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 सत्रहवीं बैठक का कार्यवृत– के सम्बन्ध में।

Subject: Minutes of the 17th Meeting of National Committee on Transmission (NCT) – regarding.

महोदया (Madam) / महोदय (Sir),

The 17th meeting of the "National Committee on Transmission" (NCT) was held on 31.01.2024. The minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

Encl.: As above.

Rakesh Goyal 2/7/2024

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

प्रतिलिपि / **Copy to:**

Joint Secretary (Trans), Ministry of Power, New Delhi

List of Addresses:

1.	Chairperson, Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	2.	Member (Power System), 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.	Director (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh. Lalit Bohra, Joint Secretary Room no 602, 6th floor, Atal Akshay Urja Bhawan Opposite CGO Complex gate no 2,Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Saudamini, Plot No. 2, Sector-29, Gurgaon – 122 001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9, Qutub, Institutional Area, Katwaria Sarai, New Delhi – 110010
9.	Sh. Ravinder Gupta Ex. Chief Engineer CEA		

Special Invitee

Chief Engineer (PSETD), CEA

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Minutes of the 17th meeting of National Committee on Transmission

The list of participants is enclosed at **Annexure**.

1 Confirmation of the minutes of the 16th meeting of National Committee on Transmission.

1.1 The minutes of the 16th meeting of NCT held on 30.11.2023 were issued vide CEA letter no CEA-PS-12-13/3/2019-PSPA-II dated 26.12.2023.

1.2 Members confirmed the minutes.

2 Status of the transmission schemes noted/approved/recommended to MoP in the 16th meeting of NCT:

2.1 The status of the transmission schemes noted/approved/recommended in the 16th meeting of NCT is tabulated below:

2.1.1 Status of new transmission schemes approved/recommended:

Sr. No	Name of the Transmission Scheme	Noted/ Recommended/ Approved	Mode of Implementation	MoP approval	BPC
1.	Augmentation of transformation capacity at 765/400 kV Indore S/s in Madhya Pradesh	Approved	RTM	Not applicable	Not applicable
2.	Augmentation of 1x1500 MVA (3rd), 765/400 kV transformation capacity at Kurnool New S/s.	Approved	RTM	Not applicable	Not applicable
3.	Reconductoring of Raichur – Veltoor (Mahabubnagar) 400 kV S/c line with HTLS conductor	Approved	RTM	Not applicable	Not applicable
4.	Augmentation of transformation capacity at Bhuj-II PS (GIS)	Approved	TBCB (CEA Gazette notification dated 04.01.2024)	Not applicable	PFCCL
5.	Eastern Region Generation Scheme-I (ERGS-I)	Approved	TBCB (CEA Gazette notificatio	Not applicable	PFCCL

Sr. No	Name of the Transmission Scheme	Noted/ Recommended/ Approved	Mode of Implementation	MoP approval	BPC
			n dated 04.01.2024)		
6.	Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area	Recommended	TBCB	Awaited	PFCCL
7.	Eastern Region Expansion Scheme-XXXIX (ERES-XXXIX)	Recommended	TBCB	Awaited	RECPDCL
8.	Supply and Installation of OPGW on existing line 765/400kV Pune (PG) (GIS) – 400kV Parli (PG) line which is to be LILOed at Kallam Substation under TBCB project namely "Transmission system for evacuation of power from RE projects in Osmanabad area (1 GW) in Maharashtra"	Approved	RTM	Not applicable	Not applicable
9.	OPGW installation on Itarsi-Dhule Transmission Line	Approved	RTM	Not applicable	Not applicable
10.	Additional FOTE at Loktak and Bongaigaon AGC locations in NER region	Approved	RTM	Not applicable	Not applicable

2.1.2 Status of transmission schemes where modifications was suggested:

S. No.	Scheme where modifications was suggested	Status
1.	Transmission System for Evacuation of power from potential renewable energy zone in Khavda area of Gujarat under Phase-IV (7 GW): Part B	Intimated to BPC
2.	Additional 1x500 MVA 400/220 kV (9th) ICT, for injection from any additional RE project (other than 4000 MW injection under SECI bids upto Tranche IV) at Bhuj PS	Approval Awaited from MoP

3.	Spare Reactor (1-ph, 1x80 MVAr) unit at 765/400 kV Beawar S/s under Rajasthan REZ Ph-IV (Part-2: 5.5 GW) (Jaisalmer/ Barmer Complex): Part D scheme	Intimated to BPC
4.	Change in Scope of Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-1: Bikaner Complex)-Part-A package	Intimated to BPC

2.1.3 Chairman, NCT, directed that NCT should be briefed about the progress of schemes awarded under RTM route viz. date of allocation of the scheme by CTUIL to the implementing agency etc.

3 Modifications in the earlier approved/notified transmission schemes:

3.1 Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area

3.1.1 Chief Engineer (PSPA-II), CEA, stated that Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power by Bulk Consumers as well as Green Hydrogen/Ammonia manufacturers in the area was recommended to be implemented under TBCB route with PFCCL as the BPC in the 16th meeting of NCT.

3.1.2 As per MNRE, the likely electricity demand at Mundra on account of Green Hydrogen/Ammonia manufacturing is likely to be about 22 GW by the year 2030. Keeping in view the projected load at Mundra, CTUIL proposed the following changes in the future provision (space for) in original scope of the scheme:

Original Text	Revised text proposed
Future provision (space for): • 765/400 kV ICT along with bays-**2Nos.** • 765 kV line bays along with switchable line reactors – **4 Nos**. • 765 kV Bus Reactor along with bay: 2 Nos. • 765 kV Sectionaliser: 1 -set • 400 kV line bays along with switchable line reactors– **6 Nos.** *(in addition to 4 nos. bays for MUL– Navinal (Mundra) (GIS) 400 kV2xD/c line mentioned under Note)* • 400/220 kV ICT along with bays - 6Nos. • 400 kV Bus Reactor along with bays: 3 Nos. • 400 kV Sectionalization bay: 1- set • 220 kV line bays: 10 Nos. • 220 kV Sectionalization bay: 1 set	**Future provision (space for):** • 765/400 kV ICT along with bays-**5 Nos.** • 765 kV line bays along with switchable line reactors – **6 Nos.** • 765 kV Bus Reactor along with bay: 2 Nos. • 765 kV Sectionaliser: 1 -set • 400 kV line bays along with switchable line reactors– **10 Nos.** (in addition to 4 nos. bays for MUL – Navinal (Mundra) *(GIS) 400 kV 2xD/c line mentioned under Note)* • 400/220 kV ICT along with bays-6 Nos. • 400 kV Bus Reactor along with bays: 3 Nos. • 400 kV Sectionalization bay: 1-set • 220 kV line bays: 10 Nos. • 220 kV Sectionalization bay: 1set • 220 kV BC and TBC: 2 Nos.

• 220 kV BC and TBC: 2 Nos. • STATCOM (±300 MVAR) alongwith MSC (2x125 MVAr) & MSR (1x125 MVAr) and associated bays- 2 Nos.	• STATCOM (±300 MVAR) alongwith MSC (2x125 MVAr) & MSR (1x125 MVAr) and associated bays- 2 Nos.

3.1.3 After deliberations, NCT approved the above modifications in the scope of Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area.

3.2 Transmission Scheme for integration of Tumkur-II REZ in Karnataka

3.2.1 Chief Engineer (PSPA-II), CEA, stated that the "Transmission Scheme for integration of Tumkur-II REZ in Karnataka" was recommended for implementation under TBCB with BPC being RECPDCL in the 15th meeting of NCT at an estimated cost of Rs. 792.77 Cr. with the approximate line length from Tumkur-II – Tumkur (Pavagada) 400 kV (Quad ACSR moose) D/c line as 100 km.

3.2.2 Representative from CTUIL stated that connectivity applications had been received from RE Generation Developers close to the existing Tumkur (Pavagada) sub-station. It was also informed that during the meeting on finalisation of coordinates of Tumkur-II KREDL/KSPDCL informed that they are setting up solar power park close to the existing Tumkur (Pavagada) sub-station.

3.2.3 Representative from RECPDCL stated that after carrying out the survey, the line length from Tumkur-II PS – Tumkur (Pavagada) 400 kV D/c line comes to be about 37.5 km.

3.2.4 Representative from CTUIL informed that the revised cost of the transmission scheme has been arrived considering the revised line length provided by RECPDCL which come to about Rs.501 Crs.

3.2.5 After deliberations, NCT opined that as most of the RE generators will be located close to Pavgada (existing) substation, the location of Tumkur-II substation may be optimized. The scheme will be discussed in next meeting of NCT.

3.3 Transmission system for evacuation of power from Shongtong Karcham HEP (450 MW) and Tidong HEP (150 MW)

3.3.1 Chief Engineer (PSPA-II), CEA, stated that in the 16th NCT meeting held on 30.11.23, it was suggested that CTUIL will review the conductor configuration of 400 kV Wangtoo – Panchkula D/c line w.r.t. walkover survey and provide information regarding line length where an alternative to Twin HTLS (as per altitude encountered in the route of the line) shall be required along with its revised cost estimate, if any, instead of considering Quad configuration over entire stretch of the above line.

3.3.2 Representative of CTUIL stated that after detailed study, it emerged that the Twin HTLS bundle configuration shall be used for the segment up to the first 2000 meters above Mean Sea Level (MSL) starting from the Panchkula end (approx. 90 km). Beyond that point, where the altitude of the line may vary up to 2700 meters (maximum altitude as per survey report) and above (approx. 85 kms), the Quad bundle configuration shall be

implemented, even though some sections may be below 2000 meters, to ensure uniformity in the bundle configuration of the transmission line sections.

3.3.3 Considering above conductor configuration for part sections (Quad /Twin HTLS) as well as factors for Wind zone/snow bound/hill terrain etc. for relevant parts, the cost estimate for the scheme was revised to about Rs. 2367 Cr. (as per March'23 price level).

3.3.4 There is a variation of +3.5% in the modified scheme, which is as under:

Sl. No.	Scope	Estimated cost (Rs Cr.)
1	With Original Transmission scheme including 400 kV Wangtoo -Panchkula (210 km) D/c line (Twin HTLS)	2286 (March, 22 price level)
2	With revised Transmission scheme including 400 kV Wangtoo -Panchkula (175 km) D/c line [Quad Bundle-85 km, Twin HTLS (Min. dia 31.77 mm) - 90 km]	2367 (March, 23 price level)
	% variation in cost	**+3.54%**

3.3.5 After detailed deliberations, NCT approved the modified scope of the scheme as mentioned below:

Sl. No.	Scope of the Transmission Scheme (As agreed in 11th NCT meeting)	Revised Scope of the Transmission Scheme
A.	**Phase-I with Tidong HEP [Schedule: 01st July 2026]**	
1.	Establishment of 2x315 MVA (7x105 MVA 1-ph units including a spare unit) 400/220 kV GIS Pooling Station at Jhangi • 400/220 kV ICTs- 2x315 MVA (7x105 MVA 1-ph units including a spare unit) • 400 kV ICT bays- 2 Nos. • 220 kV ICT bays- 2 Nos. • 400kV line bays (GIS) -2 Nos. (for Jhangi PS – Wangtoo D/c line) • 420 kV Bus reactor -1 No. (4x 41.66 MVA 1-ph units including one spare unit) • 420 kV Reactor bay-1 No. **Future space provision for:** • 5 nos. of 400 kV line bays • 6 nos. of 220 kV line bays for future projects (space for 2 bays to be utilized for connectivity to Tidong generation) • 2 nos. of 400/220 kV Transformer • 1 no. 420 kV Bus Reactor along with bay	Establishment of 2x315 MVA (7x105 MVA 1-ph units including a spare unit) 400/220 kV GIS Pooling Station at Jhangi • 400/220 kV ICTs- 2x315 MVA (7x105 MVA 1-ph units including a spare unit) • 400 kV ICT bays- 2 Nos. • 220 kV ICT bays- 2 Nos. • 400kV line bays (GIS) -2 Nos. (for Jhangi PS – Wangtoo D/c line) • 420 kV Bus reactor -1 No. (4x 41.66 MVA 1-ph units including one spare unit) • 420 kV Reactor bay-1 No. **Future space provision for:** • 5 nos. of 400 kV line bays • 6 nos. of 220 kV line bays for future projects (space for 2 bays to be utilized for connectivity to Tidong generation) • 2 nos. of 400/220 kV Transformer • 1 no. 420 kV Bus Reactor along with bay

	• 220 kV Sectionalization bay: 1 set • Bus Coupler: 1 No.	• 220 kV Sectionalization bay: 1 set • Bus Coupler: 1 No.
2.	400 kV Jhangi PS – Wangtoo (Quad) D/c line (Line capacity shall be 2500 MVA per circuit at Nominal voltage) • Route Length-54 km	400 kV Jhangi PS – Wangtoo (Quad) D/c line (Line capacity shall be 2500 MVA per circuit at Nominal voltage) • Route Length-54 km
I.	400 kV bays at Wangtoo for termination of 400 kV Jhangi PS – Wangtoo D/c line • 400 kV bays – 2 Nos. (GIS)	400 kV bays at Wangtoo for termination of 400 kV Jhangi PS – Wangtoo D/c line • 400 kV bays – 2 Nos. (GIS)
B.	**Phase-II with Shongtong HEP [Schedule: 31st July, 2026]**	
1.	LILO of one circuit of Jhangi PS - Wangtoo (HPPTCL) 400 kV D/c (Quad) line$ at generation switchyard of Shongtong HEP • LILO Route length- 1 km (2 ckm)	LILO of one circuit of Jhangi PS - Wangtoo (HPPTCL) 400 kV D/c (Quad) line$ at generation switchyard of Shongtong HEP • LILO Route length- 1 km (2 ckm)
2.	**Wangtoo (HPPTCL) - Panchkula (PG) 400 kV D/c (Twin HTLS*) line along with 80 MVAr switchable line reactor at Panchkula end on each circuit** • **Route length-210 km**	**2a) Panchkula- Point PW** 400 kV D/c line (Twin HTLS*,) along with 80 MVAr switchable line reactor at Panchkula end on each circuit – 90 km** **2b) Point PW** - Wangtoo (HPPTCL) 400 kV D/c line (Quad AL 59/Quad ACSR Moose/Quad AAAC) - 85 km** • **Total Route length-175 km** ***** Point PW : First point of 2000 m altitude of Panchkula-Wangtoo line from Panchkula end***
3	400 kV bays at Wangtoo S/s (2 Nos.) and Panchkula S/s (2 Nos.) for termination of 400 kV Wangtoo (HPPTCL) - Panchkula (PG) D/c line • 400 kV line bays- 4 nos. (2 Nos. GIS bays at Wangtoo and 2 Nos. AIS bays at Panchkula)	400 kV bays at Wangtoo S/s (2 Nos.) and Panchkula S/s (2 Nos.) for termination of 400 kV Wangtoo (HPPTCL) - Panchkula (PG) D/c line • 400 kV line bays- 4 nos. (2 Nos. GIS bays at Wangtoo and 2 Nos. AIS bays at Panchkula)
	Estimated Cost of the Scheme: • **Rs. 2,286 Cr**	**Estimated Cost of the Scheme:** • **Rs. 2,367 Cr**

$ Line capacity shall be 2500 MVA per circuit at nominal voltage

* with minimum capacity of 2100 MVA on each circuit at nominal voltage and Min.

Diameter of 31.77 mm for HTLS conductor

3.4 **Timeline for 1500 MVA, 765/400 kV ICT Augmentation at Jhatikara S/s**

3.4.1 Chief Engineer (PSPA-II), CEA, stated that augmentation of 1x1500 MVA, 765/400kV ICT (3rd) at Jhatikara Substation (Bamnoli/Dwarka Section) was planned as part of "Transmission system for evacuation of power from REZ in Rajasthan (20 GW) under Phase-III" and the ICT was recommended to be implemented under RTM route in 5th NCT meeting held on 25.08.2021 & 02.09.2021. Subsequently, MoP vide OM dated 01.12.2021 allocated above ICT to POWERGRID in matching timeframe of Rajasthan SEZ Ph-III Part-D Scheme which consists of the following major elements:

- Sikar-II – Khetri 765 kV D/c line
- Sikar-II – Narela 765 kV D/c line
- Jhatikara – Dwarka 400 kV D/c line (Quad) – **(Now Part-D Ph-II)**

He further stated that in 15th NCT meeting held on 25.08.2023, the Jhatikara – Dwarka 400 kV D/c line was delinked from Rajasthan SEZ Ph-III Part-D Scheme and was agreed to be implemented under RTM route. Based on this, MoP vide OM dated 06.11.2023 allocated the scheme comprising of Jhatikara – Dwarka 400 kV D/c line to POWERGRID through RTM route under Rajasthan SEZ Ph-III Part-D Phase-II scheme with implementation timeframe as 18 months.

Other elements of Part-D scheme comprising of Sikar-II – Khetri 765 kV D/c line and Sikar-II – Narela 765 kV D/c line are under bidding by RECPDCL as part of Rajasthan SEZ Ph-III Part-D Phase-I scheme with implementation timeframe as 18 months from SPV transfer

3.4.2 Representative from CTUIL stated requirement of 1500 MVA ICT (3rd) at Jhatikara (PG) S/s is arising with Jhatikara – Dwarka 400 kV D/c line. Accordingly, it is proposed that "Augmentation of 1x1500 MVA, 765/400 kV ICT (3rd) at Jhatikara Substation (Bamnoli/Dwarka Section)" may be implemented in matching timeframe of Rajasthan SEZ Ph-III Part-D Phase-II i.e. Jhatikara – Dwarka 400 kV D/c line (Quad).

3.4.3 CMD, Grid-India stated that at present, 2x1500 MVA, 765/400 kV ICTs at both the bus sections of Jhatikara S/s are already 'N-1' non-compliant. Therefore, the proposed ICT implementation may be taken up independent of the implementation schedule of 400 kV Jhatikara – Dwarka D/C line.

3.4.4 After detailed deliberations, it was agreed that augmentation of 1x1500 MVA, 765/400 kV ICT (3rd) at Jhatikara Substation (Bamnoli/Dwarka Section) should be done with implementation timeframe of 18 months from date of intimation by CTUIL.

3.5 **Timeline for implementation of 400 kV D/C (Quad) Jhatikara - Dwarka line along with associated bays under the scheme "Transmission system for evacuation of power from REZ in Rajasthan (20 GW) under Phase-III Part D Phase-II"**

3.5.1 Chief Engineer (PSPA-II), CEA, stated that implementation of 400 kV D/C (Quad) Jhatikara-Dwarka line along with 2 Nos. 400 kV bays at Jhatikara and Dwarka end under

the scheme "Transmission system for evacuation of power from REZ in Rajasthan (20 GW) under Phase-III Part D Phase-II" was allocated to POWERGRID in RTM mode vide MoP OM No.- 15/3/2018-Trans-Part (5) dated 06.11.23 with completion schedule of 18 months from OM.

3.5.2 Representative from CTUIL stated that, POWERGRID vide letter dated 29.12.23 has requested to increase the time frame provided for implementation of the transmission scheme from 18 months to 24 months and change the conductor configuration from Quad to twin HTLS conductor (on monopole/narrow base tower). As per route survey report as well as the cost estimates by POWERGRID, taking into account the proposed changes, would be about Rs. 258 Crores (approx.).

3.5.3 After detailed deliberations, NCT directed CTUIL to re-survey of the scheme through implementing agency so as to arrive at the optimum requirement of monopole/narrow base tower towers, and work out the revised estimated cost. The scheme will be discussed again in the next NCT meeting. .

3.6 Change in Scope of the transmission scheme "North Eastern Region Expansion Scheme-XVI (NERES-XVI)"

3.6.1 Chief Engineer (PSPA-II), CEA, stated that the "North Eastern Region Expansion Scheme-XVI (NERES-XVI)" was notified vide CEA notification dated 24.01.2023 and appointed RECPDCL as Bid Process Coordinator (BPC) of the scheme.

He further informed, as per the Gazette notification, Department of Power, Arunachal Pradesh, has to provide space at Gerukamukh S/s for establishment of 2 Nos. 132 kV line bays for termination of Gogamukh (ISTS) – Gerukamukh 132 kV D/c line.

3.6.2 Representative from RECPDCL stated that during survey Department of Power, Government of Arunachal Pradesh informed that space for 1 no. of bay is available at existing Gerukamukh S/s for termination of Gogamukh (ISTS) - Gerukamukh (Arunachal Pradesh) 132 kV D/c line and for 2nd line bay, TSP has to acquire land outside the existing Gerukamukh S/s.

3.6.3 In this regard, a meeting was held on 18.12.2023, wherein it was agreed that Department of Power, Arunachal Pradesh, would acquire the additional land and provide the same to the successful TSP.

3.6.4 Chief Engineer (PSPA-II), CEA, stated that based on the above, Department of Power, Govt. of Arunachal Pradesh, vide their letter dated 22.12.2023 has conveyed the tentative cost estimates amounting to Rs. 39.36 Lakhs pertaining to additional land acquisition and dismantling and erection of already installed structures with the associated civil works.

He further informed, with this, there would be change of scope of the transmission scheme with additional cost implications of Rs. 39.36 lakhs. If agreed, RECPDCL may incorporate the additional cost of Rs. 39.36 Lakhs in the bidding document and intimate the same to the prospective bidders.

3.6.5 After detailed deliberations, NCT approved the change in scope of Transmission Scheme for North Eastern Region Expansion Scheme-XVI (NERES-XVI) i.e. *TSP to provide Rs. 39.36 Lakhs to DoP, Arunachal Pradesh pertaining to additional land acquisition at Gerukamukh (Arunachal Pradesh) S/s and dismantling and erection of already installed structures with the associated civil works in Gerukamukh (Arunachal Pradesh) S/s*. The revised scope is as under:

	As agreed in the 9th meeting of NCT (28-09-2022)		**Modifications w.r.t 9th meeting of NCT**	
Sl. No.	**Scope of the Transmission Scheme**	**Capacity (MVA) / line length (km)/ Nos.**	**Scope of the Transmission Scheme**	**Capacity (MVA) / line length (km)/ Nos.**
	Establishment of Gogamukh 400/220/132kV substation **Additional space for future expansion**: - 400/220kV, 1x500MVA ICT - 1 no. (along with associated bays at both levels) - 220/132kV, 1x200MVA ICT - 1 no. (along with associated bays at both levels) - 420kV, 1x125MVAr bus reactor along with associated bays - 12 nos. of 400kV line bays for future lines • 4 nos. of 400V line bays for termination of Dibang – Gogamukh 2xD/c lines • 2 nos. of 400kV line bays (along with 2x80MVAr switchable line reactor) for termination of Gogamukh – Biswanath Chariali	500MVA, 400/220kV ICT: 2 nos. 200MVA, 220/132kV ICT: 2 nos. 420kV, 125MVAr Bus reactor: 2 nos. 400kV ICT bays: 2 nos. 220kV ICT bays: 4 nos. 132kV ICT bays: 2 nos. 400kV Bus reactor bays: 2 nos. 220kV Bus coupler bay: 1 no. 220kV Transfer bus coupler bay:1 no. 132kV Transfer bus coupler bay: 1 no. 400kV line bays: 4 nos. *[for termination of LILO of one D/c line (ckt-1 & ckt-2 of line-1) of Lower Subansiri - Biswanath Chariali 400kV (Twin Lapwing) 2xD/c lines]* 220kV line bays: 2 nos. *[for termination of Bihpuria – Gogamukh 220kV D/c line (line to be implemented by AEGCL)]* 132kV line bays: 4 nos.	No change.	No change.

	As agreed in the 9th meeting of NCT (28-09-2022)		Modifications w.r.t 9th meeting of NCT	
Sl. No.	**Scope of the Transmission Scheme**	**Capacity (MVA) / line length (km)/ Nos.**	**Scope of the Transmission Scheme**	**Capacity (MVA) / line length (km)/ Nos.**
	400kV D/c (Quad) line • 6 nos. of 400kV line bays (along with switchable line reactor) for future lines - 6 nos. of 220kV line bays for future lines - 6 nos. of 132kV line bays for future lines - 220kV Bus sectionalizer bay :1 set - 220kV Bus coupler bay: 1 no. - 220kV Transfer bus coupler bay:1 no. - 132kV Bus sectionalizer bay :1 set - 132kV Transfer bus coupler bay:1 no.	*[2 no. for termination of LILO of one circuit of North Lakhimpur – Dhemaji 132kV new D/c line (LILO to be implemented by AEGCL) &* *2 no. for termination of Gogamukh (ISTS) – Gerukamukh (Arunachal Pradesh) 132kV D/c line]*		
	Extension works at Gerukamukh (Arunachal Pradesh) 132kV S/s	132kV line bays: 2 nos. (*for termination of Gogamukh (ISTS) – Gerukamukh (Arunachal Pradesh) 132kV D/c line*)	No change.	No change.
	Gogamukh (ISTS) – Gerukamukh (Arunachal Pradesh) 132kV D/c (Zebra) line	*20km*	No change.	No change.
	LILO of one D/c (ckt-1 & ckt-2 of line-1) of Lower Subansiri – Biswanath Chariali 400kV (Twin Lapwing) 2xD/c lines at Gogamukh S/s	*20km*	No change.	No change.
	Note:		***Note:***	

	As agreed in the 9th meeting of NCT (28-09-2022)		Modifications w.r.t 9th meeting of NCT	
Sl. No.	**Scope of the Transmission Scheme**	**Capacity (MVA) / line length (km)/ Nos.**	**Scope of the Transmission Scheme**	**Capacity (MVA) / line length (km)/ Nos.**
	a) Lower Subansiri – Biswanath Chariali 400kV (Twin Lapwing) D/c line is under implementation by POWERGRID and is expected to be commissioned shortly. *b) DoP, Arunachal Pradesh to provide space at Gerukamukh (Arunachal Pradesh) S/s for implementation of 2 no. 132kV line bays.* *c) Bihpuria (AEGCL) – Gogamukh (ISTS) 220kV D/C line is to be implemented by AEGCL.* *d) LILO of one circuit of North Lakhimpur (AEGCL) – Dhemaji (AEGCL) 132kV new D/C line is to be implemented by AEGCL.* *e) The line lengths mentioned above are approximate, as the exact length shall be obtained after detailed survey.*		*a) DoP, Arunachal Pradesh to provide space at Gerukamukh (Arunachal Pradesh) S/s for implementation of 2 no. 132kV line bays. TSP to provide Rs. 39.36 Lakhs to DoP, Arunachal Pradesh pertaining to additional land acquisition at Gerukamukh (Arunachal Pradesh) S/s and dismantling and erection of already installed structures with the associated civil works in Gerukamukh (Arunachal Pradesh) S/s.* *b) Bihpuria (AEGCL) – Gogamukh (ISTS) 220kV D/C line is to be implemented by AEGCL.* *c) LILO of one circuit of North Lakhimpur (AEGCL) – Dhemaji (AEGCL) 132kV new D/C line is to be implemented by AEGCL.* *d) The line lengths mentioned above are approximate, as the exact length shall be obtained after detailed survey.*	
	Estimated Cost: *Rs. 289 Cr.*		***Estimated Cost:*** *Rs. 289.3936 Cr.*	
	Implementation time: *30 months*		***Implementation time:*** *30 months*	

3.7 **Change in Scope of transmission scheme "Eastern Region Expansion Scheme-XXXIV (ERES-XXXIV)"**

3.7.1 Chief Engineer (PSPA-II), CEA, stated that the transmission scheme "Eastern Region Expansion Scheme-XXXIV (ERES-XXXIV)" was agreed in the 12th meeting of NCT held on 24.03.2023. Further, the space provision for future was slightly modified in the 13th meeting of NCT. The scheme inter-alia includes establishment of Paradeep 765/400 kV, 2x1500 MVA GIS substation along with Paradeep (ISTS) – Paradeep GIS (OPTCL) 400 kV D/c line. He further informed, in the scope of works of the scheme, it has been mentioned that:

OPTCL shall provide space at under implementation Paradeep (OPTCL) 400/220 kV GIS S/s (expected by December 2024) for implementation of 2 Nos. of 400 kV GIS line

bays for termination of Paradeep–Paradeep (OPTCL) 400 kV D/c (Quad) line. 2 Nos. full diameter i.e. 4 Nos. GIS bays shall be established.

Subsequently, a meeting was held amongst CEA, CTUIL, BPC and OPTCL on 08.01.2023 under the chairmanship of Member (PS), wherein it was agreed that one existing bay at Paradeep GIS (OPTCL) S/s would be utilized for termination of one circuit of Paradeep (ISTS) – Paradeep (OPTCL) 400 kV D/c line and for the second circuit, one full dia will be implemented under ISTS at 400 kV Paradeep GIS (OPTCL). Further, remaining bay of the dia (to be implemented under ISTS) will be utilized by OPTCL for future requirement in lieu of the existing bay (of OPTCL) being utilized under ISTS.

3.7.2 Representative of CTUIL stated that, with this, there would be change in the scope of the scheme with establishment of 1 no. of full diameter i.e. 2 nos. of GIS bays instead of 2 Nos. of full diameter i.e. 4 nos. of GIS bays at Paradeep (OPTCL).

3.7.3 After detailed deliberations, NCT approved the change in scope of Eastern Region Expansion Scheme-XXXIV (ERES-XXXIV) i.e. Establishment of 1 no. of full diameter i.e. 2 nos. of GIS bays instead of 2 nos. of full diameter i.e. 4 nos. of GIS bays at Paradeep (OPTCL) S/s with updated cost of the scheme as Rs. 2540.83 Cr. (Mar 2023 price level) without change in completion schedule. The revised scope is as under:

As agreed in 13th meeting of NCT		**Modifications w.r.t. 13th meeting of NCT**	
Scope of the transmission scheme	**Capacity (MVA) / line length (km)/ Nos.**	**Scope of the transmission scheme**	**Capacity (MVA) / line length (km)/ Nos.**
Establishment of Paradeep 765/400kV, 2x1500MVA GIS substation Future Provisions: Space for - 765/400kV, 4x1500MVA ICTs (12x500MVA single phase units including one spare) along with associated ICT bays at both voltage levels - 400/220kV, 5x500MVA ICTs along with associated ICT bays at both voltage levels - 765kV, 2x330MVAr (6x110MVAr single phase units including one spare) bus reactor along with associated bays - 420kV, 2x125MVAr bus reactor along with associated bays - 10 nos. of 765kV line bays (along with space for switchable line reactor) for future lines	765/400kV, 1500MVA ICTs: 2 nos. (7x500 MVA single phase units including one spare) 765kV ICT bays: 2 nos. 400kV ICT bays: 2 nos. 765kV, 330MVAr Bus reactor: 2 nos. (7x110MVAr single phase units including one spare unit for both bus and line reactors) 420kV, 125MVAr Bus reactor: 2 nos. 765kV Bus reactor bays: 2 nos. 400kV Bus reactor bays: 2 nos. 765kV line bays: 2 nos. *[for termination of Angul (POWERGRID) – Paradeep 765kV D/c line along with 765kV, 1x330MVAr switchable line reactor*	No change.	No change.

As agreed in 13th meeting of NCT		Modifications w.r.t. 13th meeting of NCT	
- 12 nos. of 400kV line bays (along with space for switchable line reactor) for future lines - 12 nos. of 220kV line bays for future lines - 765kV bus sectionaliser bay: 1 set - 400kV bus sectionaliser bay: 1 set - 220kV bus sectionaliser bay : 1 set - 220kV bus coupler bay: 2 no.	*at Paradeep end in both circuits]* 765kV, 330MVAr (3x110 MVAr single phase units) switchable line reactor along with associated bay and 500ohm NGR (with NGR bypass arrangement): 2 nos. *[at Paradeep end in both circuits of Angul (POWERGRID) – Paradeep 765kV D/c line]* 400kV line bays: 2 nos. *[for termination of Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line]*		
Angul (POWERGRID) – Paradeep 765kV D/c line along with 765kV, 1x330MVAr switchable line reactor with 500ohm NGR (with NGR bypass arrangement) at Paradeep end in both circuits	Route length: 190 km	No change.	No change.
Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line	Route length: 10 km	No change.	No change.
Extension at Angul (POWERGRID) S/s	765 kV line bays (along with space for future switchable line reactor): 2 nos. *[for termination of Angul (POWERGRID) – Paradeep 765kV D/c line along with 765kV, 1x330MVAr switchable line reactor at Paradeep end in both circuits]*	No change.	No change.
#Extension at Paradeep (OPTCL) GIS S/s	400kV GIS line bays: 2 nos. *[for termination of Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line]*	#Extension at Paradeep (OPTCL) GIS S/s	400kV GIS line bay: 2 no.-(one GIS diameter)
#As the bus scheme of Paradeep (OPTCL) GIS S/s is one and half breaker scheme, 2 nos. full diameter i.e. 4 nos. of GIS bays needs to be implemented in the scheme for requirement of 2 nos. GIS bays for termination of Paradeep (OPTCL) – Paradeep 400kV D/c (Quad) line in two different diameters. Utilisation of other 2 nos. GIS bays of these diameters shall be identified in future.		*#As the bus scheme of Paradeep (OPTCL) GIS S/s is one and half breaker scheme. For termination of Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line, 2 nos. of line bays in different diameters are required. One GIS diameter (2 no. line bays) is planned to be implemented in this scheme. One bay of the ISTS diameter shall*	

As agreed in 13th meeting of NCT	Modifications w.r.t. 13th meeting of NCT
	be used for termination of one circuit of of Paradeep (OPTCL) – Paradeep 400kV D/c (Quad) line. The other circuit of this line shall be terminated in bay in immediately adjacent diameter of OPTCL. The other bay of the ISTS diameter will be utilized by OPTCL for future requirement in lieu of their bay being utilized under ISTS.
Note: *(a) POWERGRID shall provide space at Angul (POWERGRID) 765/400kV S/s for implementation of 2 no. of 765kV line bays (along with space for future switchable line reactor) for termination Angul (POWERGRID) – Paradeep 765kV D/c line.* *(b) OPTCL shall provide space at under implementation Paradeep (OPTCL) 400/220kV GIS S/s (expected by Dec 2024) for implementation of 2 no. of 400kV GIS line bays for termination of Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line. 2 nos. full diameter i.e. 4 nos. GIS bays shall be established.*	***Note:*** *(a) POWERGRID shall provide space at Angul (POWERGRID) 765/400kV S/s for implementation of 2 no. of 765kV line bays (along with space for future switchable line reactor) for termination Angul (POWERGRID) – Paradeep 765kV D/c line.* *(b) OPTCL shall provide space at under implementation Paradeep (OPTCL) 400/220kV GIS S/s (expected by Dec 2024) for implementation of 2 no. of 400kV GIS line bays i.e. 1 no. full diameter.* *(c) OPTCL shall provide one no. 400kV line bay in their diameter immediately adjacent to ISTS diameter being implemented for termination of one circuit of Paradeep – Paradeep (OPTCL) 400kV D/c (Quad) line. One bay of ISTS diameter shall be provided to OPTCL in lieu of usage of their bay.*
Estimated cost: *Rs. 2564.24 Cr. (Mar 2022 price level)*	***Estimated cost:*** *Rs. 2540.83 Cr. (Mar 2023 price level)*
Implementation time: *24 months*	***Implementation time:*** *24 months*

3.8 Transmission system for evacuation of RE power from renewable energy parks in Leh (5 GW Leh- Kaithal transmission corridor)

3.8.1 Chief Engineer (PSPA-II), CEA, stated that Transmission system (EHVAC+HVDC) for evacuation of RE power from renewable energy parks in Leh (5GW Leh- Kaithal transmission corridor) was approved in 7th NCT meeting held on 03.12.21. Same was allocated for implementation to POWERGRID under RTM route vide MOP OM dated 13.01.22 with implementation time frame of 5 years from approval i.e. approval of the Central Government for providing Central Grant for part funding of the project.

3.8.2 Further, a meeting of the EFC was held on 3rd June 2022 under the chairmanship of Finance Secretary & Secretary (Expenditure) for appraisal of the proposal of Ministry of New and Renewable Energy (MNRE) on Green Energy Corridor Phase-II - Inter State Transmission system for 13 GW Renewable Energy Projects in Ladakh. In the meeting, following was inter-alia concluded:

The Ministry should re-examine the TBCB mode, especially the feasibility of transmission system in TBCB mode. The Transmission system beyond Kaithal would come up in the plain areas, where not much challenges are envisaged. Accordingly, at

the very least the transmission system beyond Kaithal should be considered under TBCB.

The AC system would be required in the matching timeframe of HVDC system.

3.8.3 CTU informed that CCEA has aapproved Central Financial Assistance (CFA) based on the Tr. System proposed by POWERGRID wherein the AC transmission system beyond Kaithal is considered under TBCB and excluded from the RTM scope.

3.8.4 Subsequently, due to urgent requirement of 1500 MVA, 765/400 kV ICT at Bhiwani S/s, this element was delinked from earlier RTM scope in 15th NCT meeting and subsequent MOP vide OM dated 06/11/23 allocated the implementation of the ICT to POWERGRID in RTM.

3.8.5 In view of the observations of EFC regarding implementation of the EHVAC scheme under TBCB route, NCT opined that the MoP OM dated 13.01.2022 regarding implementation of the (EHVAC+HVDC) scheme under RTM by Powergrid, needs to be modified to delink the EHVAC system (beyond Kaithal under TBCB). The AC system would be required in the matching timeframe of the HVDC system i.e. by 2028-29. CTU mentioned that in case of delinking, whether Kaithal HVDC station scope need to include land requirement for Kaithal S/s (AC) also, need to be finalised

3.8.6 It was also opined that agenda may be discussed in a comprehensive manner in next NCT.

3.9 Augmentation of transformation capacity at Bhuj-II PS- request for change in implementation timeframe

3.9.1 Chief Engineer (PSPA-II), CEA, stated that the scheme Augmentation of transformation capacity at Bhuj-II PS was approved in 16th NCT with implementation timeframe of 21 months.

3.9.2 Representative of CTUIL stated that M/s ABREL (RJ) vide e-mail dated 19.01.2024 has requested that considering the targeted schedule of their RE project as 31.05.2025, the timeline for the Sl. 1 & Sl. 3 of the scheme i.e. 220 kV new bus section (with Sectionaliser) and 220 kV Bay may be kept as 18 months.

3.9.3 M/s ABREL (RJ) vide letter addressed to Chairperson has requested to consider the implementation timeframe of the works mentioned at Sl. No. 1 and 3 as 15 months.

3.9.4 After detailed deliberations, NCT approved the following timeline for the elements of the scheme:

Sl. No.	Scope of transmission scheme	Revised Timeframe
1	Creation of New 220 kV Bus Section-II at Bhuj-II PS	18 months in place of 21 months*
2	Augmentation of transformation capacity at Bhuj-II PS (GIS) by 2x500 MVA, 400/220 kV ICT (5th & 6th) (Terminated at New 220	21 months

	kV Bus Section-II) and by 1x1500 MVA, 765/400kV ICT (3rd)	
3	Implementation of 220 kV GIS line bay at Bhuj-II PS for ABREL (RJ) Projects Limited (Terminated at New 220 kV Bus Section-II)	18 months in place of 21 months*
* 15 months on Best Effort basis		

3.10 **Change in Completion Schedule of transmission scheme "North Eastern Region Generation Scheme-I (NERGS-I)"**

3.10.1 Chief Engineer (PSPA-II), CEA stated that the transmission scheme North Eastern Region Generation Scheme-I was approved to be implemented through TBCB mode in the 15th meeting of NCT. The scheme was notified vide gazette notification dated 25th September, 2023, appointing RECPDCL as BPC with completion schedule of 31st Dec 2025.

3.10.2 Representative of CTUIL stated that M/s APDCL vide letter dated 24-01-2024 requested to extend the start date of connectivity from 31-12-2025 to 31-12-2026 and reduction in connectivity quantum from 1000 MW to 750MW.

3.10.3 After detailed deliberations, NCT recommended the completion schedule of the scheme as 31-12-2026 instead of 31-12-2025.

4 New Transmission Schemes:

4.1 **Augmentation of transformation capacity by 2x500 MVA (7th & 8th), 400/220 kV ICTs at Tumkur (Pavagada) 400/220 kV Pooling Station in Karnataka**

4.1.1 Chief Engineer (PSPA-II), CEA stated that presently, Tumkur (Pavagada) PS is under operation with 5x500 MVA, 400/220 kV ICTs. Further, additional 1x500 MVA, 400/220 kV ICT (6th) is under implementation and is expected by Jan'24.

4.1.2 Representative of CTUIL stated that connectivity of about 3,350 MW has been granted / agreed for grant. For evacuation of power with 'N-1' reliability criteria, it is proposed to augment the ICTs at Tumkur (Pavagada) PS by 2x500 MVA, 400/220 kV ICTs (7th & 8th ICT). The estimated cost of the scheme is INR 116 Cr.

4.1.3 After detailed deliberations, NCT approved the augmentation of transformation capacity by 2x500 MVA (7th & 8th), 400/220 kV ICTs at Tumkur (Pavagada) 400/220 kV Pooling Station in Karnataka through RTM mode with tentative implementation timeframe of 18 months.

4.1.4 Summary of the scheme is given below:

SI No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crores)	Remarks

1.	Augmentation of transformation capacity by 2x500 MVA (7^{th} & 8^{th}), 400/220 kV ICTs at Tumkur (Pavagada) 400/220 kV Pooling Station. Tentative Implementation timeframe: 18 months	116	Approved under RTM by owner of existing substation

4.1.5 Detailed scope of the scheme is given below:

SI No.	***Scope of the Transmission Scheme***	***Capacity /km***
1.	Augmentation by 2x500 MVA, 400/220 kV transformation capacity at Tumkur (Pavagada) PS	• 500 MVA, 400/220 kV ICTs – 2 Nos. • 400 kV ICT bay – 2 Nos. • 220 kV ICT bay – 2 Nos. • 220 kV cable (2000 m approx.) along with associated termination kits

4.2 **Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL)**

4.2.1 Representative of CTUIL stated that the proposed augmentation of transformation capacity at Jam Khambhaliya PS (JKTL) shall enable evacuation of RE power from various generation projects in Jam Khambhaliya area who have applied for connectivity under GNA at Jam Khambhaliya PS at 220 kV level. Cumulative injection from developers at 220 kV bus section-2 shall be: 750 MW out of which 650 MW (ACME & MRPL) is linked with 2x500 MVA, 400/220 kV ICT (5th & 6th). The estimated cost of the scheme is about INR 110 Cr. M/s MRPL have informed that they shall implement their 220kV bay by themselves matching with availability of 220kV GIS Bus section-2 and have requested that the Bus section-2 be implemented at the earliest.

4.2.2 After detailed deliberations, NCT approved the augmentation of transformation capacity at Jam Khambhaliya PS (JKTL), through RTM mode with tentative implementation timeframe as mentioned in the para below.

4.2.3 Summary of the scheme is given below:

SI No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crores)	Remarks

1.	Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL) Tentative Implementation timeframe: For scope at Sl. No.1 & 2 below: 21 months. For 2 Nos 220 kV bays at Sl. No. 3 below: 30.03.2026 and 30.06.3027 respectively (subject to minimum schedule of 21 months from date of award of balance works).	110	Approved under RTM by owner of existing substation

4.2.4 Detailed scope of the scheme is given below:

SI No.	***Scope of the Transmission Scheme***	***Capacity /km***
1.	Creation of New 220 kV Bus Section-II at Jam Khambhaliya PS Space to be kept for 1 no. 220 kV line bay and 1 no. 220kV ICT bay in the same GIS Hall for RE Interconnection being implemented by the RE developer & 7th ICT (i.e 3rd ICT on Sec-II)(in addition to 2 nos. bays at Sl. 3)	220 kV Bus sectionaliser bay - 1 Set *(to be kept normally CLOSED and may be opened based on system requirement)* 220 kV BC – 1 No.
2.	Augmentation of transformation capacity at Jam Khambhaliya PS (GIS) by 2x500MVA, 400/220 kV ICT (5th & 6th) terminated on New 220 kV bus section-II	500 MVA, 400/220 kV ICTs: 2 Nos. 400 kV ICT bays: NIL* 220 kV ICT bays: 2 Nos.
3.	Implementation of 220kV GIS line bays at Jam Khambhaliya PS for RE Projects on New 220kV bus section-II	220 kV line bay – 2 No. (GIS) (1 for ACME Sun Power Pvt Ltd and 1 for Juniper Green Energy Pvt Ltd.)

**Note: Termination of the 2x500MVA ICTs under present scope shall be in the '2' separate dia's which are being developed by POWERGRID for RIL for termination of 400 kV Jam Khambaliya - Jamnagar D/c line. TSP shall implement 400 kV side GIS Duct required for interconnection of ICT-5 & 6 at 400 kV Jam Khambaliya PS [length is approx. 350m. (Actual length shall be finalized based upon final layout)] along with associated equipment as required.*

4.3 **Augmentation of transformation capacity at 765/400 kV Lakadia S/s (WRSS XXI (A) Transco Ltd) in Gujarat**

4.3.1 Representative of CTUIL stated that the proposed augmentation of transformation capacity at 765/400 kV Lakadia S/s (WRSS XXI (A) Transco Ltd) in Gujarat **– Part A** shall enable evacuation of RE power from various generation projects in Lakadia area who have applied for connectivity under GNA at Lakadia S/s at 220 kV level. The 2x500 MVA ICTs proposed at Lakadia form part of ATS of RE projects for 550 MW [Avaada Inclean Pvt. Ltd. (AIPL) (50MW): Appl. No. 2200000011, Avaada Energy Private Limited (AEPL) (300MW): Appl. No. 2200000131 & Avaada Energy Private Limited (200MW) : Appl. No. 2200000200]. The estimated cost of the scheme is less than INR 500 Cr and accordingly, same was not sent to WRPC for deliberations. M/s AIPL / AEPL vide e-mail dated 25.11.2023 have requested that the ICTs be implemented in compressed time-frame by Jun-25. Hence time-frame was deliberated and proposed as 18 months from date of allocation to implementing agency (By 30.06.2025 on best effort basis).

4.3.2 After detailed deliberations, NCT approved the augmentation of transformation capacity at 765/400 kV Lakadia S/s (WRSS XXI (A) Transco Ltd) in Gujarat- Part A, through RTM mode with tentative implementation timeframe of 18 months.

4.3.3 Summary of the scheme is given below:

SI No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crores)	Remarks
1.	Augmentation of transformation capacity at 765/400 kV Lakadia S/s (WRSS XXI(A) Transco Ltd) in Gujarat – Part A Tentative Implementation timeframe: 18 months (By 30.06.2025 on best effort basis)	142	Approved under RTM by owner of existing substation

4.3.4 Detailed scope of the scheme is given below:

SI No.	***Scope of the Transmission Scheme***	***Capacity /km***
1.	Creation of 220kV switchyard at Lakadia 765/400kV S/s along with 220kV line bays for RE Interconnection	220 kV switchyard & 220kV line bays – 2 Nos. 220 kV Bus coupler – 1 No. 220 kV Transfer bus coupler – 1 No.

2.	Installation of 2x500 MVA, 400/220 kV ICTs (1st & 2nd) at Lakadia PS along with associated ICT bays	400/220kV, 1x500MVA ICT – 2 No. 400kV bay – 2 No. 220kV bay – 2 No. Associated 400 kV Bus Bar extension

With regard to status of revival of 2GW potential at Lakadia, MNRE informed that they are already considering the above proposal and shall intimate to MOP/CEA/CTU so that the 400/220kV ICTs at Lakadia may be implemented under coordinated system planning based on REZ potential in the area.

With regard to Augmentation of transformation capacity at 765/400 kV Lakadia S/s (WRSS XXI (A) Transco Ltd) in Gujarat – Part B scheme, it was deliberated that the same may be discussed again in subsequent meetings along with other 400/220kV ICTs at Lakadia so that the entire scope w.r.t. ICT Augmentation at Lakadia is implemented in one go.

4.4 **400 kV line bays & ICT Augmentation at 765/400/220 kV Mandsaur S/s in MP**

4.4.1 Chief Engineer (PSPA-II), CEA, stated that the Mandsaur PS is being set-up with 3x1500 MVA, 765/400 kV ICTs to enable evacuation of power from 2 GW Wind Potential. The S/s has been approved in the 14th NCT meeting held on 09.06.2023 and the same is under bidding with implementation time-frame of 24 months from SPV Transfer.

4.4.2 Representative of CTUIL stated that the GNA application of Greenko shall result in cumulative injection of 3,512 MW (including 2,000 MW WEZ) at 400 kV level of Mandsaur PS and hence, an additional 1x1500 MVA, 765/400 kV ICT (4th) is required. The PSPs of M/s Greenko are tying up power from RE sources and the RE power stored during high RE generation periods shall be dispatched in conjunction with the 2 GW WEZ at Mandsaur PS. Thus, the 4th ICT would be catering to WEZ potential and would also facilitate evacuation of power from PSP in a reliable manner. Hence, the 1x1500 MVA, 765/400 kV ICT (4th) at Mandsaur PS shall serve both RE projects as well as the subject PSPs (Energy storage).

4.4.3 On a query from NCT, CTUIL informed that connectivity applications have been received only for 300MW at Mandsaur PS from RE project till date.

4.4.4 It was deliberated that PSPs should operate to store RE power in such a manner so as to ensure optimal loading on 765/400kV ICTs at Mandsaur PS. In this way, the loading on outgoing 765kV lines from Mandsaur PS would also be within limits and PSP would

compliment the ISTS Grid and help in maximum RE integration without the need for additional system.

4.4.5 NCT opined that connectivity to PSP of Greenko can be accommodated within the present scope of works. Accordingly, augmentation of transformation capacity and line bays is not required at Mandsaur S/s at present.

4.5 Additional Transmission system for evacuation of power from Bhadla-III PS as part of Rajasthan REZ Phase-III scheme (20 GW)

4.5.1 Representative of CTUIL stated that connectivity application of about 7 GW (against potential of 6.5GW) is already received at Bhadla-III PS, out of which 6.5 GW is already granted/agreed for grant. Out of above RE application of about 3 GW (400 kV – 1 GW, 220 kV- 2 GW) is granted through EHVAC system (Scheduled progressively from March, 2025) and balance 3.5 GW is being granted on HVDC system (Expected Sch.: Feb'28) at Bhadla-III PS. With fulfilment of connectivity grant process (Intimation, BGs etc.), total 5 nos. of 400/220 kV ICTs are required, out of which 3 nos. ICTs already under implementation (Ph-III Part B1). Therefore, balance 2 nos. ICTs (4th & 5th) are required with 18 months' schedule considering RE generation schedule.

4.5.2 After detailed deliberations, NCT approved the additional Transmission system for evacuation of power from Bhadla-III PS as part of Rajasthan REZ Phase-III scheme (20 GW), under TBCB mode with implementation timeframe as mentioned in the below para.

4.5.3 Summary of the scheme is given below:

SI No.	Name of the scheme and implementation timeframe	Estimated Cost (₹ Crores)	Remarks
1.	Additional Transmission system for evacuation of power from Bhadla-III PS as part of Rajasthan REZ Phase-III scheme (20 GW) i. Augmentation of 2x500 MVA (4^{th} & 5^{th}), 400/220 kV ICTs at Bhadla-III PS ii. 220 kV bus sectionalizer (1 set) along with 220kV BC (1 no.) bay and 220kV TBC (1 no.) bay at Bhadla-III PS Implementation timeframe :18 months from the date of SPV Transfer Augmentation of 2x1500 MVA, 765/400kV (3rd & 4th) ICTs at Bhadla-III PSImplementation timeframe: • 765/400kV ICT-3: 18 months from the date of SPV Transfer* • 765/400kV ICT-4:30.12.25	368.83	Approved under TBCB with BPC being RECPDCL

*efforts may be made to commission the 765/400kV ICT by Jun'25

4.5.4 Detailed scope of the scheme is given below:

Sl.	*Scope of the Transmission Scheme*
1.	• Augmentation of 2x500 MVA (4th & 5th) 400/220 kV ICTs at Bhadla-III PS • 220 kV bus sectionalizer (1 set) along with 220kV BC (1 no.) bay and 220kV TBC (1 no.) bay at Bhadla-III PS • Augmentation of 2x1500 MVA 765/400 kV (3rd & 4th) ICTs at Bhadla-III PS

4.6 Transmission System for integration of Nizamabad REZ (1 GW) in Telangana

4.6.1 Chief Engineer (PSPA-II), CEA stated that the transmission system for integration of Nizamabad REZ (1 GW) and Transmission System for integration of Medak REZ (1 GW) in Telangana was discussed in the 16th NCT meeting. In the meeting, representative of CTUIL stated that for proper planning of transmission system, the exact location of pooling stations both at Nizamabad and Medak has to be provided by SECI. In the 16th meeting of NCT, SECI was directed to provide the exact location of pooling stations at Nizamabad and Medak to CEA/CTUIL.

4.6.2 Representative of SECI informed that the RE potential area and suitable pooling substation area in Yellapgoda village (Nizamabad District) for Nizamabad-II PS and Arepalle Village (Medak District) for Medak PS were suggested.

4.6.3 CTUIL suggested that looking into the short line length of about 30 km of Nizamabad-Nizamabad-II 765 kV D/c line, the Nizamabad-II PS and the line may be considered at rated voltage of 765 kV level from initial stage itself.

4.6.4 NCT directed that the modified transmission scheme should be put up for deliberation in the next NCT meeting.

4.7 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme "5 min Interface Energy Meter along with AMR system-Southern Region"

4.7.1 Representative of CTUIL stated that a Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS.

This Technical specification includes:

- All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary

computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).

- Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose.

In view of the above for making the system future ready for 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above mentioned project proposal.

4.7.2 After detailed deliberations, NCT directed that scheme comprising of Supply and installation of AMR compatible 5 min Interface Energy Meter along with AMR Systems for All India level shall be taken up in place of region-specific schemes. CTUIL was directed to take appropriate action in this regard

Summary of the deliberations of the 17th meeting of NCT held on 31th January, 2024

I. Modification in the earlier approved/notified transmission schemes:

1. **Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area**
   Changes in the future provision (space for) in original scope of the scheme was agreed to be implemented.

2. **Transmission system for evacuation of power from Shongtong Karcham HEP (450MW) and Tidong HEP (150 MW)**
   Modifications regarding configuration of conductor for the line Wangtoo (HPPTCL) – Panchkula (PG) 400 kV D/c line was approved.

3. **Timeline for 1500 MVA, 765/400 kV ICT Augmentation at Jhatikara S/s**
   Augmentation of 1x1500 MVA, 765/400 kV ICT (3rd) at Jhatikara Substation (Bamnoli/Dwarka Section) was agreed with implementation timeframe of 18 months from date of intimation by CTUIL.

4. **Change in Scope of the transmission scheme "Transmission Scheme for North Eastern Region Expansion Scheme-XVI (NERES-XVI)"**
   DoP, Arunachal Pradesh, to charge Rs. 39.36 Lakhs for the additional land being acquired by them at Gerukamukh (Arunachal Pradesh) S/s and dismantling and erection of already installed structures with the associated civil works in Gerukamukh (Arunachal Pradesh) S/s

5. **Change in Scope of transmission scheme "Eastern Region Expansion Scheme-XXXIV (ERES-XXXIV)"**
   2 nos. of GIS bays instead of 2 nos. of full diameter i.e. 4 nos. of GIS bays at Paradeep (OPTCL) was agreed to be implemented.

6. **Change in implementation timeframe for Augmentation of transformation capacity at Bhuj-II PS**
   Change of implementation timeframe for elements at Sl. No. 1 and 3 of the scope of the scheme was approved.

7. **Change in Completion Schedule of transmission scheme North Eastern Region Generation Scheme-I (NERGS-I)**
   The completion schedule of the transmission scheme "North Eastern Region Generation Scheme-I" was approved to be 31-12-2026 instead of 31-12-2025.

II. ISTS Transmission schemes, costing between Rs 100 Crore to Rs 500 Crore, approved by NCT:

a) The transmission schemes approved by NCT under RTM route is given below:

Sl. No.	Name of Transmission Scheme	Implementation Mode	Tentative Implementation timeframe	Allocated to	Estimated Cost (Rs. Crs)
1.	Augmentation of transformation capacity by 2x500 MVA (7th & 8th), 400/220 kV ICTs at Tumkur (Pavagada) 400/220 kV Pooling Station.	RTM	18 months	POWERGRID	116
2.	Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL)	RTM	For scope at Sl. No.1 & 2: 21 months. For 2 Nos 220 kV bays at Sl. No. 3: 30.03.2026 and 30.06.3027 respectively (subject to minimum schedule of 21 months from date of award of balance works).	JKTL Adani Energy Solutions Ltd.	110
3.	Augmentation of transformation capacity at 765/400kV Lakadia S/s (WRSS XXI(A) Transco Ltd) in Gujarat-Part A	RTM	18 months (By 30.06.2025 on best effort basis)	WRSS XXI(A) Transco Ltd Adani Energy Solutions Ltd.	142

b) The transmission schemes approved by NCT under TBCB route is given below:

Sl. No.	Name of Transmission Scheme	Implementation Mode	Implementation timeframe	BPC	Estimated Cost (Rs. Crs)
1.	Additional transmission system for evacuation of power from Bhadla-III PS as part of	TBCB	2x500 MVA, 400/220kV ICTs at Bhadla-III(4^{th} & 5^{th}) & 220kV bus	RECPDCL	368.83

	Rajasthan REZ Phase-III scheme (20GW)		sectionaliser along with BC+TBC • 18 months from the date of SPV transfer 2x1500 MVA, 765/400kV ICTs • 765/400kV ICT-3: 18 months from the date of SPV transfer* • 765/400kV ICT-4 : 30.12.25		

*efforts may be made to commission the 765/400 kV ICT by Jun'25.

The broad scope of above ISTS scheme, approved by NCT for implementation through TBCB route to be notified in Gazette of India is as given below:

Sl. No.	Name of Scheme & implementation timeframe	Broad Scope	Bid Process Coordinator
1.	Additional Transmission system for evacuation of power from Bhadla-III PS as part of Rajasthan REZ Phase-III scheme (20 GW) i. Augmentation of 2x500 MVA (4^{th} & 5^{th}), 400/220 kV ICTs at Bhadla-III PS ii. 220 kV bus sectionalizer (1 set) along with 220kV BC (1 no.) bay and 220kV TBC (1 no.) bay at Bhadla-III PS Implementation timeframe :18 months from the date of SPV Transfer Augmentation of 2x1500 MVA, 765/400kV (3rd & 4th) ICTs at Bhadla-III PS Implementation timeframe: • 765/400kV ICT-3: 18 months from the date of SPV Transfer* • 765/400kV ICT-4:30.12.25	1. Augmentation of 2x500 MVA (4^{th} & 5^{th}) 400/220 kV ICTs at Bhadla-III PS 2. 220 kV bus sectionalizer (1 set) along with 220kV BC (1 no.) bay and 220kV TBC (1 no.) bay at Bhadla-III PS 3. Augmentation of 2x1500 MVA 765/400kV (3^{rd} & 4th) ICTs at Bhadla-III PS **(Detailed scope as approved by 17^{th} NCT and subsequent amendments thereof)**	RECPDCL

*efforts may be made to commission the 765/400kV ICT by Jun'25

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Annexure

List of participants of the 17th meeting of NCT

CEA:

1. Sh. Ghanshyam Prasad, Chairperson, CEA & Chairman, NCT
2. Sh. Ajay Talegaonkar, Member (E&C)
3. Sh. A. K. Rajput, Member (PS)
4. Sh. Rakesh Goyal, Chief Engineer (PSPA-II)
5. Sh. Ishan Sharan, Chief Engineer (PSPA-I)
6. Sh. Ramesh Kumar, Chief Engineer (PSETD)
7. Sh. Bhanwar Singh Meena, Director (PSETD)
8. Sh. B.S. Bairwa, Director (PSPA-II)
9. Sh. Pranay Garg, Deputy Director (PSPA-II)
10. Sh. Deepanshu Rastogi, Deputy Director (PSPA-II)
11. Sh. Prateek Jadaun, Assistant Director (PSPA-II)

MoP:

1. Om Kant Shukla, Director (Trans.)

MNRE:

1. Sh. Tarun Singh, Scientist E

SECI:

1. Sh. Himanshu Gulati, Sr Engineer
2. Sh. Prashant K. Upadhyay, Sr Manager
3. Sh. R.K. Agarwal, Consultant

NITI Aayog:

1. Sh. Manoj Kr. Upadhyay, Deputy Adviser

CTUIL:

1. Sh. P.C Garg, COO
2. Sh. Ashok Pal, Deputy COO
3. Sh. P.S Das, Senior GM
4. Sh. K.K Sarkar, Sr GM
5. Ms. N. Mishra, Sr. GM
6. Sh. Atul Agarwal, CGM
7. Sh. V. Thiagarajan, Sr GM
8. Sh. Rajesh Kumar, Sr GM
9. Sh. Kashish Bhambhani, GM
10. Sh. Anil Kr Meena, GM
11. Sh. Sandeep Kumawat, DGM
12. Sh. Bhaskar Wagh, CM
13. Sh. G. Venkatesh, Manager
14. Sh. Pratyush Singh, Chief Manager

15. Sh. Manish Ranjan Keshari, Chief Manager

GRID India:

1. Sh. S.R. Narasimhan, CMD
2. Sh. Rajiv Porwal, Director (SO)
3. Sh. Surajit Banarjee, CGM
4. Sh. Rahul Shukla, CM
5. Sh. Priyam Jain, Manager

RECPDCL

1. Sh. Anil Kumar, CM
2. Sh. Amit Chatterjee, Ex Engineer

Expert Member

1. Sh. Ravinder Gupta, Ex- CE (CEA)

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