV, 3x500MVA Nasik S/s (towards South of Nasik) with 2x330 MVAR 765kV bus reactor and 2x125 MVAR 400kV bus reactor. Future provision (space for): ➤ 765/400 kV, 1500MVA ICT along with bays- 3 Nos. (on Sec-II) ➤ 765 kV line bays along with switchable line reactors – 10 Nos. (4 Nos. on Sec-I & 6 Nos. on Sec-II) ➤ 765 kV, 330MVAR Bus Reactor along with bay: 2 Nos. (on Sec-II) ➤ 765 kV Sectionaliser bay: 1 -set ➤ 400 kV Sectionaliser bay: 1- set ➤ 400/220 kV, 500MVA ICT along with bays - 7 Nos. (2 on Sec-I & 5 on Sec-II) ➤ 400 kV line bays along with	single phase units including one spare ICT Unit) • 400/220 kV ICTs - 3 Nos. • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 6 Nos. • 220kV ICT bays – 3 Nos. • 765 kV Line bays – 2 Nos. • 1x330 MVAR, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactor) • 765 kV Bus reactor bay – 2 Nos. • 220kV BC– 1 No. • 220kV TBC – 1 No. • 125 MVAR, 420 kV reactor- 2 Nos. • 400 kV Reactor bay- 2 Nos. • 400 kV line bays - 2 Nos. • 220 kV line bays - 6 Nos. (for MSETCL 220kV lines: Adwadi 220kV D/c, Nasik	3x1500MVA & 400/220kV, 3x500MVA Nasik S/s (towards South of Nasik) with 2x330 MVAR 765kV bus reactor and 2x125 MVAR 400kV bus reactor. Future provision (space for): ➤ 765/400 kV, 1500MVA ICT along with bays- 3 Nos. (on Sec-II) ➤ 765 kV line bays along with switchable line reactors – 10 Nos. (4 Nos. on Sec-I & 6 Nos. on Sec-II) ➤ 765 kV, 330MVAR Bus Reactor along with bay: 2 Nos. (on Sec-II) ➤ 765 kV Sectionaliser bay: 1 -set ➤ 400 kV Sectionaliser bay: 1- set ➤ 400/220 kV, 500MVA ICT along with bays - 7 Nos. (2 on Sec-I & 5 on Sec-II) ➤ 400 kV line bays along with	MVA single phase units including one spare ICT Unit) • 400/220 kV ICTs - 3 Nos. • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 6 Nos. • 220kV ICT bays – 3 Nos. • 765 kV Line bays – 2 Nos. • 1x330 MVAR, 765 kV Bus Reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactor) • 765 kV Bus Reactor bay – 2 Nos. • 220kV BC– 1 No. • 220kV TBC – 1 No. • 125 MVAR, 420 kV Bus Reactor- 2 Nos. • 400 kV Bus Reactor bay- 2 Nos. • 400 kV line bays - 2 Nos.

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
	switchable line reactors– 10 Nos. (4 on Sec-I & 6 on Sec-II) ➤ 420 kV, 125MVA Bus Reactor along with bays: 2 Nos. (on Sec-II) ➤ 220 kV Sectionaliser bay: 1- set ➤ 220kV BC & TBC – 1 No. each ➤ 220 kV line bays: 2 Nos. on Sec-I & 8 Nos. on Section-II	GCR 220kV D/c & Nasik OCR 220kV D/c)	switchable line reactors– 10 Nos. (4 on Sec-I & 6 on Sec-II) ➤ 420 kV, 125MVA Bus Reactor along with bays: 2 Nos. (on Sec-II) ➤ 220 kV Sectionaliser bay: 1- set ➤ 220kV BC & TBC – 1 No. each ➤ 220 kV line bays: 2 No. on Sec-I & 8 Nos. on Section-II	• 220 kV line bays - 6 Nos. (for MSETCL 220kV lines: Adwadi 220kV D/c, Nasik GCR 220kV D/c & Nasik OCR 220kV D/c)
2.	South Olpad (GIS) – Nasik 765kV D/c line (240km.)	• 240 km (480 ckm)	South Olpad (GIS) – Nasik 765kV D/c line (240km.)	• 240 km (480 ckm)
3.	2 Nos. 765 kV line bays at South Olpad (GIS) S/s (Sec-II) for South Olpad – Nasik 765kV D/c line	• 765 kV line bays – 2 Nos. (GIS) (Sec-II) along with 1 Set of 765kV sectionaliser so as to establish 765kV Sec-II.	2 Nos. 765 kV line bays at South Olpad (GIS) S/s (Sec-II) for South Olpad – Nasik 765kV D/c line	• 765 kV line bays – 2 Nos. (GIS) (Sec-II) along with 1 Set of 765kV sectionaliser so as to establish 765kV Sec-II.

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
4.	765kV, 240MVAR Switchable line reactors on each circuit at both ends of South Olpad – Nasik 765kV D/c line	• 240 MVAR, 765 kV switchable line reactor- 4 Nos. (2 for South Olpad end and 2 for Nasik end) • 765 kV switchable Line Reactor Bay - 4 Nos. (2 for South Olpad end and 2 for Nasik end) • 80MVAR spare single-phase reactor at Nasik for above 240MVAR switchable LR. • 80MVAR spare single-phase reactor at South Olpad S/s is already available and same shall be used for subject switchable LR.	765kV, 240MVAR Switchable Line Reactors on each circuit at both ends of South Olpad – Nasik 765kV D/c line	• 240 MVAR, 765 kV Switchable Line Reactor- 4 Nos. (2 for South Olpad end and 2 for Nasik end) • 765 kV switchable Line Reactor Bay - 4 Nos. (2 for South Olpad end and 2 for Nasik end) • 80MVAR spare single-phase reactor at Nasik for above 240MVAR switchable LR. • 80MVAR spare single-phase reactor at South Olpad S/s is already available and same shall be used for subject Switchable LR.
5.	Nasik – Pimpalgaon (MSETCL) 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent) <i>(Line to be routed from near Sinner TPP / Raymond i.e. from eastern side of Nasik).</i>	• 80km. (160ckm)	Nasik – Pimpalgaon (MSETCL) 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent)	• 80km. (160ckm)

	Original Scope		Revised Scope	
Sl. No.	Scope of the Transmission Scheme	Capacity /km	Scope of the Transmission Scheme	Capacity /km
6.	2 Nos. 400 kV line bays at Pimpalgaon S/s for Nasik – Pimpalgaon (MSETCL) 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent)	• 400 kV line bays – 2 Nos.	2 Nos. 400 kV line bays (GIS) at Pimpalgaon (MSETCL) S/s for Nasik – Pimpalgaon (MSETCL) 400kV D/c line (Quad ACSR/AAAC/AL59 moose equivalent)	• 400 kV line bays (GIS) (DM Scheme) – 2 Nos. along with associated equipment

Note:

- Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.
- TSP of South Olpad (GIS) to provide space for above scope of work (Free of cost)
- MSETCL to provide space for above scope of work at Pimpalgaon S/s (Free of cost)
- MSETCL to implement 220kV downstream system from Nasik S/s in matching time-frame.

3.5 Modification in implementation timeframe of “Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)-Part E” scheme

3.5.1 Representative of CTUIL stated that the transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW) was recommended by NCT in 41st NCT held on 18.05.26. The entire scheme was considered in five (5) packages i.e. Part-A to Part-E. Out of these, Part-A to Part-D have been considered under TBCB through RECPDCL as the BPC with an implementation timeframe of 36 months and Part E package was agreed under RTM by POWERGRID with an implementation timeframe of 36 months. For Part-E of the Scheme, OM has been issued by MoP on 19.06.26.

3.5.2 It was further informed that as the Utilization of Part-E package (RTM) is linked with TBCB portion of scheme i.e. Part B package, implementation timeframe of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW) – Part E is proposed to be considered as 36 months (matching with Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V : 6GW) - Part B scheme.

3.5.3 After deliberations, NCT approved the following modification in the implementation timeframe of transmission scheme “Transmission scheme for evacuation of power as

part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)-Part E”:

S.No.	Scheme recommended in 41 st NCT	Proposed modification in implementation timeframe
1	Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)-Part E Implementation timeframe: 36 months	Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW)-Part E Implementation timeframe: 36 months (matching with Transmission scheme for evacuation of power as part of Rajasthan REZ Ph-IV (Part-6: 6GW) (Bikaner Complex) (Bikaner V: 6GW) - Part B scheme).

3.5.4 Further, it was also noted that respective STUs (UPPTCL for Gonda and Noida Sec-148 S/s, RVPN for Hanumangarh S/s) and ISTS license of Nawada S/s shall provide unconditional access to the ISTS licensee free of any cost for termination of ISTS lines as part of Bikaner V transmission scheme.

4 New Transmission Schemes

4.1 Static/Dynamic compensation requirement in the Northern Region Grid

4.1.1 Representative of CTUIL stated considering Grid India Operational Feedback, issues of weak Grid strength (low SCR) in western Rajasthan RE complex as well as Over voltage/Under voltage in the Northern Region Grid was discussed in various forums. As a short-term measure, transmission lines are opened based on real time grid condition, however high voltage issues continue to persist. In the meetings of NRPC forum, MS NRPC requested CTUIL to carry out a comprehensive study analysis to examine the requirement of further reactive power devices for voltage control in this area.

4.1.2 Further in 38th NCT meeting held on 25.02.2026 Grid-India also highlighted that fault level / SCR at some of the ISTS RE pooling buses in Northern Region (Rajasthan RE complex). Grid-India suggested Planning and commissioning of Synchronous Condensers or any other suitable device for improvement in fault level and dynamic reactive power support on priority as a remedial measure for ensuring the stability of RE complexes. In the NCT meeting CTUIL was directed to plan suitable measures for improvement in fault level on priority.

4.1.3 CTUIL mentioned that as per comprehensive studies for voltage analysis in

NR from voltage profile (of past one year) provided by Grid-India, suitable nodes for installation of static and dynamic compensation based on space availability and application i.e. voltage regulation, improvement in grid strength & inertia etc have been identified. The brief requirement includes SynCons at Bhadla-III, Ramgarh PS and Fatehgarh-IV S/s, STATCOM at Aligarh (PG), Wagoora (PG), Amargarh (Indigrid), Jhatikara (PG) and Mandola (PG)) S/s and Bus Reactors at Agra (PG), Patran (IndiGrid) and Orai (PG) S/s with estimated cost of Rs. 8264.94 Cr.

4.1.4 Representative of GRID-INDIA stated that short circuit ratio (SCR) in both - Rajasthan and Gujarat – RE complexes is currently on the lower side. In future cases also, the SCR is observed to be less than the threshold of ‘5’ specified in CEA Technical Standards for Connectivity to the Grid, Regulations. It was suggested that planning of synchronous condensers or any other suitable technical device may be considered in these complexes.

4.1.5 The proposal has been agreed in 57th TCC/82nd NRPC meetings held on 17th-18th April 2026.

4.1.6 Chairperson, NCT requested CTUIL & Grid-India to examine other possible alternatives that provide synthetic inertia to the grid vis-à-vis SynCon and make a detailed presentation on the same.

4.1.7 After deliberations, NCT recommended the implementation of STACOMs and bus reactors as part of transmission scheme “Static/Dynamic compensation requirement in the Northern Region Grid” under TBCB mode with following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Static/Dynamic compensation requirement in the Northern Region Grid Implementation timeframe: 24 months.	4377.98	Under TBCB through PFCCCL

4.1.8 Details of the scheme are given below:

Sl. No.	Description of Transmission Element	Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)
A	STATCOM	
1	1 unit of STATCOM(±300MVar) along with MSC (1x125 MVar) & MSR (2x125	1 unit of STATCOM(±300MVar) along

	MVAr) at 765/400kV Aligarh (PG) S/s	- with MSC (1x125 MVAr) & MSR (2x125 MVAr) 400 kV STATCOM (GIS) bay: 1 No.
2	2 units of STATCOM (± 300 MVAr) along with MSC (2x125 MVAr with each unit) at 400/220kV Wagoora(PG) S/s	2 units of STATCOM (± 300MVAr) along with MSC (2x125 MVAr with each unit) at 400/220kV Wagoora (PG) S/s 400 kV STATCOM bays: 2 Nos.
3	2 units of STATCOM (± 300 MVAr) along with MSC (2x125 MVAr with each unit) at 400/220kV Amargarh (Indigrid) S/s	2 units of STATCOM (± 300MVAr) along with MSC (2x125 MVAr with each unit) at 400/220kV Amargarh (Indigrid) S/s 400 kV STATCOM (GIS) bays: 2 Nos.
4	2 units of STATCOM(± 300 MVAr) along with MSC (1x125 MVAr with each unit) & MSR (2x125 MVAr with each unit) at 765/400kV Jhatikara(PG) S/s	2 units of STATCOM (± 300MVAr) along with MSC (1x125 MVAr with each unit) & MSR (2x125 MVAr with each unit) at 765/400kV Jhatikara(PG) S/s 400 kV STATCOM bays: 2 Nos.
5	1 unit of STATCOM(± 300 MVAr) along with MSC (1x125 MVAr) & MSR (2x125 MVAr) at 400/220kV Mandola (PG) S/s	1 unit of STATCOM(± 300MVAr) along with MSC (1x125 MVAr) & MSR (2x125 MVAr) 400 kV STATCOM bay: 1 No.
B	Bus Reactor	
1	1 no. of 125 MVAR (420kV) Bus Reactor at 765/400/220kV Agra(PG) S/s	125 MVAR (420kV) Bus Reactor-1 No. 400kV Bus reactor bay – 1 No.
2	1 no. of 125 MVAR (420kV) Bus Reactor at 400/220kV Patran (IndiGrid) S/s (GIS)	125 MVAR (420kV) Bus Reactor-1 No. (in existing half diameter)
3	1 no. of 330 MVAR (765kV) additional Bus Reactor at 765/400kV Orai(PG) S/s	330 MVAR Bus Reactor-1 No. 765kV Bus reactor bay – 1 No. (GIS)

Note:

1. Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed.
2. Bus extension wherever required, shall also be executed under present scope.
3. Additional land adjacent to the existing substation at Amargarh S/s and Wagoora S/s,

required for the installation of bays and associated elements, shall be within the scope of the successful bidder as per site conditions.

4. *Respective TSP of S/s (Aligarh, Jhatikara, Mandola, Agra, Patran & Orai) is to provide free of cost unconditional access to the implementing ISTS licensee for installation of STACOMs/Bus reactors and commensurate bays*
5. *Respective TSP of Amargarh and Wagoora is to provide free of cost unconditional access to the implementing ISTS licensee for termination of bays required for STATCOM installation*

4.2 Transmission System Strengthening at Karur PS for Integration of RE Generation Capacity

- 4.2.1 Representative of CTUIL stated that Karur REZ (2.5 GW) was identified as a part of 18.5 GW RE potential in SR. Karur PS has been implemented by M/s Adani through LILO of Pugalur (HVDC) – Pugalur (existing) 400kV (Quad) D/c line at Karur PS and presently is under operation with 2x500 MVA, 400/230kV ICTs. Further, the pooling station is being augmented with 2x500 MVA, 400/230kV ICTs (3rd & 4th) and expected by Oct'26 & Jan'27. Connectivity of about 1489 MW has been granted at Karur PS with above system.
- 4.2.2 It was informed that, the scheme was deliberated in the 41st NCT meeting held on 18.05.2026, wherein NCT advised CTUIL to study the scheme holistically matching with the Resource Adequacy plan. Further, NCT advised CTUIL to clearly indicate about whether the proposed scheme is for system strengthening or evacuation purpose.
- 4.2.3 CTUIL stated Karur is a wind energy zone and applications granted/received at Karur PS are predominantly based on wind. Total applications for about 2176 MW have been received at Karur PS, out of which connectivity for 1489 MW has been granted with under implementation transmission system. For grant of connectivity to balance applications of 687 MW, augmentation of 2x500 MVA, 400/230kV ICTs (5th & 6th) and strengthening of transmission system beyond Karur PS is required. Further, SRLDC in various forums and in its operational feedback has highlighted the high loading on Karur PS – Pugalur (HVDC) 400kV (Quad) D/c line and Karur PS – Pugalur (existing) 400kV (Quad) D/c lines under N-1 conditions.
- 4.2.4 Further, it was informed that connectivity has been granted to M/s Subramaniyapuram Wind Park Pvt. Ltd. for 350 MW with implementation of 230 kV terminal line bay at Karur PS under the scope of ISTS.
- 4.2.5 Representative of CTUIL stated that the proposed transmission scheme shall facilitate:
 - Evacuation of additional RE Power beyond 1500 MW from Karur REZ (2.5 GW)
 - Relieve overloading on Karur PS – Pugalur (HVDC) 400kV (Quad) D/c line and Karur PS – Pugalur (existing) 400kV (Quad) D/c lines under N-1 conditions.
 - Enhancement of the reverse capability of Raigarh – Pugalur HVDC from 3000 MW to 6000 MW.
 - As in addition to 400 kV D/c lines, scheme also includes augmentation of transformation capacity and 230 kV terminal line bays at Karur PS for evacuation of RE power, therefore the scheme may be considered for evacuation of RE Power from

Karur REZ.

4.2.6 Representative of Grid-India stated that scheme would relieve loading constraints on Karur PS – Pugalur (HVDC) 400kV (Quad) D/c line and Karur PS – Pugalur (existing) 400kV (Quad) D/c lines specially during reversal on power on Raigarh-Puglur HVDC.

4.2.7 It was informed that SRPC vide letter dated 08.04.2026 recommended the scheme for implementation and mentioned that same may be included in National component.

4.2.8 Representative of SRPC (TANTRANSCO), stated that the complete scheme should be classified as evacuation scheme and transmission charges to be considered under NC-RE. Chairperson, CEA stated that in NCT, only technical aspects would be discussed.

4.2.9 After deliberations, NCT recommended the transmission scheme “Transmission System Strengthening at Karur PS for Integration of RE Generation Capacity” for implementation under TBCB mode with following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Transmission System Strengthening at Karur PS for integration of RE generation capacity Implementation timeframe: 30 months	634	Under TBCB through PFCCL

4.2.10 Details of the scheme are given below:

Sl.	Scope of the Transmission Scheme	Capacity /km
1.	Karur PS – Pugalur (HVDC) 400kV (Quad) 2 nd D/c line	~ 15 km • 400 kV line bays – 2 Nos. at Karur PS
2.	400kV line bays at Pugalur (HVDC) for Karur PS – Pugalur (HVDC) 400kV (Quad) 2 nd D/c line	• 400 kV GIS line bays : 2 Nos. of complete GIS diameter (Line-Tie-Line(F) without future provision of line reactor) at Pugalur (HVDC) S/s. • Suitable re-routing of existing 400 kV lines including multi circuit tower etc., if required, for termination of Karur PS – Pugalur (HVDC) 400kV (Quad) 2 nd D/c line
3.	400kV line bays at Pugalur (existing) for Karur PS – Pugalur (existing) 400kV (Quad) 2 nd D/c line	• 400 kV line bays – 2 Nos. at Pugalur (existing) • Acquisition of additional land of about 255x75 meters adjacent to Pugalur (existing) for 2 nos. of 400kV line bays

Sl.	Scope of the Transmission Scheme	Capacity /km
4.	Augmentation of 2x500 MVA, 400/230kV ICTs (5 th & 6 th) at Karur PS	• 2x500 MVA, 400/230kV ICTs • 400kV ICT bay – 2 Nos. • 230kV ICT bay – 2 Nos. • 230kV Bus Sectionalizer – 1 set • 230 kV Bus Coupler (BC) Bay – 1 No. • 230 kV Transfer Bus Coupler (TBC) Bay – 1 No.
5.	Karur PS – Pugalur (existing) 400 kV (Quad) 2 nd D/c line	~ 36 km • 400 kV line bays – 2 Nos. at Karur PS
6.	1 no. of 230kV line bay at Karur PS for termination of dedicated transmission line of RE generation project	• 230kV line bays – 1 no.

Note:

i) *Implementation of scheme require*

- Acquisition of additional land at Pugalur (existing) for 2 nos. of 400kV line bays for Karur PS – Pugalur (existing) 400kV (Quad) 2nd D/c line and its integration with existing S/s. POWERGRID to facilitate termination of line.*
- 2 nos. new GIS diameter (Line-Tie-Line(F) without future provision of line reactor) at Pugalur (HVDC) for termination of Karur PS – Pugalur (HVDC) 400kV (Quad) 2nd D/c line and suitable re-routing of existing 400 kV lines including implementation of multi circuit tower etc. at Pugalur (HVDC) end. TSP of Pugalur (HVDC) shall provide space (free of cost) for above scope of work at Pugalur (HVDC) S/s.*
- TSP of Karur PS shall provide the required space free of cost for the above scope of work at Karur PS.*

4.3 Transmission System for Integration of Kadapa-II REZ (Phase-I)

4.3.1 Representative of CTUIL stated that transmission scheme for integration of RE potential at Kadapa Phase-I (4.5 GW) was discussed in 32nd and 41st NCT meetings, wherein CTUIL was advised to review the scheme again considering the surplus scenario and bring the scheme in the next NCT meeting.

4.3.2 It was informed that applications corresponding to 6322 MW have been received at Kadapa-II PS which includes connectivity for 600 MW PSP project of M/s Adani Renewable Energy Fifty One Ltd. at Gandikota. The start date of connectivity sought for the 600 MW PSP project is Oct'28. In addition to the above, connectivity application for 2250 MW PSP has been received from M/s Adani Hydro Energy Eleven Limited in the months of June, 2026. PSPs will provide the inertia support to the Grid

towards stability and also provides storage facility for RE generation, thereby facilitating optimal utilization of transmission infrastructure. Further, Phase-II transmission scheme for Kadapa-II PS is yet to be finalized.

4.3.3 Chairperson, NCT suggested that no BESS should be considered where hybrid applications of solar and PSP are received.

4.3.4 After deliberations, NCT recommended the transmission scheme “Transmission System for Integration of Kadapa-II REZ (Phase-I)” for implementation under TBCB mode with following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Transmission System for Integration of Kadapa-II REZ (Phase-I) Implementation timeframe: 36 months	3673	Under TBCB through PFCCCL

4.3.5 Details of the scheme are given below:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of 3x1500 MVA, 765/400 kV and 7x500 MVA, 400/220kV Kadapa-II Pooling Station along with 1x330 MVA (765 kV) bus reactors at Kadapa-II PS with provision of two (2) sections of 4500 MVA each at 400kV level Future Space Provisions: • 765/400kV, 1500 MVA, ICTs – 3 nos. • 765kV ICT bays – 3 nos. • 400kV ICT bays – 3 nos. • 400/220kV, 500 MVA, ICTs – 12 nos. • 400kV ICT bays – 12 nos. • 220kV ICT bays – 12 nos. • 765kV line bays – 12 nos. (with provision for SLR) • 765 kV, 330 MVA Bus Reactor – 1 no. • 765 kV Bus Reactor bays – 1 no. • 400kV line bays – 12 nos. (with provision for SLR) • 220kV line bays – 15 nos.	• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit) • 765kV ICT bays – 3 nos. • 400kV ICT bays – 3 nos. • 765kV line bays – 2 nos. (at Kadapa-II PS for termination of Kadapa-II – Thiruvalam 765kV D/c lines) • 765 kV, 330 MVA Bus Reactor – 1 no. (4x110 MVA inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV Bus Reactor bays – 1 no. • 400/220kV, 500 MVA, ICTs – 7 nos. • 400kV ICT bays – 7 nos. • 220kV ICT bays – 7 nos. • 220kV line bays – 10 nos. • 220kV Bus Sectionalizer: 1 set • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos.

Sl. No.	Scope of the Transmission Scheme	Capacity /km
	• 220kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos. • 400kV Bus Sectionalizer: 1 set	
2.	$\pm$ 300 MVar STATCOM at Kadapa-II PS	• 400kV bay – 1 no. • $\pm$ 300 MVar STATCOM – 1 set
3.	Kadapa-II – Thiruvalam 765 kV D/c line with 330 MVar SLR (convertible) at Kadapa-II end on both circuits	~ 226 km • 765 kV line bays – 2 nos. of complete diameters (GIS) at Thiruvalam • 765 kV, 330 MVar SLR at Kadapa-II PS – 2 nos. (6x110 MVar unit) • Switching Equipment for 765 kV SLR at Kadapa-II PS – 2 Nos.

Note:

- i) *POWERGRID shall provide space (free of cost) for above scope of work at Thiruvalam S/S.*

4.4 ERES-51: Diameter completion at Sasaram (POWERGRID) S/s

4.4.1 Representative of CTUIL stated that in order to improve the reliability, ERLDC had proposed completion of 400kV diameter of 765/400kV ICT & 765kV diameter of 330MVAR Bus Reactor at Sasaram (Pusauli) S/s.

4.4.2 After discussions and joint site visit by officials from CTUIL and POWERGRID on 21-11-2025 wherein following was observed for implementation:

- Connection of 400kV side of 765/400kV ICT-I through full diameter:
 - i. Existing 765/400kV ICT is presently connected to 400kV Main Bus-1 through Bay No. 406 (Single bus arrangement) and due to space constraints completion of diameter is not possible.
 - ii. Bay no. 421 is vacant due to shifting of Biharshariff-4 line to Varanasi. Accordingly, it is feasible to shift Sasaram – Daltonganj 400kV line-1 from Bay no. 409 to Bay no. 421 through additional gantry.
 - iii. 400kV side of 765/400kV ICT-I shall be shifted in the Bay No. 409 thereby resulting in connection of ICT-I in complete diameter through Bay nos. 407-408-409. Further Bay no. 406 shall be dismantled.
 - iv. Existing bay equipment/Jack buses are not suitable for 1500MVA, 765/400kV ICT-I. Therefore, with connection of ICT-I in Bay no. 409, bay equipment/Jack Bus and other associated equipment in diameter 407-408-409 shall be upgraded

with suitable rating (i.e. 3150A).

- Diameter completion for 765kV Bus Reactor:

- Existing 765kV 330 MVAR Bus reactor is presently connected to 765kV Main Bus-2 through Bay No. 703 (Single bus arrangement) and due to space constraints completion of diameter is not possible.
- Space for future 765/400kV ICT-2 is vacant. However, 400kV yard of Sasaram S/s has already been exhausted. Accordingly, installation of future 765/400kV ICT-2 is not possible. This available space can be utilized for interconnection of 765kV main Bus-I and Main Bus-II through GIS for completion of 765kV Bus Reactor Diameter.
- Dismantling of AIS equipment & associated interconnection arrangement of Bay no. 703 of Bus Reactor is required.
- Tapping/extension of existing 765kV AIS buses through GIS for construction of new 765kV GIS diameter in new GIS building with 2 nos. of GIS Bays (Main and Tie) for 765kV Bus Reactor was found feasible. Complete diameter is not envisaged since any new element is not foreseen in Sasaram at 765kV level due to space limitation.
- Existing 3 nos. of Bus CVT shall be dismantled and re-erected on the Main Bus-I.

4.4.3 CTUIL proposed for approval of above for improving reliability at Sasaram (PG) substation.

4.4.4 After deliberations, NCT approved the transmission scheme “ERES-51: Diameter completion at Sasaram (POWERGRID) S/s” for implementation under RTM mode with following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	ERES-51: Diameter completion at Sasaram (POWERGRID) S/s Implementation timeframe: 30 months	345.25	Under RTM through POWERGRID

4.4.5 Details of the scheme are given below:

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km) / Nos.
a)	Shifting works at Sasaram (POWERGRID) S/s	- Shifting of Sasaram - Daltonganj 400kV ckt-1 at Sasaram end from Bay no. 409 to Bay No. 421 (currently vacant) through

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km) / Nos.
		additional Gantry thereby making Bay no. 409 spare - Shifting of 400kV side of 765/400kV, 1500MVA ICT-1 at Sasaram (POWERGRID) S/s from Bay no. 406 to Bay no. 409 thereby resulting in installation of ICT-1 in complete diameter through Bay nos. 407-408-409 and dismantling of Bay no. 406
b)	Upgradation of 400kV Bay equipment at Sasaram (POWERGRID) S/s	Upgradation of bay bus and other associated equipment in the diameter 407-408-409 to suitable rating (i.e. 3150A)
c)	765kV Bus extension works at Sasaram (POWERGRID) S/s	- Extension of existing 765kV AIS Buses at Sasaram (POWERGRID) S/s through GIS for construction of new 765kV one diameter (3150A) in a new GIS building with 2 nos. of Main Bays with associated tie bay [i.e. Bus Reactor Bay for existing Bus Reactor – Tie Bay – ICT Bay for future (2nd) ICT] for termination of existing 765kV, 1x330MVA_r Bus Reactor. - Approx. 1800 m (single phase) 765kV GIS Bus Duct
d)	Dismantling and re-erection of existing 3 nos. of 765kV Bus CVTs on Main Bus-I at Sasaram (POWERGRID) S/s.	-

Note:

- The AIS equipment dismantled during implementation of the above scheme shall be utilised under this scheme itself to the extent possible and balance AIS equipment shall become regional spares for their remaining service life.*
- Shifting arrangement of Sasaram - Daltonganj 400kV ckt-1 from Bay no. 409 to Bay No. 421 is proposed inside the substation. Accordingly, any additional transmission line length is not envisaged for the proposed works*

4.5 Transmission System for Evacuation of Power from RE Projects in Solapur SEZ (Phase-II: 2 GW) and Network Expansion Scheme to Enable Drawl of Power from Solapur PS

- 4.5.1 Representative of CTUIL stated that a cumulative REZ potential of 3.5 GW had initially been identified in the Solapur area, comprising 2 GW at Solapur (PG) and 1.5 GW at Solapur PS). Solapur PS is presently under implementation by M/s Solapur Transmission Limited (STL), a subsidiary of Torrent Power Limited, with SCOD of March 2026, for evacuation of 1.5 GW RE power. Further, connectivity applications aggregating about 7.15 GW RE capacity have been received in Solapur area, comprising about 5.15 GW at Solapur PS and 2 GW at Solapur (PG).
- 4.5.2 It was stated that, in its 29th meeting held on 17.04.2025, NCT had decided that transmission schemes corresponding to capacities beyond the RE potential formally declared by MNRE would be considered only after such potential is officially declared by MNRE. Subsequently, MNRE vide letter dated 20.02.2026, declared an additional RE potential of 7 GW in the Solapur area, thereby increasing the cumulative RE potential to 10.5 GW. Accordingly, the proposal for development of Phase-II transmission system for evacuation of an additional 2 GW RE power from Solapur PS has now been taken up.
- 4.5.3 It was informed that the scheme had also been discussed and recommended for implementation in the 51st WRPC meeting held on 11.01.2025.
- 4.5.4 Further, during the meeting held on 29.04.2026 under the Chairmanship of Secretary (Power) regarding cancellation of in-principle grant of connectivity by CTUIL, it was decided to expedite development of transmission system in regions where transmission planning through AC systems is feasible and sufficient applications are available, including Maharashtra.
- 4.5.5 The proposal was also deliberated in the 41st NCT meeting held on 18.05.2026, wherein CTUIL was directed to comprehensively review the transmission requirement in coordination with MSETCL and other concerned stakeholders, considering the planned intra-state transmission network of Maharashtra.
- 4.5.6 Accordingly, the matter was deliberated in the Joint Study Meeting on Transmission Issues in Western Region held during 25th - 27th May 2026, amongst CEA, MNRE, CTUIL, GRID-India, MSETCL, and GETCO, wherein the following was discussed:
- The establishment of the 400/220 kV Wagdari (AIS) substation through the Wagdari - Pune (E) 400 kV D/c line & Wagdari – Solapur (Bus Section-II) 400 kV D/c line had been planned under In-STS for integration of 1.5 GW of RE generation in the Solapur region and to meet the future load requirement in the Pune/Lonikand region. The above system (Wagdari Transmission Limited) has already been awarded through TBCB route to KCC Buildcon in March 2026, with an implementation schedule of 24 months from SPV transfer. In view of the planned utilization of the In-STS, it would not be feasible to evacuate any additional ISTS-connected RE power from the Solapur area through the said network.

- MSETCL highlighted that Solapur PS (Bus Section-II), which forms part of the Solapur REZ Phase-II scheme, is essential for establishment of the Wagdari S/s and for reliable evacuation of power therefrom. MSETCL therefore requested that the Solapur REZ Phase-II (2 GW) scheme be expedited.
- MSETCL further stated that, in order to relieve the loading on existing 220 kV intra-state transmission network, particularly in the Solapur (PG)–Bale corridor, and to improve voltage profile in downstream areas such as Jeur and adjoining regions, an additional ISTS source at the 220 kV level would be required.

4.5.7 Based on the above considerations, the following emerged:

- The transmission system strengthening required for drawl of power in the Solapur area is needed in an earlier timeframe (~30 months), independent of RE evacuation requirements.
- The transmission system for evacuation of 2GW RE power from Solapur REZ Phase-II is also required on priority, considering that Wagdari Transmission Limited has already been awarded with an implementation timeline of 24 months. However, owing to anticipated ROW challenges in the Jejuri area, an implementation timeline of 36 months was considered appropriate for the RE evacuation scheme.
- It was concluded that the requirements for drawal of power and evacuation RE power from the Solapur area are distinct in nature as well as implementation timelines, although both are required on an urgent basis by Maharashtra.

4.5.8 Representative of CTUIL stated that, in line with stakeholder input and system requirement, the originally envisaged combined scheme could either be delinked into two independent schemes with separate implementation timelines or implemented as a single scheme in two distinct parts with different implementation timelines.

4.5.9 NCT observed that policy framework relating to wind energy is under finalization. However, while planning of transmission system in wind-rich regions such as Solapur, due consideration shall be given to wind energy development.

4.5.10 GRID-INDIA stated that the planned In-STS of Maharashtra need to be commissioned within a matching timeframe to avoid overloading of parallel transmission corridors and secure system operation.

4.5.11 After detailed deliberations, NCT recommended the scheme “Transmission system for Evacuation of Power from RE Projects in Solapur SEZ (Phase-II: 2 GW) and Network Expansion Scheme to Enable Drawl of Power from Solapur PS” as a single transmission scheme at an estimated cost of ₹ 2295 Cr. comprising two parts with separate implementation timelines, as detailed below:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
Transmission system for Evacuation of Power from RE Projects in Solapur SEZ (Phase-II: 2 GW) and Network Expansion Scheme to Enable Drawl of Power from Solapur PS			

Part A	Network Expansion Scheme to enable drawl of power from Solapur PS Implementation timeframe: 30 months	196	Under TBCB through PFCCL
Part B	Transmission system for Evacuation of Power from RE Projects in Solapur SEZ (Phase-II: 2 GW) Implementation timeframe: 36 months from the date of allocation of project	2099	

4.5.12 Details of the scheme are given below:

A. Network Expansion Scheme to enable drawl of power from Solapur PS

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Installation of 2x500 MVA, 400/220 kV ICTs (5 th & 6 th) at Solapur PS (terminated on 400 kV bus section-1 and on segregated 220 kV bus section-2, other than the one where RE injection is planned (<i>with space kept for ICT 7th on 400 kV bus section-1 and 220 kV bus section-2, to be planned, in future, as per requirement</i>) Bus Sectionalizer between 220 kV Bus Section-1, Bus Section-2 (proposed for additional RE injection) shall be kept normally open and may be closed under contingency conditions.	• 400/220 kV, 500 MVA ICTs – 2 Nos. • 400 kV ICT bays – 2 Nos. (Bus Section-1) • 220 kV ICT bays – 2 Nos. (Bus Section-2) • 220 kV Sectionalization bay – 1 set • 220 kV BC Bay – 1 No. • 220 kV TBC Bay – 1 No.
2.	6 Nos. 220 kV line bays on 220 kV Bus Section-2 at Solapur PS for 220 kV downstream lines of MSETCL	• 220 kV line bays – 6 Nos. (Bus Section-2)
	Note: 1. MSETCL shall implement the following lines within a matching timeframe: a. LILO of Bale – Osmanabad 220 kV S/c line at Solapur PS b. LLO of Osmanabad – Barshi 220 kV S/c line at Solapur PS c. Solapur PS – Jeur 220 kV D/c line (with high capacity HTLS conductor with minimum capacity of 500 MVA per circuit at nominal voltage) 2. TSP of Solapur PS shall provide space for above scope of work free of cost	

B. Transmission system for Evacuation of Power from RE Projects in Solapur SEZ (Phase-II: 2 GW)

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Creation of New 400 kV Bus Section-2 and 220 kV Bus Section-3 with 400 kV and 220 kV Bus Sectionalizers at Solapur PS, along with 3 nos. 220 kV line bays on Bus Section-3 & 1 no. 400 kV bay on Bus Section-2 for RE Interconnection. 400kV Bus Sectionaliser shall be kept normally OPEN and may be closed under contingency conditions. 220kV Bus Sectionaliser (between 220 kV Bus Section-2 and 3) shall be kept normally OPEN.	• 400 kV Sectionalization bay – 1 set. • 220 kV Sectionalization bay– 1 set. • 220 kV BC Bay – 1 No. • 220 kV TBC Bay – 1 No. • 400 kV line bays – 1 No. (for interconnection of RE Projects at Bus Section-2) • 220 kV line bays – 3 Nos. (for interconnection of RE Projects at Bus Section-3) • 420kV, 125MVAr Bus Reactor – 2 No. • 400kV Bus Reactor bay – 2 No. on 400 kV Bus Section-2
2.	400/220 kV, 3x500 MVA ICT augmentation (8 th , 9 th & 10 th) at Solapur PS on New 400 kV Bus Section-2 and 220 kV Bus Section-3	• 400/220 kV, 500 MVA ICTs – 3 Nos. • 400 kV ICT bays – 3 Nos. (Bus Section-2) • 220 kV ICT bays – 3 Nos. (Bus Section-3)
3.	Solapur PS (Bus Section-II) – Jejuri (MSETCL) 400 kV D/c line (Quad ACSR/ AAAC/ AL59 Moose equivalent)	240 km
4.	400 kV line bays at Solapur PS (Bus Section-2) as well as Jejuri (MSETCL) for Solapur PS (Bus Section-II) – Jejuri (MSETCL) 400 kV D/c line	• 400 kV Bays (AIS) – 2 Nos. at Solapur PS (Bus Section-2) end • 400 kV Bays (GIS) – 2 Nos. at Jejuri end
5.	63 MVAr, 420 kV Switchable line reactors on each circuit at both ends of Solapur PS (Bus Section-2) – Jejuri (MSETCL) 400 kV D/c	• 63 MVAr, 420 kV switchable line reactor - 4 Nos. (2 Nos. at Solapur PS end and 2 Nos. at Jejuri end) • Switching equipment for 420 kV

Sl. No.	Scope of the Transmission Scheme	Capacity /km
	line (with NGR bypass arrangement)	line reactor- 4 Nos. (2 Nos. at Solapur PS end and 2 Nos. at Jejuri end)
6.	Jejuri (M) – Pune-III 400 kV D/c line (Quad ACSR/ AAAC/ AL59 Moose equivalent) (~20 km.)	20 km.
7.	400 kV line bays at Pune-III as well as Jejuri (MSETCL) for Jejuri (M) – Pune-III 400 kV D/c line	• 400 kV Bays (GIS) – 2 Nos. at Pune-III end • 400 kV Bays (GIS) – 2 Nos. at Jejuri end
	Note: a. MSETCL shall implement Jejuri (M) – Hinjewadi (M) 400 kV D/c line within a matching timeframe b. The interim LILO of the 400 kV Lonikand - Karad line at Jejuri (M) shall be reinstated by MSETCL after commissioning of the planned Jejuri - Hinjewadi 400 kV D/c line by MSETCL. c. MSETCL has suggested that the scope at Sl. Nos. 3 & 6 may be implemented by constructing the Solapur PS – Pune-III D/c line (Quad ACSR/ AAAC/ AL59 Moose equivalent) and subsequently LILOing the same at Jejuri through multi-circuit towers, in view of severe ROW constraints in the Jejuri area. The TSP may take note of the same for ease of implementation of the subject scope. d. TSPs of Solapur PS & Pune-III S/s shall provide space for above scope of work free of cost e. MSETCL shall provide space for above scope of work at Jejuri S/s free of cost	

4.6 Common Transmission System Augmentation for Evacuation of Power from 2x800 MW Gadarwara-II TPS and an Additional 1500 MW RE power at Mandsaur PS

4.6.1 Representative of CTUIL stated that as of date, connectivity applications exceeding 6.5 GW have been received in the Mandsaur region, out of which 4.5 GW has been agreed / granted through the following transmission systems, which are currently under various stages of implementation:

- Establishment of 765/400 kV Mandsaur S/s
- Mandsaur - Indore 765 kV D/c line
- Mandsaur - Kurawar 765 kV D/c line
- Augmentation of transformation capacity at Mandsaur S/s for RE Interconnection
- Mandsaur PS - Khandwa (New) PS 765 kV D/c line

4.6.2 It was further stated that detailed system studies were carried out to ensure reliable evacuation of power from 2x800 MW Gadarwara TPS-II without overloading of the

existing transmission corridor, namely the 2x800 MW Gadarwara TPS-I – Jabalpur & 2x800 MW Gadarwara TPS -I – Warora PS 765 kV D/c lines, and to alleviate high loading on the Kurawar - Bhopal 765 kV S/c line. Although a new transmission corridor was initially identified, the configuration was reviewed in view of the high fault levels observed at Jabalpur PS and Gadarwara TPS-I, which were found to exceed the permissible design limits.

4.6.3 CTUIL informed that detailed system studies were further conducted during the joint study meetings held on 15.01.2026 & 16.01.2026, which lead to the evolution of a revised transmission configuration aimed at facilitating:

- Evacuation of up to 6 GW of RE capacity at Mandsaur PS (including an additional 1500 MW beyond 4500 MW already granted)
- Evacuation of additional RE power from Rajasthan (Northern Region) and its reliable dispersal in the Western Region
- Evacuation of power from 2x800 MW Gadarwara TPS-II
- Mitigating of overloading on the existing Gadarwara – Jabalpur & Gadarwara – Warora PS 765 kV D/c lines
- Alleviation of high loading on Kurawar - Bhopal 765 kV S/c line
- Maintaining fault levels within permissible limits at Gadarwara / Jabalpur substations

4.6.4 The scheme was recommended in the 58th WRPC Meeting held on 19.05.2026. During the meeting, NTPC requested that Part-A of the scheme be implemented by September 29 to match the commissioning schedule of the Gadarwara Expansion Project, which would correspond to an implementation period of about 33 months, assuming ~ 5-6 months for bidding activities. NCT deliberated upon the request, however, considering the implementation challenges and RoW issues generally associated with 765 kV transmission corridors, it was decided to retain the implementation timeline of 36 months, as agreed during 40th NCT meeting for 765kV Greenfield S/s.

4.6.5 After detailed deliberations, NCT recommended the scheme “Common Transmission System Augmentation for evacuation of power from 2x800 MW Gadarwara-II TPS and an additional 1500 MW RE power at Mandsaur S/s” for implementation under the TBCB mode, as a single scheme, in following two parts, at an estimated cost of about ₹ 3573 Cr.:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Common Transmission System Augmentation for evacuation of power from 2x800 MW Gadarwara-II TPS and an additional 1500 MW RE power at Mandsaur S/s- Part A Implementation timeframe: 36	3201	Under TBCB through PFCCCL

	months		
II.	Common Transmission System Augmentation for evacuation of power from 2x800 MW Gadarwara-II TPS and an additional 1500 MW RE power at Mandsaur S/s- Part B Implementation timeframe: 31.03.2031	372	

4.6.6 Details of the scheme are given below:

Sl. No.	Scope of the Transmission Scheme	Capacity/ Route length
Part A:		
1.	Augmentation of transformation capacity at Mandsaur PS by 2x1500 MVA, 765/400 kV ICTs (5 th & 6 th), terminated at 765 kV and 400 kV Bus Section-II. [400kV Bus Sectionalizer between 400kV Bus Sections-I and II shall be kept normally open for maintaining sufficient SCR on both buses and may be closed as per requirement of Grid Operator.]	• 765/400 kV, 1500 MVA ICT – 2 Nos. • 765 kV ICT bays – 2 Nos. on Bus Section-II • 400 kV ICT bays – 2 Nos. on Bus Section-II.
2.	Augmentation of transformation capacity at Mandsaur PS by 3x500 MVA, 400/220 kV ICTs (8 th ,9 th & 10 th), terminated at 400 kV Bus Section-II & 220 kV Bus Section-III.	• 3x500 MVA, 400/220 kV ICT – 3 Nos. • 400 kV ICT bays - 3 Nos. on Bus Section-II • 220 kV ICT bays - 3 Nos. on Bus Section-III.
3.	Installation of ± 400 MVar STATCOM at Mandsaur PS	• ± 400 MVar STATCOM – 1 No. • 400 kV bay - 1 No. on Bus Section -II <i>(As per inputs from TSP, space for one of the future line bays envisaged in 400 kV Bus Section-II shall be utilised for subject STATCOM bay)</i>
4.	Establishment of 765 kV Gadarwara Substation along with 2x330 MVAR 765 kV bus reactors	• 765 kV Line bays – 4 Nos. on Bus Section-I (2 Nos. for Kurawar D/c

Sl. No.	Scope of the Transmission Scheme	Capacity/ Route length
	Future provision (space for) (including space required for scope at Part B): • 765/400 kV, 1500 MVA ICTs along with bays - 6 Nos. (3 on Bus Section-I & 3 on Bus Section-II) • 765 kV line bays along with switchable line reactors – 8 Nos. (2 Nos. on Bus Section-I & 6 Nos. on Bus Section-II) • 765 kV, 330 MVAR Bus Reactor along with bays: 2 Nos. (on Bus Section-II) • 400 kV line bays along with switchable line reactors– 16 Nos. (8 Nos. on Bus Section-I & 8 Nos. on Bus Section-II) • 420 kV, 125 MVAR Bus Reactor along with bays: 4 Nos. (2 on Bus Section-I & 2 on Bus Section-II) • 400/220kV ICT along with bays - 6 Nos. (3 on Bus Section-I & 3 on Bus Section-II) • 220 kV line bays: 8 No. on Bus Section -I & 8 Nos. on Bus Section-II • 765 kV Sectionalizer bay: 1 set • 400 kV Sectionalization bay: 1 set • 220 kV Sectionalization bay: 1 set • 220 kV BC Bay - 2 Nos. • 220 kV TBC Bay - 2 Nos.	line and 2 Nos. for Gadarwara TPS-II (Bus Section-II) D/c line) • 330 MVAR, 765 kV Bus Reactor- 2 Nos. (7x110 MVAR 1-phase reactors including one spare unit for bus /line reactors) • 765 kV Bus Reactor bays – 2 Nos. on Bus Section-I
5.	Kurawar - Gadarwara 765 kV D/c line, with LILO of one circuit at Bhopal (BDTCL) S/s	~225Km
5a.	2 nos. 765kV line bays at Bhopal S/s for LILO of one circuit of Kurawar - Gadarwara 765 kV D/c line	• 765kV line bays – 2 Nos.
5b.	2 nos. 765kV line bays at Kurawar S/s for Kurawar - Gadarwara 765 kV D/c line, with LILO of one circuit at Bhopal (BDTCL) S/s	• 765kV line bays – 2 Nos.
6.	Installation of 330 MVAR Switchable Line Reactor at Gadarwara end of Kurawar –	• 330 MVAR, 765 kV Switchable Line Reactor - 1 No.

Sl. No.	Scope of the Transmission Scheme	Capacity/ Route length
	Gadarwara 765 kV line	765 kV Switchable Line Reactor bay - 1 No. 110 MVAr, 1-Phase spare reactor - covered at Sl. No. 4
7.	Installation of 240 MVAr Switchable Line Reactor at Bhopal (BDTCL) end of Bhopal (BDTCL) - Gadarwara 765 kV line	240 MVAr, 765 kV Switchable Line Reactor - 1 No. 765 kV Switchable Line Reactor bay- 1 No. - Existing 80MVAr, 1-Phase spare reactor to be utilized
	Note: 1. With the above scope at Sl. No. 5, the following transmission lines shall be established: - Kurawar - Gadarwara 765 kV S/c line (~225 km), - Kurawar - Bhopal (BDTCL) 765 kV S/c line (~50 km) - Bhopal (BDTCL) - Gadarwara 765 kV S/c line (~175 km) 2. TSP of Kurawar S/s, Bhopal S/s & Mandsaur S/s shall provide the required space free of cost for the above scope of work. 3. NTPC shall implement Gadarwara - Gadarwara TPS-II (Bus Section-II) D/c line Implementation Schedule: Part A: - 36 Months	
Part B:		
8	Creation of 400 kV level at 765 kV Gadarwara Substation and Implementation of 2x1500 MVA 765/400 kV ICTs along with 400 kV line bays	765/400 kV, 1500 MVA ICT – 2 Nos. (7x500 MVA single phase ICTs) 765 kV ICT bays – 2 Nos. (on Bus Section-I). 400 kV ICT bays – 2 Nos. (Bus Section-I). 400 kV line bays – 2 Nos. (on Bus Section-I (for Gadarwara S/s – Gadarwara (STU) 400 kV D/c line of MPPTCL)
9	2 Nos. 400 kV line bays at 765/400 kV Seoni (PG) S/s (refer Note 1 & 2)	400 kV line bays – 2 Nos. [for Seoni (PG) - Chhindwara (STU) 400 kV DCDS (Quad Moose / High Capacity) line under scope of

Sl. No.	Scope of the Transmission Scheme	Capacity/ Route length
		MPPTCL]
	Note: 1. As per feedback from TSP (POWERGRID) of Seoni (PG) S/s, existing Bays No. 430 (in the diameter of 765/400 kV ICT-3) and Bay No. 426 & 427 (to be constructed in a new diameter) can be utilized for termination of the 400 kV lines. Further, one no. line reactor present in the new diameter space is a cold spare, which shall be relocated within the substation. The scope of shifting and new foundation shall be under the present scope of work. 2. TSP of Seoni S/s (POWERGRID) shall provide the required space free of cost for the above scope. 3. MPPTCL shall implement Gadarwara S/s – Gadarwara (STU) 400kV D/c (Quad Moose / High Capacity) line as well as Seoni (PG) - Chhindwara (STU) 400 kV DCDS (Quad Moose / High Capacity) line along with associated line bays at Gadarwara (STU) end in matching time-frame. Implementation Schedule: Part B: 31.03.2031	

4.7 List of awarded ISTS projects costing less than Rs. 100 Crs.

4.7.1 CTUIL informed the following awarded ISTS projects costing less than Rs. 100 Crs. for information of the members:

S. No.	Name of Scheme	Implementing Agency	Estimated Cost	Date of award	Implementation Timeframe
1.	Implementation of 2 nos. 220kV line bays (GIS) at 400/220kV Nallagarh (PG) S/s for the termination of 220kV D/c line from 220/132kV Kunihar S/s to Nallagarh S/s	Power Grid Corporation of India Ltd.	₹ 29.97 Cr.	19.06.2026	31.10.2028
2.	Augmentation of Transformation capacity by 1x500MVA ,400/220kV ICT (4 th) at 400/220kV Sohawal (PG) S/s	Power Grid Corporation of India Ltd.	₹ 73.82 Cr.	19.06.2026	30 months from the date of award.

3.	Implementation of Dynamic Line Rating (DLR) system in 400kV Jhatikara-Mundka D/c line & 400kV Jhatikara-Bamnoli line	Power Grid Corporation of India Ltd.	₹ 9.59 Cr.	19.06.2026	08 months from the date of award.
4.	Augmentation of transformation capacity by 1x500 MVA, 400/220 kV ICT (9 th) at Davanagere PS	M/s POWERGRID Chitradurga Bellary REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited).	₹ 58.3 Cr.	19.06.2026	30 months from the date of award.
5.	Implementation of 1 no. of 220kV Bus Sectionalizer at 220kV level of Koppal-II 765/400/220kV PS	POWERGRID Khavda II-C Transmission Limited (erstwhile POWERGRID Koppal Gadag Transmission Limited) {a 100% wholly owned subsidiary of Power Grid Corporation of India Limited}.	₹ 20.99 Cr.	19.06.2026	24 months from the date of award.

6.	Implementation of 2 no. of 220kV line bay at Tumkur (Pavagada) PS for termination of Tumkur (Pavagada) – Pavagada (KPTCL) 220kV D/c line of KPTCL	Power Grid Corporation of India Ltd.	₹ 14.18 Cr.	19.06.2026	24 months (18 months with best effort basis).
7.	ISTS Works associated with upgradation of existing conductors by High performance conductors by MSETCL in Talegaon area and upgradation of bay equipment at Navi Mumbai S/s			19.06.2026	Par-A&B – 18 months Part-C – 6 months

4.7.2 NCT noted the same.

4.8 Identification of technical, operational, and implementation-related issues before Approval

- 4.8.1 Member Secretary, NCT stated that MoP vide letter dated 22.06.2026 informed that a weekly review meeting of Under-Bidding ISTS TBCB Projects was held on 19.06.2026 under the Chairmanship of Addl. Secretary (Trans.), MoP. During the meeting it is observed that the issues now being cited as reasons for delay pertain to fundamental planning and implementation aspects, which ideally should have been identified, examined and resolved prior to obtaining NCT approval and issuance of the RIP. Timely and comprehensive due diligence at the planning stage could have mitigated these concerns to enable completion of the bidding process within the prescribed timelines.
- 4.8.2 The recurring emergence of such issues after initiation of the bidding process not only delays project transfer but also adversely impacts the timely development of critical transmission infrastructure. It is, therefore, imperative that all stakeholders ensure thorough vetting of technical, operational, and implementation-related issues before projects are taken up for approval and bidding.
- 4.8.3 NCT decided that BPCs should conduct the survey meticulously so that any modifications in the scheme is known quickly. Further, CTUIL shall place any issue requiring ratification or modification before the Committee at the earliest, so as to avoid recurrence of such delays in future.

4.9 Interim arrangement for Neemrana-II

- 4.9.1 It was informed that establishment of Neemrana-II Sub-station under the transmission scheme to Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part1) (Bikaner Complex)- Part-B, is delayed.
- 4.9.2 A meeting was held on 03.07.2026 under the chairmanship of Chairperson, CEA to discuss the possibility of implementing an interim arrangement for evacuation of

power from Bikaner complex. The interim arrangement proposed utilization of Sikar-II – Narela 765 kV D/c line (Under construction) and Bikaner-III – Neemrana-II 765 kV 2xD/c lines, so as to form Bikaner-III – Narela 765 kV D/c line and Bikaner-III – Sikar-II 765 kV D/c line.

- 4.9.3 However, it was observed that the length of the lines formed after the interim arrangement would be more than 400 km; hence, may pose challenge to the reliability of the grid and may aggravate prevalent issue of Oscillations in the RE complexes. Further, the interim arrangement would increase the ICT and line loading in certain pockets of NR grid.
- 4.9.4 Considering the above, the proposal of interim arrangement was not found to be technically feasible.
- 4.9.5 NCT noted the same.

5 Communication Schemes

5.1 Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region

- 5.1.1 Representative of CTUIL stated that as per the CEA letter dated 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.
- 5.1.2 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 existing 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.
- 5.1.3 Subsequently CEA vide their letter dated 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.
- 5.1.4 This agenda was also discussed in the 16th NPC meeting held on 04.07.2025. In principal approval of the scheme was agreed in the 55th TCC/ 80th NRPC meeting held on 17.07.2025/ 18.07.2025.
- 5.1.5 As per the ownership of transmission lines and substations, Scheme is bifurcated owner wise e.g. TSPs (POWERGRID, POWERLINK, SEKURA, BBMB & PKTCL) and other utility STU wise (RRVNL, UPPTCL and PTCUL).

5.1.6 Subsequently, a meeting was convened by CTU on 06.04.2026 among POWERGRID, CTU and STUs to deliberate and finalize the scheme. Based on the inputs received during the meeting, scheme has been updated and same has been put up in 30th NR TeST meeting held on 10.04.2026.

5.1.7 Summary of the schemes under ISTS is given below:

S. No	TSP	OPGW (Km)	FOTE (Nos.)	Estimated Cost (Cr.)
1	POWERGRID	5392.33	68	342.26
2	POWERLINK	856.3	0	47.09
3	NRSS XXXI (B) Transmission Ltd	149	0	8.19
4	PKTCL	66.38	0	3.65
5	BBMB	576.2	3	33.55
Grand Total		7040.21	71	434.74 (approx.)

5.1.8 Summary of the schemes under STUs is given below:

S. No	Utility	OPGW (Km)	FOTE (Nos.)	Cost (Cr.)
1	RRVPL	124.61	6	Through STU schemes
2	UPPTCL	221.736	9	
3	PTCUL	113.54	1	
Grand Total		459.886	16	

5.1.9 The Schemes was deliberated in the 57th TCC/82nd NRPC meeting held on 17.04.2026/18.04.2026 and following was agreed by forum.

- For ISTS portion, Scheme will be taken up by CTU in the upcoming NCT for approval.
- A separate category of deemed ISTS may be made for BBMB portion and taken up to NCT for information by CTU
- For STU and BBMB portion, respective utilities were advised to implement in matching timeframe with ISTS scheme.

5.1.10 After detailed deliberations, NCT approved the communication scheme “Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region” for implementation under RTM with following details:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Comprehensive Scheme for OPGW installation on the existing lines of	Rs. 342.26 crore	Under RTM through POWERGRID

	ISTS in Northern Region- Part A Implementation timeframe: 36 months from the date of allocation (Considering hilly terrain)		
II	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region- Part B Implementation timeframe: 36 months from the date of allocation (Matching with Part-A, which includes FOTE for the entire NR scheme)	Rs. 3.65 crore	Under RTM through PKTCL
III	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region- Part C Implementation timeframe: 36 months from the date of allocation (Matching with Part-A, which includes FOTE for the entire NR scheme)	Rs. 8.19 crore	Under RTM through NRSS XXXI (B) Transmission Ltd
IV	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region- Part D Implementation timeframe: 36 months from the date of allocation (Matching with Part-A, which includes FOTE for the entire NR scheme)	Rs. 47.09 crore	Under RTM through POWERLINK
V	Comprehensive Scheme for OPGW installation on the existing lines of ISTS in Northern Region- Part E Implementation timeframe: 36 months from the date of allocation (Matching with Part-A, which includes FOTE for the entire NR scheme)	Rs. 33.55 crore	Under RTM through BBMB

5.1.11 Details of the scheme is given below:

PART-A

- Supply & installation of OPGW (48F) along with Hardware Fittings, Joint Box etc on transmission lines - Total OPGW (Km): 5392.33
- Supply & installation of FOTE (STM-16/64 with minimum 5 MSP) (including associated system e.g. Repeaters and its shelter, FODP, NMS, Amplifiers, Approach cable, Power supply etc.) - Total FOTE (No.): 68
- All the equipment under this scheme to be integrated with UNMS.

PART-B

- Supply & installation of OPGW (48F) on 400kV Nalagarh-Banala-I transmission line along with Hardware Fittings, Joint Box etc. . Total OPGW to be installed = 66.38 Km (PKTCL ownership)-Total Line Length: 112.78 Km.

PART-C

- Supply & installation of OPGW (48F) on 400kV Malerkotla – Amritsar transmission line along with Hardware Fittings, Joint Box etc. . -Total OPGW = 149 Km

PART-D

- Supply & installation of OPGW (48F) on the transmission line (along with Hardware Fittings, Joint Box etc. Total OPGW = 856.3 Km

PART-E

- Supply & installation of OPGW (48F) along with Hardware Fittings, Joint Box etc on transmission lines with total OPGW (Km): 576.19
- Supply & installation of FOTE (STM-16 with minimum 5 MSP) (including associated system e.g. Repeaters and its shelter, FODP, Amplifiers, Approach cable, Power supply etc. Total FOTE (No.): 3
- All the equipment under this scheme to be integrated with UNMS.

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	0
2	Bids Under Evaluation	4	4
3	RfP issued and bids to be submitted	4	4
4	RfP yet to be issued	4	0
5	RfP bid submission on hold	1	0
6	Scheme to be de-notified	0	1
	TOTAL	14	09

6.2 Members noted the status of the schemes under bidding.

7 Operational Constraints Highlighted by Grid India

- a) **High Loading of 765/400 kV ICTs and Associated Transmission Elements in Delhi-NCR region during High Demand Period**

- (i) GRID-INDIA informed that the Northern Region is witnessing high power demand during the current summer season. On 29th June 2026, the region recorded an all-time maximum demand of ~94 GW. The demand is expected to rise further in the coming months.

Under the prevailing load-generation scenario, the following transmission constraints have been observed during solar hours:

- i. N-1 non-compliance of 2×1000 MVA + 1×1500 MVA, 765/400 kV ICTs at Bhiwani (PG) (Jind-BBMB section)
 - ii. N-1 non-compliance of the downstream 400 kV network at Bhiwani (PG)
 - a. 400 kV Bhiwani–Jind D/C,
 - b. 400 kV Bhiwani–Kabulpur S/C, and
 - c. 400 kV Bhiwani–BBMB S/C.
 - iii. N-1 non-compliance of 2×1500 MVA, 765/400 kV ICTs at Moga
 - iv. N-1 non-compliance of 2×1500 MVA, 765/400 kV ICTs at Jhatikara (PG) (Bamnoli–Dwarka section)
 - v. N-1 non-compliance of 400 kV Jhatikara–Bamnoli S/C.
 - vi. Severe low voltages at Delhi-NCR stations
- (ii) The 765 kV Beawar–Dausa D/C has also been recently commissioned on 29th June 2026. Following its commissioning, RE evacuation from Rajasthan has been increased by 1500 MW. This coupled with high demand in northern region has resulted in an increase in loading of 2×1000 MVA + 1×1500 MVA, 765/400 kV ICTs at Bhiwani (PG) and other transmission elements listed above.
- (iii) With further increase in renewable energy evacuation from Rajasthan, the loading on the above ICTs and transmission lines is expected to increase further, particularly during high-demand conditions, thereby aggravating the existing transmission constraints.
- (iv) GRID-INDIA suggested the following suggested measures to address the constraints:
- Expeditious commissioning of the planned 3rd 1500 MVA, ICT at Jhatikara (PG) (Bamnoli–Dwarka section) and 400 kV Jhatikara – Dwarka D/C
 - Expediting commissioning of Rajasthan REZ Ph-IV system (765 kV Bikaner-IV PS- Siwani kV D/c, 400 kV Siwani – Jind, 400 kV Siwani – Sonipat, 400 kV Siwani – Fatehabad D/C etc.); **Anticipated CoD:** April – June 2027
 - Exploring upgradation of 765 kV Moga – Kishenpur D/C (currently charged at 400 kV level) at 765 kV voltage level.
 - Commissioning of Chenab Valley Hydro Power Projects (Kiru, Pakaldul etc.) and Ratle Power Projects with associated transmission systems would also help in relieving the loading at least during high hydro season.
 - Planning of additional transmission augmentations to mitigate the high loading on the 765/400 kV ICTs at Bhiwani & Moga
 - Measures to mitigate low voltage issues at Delhi-NCR stations

- Interim arrangements, if any, to address the above constraints may also be explored by CTUIL & Grid-India
- (v) CTUIL was directed to plan and implement the corrective measures on priority to address the transmission constraints.

b) Low fault level and SCR in 2029-30 time-frame cases

- (i) GRID-INDIA stated that very low fault level and SCR have been observed in 2029-30 time-frame cases at following RE pooling stations in Rajasthan and Gujarat:

- Ramgarh-I
- Bhadla-III
- Barmer-II
- Fatehgarh-IV
- Bikaner-II
- Khavda-I, II and III
- Lakadia-II
- Bhuj-II
- Jam Khambaliya

Suitable corrective measures such as planning of synchronous condensers or any other suitable technical device may be considered in these complexes on priority.

- (ii) GRID-INDIA further stated that requirement of Grid-forming inverters in BESS above 50 MW capacity has been notified in CEA Construction Standards, 2026. However, the necessary technical guidelines governing the performance requirements of grid forming inverters may also be issued.

- (iii) Following was suggested, in this regard:

- CEA to issue Office Memorandum (OM) mandating grid forming inverters (GFM) in all new BESS above 50 MW including BESS under non-solar hour connectivity. The technical guidelines specifying performance requirements for grid-forming inverters shall also be appended in the OM to provide necessary clarity regarding grid-forming inverters.
- BESS with grid-forming capability is expected to be commissioned in major RE complexes. Further, development of pumped storage plants near RE pooling stations in Rajasthan and Gujarat is also envisaged. Accordingly, CTUIL and GRID-INDIA shall assess the optimal requirement of synchronous condensers in future planning timeframes, duly factoring in the anticipated contribution from GFM BESS and pumped storage plants.

c) Coordination Challenges in Multi-Party TBCB Commissioning

- (i) GRID-INDIA highlighted the coordination challenges encountered during the construction and testing phase where multiple transmission licensees are involved within the same station. Similar challenges are currently being observed in

Fatehgarh-III substation where incomplete commissioning of diameter and delay in commissioning of certain elements has been observed due to coordination issues.

- (ii) It was suggested that a Standard Operating Procedure (SOP) may be prepared with roles, responsibilities, coordination mechanisms, and commissioning protocols for all transmission licensees within a pooling station. Suitable commercial mechanism may also be included in the SoP for ensuring timely coordination. The SOP shall facilitate seamless execution and help avoid coordination issues during the construction and commissioning of multi-transmission licensee TBCB projects.

List of participants of the 42nd meeting of NCT

CEA:

1. Sh. Ghanshyam Prasad, Chairperson, CEA
2. Sh. Praveen Gupta, Member (E&C)
3. Sh. B. S. Bairwa, Chief Engineer (PSPA-II)
4. Smt. Ammi R Toppo, Chief Engineer (PSPA-I)
5. Sh. Shravan Kumar, Chief Engineer (PSPM)
6. Sh. Farooque Iqbal, Director (PSPA-II)
7. Sh. Ganeshwara Rao Jada, Director (PSPA-I)
8. Sh. Akshay Dubey, Deputy Director (PSPA-II)
9. Sh. Prateek Jadaun, Assistant Director (PSPA-II)

MoP:

1. Sh. D. Saibaba, Additional Secretary

MNRE:

- 1.
2. Sh. Anupam Kumar, Joint Secretary
3. Sh. Prasad Chaphekar, Director
4. Sh. Tarun Singh, Scientist E

SECI:

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

CTUIL:

1. Sh. K.K. Gupta, COO
2. Sh. Vikas Bagadia, Dy. COO
3. Sh. RVMM Rao, CGM
4. Sh. Rajesh Kumar, CGM
5. Sh. Kishore Kr Sarkar, CGM
6. Smt. Nutan Mishra, CGM
7. Sh. Anil Kumar Meena, Sr.GM
8. Sh. Sandeep Kumawat, DGM
9. Sh. T P Verma, DGM
10. Sh. Ajay Dahiya, DGM
11. Sh. Bhaskar Wagh, DGM
12. Sh. Narendra Sathvik R, Chief Manager
13. Sh. Venkatesh Gorli, Chief Manager
14. Sh. Ankush Patel, Chief Manager
15. Sh. Manish Ranjan Keshari, Chief Manager
16. Sh. Pratyush Singh, Chief Manager
17. Sh. Mritunjay Kumar, Chief Manager
18. Sh. Prakhar Pathak, Engineer

GRID India:

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

Expert Member

1. Sh. S. R. Narasimhan

RECPDCL

1. Sh. Ratnesh Kumar, General Manager
2. Sh. Anil Kumar Perala, DGM (Engg.)

PFCCL

1. Sh. Farooque S. Nasser, GM
2. Smt. Nirmala Meena , DGM
3. Sh. Nitesh Jambhulkar, DGM

NITI Aayog

1. Sh. Manoj Kr. Upadhyay, Deputy Advisor
2. Sh. Shravan Kr. Pushkar, Consultant

RPCs

1. Smt. Rishika Sharan, MS (NRPC)
2. Sh. Asit Singh, MS (SRPC)
3. Sh. Stephen Fernandes, Chief Electrical Engineer, WRPC
4. Sh. J. Paul Daniel, AE (O), SRPC
5. Superintending Engineer, TNPDC
6. Superintending Engineer, PSTCL (Planning)