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 पैंतीसवी बैठक का कार्यवृत्त ।

Subject: Minutes of the 35th Meeting of the National Committee on Transmission (NCT)-reg.

महोदया (Madam) / महोदय (Sir),

The 35th meeting of the National Committee on Transmission (NCT) was held on 19th November, 2025 at New Delhi. The minutes of the meeting are enclosed herewith.

भवदीय / Yours faithfully

02.12.2025

(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.	Joint Secretary (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh, Abhay Bakre, Mission Director, MNRE Atal Akshay Urja Bhawan Opposite CGO Complex gate No. 2, Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Floors Nos. 5-10, Tower 1, Plot Nos. 16, IRCON International Tower, Institutional Area, Sector 32, Gurugram, Haryana - 122001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9 (1st Floor), Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016
9.	Sh. Abhay Choudhary Expert Member	10.	Managing Director, Jammu Power Distribution Corporation Limited (JPDCL) Gladni Narwal, Jammu, Jammu & Kashmir, India - 180006
11.	Sh. S.R Narasimhan Expert Member	12.	Shri. Shivdas.S, Director (Transmission & System Operation) Vydyuthi Bhavanam, Pattom, Thiruvananthapuram, Kerala-695004
13.	Sh. Sabyasachi Roy, Director (Operations), WBSETCL	14.	Chairperson, North Eastern Region Power Committee Hon'ble Minister of Power, Govt. of Assam, Guwahati – 781 006
15.	Chairperson, Western Region Power Committee 2nd Floor, Vidyut Seva Bhavan, P.O. Sunder Nagar, Danganiya, Raipur: 492 013		

Special Invitee

i) Chief Engineer (PCD), CEA
ii) CEO, RECPDCL
iii) CEO, PFCCL

Minutes of the 35th meeting of National Committee on Transmission (NCT)

1. Modification in earlier approved transmission schemes

1.1. Review of transmission scheme "Transmission System for integration of Kurnool-V REZ Phase-I" and "Transmission System for integration of Ananthapuram-III REZ –Phase-I"

1.1.1. "Transmission System for integration of Kurnool-V REZ Phase-I" and "Transmission System for integration of Ananthapuram-III REZ –Phase-I" were recommended in the 32nd meeting of NCT held on 12.08.2025 for implementation under TBCB mode.

1.1.2. MoP vide order dated 17.09.2025 made following observations:

I. It has been observed that the transmission system for evacuation of 10.5 GW RE potential (7.5 GW at Kurnool-IV PS, 3 GW at Kurnool-III PS) and 7.5 GW RE potential (at Ananthapuram-II PS) has already been identified in Kurnool area and in Ananthapuram area respectively which is at various stages of implementation.

II. In order to ensure optimum utilization of the transmission lines, RE power from Kurnool-V REZ-Phase-I (4.5 GW) and from Ananthapuram-III REZ-Phase-I (4.5 GW) can be evacuated through the already identified transmission system in Kurnool area and in Ananthapuram area respectively during non-solar hours with implementation of co-located BESS.

1.1.3. Further, NCT was requested to review the scheme in light of the optimum utilization of the existing/under implementation transmission lines in those REZs.

1.1.4. In the 34th meeting of NCT, CTUIL was directed to take up with NTPC and Tata Power for optimization of connectivity quantum at Kurnool and Ananthapuram. CTUIL was also directed to take up with applicants requesting connectivity at Kurnool-V for shifting to Kurnool-III or Kurnool-IV with BESS for non-solar hour. Further, applicants requesting connectivity at Ananthapuram-III shall also be requested for shifting to Ananthapuram and Ananthapuram-II with BESS.

1.1.5. Representative of CTUIL stated matter has been taken up with all the concerned RE developers at Kurnool & Ananthapuram complexes for optimization of their connectivity as per the decision taken during the meeting held on 30.09.2025 under chairperson, CEA. Further, all the RE developers including NTPC and Tata Power were again requested to optimize their connectivity quantum as per the directions of the 34th NCT meeting. However, responses from the RE developers are awaited.

1.1.6. MD, NREDCAP stated that they have identified the location for Kurnool-V and the location for Ananthpuram-III is under finalization. He mentioned that the location details would be provided to CTUIL shortly.

1.1.7. Chairperson, NCT, emphasized that the connectivity quantum at these locations needs to be optimized and should be aligned with the Resource Adequacy Plan.

1.1.8. Representative of CTUIL stated that during the preliminary engineering, it was observed that space is available for 2 nos. of 400kV line bays at Nagarjunasagar, but

line corridor is not available for termination of Sagar – Nagarjunasagar 400 kV quad D/c line. Accordingly, shifting of existing 50 MVAr bus reactor at Nagarjunasagar to a new bay is required for termination of one circuit of Sagar – Nagarjunasagar 400 kV quad D/c line and 2nd circuit may be terminated in a new bay through GIS duct. Similarly, space is available for 2 nos. of 765kV line bays at Raichur New substation but line corridor is not available for termination of Kurnool-V – Raichur New 765kV D/c line, accordingly, Kurnool-V – Raichur 765kV D/c line was proposed to be terminated in the existing 2x240 MVAr bus reactor bays after conversion of 765 kV Bus Reactor bays to 765 kV SLR Line bays. It was also proposed that, to avoid difficulties during shifting of the bus reactor and subsequent commercial / maintenance issues at Nagarjunasagar & Raichur New substations, the above modification works may be considered for implementation by the owner of existing substation.

1.1.9. It was deliberated that holding up of implementation of Kurnool-V and Ananthapuram-III may lead to non-development of RE generation in that area.

1.1.10. After deliberations, it was decided that transmission system for Ananthapuram-III shall be discussed again in the next NCT meeting.

1.1.11. Further, NCT recommended that transmission scheme for Kurnool-V may be taken up for implementation with above mentioned minor modification in transmission scheme. The estimated cost of the scheme is about Rs 7627 Cr. at May'25 price level. Details of the transmission scheme is given below.

Sl. No.	***Scope of the Transmission Scheme***	***Capacity /km***
1.	Establishment of 4x1500 MVA, 765/400 kV and 5x500 MVA, 400/220kV Kurnool-V Pooling Station near Kodumur in Kurnool district along with 2x330 MVAr (765 kV) bus reactors at Kurnool-V PS with provision of two (2) sections of 4500 MVA each at 400kV level **Future Space Provisions:** • 765/400kV, 1500 MVA, ICTs – 2 Nos. • 765kV ICT bays – 2 Nos. • 400kV ICT bays – 2 Nos. • 400/220kV, 500 MVA, ICTs – 13 Nos. • 400kV ICT bays – 13 Nos. • 220kV ICT bays – 13 Nos. • 765kV line bays – 8 Nos. (with provision for SLR) • 400kV line bays – 12 Nos. (with provision for SLR) • 220kV line bays – 19 Nos. • 220kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 Nos.	• 765/400kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765kV ICT bays – 4 Nos. • 400kV ICT bays – 4 Nos. • 765kV line bays – 6 Nos. (at Kurnool-V PS for termination of Kurnool-V – Shadnagar, Kurnool-V – Raichur New and Kurnool-V – Sagar 765kV D/c lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV Bus Reactor bays – 2 Nos. • 400/220kV, 500 MVA, ICTs – 5 Nos. • 400kV ICT bays – 5 Nos. • 220kV ICT bays – 5 Nos. • 220kV line bays – 6 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*
	• 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos. • 400kV Bus Sectionalizer : 1 set	
2.	± 300 MVAr STATCOM at Kurnool-V PS	• 400kV bay – 1 no. • ± 300 MVAr STATCOM – 1 set
3.	Kurnool-V – Shadnagar 765 kV D/c line (about 240 km) with 240 MVAr SLR (convertible) at both ends on both circuits	~ 240 km • 765 kV line bays – 2 Nos. (at Shadnagar) • 765 kV, 240 MVAr SLR at Kurnool-V PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) • Switching Equipment for 765 kV SLR at Kurnool-V PS – 2 Nos. • 765 kV, 240 MVAr SLR at Shadnagar PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) • Switching Equipment for 765 kV SLR at Shadnagar PS – 2 Nos.
4.	Kurnool-V – Raichur New 765 kV D/c line (about 150 km) with 240 MVAr SLR (convertible) at Raichur New end on both circuits	~ 150 km
5.	Establishment of 3x1500 MVA, 765/400 kV Sagar substation with 2x330 MVAr (765 kV) bus reactors with space provision for establishment of 220 kV switchyard **Future Space Provisions:** • 765/400kV, 1500 MVA, ICTs – 3 Nos. • 765kV ICT bays – 3 Nos. • 400kV ICT bays – 3 Nos. • 765kV line bays – 12 Nos. (with provision for SLR) • 400kV line bays – 10 Nos. (with provision for SLR) • 400kV Bus Sectionalizer : 1 set **Future Space Provisions for 220kV switchyard:** • 400/220kV, 500 MVA, ICTs – 10 Nos. • 400kV ICT bays – 10 Nos. • 220kV ICT bays – 10 Nos. • 220kV line bays – 16 Nos. • 220kV Bus Sectionalizer: 3 set	• 765/400kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA incl. 1 spare unit) • 765kV ICT bay – 3 Nos. • 400kV ICT bay – 3 Nos. • 765kV line bays – 2 Nos. (at Sagar for termination of Kurnool-V – Sagar 765 kV D/c line) • 765 kV, 330 MVAr Bus Reactors – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit) • 765 kV Bus Reactor bays – 2 Nos. • 400kV line bays – 2 Nos. (at Sagar for termination of Sagar – Nagarjunasagar 400 kV quad D/c line)

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
	• 220 kV Bus Coupler (BC) Bay – 4 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 4 Nos.	
6.	Kurnool-V – Sagar 765 kV D/c line (about 240 km) with 240 MVAr SLR (convertible) at both ends on both circuits	~ 240 km • 765 kV, 240 MVAr SLR at Kurnool-V PS – 2 Nos. (6x80 MVAr switchable units) • Switching Equipment for 765 kV SLR at Kurnool-V PS – 2 Nos. • 765 kV, 240 MVAr SLR at Sagar – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) • Switching Equipment for 765 kV SLR at Sagar – 2 Nos.
7.	Sagar – Nagarjunasagar 400 kV quad D/c line (about 25 km)	~ 25 km

Note :

i. *The Kurnool-V – Raichur New 765kV D/c line is to be terminated in the existing 240 MVAr bus reactor bays. Conversion of existing 765 kV Bus Reactor bays to 765 kV SLR Line bays at Raichur New for termination of Kurnool-V – Raichur New 765kV D/c line is in the scope of POWERGRID.*

ii. *2 No. of 400kV line bays at Nagarjunasagar for termination of Sagar – Nagarjunasagar 400 kV quad D/c line is in the scope of POWERGRID. Line termination shall be in the scope of TSP.*

iii. *TSP of Shadnagar S/s to provide space (free of cost) for 2 Nos. of 765kV line bays with provision of SLR at Shadnagar S/s for termination of Kurnool-V – Shadnagar 765 kV D/c line.*

1.1.12. NCT also approved modification works at Nagarjunasagar and Raichur New as given below:

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*	*Remarks*
1.	Conversion of 765 kV Bus Reactor bays to 765 kV SLR Line bays – 2 Nos. (at Raichur New)	• Conversion of 765 kV Bus Reactor bays to 765 kV SLR Line bays – 2 Nos. (at Raichur New) (for termination of *Kurnool-V – Raichur 765kV D/c line under the scheme* "*Transmission System for integration of Kurnool-V REZ - Phase-I")*	• Approved under RTM mode through POWERGRID • Estimated Cost - Rs 91 Crore • Tentative implementation timeframe: 30 months from the date of allocation

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*	*Remarks*
2.	Shifting of existing 50 MVAr bus reactor at Nagarjunasagar to a new bay for termination of one circuit of Sagar – Nagarjunasagar 400 kV quad D/c line	• Shifting of existing 50 MVAr bus reactor at Nagarjunasagar to a new bay for termination of 1st circuit of Sagar – Nagarjunasagar 400 kV quad D/c line and upgradation of entire existing 50 MVAr bus reactor diameter equivalent to quad moose capacity. • Termination of 1st circuit of Sagar – Nagarjunasagar 400 kV quad D/c line including line side equipment in existing 50 MVAr bus reactor bay. • 400 kV bays – 1 Nos. [at Nagarjunasagar S/s for installation of shifted 50 MVAr bus reactor] • 400kV line bays – 1 No. along with GIS duct and associated equipment for termination of 2nd circuit of Sagar – Nagarjunasagar 400 kV quad D/c line.	

1.2. Transmission system for proposed Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-l)

1.2.1. The "Transmission system for proposed Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-I)" was recommended in the 32nd meeting of NCT held on 12.08.2025 for implementation under TBCB mode.

1.2.2. MoP vide letter dated 17.09.2025 has conveyed that the transmission scheme for "Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-l)" is on hold and will be taken up for approval of competent authority only after addressing the financial security of the transmission system by CERC.

1.2.3. CTUIL mentioned applications have been received from Green Hydrogen/Ammonia developers for grant of GNA at Tuticorin, Kakinada and Vizag. NTPC has submitted

application for 2500 MW for grant of GNA at Vizag for development of Green Hydrogen/Ammonia. AM Green Ammonia (India) Pvt. Ltd. has submitted application for 2000 MW for grant of GNA at Kakinada and Green Infra Renewable Energy Farms Private Limited has submitted application for 800 MW for grant of GNA at Tuticorin.

1.2.4. MNRE stated that the Green Hydrogen/ Ammonia developers have the firm offtake and any delay in transmission system would affect them adversely.

1.2.5. Chairperson, NCT stated that in a meeting held with the green hydrogen developers, progress was noted in Vizag and Kakinada.

1.2.6. The representative of APTRANSCO stated that large data centers of 2000 MW are expected to come up by the end of 2029–30, and therefore this system is necessary to meet those requirements.

1.2.7. Considering the current connectivity applications and the clear visibility of upcoming developments, it was recommended that the bidding process should be resumed for implementation of transmission system for "Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh (Phase-I)" and "Transmission system for proposed Green Hydrogen / Green Ammonia projects in Vizag area, Andhra Pradesh (Phase-I)". However, due to the lack of clear visibility, transmission system for Kandla and Tuticorin GH, may be taken up in the forthcoming meetings of the NCT.

1.3. Transmission system strengthening at Tumkur-II for integration of additional RE potential (1 .5 GW)

1.3.1. The "Transmission system strengthening at Tumkur-II for integration of additional RE potential (1.5 GW)" was agreed in the 31st NCT meeting held on 12.08.2025 for implementation under TBCB mode. Further, NCT recommended some modifications in the scheme in the 33rd NCT held on 16.09.2025.

1.3.2. MoP vide letter dated 30.10.2025 has communicated following observations:

I. In order to ensure optimum utilization of the transmission lines, additional RE potential of 1.2 GW can be evacuated through the already identified transmission system in Tumkur-II PS during non-solar hours with implementation of co-located BESS.

II. MoP has requested to review the scheme in light of the optimum utilization of the existing/under implementation transmission lines in those REZs.

1.3.3. In the 34th meeting of NCT, CTUIL was directed to take up with applicants requesting connectivity applicants at Tumkur-II to optimize the quantum or come with BESS. Representative of CTUIL stated that due to limited time, responses from the developers could not be obtained, however, CTUIL is taking up with the developers.

1.3.4. Joint Secretary, MoP stated that the scheme has only transformer augmentation for evacuation of additional quantum and may be recommended.

1.3.5. Representative of CTUIL stated that in the 33rd meeting of NCT modification in existing transmission scheme "Transmission system strengthening at Tumkur-II for integration of additional RE potential (1.5 GW)" with change in name of the scheme as "Transmission system strengthening at Tumkur-II for integration of additional RE potential (2.7 GW)" were recommended. He mentioned that the modifications related to space for STATCOM and deletion of 2 Nos. of 400 kV line bays at Tumkur-II PS were required even without additional 1.2 GW quantum.

1.3.6. After deliberations, NCT again recommended the scheme as agreed in the 33rd meeting of NCT i.e. modification in existing transmission scheme "Transmission system strengthening at Tumkur-II for integration of additional RE potential (1.5 GW)" with change in name of the scheme as "Transmission system strengthening at Tumkur-II for integration of additional RE potential (2.7 GW)":

Sl.No.	**Scope of the Transmission Scheme**	**Original scope of the Transmission Scheme**	**Revised scope of the Transmission Scheme**
1	Augmentation of Tumkur-II PS by 400/220 kV, 3x500 MVA ICTs (5th to 7th)	• 400/220kV, 500 MVA, ICTs – 3 Nos. • 400kV ICT bays – 3 Nos. • 220kV ICT bays – 3 Nos. • 220kV Bus Sectionalizer: 2 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.	No Change
2	Tumkur-II – Madhugiri 400kV (Quad) D/c line (~ 100 km)	• 400kV line bays – 2 Nos. (at Tumkur-II PS) • 400kV line bays – 2 Nos. (at Madhugiri)	• 400kV line bays – 2 nos. (at Tumkur-II PS) • 400kV line bays at Madhugiri – The Tumkur-II – Madhugiri 400kV (Quad) D/c line may be terminated in the existing line bays which will be available upon upgradation of Narendra New – Madhugiri 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level which is being implemented under "Transmission Scheme for integration of Davanagere / Chitradurga and Bellary REZ in Karnataka"

Sl.No.	Scope of the Transmission Scheme	Original scope of the Transmission Scheme	Revised scope of the Transmission Scheme
3	± 300 MVAR STATCOM at Tumkur-II PS with switching arrangement of under implementation 2x125 MVAr bus reactors	• ±300 MVAR STATCOM at Tumkur-II PS with switching arrangement of under implementation 2x125 MVAr bus reactors. • 400 kV bay – 1 No.	• ± 300 MVAR STATCOM at Tumkur-II PS with switching arrangement of under implementation 2x125 MVAr bus reactors. • 400 kV bay – 1 No. • **Acquisition of additional land adjacent to Tumkur-II PS for STATCOM.**
4	2 Nos. of 220kV line bay at Tumkur-II PS for termination of dedicated transmission lines of RE developers	• 220kV line bays – 2 Nos.	• No Change
5.	Augmentation of Tumkur-II PS by 400/220 kV, 3x500 MVA ICTs (8^{th} to 10^{th})	-	•400/220kV, 500 MVA, ICTs – 3 Nos. •400kV ICT bays – 3 Nos. •220kV ICT bays – 3 Nos. •220kV Bus Sectionalizer: 1 set •220 kV Bus Coupler (BC) Bay – 1 No. • 220 kV Transfer Bus Coupler (TBC) Bay – 1 No.
6.	4 Nos. of 220kV line bay at Tumkur-II PS for termination of dedicated transmission lines of RE developers	-	• 220kV line bays – 4 Nos.

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

1.4.1. NCT recommended the Transmission system for the supply of power to Green Hydrogen/ Ammonia manufacturing potential in the Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)" for implementation under ISTS under TBCB route with an implementation timeframe of 36 Months. MoP had notified the scheme for implementation under ISTS through TBCB vide gazette dated 12.09.2024.

1.4.2. Mundra I Transmission Limited, the successful bidder for the scheme, has filed a Petition for grant of a transmission license under Section 14 of the Electricity Act, 2003

to Central Electricity Regulatory Commission to establish transmission project for the "Transmission System for supply of power to Green Hydrogen/ Ammonia manufacturing potential in Mundra area of Gujarat under Phase- I: Part B1 scheme (3 GW at Navinal S/s)" on a Build, Own, Operate and Transfer basis.

1.4.3. CERC in its order dated 30.10.2025 mentioned the following:

"Act mandates that the inter-state transmission system be developed in an efficient and economical manner. However, the instant transmission scheme may lead to a redundant transmission asset without any visibility of its utilization. Therefore, it is premature to consider the grant of a transmission license for the instant transmission scheme, as it does not fulfil the requirement under section 38(2) (c) of the Act.

The transmission scheme is referred back to the NCT for reconsideration on the basis of its likely utilization and impact on the consumers in the absence of any application for its use by the bulk consumers. After the decision of the NCT, the Petitioner may approach the Commission if so advised."

1.4.4. Chairperson, NCT, stated that transmission planning is governed by three aspects of the Government's policy i.e. (i) transmission ahead of generation, (ii) potential based planning and (iii) continuous/dynamic planning.

1.4.5. Representative of CTUIL informed that during the 22nd meeting of NCT held on 23.08.2024, MNRE projected an electricity demand of 8GW by 2027-28 for green Hydrogen/Green Ammonia production in Mundra region. In the meeting, it was informed that 1.5GW capacity can be accommodated in spare capacity at Navinal-I S/s which was under tendering stage at that time.

Accordingly, the subject 3GW transmission scheme was planned considering the potential with an extended implementation timeline of 36 months to provide a buffer for alignment with expected GNA applications. CTUIL also informed that Adani New Industries Ltd. (ANIL) vide letter dated 21.02.2025 indicated their intent to apply for 5 GW GNA by December 2025, but no formal application has been submitted.

1.4.6. CTUIL also mentioned that the planning of the subject scheme was done as per extant Government's policies. Further, the scheme has undergone all the necessary process including joint studies, stakeholder's consultation, RPC consultation, discussion in NCT and final approval of ministry.

1.4.7. It was deliberated that the scheme has completed all the stages of planning process and direction of CERC to review the scheme after successful bidding may derail the whole process.

1.4.8. The MD, Green Hydrogen Mission, MNRE, stated that an updated status on the development of Green Hydrogen/Green Ammonia (GH/GA) projects in the Mundra region, along with associated timelines, will be provided after obtaining feedback from prospective developers.

1.4.9. After deliberations, it was decided to deliberate the matter again after receiving inputs from MNRE on visibility of Green Hydrogen/Green Ammonia (GH/GA) projects in

the Mundra region, along with associated timelines.

1.5. Transmission system for evacuation of 5GW RE power from Renewable Energy Parks in Leh

1.5.1. In the 33rd meeting of the National Committee on Transmission (NCT) held on 16.10.2025, the transmission system for evacuation of 5 GW RE power from Renewable Energy Parks in Leh was discussed, wherein following were the agreed action point:

a. CTUIL, in consultation with CEA, would review the transmission scheme to enhance system stability while also facilitating the supply of green power to Himachal Pradesh.

b. POWERGRID to carry out studies regarding feasibility of the proposed scheme with respect to EHAVC equipment's and a firmness in design. POWERGRID may present the result of the feasibility study conducted for the scheme.

c. MNRE to take up the matter with RE developers and get their feedback on the working of inverters in high altitude low temperature areas and on SynCons planned as part of developer's scope and implementation timeline. MNRE may present the feedback of RE developers.

1.5.2. In a meeting that was held on 06.10.2025 among CEA, CTU, HPPTCL and Grid-India to explore various alternatives/options of AC system for evacuation of power from Pang RE Park along with exploring possibilities of suitable interconnection with intra-state network of Himachal Pradesh to supply of green power to the state. Himachal Pradesh mentioned that they do not envisage any requirement of drawl from the proposed 400/220 kV substation near Sundernagar.

1.5.3. POWERGRID vide letter dated 07.11.2025 informed the following:

a) Following were some relevant outcomes of Front-End Engineering & Design (FEED) Study-1 for the project by the OEMs:

- Ancillary support would be required in the form of Synchronous Condenser (SYNCON).
- Enhanced insulation is required, such as 765 kV equivalent insulation rating for 400 kV equipment, and 400 kV equivalent insulation rating for 220 kV equipment at Pang and it was concluded that AIS equipment with suitable insulation can be used at Pang.

b) Furthermore, discussions were carried out with SYNCON vendors regarding the availability of SYNCON suitable for high altitude and other environmental conditions at Pang. M/s BHEL and M/s Andritz have confirmed for supply of SYNCON for Pang Kaithal Transmission project considering all environmental conditions at Pang including altitude correction factor.

c) POWERGRID is already executing 66/11 kV sub-station and transmission works in Ladakh at Phobrang, Chushul, Korzok, Hanle, Koyul under Revamped Distribution Sector Scheme (RDSS). These sites are at comparable altitudes to Pang and no issues are anticipated at these stations with respect to Control & Protection Systems.

d) 220kV sub-stations of Srinagar Leh Transmission System (SL TS) are already successfully in operation in similar terrain and ambient temperature condition. No issue has been observed in the Control, Protection & Automation System at above sub-stations.

e) 220kV sub-stations are also under implementation at Diskit (Nubra) and Padum in Ladakh region.

f) Accordingly, the proposed scheme with EHVAC, with additional equipment's like SYNCON etc, is feasible and transmission system at the level of 220kV and below is already under operation in similar terrain and condition.

1.5.4. Representative of MNRE stated that they've sought certain information from CEA regarding optimal study and feasibility. On that, Chief Engineer, PSPA-I informed that reply will be provided shortly.

1.5.5. After deliberations, it was decided that MNRE will re-analyze the scheme, and also take up the matter with RE developers and get their feedback on the working of inverters in high altitude low temperature areas and on SynCons planned as part of developer's scope and implementation timeline. Based on the inputs, further discussion will be taken up in the next meeting of the NCT.

1.6. Modification in the proposal for "WR–ER Inter-Regional Network Expansion Scheme – Part A

1.6.1. The transmission scheme WR–ER Inter-Regional Network Expansion Scheme – Part A, with an estimated cost of ₹6,272.30 crore, was agreed in the 32nd meeting of the National Committee on Transmission (NCT) held on 12.08.2025 for implementation under TBCB, with RECPDCL designated as the BPC. The implementation timeline of the entire scheme was agreed as 24 months from the date of project allocation. The scheme is currently under the bidding process being conducted by the BPC.

1.6.2. Some potential bidders have raised the concerns of completing the entire project in 24 months citing the following constraints:

a) **Land Acquisition Challenges:**

- ✓ The project entails the acquisition of approximately 700-800 acres of land for the Kotra II sub-station at a single location, incorporating provisions for future requirements of 400kV/765kV/1100kV AC and 800kV HVDC systems.
- ✓ Acquiring a contiguous plot of approximately 2.5 km x 1.3 km at one location is highly challenging;
- ✓ Moreover, scope also required other land parcels at Jamshedpur (300 acres).
- ✓ Land acquisition itself is mammoth activity requiring at least 12-14 months out of the total proposed 24 months project completion period.

b) **Statutory clearances and approvals:**

- ✓ Transmission Line will be passing through 4 states (Chhattisgarh, Odisha, Jharkhand, and West Bengal), which includes multiple forest and Coal/ Minerals bearing areas clearances, which may delay the overall project, if any component approval delays.

- ✓ Forest and environmental clearances in these areas are known to take much longer time than normal timeframes.
- ✓ Past projects in the same corridor have faced substantial delays due to land acquisition bottlenecks and environmental (both forest and coal fields) issues.

c) **High Risk associated because of single integrated package:**

- ✓ The integrated 24-month completion requirement for the entire package is therefore likely to prove impractical, forcing bidders to factor in high contingencies for IDC, IEDC, penalties, and liquidated damages, which may in turn unduly inflate tariff bids and impose avoidable cost burdens on consumers and high chances of project get stalled.

1.6.3. It was deliberated that implementation timeframe of some elements of the scheme, for which anticipated timeline for completion is larger may be reviewed, however, the scheme need not be bifurcated as the whole scheme is required to reliably evacuate the power and address the overloading of inter-regional interconnections between ER and WR. Further, the land requirement may be considered at the time of approval of ±800kV HVDC and 1100 kV HVAC schemes. Accordingly, the additional land for establishment of ±800kV HVDC and 1100 kV HVAC schemes may be removed from the present scope of works.

1.6.4. CTU stated that in the present timeframe, critical loading of the various lines in the ER – WR corridor under N-1 contingency viz. Ranchi (New) – Dharamjaigarh 765kV 2xS/c line, Ranchi – Sipat 400kV D/c line and Ranchi (New) - Purulia 400kV D/c line are observed in the solar hours. Some of these lines are also reported in the Grid-India operation feedback from Jan 2023 onwards. This scheme was planned for evacuation of power from generation projects in Kotra, Champa & Dharamajaigarh area and also to relieve the critical loading in the ER-WR corridor. Increasing the implementation timeframe of interregional corridor viz. Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c line may further aggravate the power flow in the existing ER-WR corridor during solar hours.

1.6.5. CTU further stated that interim arrangement for 1st unit of M/s APL (2x800MW) with LILO of one circuit of Raipur (PG) – Raigarh (PG) 400 kV (either ckt-3 D/c or ckt-4 D/c) line has already been agreed in the CEA meeting. The interim arrangement for evacuation of power from 2nd 800 MW unit of Raigarh TPP of APL was agreed to be reviewed in future depending upon the progress of final evacuation system (i.e. Raigarh (Kotra)-II and associated transmission system) and the 2nd 800MW unit of M/s Raigarh TPP of APL. Accordingly, additional interim arrangement may be planned at the time of commissioning of 2nd unit of M/s APL, as part system may not be sufficient for evacuation of entire power of APL during solar hours.

1.6.6. CTU informed that tentative location of HVDC station has been identified at Raigarh (Kotra)-II as one of the potential landing points for HVDC system from Rajasthan. If the HVDC and 1100kV station would be implemented at a different location, additional high-capacity interconnections need to be established between Kotra –II and new

HVDC/1100kV station which would increase the overall cost of the system. Accordingly, it would be prudent to acquire the entire land at Raigarh (Kotra)-II at one location to optimize the transmission scheme & avoid the interconnections between 765/400kV Raigarh (Kotra)-II S/s & proposed 1100/400kV & HVDC S/s.

1.6.7. Members opined that Raigarh (Kotra)-II S/s would be ready by 2027-28. However, 1100kV or HVDC may not be available by that timeframe. Therefore, it was felt prudent that 1100kV and HVDC establishment may be taken up after the scheme matures. Accordingly, space for future expansion at 1100kV and HVDC station at Raigarh (Kotra)-II may be dropped from the present scheme.

1.6.8. CTUIL stated that space for additional 400kV bays in each 400kV section of Raigarh (Kotra)-II S/s for interconnection with future 1100/400kV S/s near Raigarh (Kotra) need to be added to the scope of work. Modification in the scheme would result in increase of overall cost of the scheme from Rs. 6272.30 crore to Rs. 6444.08 crore, which is an increment of 2.74%.

1.6.9. After deliberations, NCT approved the following modifications in the "WR–ER Inter-Regional Network Expansion Scheme – Part A" scheme:

Sl. No.	**Scope of the Transmission Scheme**	**Capacity (MVA) / Line length (km)/ Nos.**	**Estimated Cost**	**Implementation timeframe**
1.	Establishment of 3x1500MVA, 765/400kV S/s at Raigarh (Kotra)-II S/s in Chhattisgarh with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor **Additional space for future expansion:** - 765kV bus sectionaliser bay: 1 set (to establish Sec-II) - 400kV bus sectionaliser bay :1 set (to establish Sec-II) - 765/400kV,	**Common Transmission System Augmentation:** - 765kV, 2x330MVAr bus reactor (7x110MVAr single phase units) - 420kV, 125MVAr bus reactor: 2 Nos. - 765kV Bus reactor bays: 2 Nos. - 400kV Bus reactor bays: 2 Nos. - 765kV line bays: 4 Nos. (for termination of	445.88	24 months

	5x1500MVA (15 x 500 MVA single phase units) ICTs along with associated ICT bays o 765kV side: - 1 No. on Bus Sec-I & 4 Nos. on Bus Sec-II) o 400kV side: - 1 Nos. on Bus Sec-I & 4 Nos. on Bus Sec-II) - 765kV, 2x330MVAr (6 x 110MVAr single phase units) bus reactor along with associated bay (on Bus Sec-II) - 420kV, 2x125MVAr bus reactor along with associated bay (2 on Bus Sec-II) - 765kV line bays (along with space for switchable line reactor) for future lines: 8 Nos. (2 Nos. on Sec-I for scope at Sl. 8 and 6 on Bus Sec-II for future lines) - 400kV line bays (along with space for switchable line reactor) for future lines: 14 Nos. (6 on Bus Sec-I; 8 on Bus Sec-II) - 400/220 kV ICT	LILO of Dharamjaygarh (Sec-B) – Jharsuguda (Sec-A) 765kV D/c line) - 765kV, 240MVAr (3x80MVAr single phase units) switchable line reactor along with associated switching equipment in each circuit of Raigarh (Kotra)-II – Jharsuguda (Sec-A) 765kV D/c section along with 1x80MVAr 765kV spare reactor		

	along with bays: 6 Nos. - 220 kV line bays: 12 Nos.(6 Nos. on Bus Sec-I and 6 on Bus Sec-II) - 220 kV Sectionalization bay: 1 set - 220kV bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II) - 220kV transfer bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II)			
2.	Extension at Raigarh (Kotra)-II 765/400kV S/s	**ATS incl. terminal bays identified for 2x800MW Raigarh TPS of M/s APL (appl. No.2200001709):** - 765/400kV, 3x1500MVA ICT (10x500MVA single phase units) - 765kV ICT bays: 3 Nos. - 400kV ICT bays: 3 Nos. - 400kV line bays: 2 Nos. [for interconnection of 2x800MW Raigarh TPS of M/s APL to Raigarh (Kotra)-	415.44	24 months

		II 400kV D/c line. DTL line under scope of M/s APL.]		
3.	LILO of Dharamjaygarh (Sec-B) – Jharsuguda (Sec-A) 765kV D/c line at Raigarh (Kotra)-II S/s	- LILO length ~40 km	523.87	24 months
4.	Installation of new 765/400kV, 1x1500MVA (3x500MVA single phase units) ICT (3^{rd}) at Jeerat (New) S/s of M/s POWERGRID Medinipur Jeerat Transmission Limited (PMJTL) along with associated bays at both ends	- 765/400kV, 1x1500MVA (3x500MVA single phase units) ICT: 1 no. - 765kV ICT bay: 1 no. - 400kV ICT bay: 1 no	147.64	24 months
5.	Establishment of 2x1500MVA, 765/400kV S/s at Jamshedpur (New) in Jharkhand **Additional space for future expansion:** - 765kV bus sectionaliser bay: 1 set (to establish Sec-II) - 400kV bus sectionaliser bay :1 set (to establish Sec-II) - 220kV bus sectionaliser bay:	- 765/400kV, 2x1500MVA ICT (7x500MVA single phase units) - 765kV, 2x330MVAr bus reactor (7x110MVAr single phase units including one spare unit) - 420kV, 125MVAr bus reactor: 2 Nos. - 765kV ICT bays: 2 Nos.	655.35	30 months

	1 set (to establish Sec-II) - 220kV bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II) - 220kV transfer bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II) - 765/400kV, 4x1500MVA (12x500MVA single phase units) ICTs along with associated ICT bays at both voltage levels o 765kV side: - 1 No. on Bus Sec-I & 3 Nos. on Bus Sec-II) o 400kV side: - 1 Nos. on Bus Sec-I & 3 Nos. on Bus Sec-II) - 400/220kV, 6x500MVA ICTs along with associated ICT bays at both voltage levels o 400kV side: - 3 No. on Bus Sec-I & 3 Nos. on Bus Sec-II) o 220kV side: - 3 Nos. on Bus Sec-I & 3 Nos. on Bus Sec-II) - 765kV,	- 765kV Bus reactor bays: 2 Nos. - 400kV ICT bays: 2 Nos. - 400kV Bus reactor bays: 2 Nos. - 765kV line bays: 4 Nos. (for termination of LILO of Ranchi (New) – Medinipur 765kV D/c line) - 400kV line bays: 4 Nos. [for termination of LILO of Ranchi (New) – New PPSP 400kV D/c line]		

	2x330MVAr (6x110MVAr single phase units) bus reactor along with associated bay (on Bus Sec-II) - 420kV, 2x125MVAr bus reactor along with associated bay (on Bus Sec-II) - 765kV line bays (along with space for switchable line reactor) for future lines: 8 Nos. (2 Nos. on Bus Sec-I and 6 on Bus Sec-II) - 400kV line bays (along with space for switchable line reactor) for future lines: 10 Nos. (2 Nos. on Bus Sec-I and 8 on Bus Sec-II) - 220kV line bays for future lines: 12 Nos. (6 Nos. on Bus Sec-I and 6 on Bus Sec-II)			
6.	LILO of Ranchi (New) – Medinipur 765kV D/c line at Jamshedpur (New)	- 51km and 49km	734.63	30 months
7.	LILO of Ranchi (New) – New PPSP 400kV D/c line at Jamshedpur (New)	- 63km Twin Moose - 63km Twin HTLS	548.89	30 months

	- Jamshedpur (New) to LILO section towards Ranchi (New) needs to be implemented with Twin Moose - Jamshedpur (New) to LILO section towards New PPSP needs to be implemented with Twin HTLS (ampacity of single HTLS as 1574A at nominal voltage)			
8.	Extension at Raigarh (Kotra)-II S/s 765/400kV S/s	- 765kV line bays: 2 nos. (for termination of Raigarh (Tamnar) – Raigarh (Kotra)-II 765kV D/c line)	58.65	36 months
9.	Bypassing of Raigarh (Tamnar) – Dharamjaygarh (Sec-B) 765kV D/c line & Raigarh(Kotra) – Raigarh (Tamnar) 765kV D/c line at Raigarh (Tamnar) S/s so as to form at Raigarh (Kotra) – Dharamjaygarh (Sec-B) 765kV D/c line	- 10km (Route length)	67.78	36 months
10.	Raigarh (Tamnar)[@]- Raigarh(Kotra)-II	- 50km	338.96	36 months

	S/s 765kV D/c line			
11.	Extension at Raigarh (Tamnar) 765/400kV S/s	- 765kV, 330MVAr (3x110MVAr single phase units) switchable line reactor along with associated switching equipment in each circuit of Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c line along with 1x110MVAr 765kV spare reactor	138.56	36 months
12.	Extension at Jamshedpur (New) 765/400kV S/s	- 765kV line bays: 2 nos. (for termination of Jamshedpur (New) – Tamnar 765kV D/c line) - 765kV, 330MVAr (3x110MVAR single phase units) switchable line reactor along with associated switching equipment in each circuit of Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c line	181.92	36 months

13.	Raigarh(Tamnar)[@] – Jamshedpur (New) 765kV D/c line	- 315km	2186.51	36 months
		Total (Rs Cr)	**6444.08**	

Note:

1. *[@]4 Nos. 765kV line bays vacated at Raigarh (Tamnar) S/s after bypass arrangement mentioned at Sl. No. 9 of the scope of works [i.e. bypassing of Raigarh (Tamnar) – Dharamjaygarh (Sec -B) 765kV D/c line & Raigarh (Kotra) – Raigarh (Tamnar) 765kV D/c at Raigarh (Tamnar)] to be utilized for termination of 765kV lines at Raigarh (Tamnar) S/s i.e. 2 nos. for Raigarh (Tamnar) – Raigarh (Kotra-II) 765kV D/c proposed line and 2 nos. for Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c proposed line.*
2. *After the implementation of subject bypassing arrangement at the outskirts of Raigarh (Tamnar) S/s, the existing unutilized portions of Raigarh (Kotra) – Raigarh (Tamnar) and Raigarh (Tamnar) – Dharamjaygarh (Sec -B) 765kV D/c line sections at Raigarh (Tamnar) end may be utilized for termination of proposed 765kV D/c lines under the subject scheme i.e. proposed 765kV D/c lines may be terminated at bypassing points. This shall ensure utilization of existing ISTS transmission infrastructure. However, if the said existing ISTS transmission line sections remain unutilized at Raigarh (Tamnar) end, due to any reason, the same shall be dismantled by the TSP of the subject scheme and cost of scrapped assets may be adjusted under subject transmission scheme. In both cases (viz. utilization of existing line sections or its scrapping), the original tariff of Raigarh (Tamnar) – Dharamjaygarh (Sec -B) 765kV D/c line & Raigarh (Kotra) – Raigarh (Tamnar) 765kV D/c line shall remain unaffected.*

   Also, TSP of Raigarh (Tamnar) S/s shall provide space for above scope of work at the existing Raigarh (Tamnar) S/s free of cost.
3. *TSP shall implement Inter-tripping scheme on Dharamjaygarh (Sec-B) – Raigarh (Kotra)-II 765 kV D/c line (for tripping of the switchable line reactor at Dharamjaygarh (Sec-B) end along with the main line breaker).*
4. *TSP of the subject scheme shall implement Inter-tripping scheme on Raigarh (Kotra)-II – Jharsuguda 765 kV D/c line (for tripping of the switchable line reactor at Raigarh (Kotra)-II end along with the main line breaker).*
5. *LILO of Ranchi (New) – Medinipur 765kV D/c line at Jamshedpur (New) shall be carried out such that one circuit of Ranchi (New) – Jamshedpur (New) 765kV D/c line and one circuit of Jamshedpur (New) – Medinipur 765kV D/c line are terminated in same diameter. Similarly, second circuit of both line sections may also be terminated in bays of the same diameter.*
6. *LILO of Ranchi (New) – New PPSP 400kV D/c line at Jamshedpur (New) shall be carried out such that one circuit of Ranchi (New) – Jamshedpur (New) 400kV D/c line and one circuit of Jamshedpur (New) – New PPSP 400kV D/c line are terminated in same diameter. Similarly, second circuit of both line sections may also be terminated in bays of the same diameter.*

7. *M/s POWERGRID Medinipur Jeerat Transmission Limited (PMJTL) shall provide space for above scope of work at the existing Jeerat (New) S/s free of cost.*
8. *Line lengths mentioned above are tentative. Exact line length shall be ascertained after detailed survey.*

****

Summary of the deliberations of the 35th meeting of NCT held on 19.11. 2025

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

1. Review of transmission scheme "Transmission System for integration of Kurnool-V REZ Phase-I" and "Transmission System for integration of Ananthapuram-III REZ –Phase-I"

- NCT recommended that transmission scheme for Kurnool-V may be taken up for implementation with minor modification in transmission scheme and the transmission system for Ananthapuram-III shall be discussed again in the next NCT meeting. The estimated cost of the scheme is about Rs 7627 Cr. at May'25 price level. Details of the transmission scheme is given below.

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
1.	Establishment of 4x1500 MVA, 765/400 kV and 5x500 MVA, 400/220kV Kurnool-V Pooling Station near Kodumur in Kurnool district along with 2x330 MVAr (765 kV) bus reactors at Kurnool-V PS with provision of two (2) sections of 4500 MVA each at 400kV level **Future Space Provisions:** • 765/400kV, 1500 MVA, ICTs – 2 Nos. • 765kV ICT bays – 2 Nos. • 400kV ICT bays – 2 Nos. • 400/220kV, 500 MVA, ICTs – 13 Nos. • 400kV ICT bays – 13 Nos. • 220kV ICT bays – 13 Nos. • 765kV line bays – 8 Nos. (with provision for SLR) • 400kV line bays – 12 Nos. (with provision for SLR) • 220kV line bays – 19 Nos. • 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	• 765/400kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765kV ICT bays – 4 Nos. • 400kV ICT bays – 4 Nos. • 765kV line bays – 6 Nos. (at Kurnool-V PS for termination of Kurnool-V – Shadnagar, Kurnool-V – Raichur New and Kurnool-V – Sagar 765kV D/c lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV Bus Reactor bays – 2 Nos. • 400/220kV, 500 MVA, ICTs – 5 Nos. • 400kV ICT bays – 5 Nos. • 220kV ICT bays – 5 Nos. • 220kV line bays – 6 Nos. • 220kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.
2.	± 300 MVAr STATCOM at Kurnool-V PS	• 400kV bay – 1 no. • ± 300 MVAr STATCOM – 1 set
3.	Kurnool-V – Shadnagar 765 kV D/c line (about 240 km) with 240 MVAr SLR (convertible) at both ends on both circuits	~ 240 km • 765 kV line bays – 2 Nos. (at Shadnagar)

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
		• 765 kV, 240 MVAr SLR at Kurnool-V PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) • Switching Equipment for 765 kV SLR at Kurnool-V PS – 2 Nos. • 765 kV, 240 MVAr SLR at Shadnagar PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) • Switching Equipment for 765 kV SLR at Shadnagar PS – 2 Nos.
4.	Kurnool-V – Raichur New 765 kV D/c line (about 150 km) with 240 MVAr SLR (convertible) at Raichur New end on both circuits	~ 150 km
5.	Establishment of 3x1500 MVA, 765/400 kV Sagar substation with 2x330 MVAr (765 kV) bus reactors with space provision for establishment of 220 kV switchyard **Future Space Provisions:** • 765/400kV, 1500 MVA, ICTs – 3 Nos. • 765kV ICT bays – 3 Nos. • 400kV ICT bays – 3 Nos. • 765kV line bays – 12 Nos. (with provision for SLR) • 400kV line bays – 10 Nos. (with provision for SLR) • 400kV Bus Sectionalizer : 1 set **Future Space Provisions for 220kV switchyard:** • 400/220kV, 500 MVA, ICTs – 10 Nos. • 400kV ICT bays – 10 Nos. • 220kV ICT bays – 10 Nos. • 220kV line bays – 16 Nos. • 220kV Bus Sectionalizer: 3 set • 220 kV Bus Coupler (BC) Bay – 4 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 4 Nos.	• 765/400kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA incl. 1 spare unit) • 765kV ICT bay – 3 Nos. • 400kV ICT bay – 3 Nos. • 765kV line bays – 2 Nos. (at Sagar for termination of Kurnool-V – Sagar 765 kV D/c line) • 765 kV, 330 MVAr Bus Reactors – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit) • 765 kV Bus Reactor bays – 2 Nos. • 400kV line bays – 2 Nos. (at Sagar for termination of Sagar – Nagarjunasagar 400 kV quad D/c line)
6.	Kurnool-V – Sagar 765 kV D/c line (about 240 km) with 240 MVAr SLR (convertible) at both ends on both circuits	~ 240 km • 765 kV, 240 MVAr SLR at Kurnool-V PS – 2 Nos. (6x80 MVAr switchable units)

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
		• Switching Equipment for 765 kV SLR at Kurnool-V PS – 2 Nos. • 765 kV, 240 MVAr SLR at Sagar – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) • Switching Equipment for 765 kV SLR at Sagar – 2 Nos.
7.	Sagar – Nagarjunasagar 400 kV quad D/c line (about 25 km)	~ 25 km

Note:

i. *The Kurnool-V – Raichur New 765kV D/c line is to be terminated in the existing 240 MVAr bus reactor bays. Conversion of existing 765 kV Bus Reactor bays to 765 kV SLR Line bays at Raichur New for termination of Kurnool-V – Raichur New 765kV D/c line is in the scope of POWERGRID.*

ii. *2 No. of 400kV line bays at Nagarjunasagar for termination of Sagar – Nagarjunasagar 400 kV quad D/c line is in the scope of POWERGRID. Line termination shall be in the scope of TSP.*

iii. *TSP of Shadnagar S/s to provide space (free of cost) for 2 Nos. of 765kV line bays with provision of SLR at Shadnagar S/s for termination of Kurnool-V – Shadnagar 765 kV D/c line.*

- Further, NCT also approved modification works at Nagarjunasagar and Raichur New as given below:

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*	*Remarks*
1.	Conversion of 765 kV Bus Reactor bays to 765 kV SLR Line bays – 2 Nos. (at Raichur New)	• Conversion of 765 kV Bus Reactor bays to 765 kV SLR Line bays – 2 Nos. (at Raichur New) (for termination of *Kurnool-V – Raichur 765kV D/c line under the scheme* "*Transmission System for integration of Kurnool-V REZ - Phase-I")*	• Approved under RTM mode through POWERGRID • Estimated Cost - Rs 91 Crore • Tentative implementation timeframe: 30 months from the date of allocation
2.	Shifting of existing 50 MVAr bus reactor at Nagarjunasagar to a new bay for termination	• Shifting of existing 50 MVAr bus reactor at Nagarjunasagar to a new bay for termination of 1st	

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*	*Remarks*
	of one circuit of Sagar – Nagarjunasagar 400 kV quad D/c line	circuit of Sagar – Nagarjunasagar 400 kV quad D/c line and upgradation of entire existing 50 MVAr bus reactor diameter equivalent to quad moose capacity. • Termination of 1st circuit of Sagar – Nagarjunasagar 400 kV quad D/c line including line side equipment in existing 50 MVAr bus reactor bay. • 400 kV bays – 1 Nos. [at Nagarjunasagar S/s for installation of shifted 50 MVAr bus reactor] • 400kV line bays – 1 No. along with GIS duct and associated equipment for termination of 2nd circuit of Sagar – Nagarjunasagar 400 kV quad D/c line.	

2. Transmission system strengthening at Tumkur-II for integration of additional RE potential (1 .5 GW)

- NCT again recommended the scheme as agreed in the 33rd meeting of NCT i.e. modification in existing transmission scheme "Transmission system strengthening at Tumkur-II for integration of additional RE potential (1.5 GW)" with change in name of the scheme as "Transmission system strengthening at Tumkur-II for integration of additional RE potential (2.7 GW)":

Sl.No.	**Scope of the Transmission Scheme**	**Original scope of the Transmission Scheme**	**Revised scope of the Transmission Scheme**
1	Augmentation of Tumkur-II PS by 400/220 kV, 3x500 MVA ICTs (5th to	•400/220kV, 500 MVA, ICTs – 3 Nos. • 400kV ICT bays – 3 Nos. • 220kV ICT bays – 3 Nos. •220kV Bus Sectionalizer: 2 set	No Change

Sl.No.	Scope of the Transmission Scheme	Original scope of the Transmission Scheme	Revised scope of the Transmission Scheme
	7th)	• 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.	
2	Tumkur-II – Madhugiri 400kV (Quad) D/c line (~ 100 km)	• 400kV line bays – 2 Nos. (at Tumkur-II PS) • 400kV line bays – 2 Nos. (at Madhugiri)	• 400kV line bays – 2 nos. (at Tumkur-II PS) • 400kV line bays at Madhugiri – The Tumkur-II – Madhugiri 400kV (Quad) D/c line may be terminated in the existing line bays which will be available upon upgradation of Narendra New – Madhugiri 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level which is being implemented under "Transmission Scheme for integration of Davanagere / Chitradurga and Bellary REZ in Karnataka"
3	± 300 MVAR STATCOM at Tumkur-II PS with switching arrangement of under implementation 2x125 MVAr bus reactors	• ±300 MVAR STATCOM at Tumkur-II PS with switching arrangement of under implementation 2x125 MVAr bus reactors. • 400 kV bay – 1 No.	• ± 300 MVAR STATCOM at Tumkur-II PS with switching arrangement of under implementation 2x125 MVAr bus reactors. • 400 kV bay – 1 No. • **Acquisition of**

Sl.No.	Scope of the Transmission Scheme	Original scope of the Transmission Scheme	Revised scope of the Transmission Scheme
			additional land adjacent to Tumkur-II PS for STATCOM.
4	2 Nos. of 220kV line bay at Tumkur-II PS for termination of dedicated transmission lines of RE developers	• 220kV line bays – 2 Nos.	• No Change
5.	Augmentation of Tumkur-II PS by 400/220 kV, 3x500 MVA ICTs (8^{th} to 10^{th})	-	• 400/220kV, 500 MVA, ICTs – 3 Nos. • 400kV ICT bays – 3 Nos. • 220kV ICT bays – 3 Nos. • 220kV Bus Sectionalizer: 1 set • 220 kV Bus Coupler (BC) Bay – 1 No. • 220 kV Transfer Bus Coupler (TBC) Bay – 1 No.
6.	4 Nos. of 220kV line bay at Tumkur-II PS for termination of dedicated transmission lines of RE developers	-	• 220kV line bays – 4 Nos.

3. Modification in the proposal for "WR–ER Inter-Regional Network Expansion Scheme – Part A

- NCT approved the following modifications in the "WR–ER Inter-Regional Network Expansion Scheme – Part A" scheme:

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.	Estimated Cost	Implementation timeframe
1.	Establishment of 3x1500MVA, 765/400kV S/s at Raigarh (Kotra)-II S/s in Chhattisgarh with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor **Additional space for future expansion:** - 765kV bus sectionaliser bay: 1 set (to establish Sec-II) - 400kV bus sectionaliser bay :1 set (to establish Sec-II) - 765/400kV, 5x1500MVA (15 x 500 MVA single phase units) ICTs along with associated ICT bays o 765kV side: - 1 No. on Bus Sec-I & 4 Nos. on Bus Sec-II) o 400kV side: - 1 Nos. on Bus Sec-I & 4 Nos. on Bus Sec-II) - 765kV, 2x330MVAr (6 x 110MVAr single phase units) bus reactor along with associated bay (on Bus Sec-II) - 420kV, 2x125MVAr bus reactor along with associated bay (2 on Bus Sec-II) - 765kV line bays (along with space for switchable line reactor)	**Common Transmission System Augmentation:** - 765kV, 2x330MVAr bus reactor (7x110MVAr single phase units) - 420kV, 125MVAr bus reactor: 2 Nos. - 765kV Bus reactor bays: 2 Nos. - 400kV Bus reactor bays: 2 Nos. - 765kV line bays: 4 Nos. (for termination of LILO of Dharamjaygarh (Sec-B) – Jharsuguda (Sec-A) 765kV D/c line) - 765kV, 240MVAr (3x80MVAr single phase units) switchable line reactor along with associated switching equipment in each circuit of Raigarh (Kotra)-	445.88	24 months

	for future lines: 8 Nos. (2 Nos. on Sec-I for scope at Sl. 8 and 6 on Bus Sec-II for future lines) - 400kV line bays (along with space for switchable line reactor) for future lines: 14 Nos. (6 on Bus Sec-I; 8 on Bus Sec-II) - 400/220 kV ICT along with bays: 6 Nos. - 220 kV line bays: 12 Nos.(6 Nos. on Bus Sec-I and 6 on Bus Sec-II) - 220 kV Sectionalization bay: 1 set - 220kV bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II) - 220kV transfer bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II)	II – Jharsuguda (Sec-A) 765kV D/c section along with 1x80MVAr 765kV spare reactor		
2.	Extension at Raigarh (Kotra)-II 765/400kV S/s	**ATS incl. terminal bays identified for 2x800MW Raigarh TPS of M/s APL (appl. No.2200001709):** - 765/400kV, 3x1500MVA ICT (10x500MVA single phase units) - 765kV ICT bays: 3 Nos. - 400kV ICT	415.44	24 months

		bays: 3 Nos. - 400kV line bays: 2 Nos. [for interconnection of 2x800MW Raigarh TPS of M/s APL to Raigarh (Kotra)-II 400kV D/c line. DTL line under scope of M/s APL.]		
3.	LILO of Dharamjaygarh (Sec-B) – Jharsuguda (Sec-A) 765kV D/c line at Raigarh (Kotra)-II S/s	- LILO length ~40 km	523.87	24 months
4.	Installation of new 765/400kV, 1x1500MVA (3x500MVA single phase units) ICT (3rd) at Jeerat (New) S/s of M/s POWERGRID Medinipur Jeerat Transmission Limited (PMJTL) along with associated bays at both ends	- 765/400kV, 1x1500MVA (3x500MVA single phase units) ICT: 1 no. - 765kV ICT bay: 1 no. - 400kV ICT bay: 1 no	147.64	24 months
5.	Establishment of 2x1500MVA, 765/400kV S/s at Jamshedpur (New) in Jharkhand **Additional space for future expansion:** - 765kV bus sectionaliser bay: 1 set (to establish Sec-II) - 400kV bus sectionaliser bay :1 set (to establish Sec-II) - 220kV bus sectionaliser bay: 1 set	- 765/400kV, 2x1500MVA ICT (7x500MVA single phase units) - 765kV, 2x330MVAr bus reactor (7x110MVAr single phase units including one spare unit) - 420kV, 125MVAr bus	655.35	30 months

	(to establish Sec-II) - 220kV bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II) - 220kV transfer bus coupler bay: 2 set (1 No. each on bus Sec-I and bus Sec-II) - 765/400kV, 4x1500MVA (12x500MVA single phase units) ICTs along with associated ICT bays at both voltage levels o 765kV side: - 1 No. on Bus Sec-I & 3 Nos. on Bus Sec-II) o 400kV side: - 1 Nos. on Bus Sec-I & 3 Nos. on Bus Sec-II) - 400/220kV, 6x500MVA ICTs along with associated ICT bays at both voltage levels o 400kV side: - 3 No. on Bus Sec-I & 3 Nos. on Bus Sec-II) o 220kV side: - 3 Nos. on Bus Sec-I & 3 Nos. on Bus Sec-II) - 765kV, 2x330MVAr (6x110MVAr single phase units) bus reactor along with associated bay (on Bus Sec-II) - 420kV, 2x125MVAr bus reactor along with associated bay (on Bus Sec-II)	reactor: 2 Nos. - 765kV ICT bays: 2 Nos. - 765kV Bus reactor bays: 2 Nos. - 400kV ICT bays: 2 Nos. - 400kV Bus reactor bays: 2 Nos. - 765kV line bays: 4 Nos. (for termination of LILO of Ranchi (New) – Medinipur 765kV D/c line) - 400kV line bays: 4 Nos. [for termination of LILO of Ranchi (New) – New PPSP 400kV D/c line]		

	- 765kV line bays (along with space for switchable line reactor) for future lines: 8 Nos. (2 Nos. on Bus Sec-I and 6 on Bus Sec-II) - 400kV line bays (along with space for switchable line reactor) for future lines: 10 Nos. (2 Nos. on Bus Sec-I and 8 on Bus Sec-II) - 220kV line bays for future lines: 12 Nos. (6 Nos. on Bus Sec-I and 6 on Bus Sec-II)			
6.	LILO of Ranchi (New) – Medinipur 765kV D/c line at Jamshedpur (New)	- 51km and 49km	734.63	30 months
7.	LILO of Ranchi (New) – New PPSP 400kV D/c line at Jamshedpur (New) - Jamshedpur (New) to LILO section towards Ranchi (New) needs to be implemented with Twin Moose - Jamshedpur (New) to LILO section towards New PPSP needs to be implemented with Twin HTLS (ampacity of single HTLS as 1574A at nominal voltage)	- 63km Twin Moose - 63km Twin HTLS	548.89	30 months
8.	Extension at Raigarh (Kotra)-II S/s 765/400kV S/s	- 765kV line bays: 2 nos. (for termination of	58.65	36 months

		Raigarh (Tamnar) – Raigarh (Kotra)-II 765kV D/c line)		
9.	Bypassing of Raigarh (Tamnar) – Dharamjaygarh (Sec-B) 765kV D/c line & Raigarh(Kotra) – Raigarh (Tamnar) 765kV D/c line at Raigarh (Tamnar) S/s so as to form at Raigarh (Kotra) – Dharamjaygarh (Sec-B) 765kV D/c line	- 10km (Route length)	67.78	36 months
10.	Raigarh (Tamnar)[@]- Raigarh(Kotra)-II S/s 765kV D/c line	- 50km	338.96	36 months
11.	Extension at Raigarh (Tamnar) 765/400kV S/s	- 765kV, 330MVAr (3x110MVAr single phase units) switchable line reactor along with associated switching equipment in each circuit of Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c line along with 1x110MVAr 765kV spare reactor	138.56	36 months
12.	Extension at Jamshedpur (New) 765/400kV S/s	- 765kV line bays: 2 nos. (for termination of	181.92	36 months

		Jamshedpur (New) – Tamnar 765kV D/c line) - 765kV, 330MVAr (3x110MVAR single phase units) switchable line reactor along with associated switching equipment in each circuit of Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c line		
13.	Raigarh(Tamnar)[@] – Jamshedpur (New) 765kV D/c line	- 315km	2186.51	36 months
		Total (Rs Cr)	**6444.08**	

Note:

1. *[@]4 Nos. 765kV line bays vacated at Raigarh (Tamnar) S/s after bypass arrangement mentioned at Sl. No. 9 of the scope of works [i.e. bypassing of Raigarh (Tamnar) – Dharamjaygarh (Sec -B) 765kV D/c line & Raigarh (Kotra) – Raigarh (Tamnar) 765kV D/c at Raigarh (Tamnar)] to be utilized for termination of 765kV lines at Raigarh (Tamnar) S/s i.e. 2 nos. for Raigarh (Tamnar) – Raigarh (Kotra-II) 765kV D/c proposed line and 2 nos. for Raigarh (Tamnar) – Jamshedpur (New) 765kV D/c proposed line.*
2. *After the implementation of subject bypassing arrangement at the outskirts of Raigarh (Tamnar) S/s, the existing unutilized portions of Raigarh (Kotra) – Raigarh (Tamnar) and Raigarh (Tamnar) – Dharamjaygarh (Sec -B) 765kV D/c line sections at Raigarh (Tamnar) end may be utilized for termination of proposed 765kV D/c lines under the subject scheme i.e. proposed 765kV D/c lines may be terminated at bypassing points. This shall ensure utilization of existing ISTS transmission infrastructure. However, if the said existing ISTS transmission line sections remain unutilized at Raigarh (Tamnar) end, due to any reason, the same shall be dismantled by the TSP of the subject scheme and cost of scrapped assets may be adjusted under subject transmission scheme. In both cases (viz. utilization of existing line sections or its scrapping), the original tariff of Raigarh (Tamnar) – Dharamjaygarh (Sec -B) 765kV D/c line & Raigarh (Kotra) – Raigarh (Tamnar) 765kV D/c line shall remain unaffected.*

Also, TSP of Raigarh (Tamnar) S/s shall provide space for above scope of work at the existing Raigarh (Tamnar) S/s free of cost.

3. *TSP shall implement Inter-tripping scheme on Dharamjaygarh (Sec-B) – Raigarh (Kotra)-II 765 kV D/c line (for tripping of the switchable line reactor at Dharamjaygarh (Sec-B) end along with the main line breaker).*
4. *TSP of the subject scheme shall implement Inter-tripping scheme on Raigarh (Kotra)-II – Jharsuguda 765 kV D/c line (for tripping of the switchable line reactor at Raigarh (Kotra)-II end along with the main line breaker).*
5. *LILO of Ranchi (New) – Medinipur 765kV D/c line at Jamshedpur (New) shall be carried out such that one circuit of Ranchi (New) – Jamshedpur (New) 765kV D/c line and one circuit of Jamshedpur (New) – Medinipur 765kV D/c line are terminated in same diameter. Similarly, second circuit of both line sections may also be terminated in bays of the same diameter.*
6. *LILO of Ranchi (New) – New PPSP 400kV D/c line at Jamshedpur (New) shall be carried out such that one circuit of Ranchi (New) – Jamshedpur (New) 400kV D/c line and one circuit of Jamshedpur (New) – New PPSP 400kV D/c line are terminated in same diameter. Similarly, second circuit of both line sections may also be terminated in bays of the same diameter.*
7. *M/s POWERGRID Medinipur Jeerat Transmission Limited (PMJTL) shall provide space for above scope of work at the existing Jeerat (New) S/s free of cost.*
8. *Line lengths mentioned above are tentative. Exact line length shall be ascertained after detailed survey.*

Annexure-I

List of participants of the 35th meeting of NCT

CEA:

1. Sh. Ghanshyam Prasad, Chairperson
2. Sh. Praveen Gupta, Member (E&C)
3. Sh. V. K. Singh, Member (PS)
4. Sh. B S Bairwa, Chief Engineer (PSPA-II)
5. Ms. Ammi R Toppo, Chief Engineer (PSPA-I)
6. Sh. Farooque Iqbal, Director (PSPA-II)
7. Smt. Kavita Jha, Director (PSPA-I)
8. Smt. Naghma Furqan, Director (PSCD)
9. Sh. Ganeshwar Rao Jada, Director (PSPA-I)
10. Smt. Priyam Srivastava, Deputy Director (PSCD)
11. Sh. Nitin Deswal Deputy Director (PSPA-I)
12. Sh. Ajay Kr. Sindhu, Deputy Director (PSPA-II)
13. Sh. Prateek Jadaun, Assistant Director (PSPA-II)
14. Sh. Gautam Sariyala Asst. Director (PSPA-II)

MoP:

1. Sh. Srikant Nagulapalli, Additional Secretary
2. Sh. D. Sai Baba, Joint Secretary (Trans.)

MNRE:

1. Sh. Abhay Bakre, MD/NGHM
2. Sh. Tarun Singh, Scientist E

CTUIL:

1. Sh. Dilip Nagesh Rozekar, COO
2. Sh. Vikas Bagadia, Dy. COO
3. Sh. RVMM Rao, CGM
4. Sh. K. K. Sarkar, Sr. GM
5. Sh. Rajesh Kumar, Sr. GM
6. Sh. Sandeep Kumawat, DGM
7. Sh. Ankush Patel, Ch. Manager
8. Sh. Venkatesh Gorli, Ch. Manager
9. Sh. Anupam Kumar, Ch. Manager

GRID India:

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

PFCCL

1. Smt. Nirmala Meena, Chief Manager
2. Sh. Deepak Kumar, Deputy Manager

NITI Aayog

1. Sh. Prince Tiwari, YP

JPDCL

1. Sh. Gurpal Singh, IAS (MD)

Expert Members

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

SECI

1. Sh. R.K. Agarwal, Consultant
2. Sh. Prashant Kr. Upadhyay, DGM (Engg.)
3. Sh. Vineet Kumar, DGM

NREDCAP

1. Sh. B Naga Chaitany, Consultant
2. Sh. M. Kamalaker, M.D.

RECPDCL

1. Sh. Anil Kumar Perala, Chief Manager
2. Vijay Kulkarni, Sr. GM (TBCB)

A.P. Transco

1. Sh. AKV Bhaskar, Dir/
2. Sh. B.V. Subbarao, EE-Power System

RPCs

1. Sh. N.S. Mondal, MS(ERPC)
2. Sh. P.D.Lone, WRPC
3. Sh. Asit Singh, MS(SRPC)
4. Director (T&SO), KSEBL