



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 पच्चीसवी बैठक के कार्यवृत्त - के सम्बन्ध में ।

Subject: Minutes of the 25th Meeting of National Committee on Transmission (NCT) – regarding.

महोदया (Madam) / महोदय (Sir),

The 25th meeting of the National Committee on Transmission (NCT) was held on 28th November, 2024, at CEA, New Delhi. Minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

(बी.एस.बैरवा/ B.S. Bairwa)

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

प्रतिलिपि / Copy to:

Joint Secretary (Trans), Ministry of Power, New Delhi-110001

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.	Director (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh. Lalit Bohra, Joint Secretary Room no 602, Atal Akshay Urja Bhawan Opposite CGO Complex, Gate No. 2, Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Floors No. 5-10, Tower 1, Plot No. 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 (1 st Floor), Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016
9.	Sh. Ravinder Gupta Ex. Chief Engineer CEA		

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Minutes of the 25th meeting of National Committee on Transmission (NCT)

The 25th meeting of NCT was held on 28th November, 2024 at CEA, New Delhi. List of participants is enclosed at **Annexure-I**. Agenda wise deliberations are given below:

Confirmation of the minutes of the 24th meeting of National Committee on Transmission.

- 1.1 The minutes of the 24th meeting of NCT held on 23.10.2024 were issued on 22.11.2024 vide CEA letter No. CEA-PS-12-13/3/2019-PSPA-II. No comments were received on the minutes.
- .2 Members confirmed the minutes of 24th meeting of NCT.

2 Status of the transmission schemes noted/approved/recommended to MoP in the 24th meeting of NCT:

2.1 Status of new transmission schemes approved/recommended:

Sr. No	Name of the Transmission Scheme	Noted/ Recommended / Approved	Mode of Implementation	BPC	Award/ Gazette notification
1.	Eastern Region Expansion Scheme-44 (ERES-44)	Approved	RTM	Not applicable	Informed to CTUIL vide letter dated 22.11.2024. CTUIL awarded the projects to the implementing agency on 25.11.2024
2.	Augmentation of transformation capacity at KPS3 (GIS) S/s under Khavda Phase-V Part B3 scheme	Approved	RTM	Not applicable	Informed to CTUIL vide letter dated 22.11.2024. CTUIL awarded the projects to the implementing agency on 25.11.2024
3.	Transmission system for Evacuation of Power from RE Projects in Rajgarh (1500 MW) SEZ in Madhya Pradesh-Phase III	Recommended	TBCB	RECPDCL	Informed to MoP vide letter dated 22.11.2024

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Sr. No	Name of the Transmission Scheme	Noted/ Recommended / Approved	Mode of Implementation	BPC	Award/ Gazette notification
4.	Transmission system for Evacuation of Power from RE Projects in Neemuch (1000 MW) SEZ in Madhya Pradesh-Phase II	Recommended	TBCB	PFCCL	Informed to MoP vide letter dated 22.11.2024
5.	Supply and Installation of additional FOTE and Ethernet cards at AGC & Critical Nodes of SR Region	Approved	RTM	Not applicable	Informed to CTUIL vide letter dated 22.11.2024. CTUIL awarded the projects to the implementing agency on 25.11.2024
6.	Requirement of Additional FOTE at various ISTS nodes in ER due to exhaustion of existing capacity	Approved	RTM	Not applicable	Informed to CTUIL vide letter dated 22.11.2024. CTUIL awarded the projects to the implementing agency on 25.11.2024
7.	Deployment of FOTE (SDH Equipment) and amplifier solutions at Alipurduar S/s end for OPGW based communication and Teleprotection for 400 kV lines from PHEP-II, PHEP-I and Jigmeling of Bhutan to Alipurduar, India	Approved	RTM	Not applicable	Informed to CTUIL vide letter dated 22.11.2024. CTUIL awarded the projects to the implementing agency on 25.11.2024

2.2 Status of transmission schemes where modifications was suggested/approved in 24th NCT meeting:

S. No.	Scheme where modifications was suggested	Status
1.	Revision in SCOD of 400 kV D/C Jhatikara-Dwarka line under REZ Phase-III Part-D Phase-II scheme	CTUIL intimated to the implementing agency on 25.11.2024
2.	Change in scope of Transmission system for evacuation of power from Rajasthan REZ Ph-V (Part-1: 4 GW) [Sirohi/Nagaur] Complex	Informed to RECPDCL vide letter dated 28.10.2024
3.	Bid process for selection of Bidder as Transmission Service Provider (TSP) to establish "Augmentation of transformation capacity at Bhuj-II PS (GIS)"	Minutes issued on 22.11.2024. Matter

		under approval in MoP.
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Modifications in the earlier approved/notified transmission schemes:

- 3.1 Post facto approval for modification in the scope of work of Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part 1) (Bikaner Complex) – Part-E**
- 3.1.1 “Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part 1) (Bikaner Complex)” was deliberated in the 9th meeting of NCT held on 28.09.2022. NCT approved “Augmentation by 765/400 kV, 1x1500 MVA ICT (4th) at Bikaner (PG)” as Part E of the above scheme for implementation under RTM route by POWERGRID.
- 3.1.2 Representative from CTUIL informed about the intimation by POWERGRID to them regarding space constraint and 765/400 kV ICT (4th) at Bikaner S/s can be accommodated after shifting of existing 01 No. of 765 kV bus reactor bank along with its spare, other related equipment and gantry towers (as required) to new diameter (to be constructed just after Adani line bays) on the other side of yard. However, this re-arrangement/shifting of 765/400 kV ICT (4th) was not mentioned in the minutes of 9th meeting of NCT and subsequently in the O.M. dated 15.11.2022 issued by CTUIL to POWERGRID. NRLDC while First Time Charging (FTC)/registration asked for the approval of above re-arrangement/shifting.
- 3.1.3 It was further informed that to discuss the issue, a meeting was held on 7th November, 2024 between CEA, CTUIL, Grid-India and POWERGRID. In the meeting, it was agreed that shifting of existing 01 No. of 765 kV bus reactor bank along with its spare, other related equipment and gantry towers (as required) to new diameter (to be constructed just after Adani line bays) and thereafter the accommodation of 765/400 kV ICT (4th) in this vacant bay at Bikaner S/s may be completed by POWERGRID.
- 3.1.4 After deliberations, NCT approved the modification in the scope of work of Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part 1) (Bikaner Complex) – Part-E, i.e, Shifting of existing 01 No. of 765 kV bus reactor bank along with its spare, other related equipment and gantry towers (as required) to new diameter (to be constructed just after Adani line bays) and thereafter the accommodation of 765/400 kV ICT (4th) in this vacant bay at Bikaner S/s.
- 3.2 Bid process for selection of Bidder as Transmission Service Provider (TSP) to establish “Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex”**
- 3.2.1 The transmission scheme “Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex)” was approved in the 19th meeting of National Committee on Transmission held on 29.04.2024 under TBCB route with

Minutes of the 25th meeting of National Committee on Transmission (NCT)

estimated cost of Rs. 198.75 crores and implementation timeframe of 18 months. The scheme was notified in the Gazette on 18.06.2024 with PFCCL as BPC.

- 3.2.2 Representative from PFCCL stated that the RfP for the subject transmission scheme was issued on August 01, 2024. RFP bid submission was originally scheduled on October 04, 2024. RfP documents for the subject transmission scheme were purchased by only one bidder. Accordingly, bid submission for the project was extended multiple times upto 30th October, 2024. As only one bidder had purchased the RfP document, PFCCL has not proceeded with the bidding process and has referred the matter to MoP for directions
- 3.2.3 Representative from CTUIL stated that the transmission scheme is required for evacuation of RE power from Bhadla/Bikaner complex in addition to other RE transmission schemes which are already under implementation i.e. Rajasthan REZ Ph-IV (Part-1 and 3). Delay in implementation of the above transmission scheme viz. Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex may impact RE evacuation of about 2-2.5 GW capacity for which connectivity is scheduled to be effective progressively from August 2026.
- 3.2.4 After deliberations, NCT decided to de-notify the scheme from TBCB and approved implementation of the “Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex” to be undertaken under RTM as mentioned below:

3.2.4.1 Summary of the scheme is given below:

SI No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crores)	Remarks
1.	Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex Tentative implementation timeframe : 18 months from the date of allocation	198.75	Approved under RTM route to be implemented by POWERGRID

3.2.4.2 Detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Item Description
1.	400 kV Bareilly (765/400 kV) – Bareilly (PG) D/c line (Quad) (2 nd)	Line length : 4 kms <ul style="list-style-type: none"> • 400 kV line bays - 2 Nos. (at Bareilly (765/400 kV) S/s) • 400 kV line bays - 2 Nos. (at Bareilly (PG) S/s)
2.	Augmentation with 1x1500 MVA,	• 765/400 kV, 1500 MVA ICT - 1 No.

Sl. No.	Scope of the Transmission Scheme	Item Description
	765/400 kV ICT (3 rd) at Bareilly (765/400 kV) S/s	<ul style="list-style-type: none"> • 765 kV ICT bay - 1 No. • 400 kV ICT bay - 1 No.

Note:

- *The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey*
- *POWERGRID shall implement the above scope of works in the space already available in the existing sub-station.*

3.3 Consideration of GIS station in place of AIS station for the scheme “Transmission System for Offshore wind farm in Tamil Nadu {500 MW VGF}”

3.3.1 Representative from CTUIL stated that “Transmission System for Offshore wind farm in Tamil Nadu {500 MW VGF}” was recommended by NCT, to be implemented under RTM to POWERGRID, in its 20th meeting with tentative implementation timeframe of 31st March 2030. Scope of the scheme inter-alia includes “Establishment of 2x500 MVA, 400/230 kV Onshore Pooling Station near Avaraikulam, Tirunelveli District in Tamil Nadu”. The Transmission Scheme was approved for implementation under RTM route vide MoP OM dated 20.08.2024 and CTUIL have allocated the schemes for implementation to POWERGRID.

3.3.2 Subsequently, POWERGRID vide email dated 11.10.2024 has communicated to CTUIL, that considering the location of proposed Onshore Pooling station which would be very close to the coastal area, there will be a significant risk of equipment corrosion due to the presence of saline environment which may affect both the reliability and safety of the substation. Accordingly, POWERGRID requested that the above Onshore Pooling station may be developed with GIS technology for addressing the salinity issue of coastal zone as well as reduction of land requirements.

3.3.3 CTU representative also informed that as per the Report of Task Force on Cyclone Resilient Robust Electricity Transmission and Distribution Infrastructure in the Coastal areas, May 2021, the measures recommended for future / new Transmission substations are as follows:

- a) The construction of compact & modular indoor GIS installations up to 60 km from the coastline above the historical water stagnation / logging level (based on locally available data) or Highest Flood Level (HFL)*

3.3.4 In view of the communication from POWERGRID and recommendations under the task force report, CTUIL proposed to consider Avairakulam Onshore PS as GIS station in place of AIS station. The tentative cost of the original scheme was Rs. 6242 cr. With the modification from AIS to GIS, the revised cost of the scheme would be Rs. 6269 Cr., which is Rs. 27 cr. (0.43%) higher than that of AIS station.

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- 3.3.5 After deliberations, NCT approved to establish the Onshore Pooling Station as GIS in place of AIS near Avaraikulam under the scheme “Transmission System for Offshore wind farm in Tamil Nadu {500 MW VGF}” as mentioned below:

Original Scope:

Sl. No.	Original Scope of the Transmission Scheme approved in 20th NCT	Capacity / km
A. Transmission System onwards Onshore Pooling Station		
i.	Establishment of 2x500 MVA, 400/230 kV Onshore Pooling Station near Avaraikulam, Tirunelveli District in Tamil Nadu with provision of expansion upto 5 GW Future Space Provisions: <ul style="list-style-type: none"> • 400/230 kV, 500 MVA, ICTs – 10 Nos. • 400 kV ICT bays – 10 Nos. • 230 kV ICT bays – 10 Nos. • 400 kV line bays – 12 Nos. (with provision for SLR) • 230 kV line bays – 18 Nos. • 230 kV Bus Sectionalizer : 3 sets • 230 kV Bus Coupler (BC) Bay – 3 Nos. • 230 kV Transfer Bus Coupler (TBC) Bay – 3 Nos. 	<ul style="list-style-type: none"> • 400/230 kV, 500 MVA, ICTs – 2 Nos. • 400 kV ICT bays – 2 Nos. • 230 kV ICT bays – 2 Nos. • 400 kV line bays – 2 Nos. (at Avaraikulam Onshore PS for termination of Avaraikulam Onshore PS – Tuticorin PS line) • 230 kV line bays – 2 Nos. • 230 kV Bus Coupler (BC) Bay – 1 No. • 230 kV Transfer Bus Coupler (TBC) Bay – 1 No.
ii.	Avaraikulam Onshore PS – Tuticorin PS 400 kV D/c quad line	Line length ~100 km <ul style="list-style-type: none"> • 400 kV line bays - 2 (at Tuticorin PS)
iii.	± 300 MVar STATCOM along with 2x125 MVar MSR	<ul style="list-style-type: none"> • 400 kV bay – 1 No.
B. Transmission System for integration of Offshore Wind Farms with Onshore PS		
Offshore Substation-1 {500 MW VGF}		
1.	Establishment of 2x315 MVA, 230/66kV Off-Shore Substation-1 with 10 Nos. of 66kV line bays for RE integration	<ul style="list-style-type: none"> • 230/66kV, 315 MVA, ICTs – 2 Nos. • 230 kV ICT bays – 2 Nos. • 66kV ICT bays – 2 Nos. • 230 kV line bays – 2 Nos. (at Off- Shore Substation-1 for termination of Offshore substation 1 (OSS-1) – Avaraikulam Onshore PS line) • 66kV line bays – 10 Nos.
2.	Offshore substation 1 (OSS-1) – Avaraikulam Onshore PS 2 Nos. 230 kV (atleast 300 MVA capacity) Submarine cables (~35 - 40 km) with 2x50MVar switchable line reactors at OSS-1 end	<ul style="list-style-type: none"> • Cable length ~35 - 40 km • 230 kV, 50MVar switchable line reactors at OSS-1 end – 2 Nos.

Revised Scope:

Sl. No.	Revised Scope of the Transmission Scheme	Capacity / km	Remarks
A. Transmission System onwards Onshore Pooling Station			
i.	Establishment of 2x500 MVA, 400/230 kV Onshore Pooling Station (GIS) near Avaraikulam, Tirunelveli District in Tamil Nadu with provision of expansion upto 5 GW Future Space Provisions: <ul style="list-style-type: none"> • 400/230 kV, 500 MVA, ICTs – 10 Nos. • 400 kV ICT bays – 10 Nos. • 230 kV ICT bays – 10 Nos. • 400 kV line bays – 12 Nos. (with provision for SLR) • 230 kV line bays – 18 Nos. • 230 kV Bus Sectionalizer : 3 sets • 230 kV Bus Coupler (BC) Bay – 3 Nos. 	<ul style="list-style-type: none"> • 400/230 kV, 500 MVA, ICTs – 2 Nos. • 400 kV ICT bays – 2 Nos. (GIS) • 230 kV ICT bays – 2 Nos. (GIS) • 400 kV line bays – 2 Nos. (GIS) (at Avaraikulam Onshore PS for termination of Avaraikulam Onshore PS – Tuticorin PS line) • 230 kV line bays – 2 Nos. (GIS) • 230 kV Bus Coupler (BC) Bay – 1 No. (GIS) 	Pooling station and bays change from AIS to GIS
ii.	Avaraikulam Onshore PS – Tuticorin PS 400 kV D/c quad line	Line length ~100 km <ul style="list-style-type: none"> • 400 kV line bays - 2 (at Tuticorin PS) 	No change
iii.	± 300 MVAR STATCOM along with 2x125 MVAR MSR	<ul style="list-style-type: none"> • 400 kV bay – 1 No. (GIS) (additional 1 No. GIS bay for dia completion) 	AIS to GIS bay
B. Transmission System for integration of Offshore Wind Farms with Onshore PS			
Offshore Substation-1 {500 MW VGF}			
1.	Establishment of 2x315 MVA, 230/66kV Off-Shore Substation-1 (GIS) with 10 Nos. of 66kV line bays for RE integration	<ul style="list-style-type: none"> • 230/66kV, 315 MVA, ICTs – 2 Nos. • 230 kV ICT bays – 2 Nos. (GIS) • 66kV ICT bays – 2 Nos. (GIS) • 230 kV line bays – 2 Nos. (GIS) (at Off- Shore Substation-1 for termination of Offshore substation 1 (OSS-1) – Avaraikulam Onshore PS line) • 66kV line bays – 10 Nos. (GIS) 	Pooling station and bays change from AIS to GIS
2.	Offshore substation 1 (OSS-1) – Avaraikulam Onshore PS 2 Nos. 230 kV (atleast 300 MVA capacity) Submarine cables (~35 - 40 km) with 2x50MVAR switchable line reactors at OSS-1 end	Cable length ~35 - 40 km <ul style="list-style-type: none"> • 230 kV, 50MVAR switchable line reactors at OSS-1 end – 2 Nos. 	No change

.4 **Modification in the scope of the scheme “Transmission system for proposed Green Hydrogen/ Green Ammonia projects in Tuticorin area”.**

3.4.1 The transmission scheme “Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area” was recommended by NCT in its 22nd meeting held on 23.08.2024 under TBCB route with RECPDCL as BPC with implementation time frame of 30 months and estimated cost of Rs. 2617 Cr. The transmission scheme involves establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s. MoP vide Gazette notification dated 12.09.2024 published the implementation of Transmission Scheme under TBCB route.

3.4.2 Representative from CTUIL informed that as per the Report of Task Force on Cyclone Resilient Robust Electricity Transmission and Distribution Infrastructure in the Coastal areas, May 2021, the measures recommended for future / new Transmission substations are as follows:

a) *The construction of compact & modular indoor GIS installations up to 60 km from the coastline above the historical water stagnation / logging level (based on locally available data) or Highest Flood Level (HFL)*

3.4.3 It was further informed that based on the representation of Grid-India during the 23rd NCT meeting held on 02.09.2024, and subsequently, letter from Grid-India dated 15.10.2024, the requirement of dynamic reactive compensation were studied at proposed Tuticorin GH S/s during the Joint Study meeting of SR constituents held on 21st to 23rd Nov, 2024 at Bengaluru.

3.4.4 Accordingly, it was proposed to consider the 765/400 kV Tuticorin (GH) S/s as **GIS** substation with dynamic compensation as mentioned below:

\pm 300 MVAR STATCOM with 2x125 MVAR MSC at Tuticorin 765/400 kV GH S/s with control switching arrangement for proposed 1x240 MVAR bus reactor

400 kV bay – 1 No. (GIS) for STATCOM

Space provision for 2nd \pm 300 MVAR STATCOM with 2x125 MVAR MSC at Tuticorin 765/400 kV GH S/s

6.1.1 The tentative cost of the original scheme was Rs. 2617 cr. With the proposed modifications in the scope, the revised cost of the scheme comes out to be Rs. 3098 Cr. which is 481 cr. (18.37%) higher than that of original scheme.

6.1.2 After deliberations, NCT recommended the modification in the scope of the transmission scheme “Transmission system for proposed Green Hydrogen/ Green Ammonia projects in Tuticorin area” as mentioned below:

Original Scope:

Sl. No.	Original Scope of the Transmission Scheme approved in 22nd NCT	Capacity / km
1.	<p>Establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s (AIS) with 1x240 MVAR bus Reactor</p> <p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 6 Nos. (with provision for SLR) • 400 kV line bays – 16 Nos. (with provision for SLR) • 400 kV Bus Sectionalizer : 1 set 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 2 Nos. (at Tuticorin (GH) S/s for termination of Tuticorin (GH) – Tuticorin PS 765 kV D/c line) • 765 kV, 240 MVAR Bus Reactor – 1 No. (4x80 MVAR including 1 switchable spare unit) • 765 kV Bus Reactor bays – 1 No.
2.	Tuticorin PS – Tuticorin (GH) 765 kV D/c line	<p>~ 50 km</p> <ul style="list-style-type: none"> • 765 kV line bays – 2 Nos. (at Tuticorin PS)
3.	Upgradation of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level with 1x330 MVAR switchable Line Reactor on both ends of each circuit	<ul style="list-style-type: none"> • 765 kV line bays Tuticorin PS – 2 Nos. • 765 kV, 330 MVAR SLR at Tuticorin PS – 2 Nos. (7x110 MVAR including 1 spare unit for both bus reactor and line reactor) • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVAR SLR at Dharmapuri (Salem New) – 2 Nos. (7x110 MVAR including 1 spare unit for both bus reactor and line reactor)
4.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Tuticorin PS – Dharmapuri (Salem New) 765 kV D/c line at Tuticorin PS & Dharmapuri (Salem New)	Approx. 1-2 km at each end
5.	<p>Upgradation of Tuticorin PS to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAR, 765 kV bus reactors</p> <p>Future Space Provisions:</p>	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVAR Bus Reactor

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	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 1 No. • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR) 	<p>– 1 No.</p> <ul style="list-style-type: none"> • • 765 kV Bus Reactor bays – 1 No.
6.	<p>Upgradation of Dharmapuri (Salem New) to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVA, 765 kV bus reactor</p> <p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 1 No. • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR) 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVA Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No.
7.	<p>400 kV line reactors on Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.</p>	
8.	<p>Upgradation of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines (presently charged at 400 kV) to its rated voltage at 765 kV with 1x330 MVA switchable Line Reactor on Dharmapuri (Salem New) end of each circuit</p>	<ul style="list-style-type: none"> • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVA SLR at Dharmapuri (Salem New) – 2 Nos. (6x110 MVA switchable units) • 765 kV line bays at Madhugiri – 2 Nos.
9.	<p>Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c line at Dharmapuri (Salem New) & Madhugiri</p>	<p>Approx. 1-2 km at each end</p>
10.	<p>400 kV line reactors on Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.</p>	

Note :

- i. POWERGRID shall provide space for upgradation of Tuticorin PS to its rated voltage level of 765 kV level

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- ii. POWERGRID shall provide space for upgradation of Dharmapuri (Salem New) to its rated voltage level of 765 kV level
- iii. POWERGRID / TSP shall provide space for 2 Nos. of 765 kV line bays at Madhugiri 765 kV for termination of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines

Revised Scope:

Sl. No	Revised Scope of the Transmission Scheme	Capacity / km	Remarks
1.	<p>Establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s (GIS) with 1x240 MVAR bus Reactor</p> <p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 6 Nos. (with provision for SLR) • 400 kV line bays – 16 Nos. (with provision for SLR) • 400 kV Bus Sectionalizer : 1 set 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. (GIS) • 400 kV ICT bays – 3 Nos. (GIS)* • 765 kV line bays – 2 Nos. (GIS) (at Tuticorin (GH) S/s for termination of Tuticorin (GH) – Tuticorin PS 765 kV D/c line) • 765 kV, 240 MVAR Bus Reactor – 1 No. (4x80 MVAR including 1 switchable spare unit) • 765 kV Bus Reactor bays – 1 No. (GIS) 	<p>Substation and bays change from AIS to GIS</p> <p>Future Space Provisions: No Change</p>
2.	Tuticorin PS – Tuticorin (GH) 765 kV D/c line	<p>~ 50 km</p> <ul style="list-style-type: none"> • 765 kV line bays – 2 Nos. (at Tuticorin PS) 	No Change
3.	Upgradation of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level with 1x330 MVAR switchable Line Reactor on both ends of each circuit	<ul style="list-style-type: none"> • 765 kV line bays Tuticorin PS – 2 Nos. • 765 kV, 330 MVAR SLR at Tuticorin PS – 2 Nos. (7x110 MVAR including 1 spare unit for both bus reactor and line reactor) • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVAR SLR at Dharmapuri (Salem New) – 2 Nos. (7x110 MVAR including 1 spare unit for both bus 	No Change

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		reactor and line reactor)	
4.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Tuticorin PS – Dharmapuri (Salem New) 765 kV D/c line at Tuticorin PS & Dharmapuri (Salem New)	Approx. 1-2 km at each end	No Change
5.	Upgradation of Tuticorin PS to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVar, 765 kV bus reactors Future Space Provisions: <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 1 No. • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR) 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVar Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No. 	No Change
6.	Upgradation of Dharmapuri (Salem New) to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVar, 765 kV bus reactor Future Space Provisions: <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 1 No. • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR) 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVar Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No. 	No Change
7.	400 kV line reactors on Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.		No Change
8.	Upgradation of Dharmapuri (Salem New) – Madhugiri 765	• 765 kV line bays at Dharmapuri (Salem New) – 2	No Change

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	kV 2xS/c lines (presently charged at 400 kV) to its rated voltage at 765 kV with 1x330 MVAR switchable Line Reactor on Dharmapuri (Salem New) end of each circuit	Nos. <ul style="list-style-type: none"> • 765 kV, 330 MVAR SLR at Dharmapuri (Salem New) – 2 Nos. (6x110 MVAR switchable units) • 765 kV line bays at Madhugiri – 2 Nos. 	
9.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c line at Dharmapuri (Salem New) & Madhugiri	Approx. 1-2 km at each end	No Change
10.	400 kV line reactors on Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.		No Change
11.	<ul style="list-style-type: none"> • \pm 300 MVAR STATCOM with 2x125 MVAR MSC at Tuticorin 765/400 kV GH S/s with control switching arrangement for proposed 1x240 MVAR bus reactor • Space provision for 2nd \pm 300 MVAR STATCOM with 2x125 MVAR MSC at Tuticorin 765/400 kV GH S/s 	<ul style="list-style-type: none"> • 400 kV bay – 1 No. (GIS) * 	New element addition

Note:

- i. POWERGRID shall provide space for upgradation of Tuticorin PS to its rated voltage level of 765 kV level
- ii. POWERGRID shall provide space for upgradation of Dharmapuri (Salem New) to its rated voltage level of 765 kV level
- iii. POWERGRID / TSP shall provide space for 2 Nos. of 765 kV line bays at Madhugiri 765 kV for termination of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines
- iv. ***2 Nos. Additional 400 kV GIS bays for diameter completion shall be provided at Tuticorin (GH) with future element as future Line.**

New Transmission Schemes:**7.1 Augmentation of transformation capacity at 765/400 kV Sipat STPS in Chhattisgarh by 1x1500 MVA, 765/400 kV ICT (3rd).**

7.1.1 Representative from CTUIL stated that NTPC Ltd. has applied for connectivity under GNA for its 800 MW Sipat Expansion project with start date requested from 31.08.2029. NTPC mentioned in their application that the project will be connected at 765 kV bus in the switchyard (Bus Section-II, which is already connected with existing switchyard of Sipat STPS (3x660 MW + 2x500 MW).

7.1.2 CTUIL further mentioned that existing 2x1000 MVA, 765/400 kV ICTs (implemented by NTPC) at Sipat STPS are observed to be critically loaded and also N-1 non-compliant in Solar Max Scenario even under reduced generation at Sipat STPS in 2028-29 timeframe. With the proposed 800 MW Sipat expansion project, loading on the ICTs are observed to be further aggravated.

After deliberations, NCT decided that proposed augmentation of transformation capacity at 765/400 kV Sipat STPS switchyard in Chhattisgarh by 1x1500 MVA, 765/400 kV ICT (3rd) needs to be implemented by NTPC as the ICT will help NTPC to evacuate the power from its 800 MW Sipat Expansion project and will also help in improving system reliability.

7.2 Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh (Phase-I)

7.2.1 Representatives from CTUIL stated that about 6000 MW demand has been envisaged for the Green Hydrogen / Green Ammonia projects in Kakinada area. The details of the phased development are as follows:

Year	Cumulative Electricity Demand (MW)
by 2027	1775
by 2028	3275
by 2029	4645
by 2030	6015

7.2.2 CTUIL, further stated that applications have been received from M/s AM Green Ammonia (India) Pvt. Ltd. seeking GNA_{RE} for 700 MW and 1300 MW as “Bulk Consumer seeking to connect to ISTS” in Kakinada area as per below details:

Name of the Applicant	Application for	GNA Breakup (Within & outside region)	Location details of Connectivity / GNA requested	Start date of Connectivity/ GNA (requested)
AM Green Ammonia (India) Pvt. Ltd.	GNA _{RE}	700 (outside the region)	Kakinada	01.07.2026
AM Green Ammonia (India) Pvt. Ltd.	GNA _{RE}	1300 (outside the region)	Kakinada	01.01.2027

7.2.3 Accordingly, CTUIL proposed the transmission scheme “Transmission system for proposed Green Hydrogen (GH) / Green Ammonia (GA) projects in Kakinada area

(Phase-I)” with following scope:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of Kakinada 765/400 kV, 3x1500 MVA substation alongwith 240 MVA bus reactor Future Space Provisions: <ul style="list-style-type: none"> 765/400 kV, 1500 MVA, ICTs – 3 Nos. 765 kV ICT bays – 3 Nos. 400 kV ICT bays – 3 Nos. 765 kV line bays – 8 Nos. (with provision for SLR) 400 kV line bays – 12 Nos. (with provision for SLR) 400 kV Bus Sectionalizer : 1 set 	<ul style="list-style-type: none"> 3x1500 MVA, 765/400 kV ICT 765 kV ICT bay – 3 Nos. 400 kV ICT bay – 3 Nos. 765 kV line bays – 4 Nos. (at Kakinada for termination of LILO of Srikakulam – Vemagiri 765 kV D/c line) 765 kV, 240 MVA Bus Reactor – 1 No. (4x80 MVA inc. 1 switchable spare unit for both bus reactor and line reactor) 765 kV Bus Reactor bays – 1 No.
2.	LILO of Vemagiri – Srikakulam 765 kV D/c line at Kakinada substation (~20 km) {with 240 MVA SLR at Kakinada end on Srikakulam – Kakinada section (~334 km)}	<ul style="list-style-type: none"> ~20 km 765 kV, 240 MVA SLR at Kakinada– 2 Nos. (6x80 MVA switchable units)

7.2.4 It was also informed that the transmission system was deliberated and agreed in the 52nd SRPC meeting held on 03.08.2024 with a rider that bidding / execution / implementation of the transmission schemes shall be taken up only when the GH & GA loads have entered into second stage like land tie up etc. or some level of certainty is attained which was also communicated vide SRPC letter dated 02.09.2024.

7.2.5 CTUIL proposed the Kakinada 765/400 kV S/s as GIS mentioning that as per the Report of Task Force on Cyclone Resilient Robust Electricity Transmission and Distribution Infrastructure in the Coastal areas, May 2021, the measures recommended for future / new Transmission substations are as follows:

a) *The construction of compact & modular indoor GIS installations up to 60 km from the coastline above the historical water stagnation / logging level (based on locally available data) or Highest Flood Level (HFL)*

7.2.6 It was further informed that based on the representation of Grid-India during the 23rd NCT meeting held on 02.09.2024, and subsequently, letter from Grid-India dated 15.10.2024, following requirement of dynamic reactive compensation was identified at proposed Kakinada 765/400 kV S/s during the Joint Study meeting of SR constituents held on 21st to 23rd Nov, 2024.

- ± 300 MVA STATCOM with 2x125 MVA MSC at Kakinada 765/400 kV S/s with control switching arrangement for proposed 1x240 MVA bus reactor
- 400 kV bay – 1 No. (GIS) for STATCOM
- Space provision for 2nd ± 300 MVA STATCOM with 2x125 MVA MSC at Kakinada 765/400 kV S/s

7.2.7 CMD, Grid-India said that network augmentation, reactive support and resource

adequacy are equally important while development of transmission plan for green hydrogen (GH) and ammonia loads. He suggested to factor ISTS connected bulk loads in the national and state-wise generation resource studies being conducted by CEA as a 3 GW GH load operating at a 65% load factor would require approximately 7.5 GW of solar capacity and 4.5 GW of 5-hour Battery Energy Storage Systems (BESS). He further emphasized that resource adequacy plan may be sought by CTUIL from the applicants seeking the General Network Access (GNA) for bulk loads at ISTS level.

- 7.2.8 CMD, Grid-India referred the CEA ‘Report on optimal generation capacity mix for 2029-30 version 2.0 which had assessed the storage capacity requirement for 2029-30 as 60.63 GW / 336.4 GWh (18.98 GW/128.15 GWh from PSP and 41.65 GW/128.15 GWh from BESS). He emphasized that planning for addition of the envisaged BESS capacity as a generation resource could help in optimizing the transmission being planned for RE evacuation as well as providing support during the non-solar hours.
- 7.2.9 Chairperson, CEA, informed that grant of connectivity during solar hours and non-solar hours is already being considered, which will encourage storage developers to seek connectivity during non-solar hours, which will eventually lead to better utilisation of transmission system. Even more RE capacity could be accommodated at the existing RE pooling sub-stations.
- 7.2.10 Director (SO), Grid-India suggested that the schedule of commissioning the second 765 kV Angul–Srikakulam D/C line, which has been planned by CTUIL could be aligned with the LILO of existing 765 kV Srikakulam–Vemagiri D/C line for supplying 3000 MW of GH load at Kakinada. This is desirable to keep the loading of 765 kV Srikakulam – Vemagiri D/C within secure limits during periods of high-power import by the Southern Region (SR).
- 7.2.11 After deliberations, NCT recommended the transmission scheme “Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area (Phase-I)” under TBCB route as mentioned below:

7.2.11.1 Summary of the scheme is given below:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Cr)	Remarks
1.	Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area (Phase-I) Tentative implementation timeframe: 24 months from date of SPV transfer	1618.5	Recommended under TBCB route with PFCCCL as BPC

7.2.11.2 Detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of Kakinada 765/400 kV, 3x1500 MVA substation (GIS) alongwith 240 MVA bus reactor	• 3x1500 MVA, 765/400 kV ICT (10x500 MVA including 1 spare unit)

Sl. No.	Scope of the Transmission Scheme	Capacity /km
	<p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 400 kV Bus Sectionalizer : 1 set 	<ul style="list-style-type: none"> • 765 kV ICT bay – 3 Nos. (GIS) • 400 kV ICT bay – 3 Nos. (GIS) • 765 kV line bays – 4 Nos. (GIS) (at Kakinada for termination of LILO of Srikakulam – Vemagiri 765 kV D/c line) • 765 kV, 240 MVA_r Bus Reactor – 1 Nos. (4x80 MVA_r inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV Bus Reactor bays – 1 No. (GIS)
2.	LILO of Vemagiri – Srikakulam 765 kV D/c line at Kakinada substation (~20 km) {with 240 MVA _r SLR at Kakinada GH end on Srikakulam – Kakinada section (~334 km)}	~20 km <ul style="list-style-type: none"> • 765 kV, 240 MVA_r SLR at Kakinada– 2 Nos. (6x80 MVA_r switchable units)
3.	<ul style="list-style-type: none"> • \pm 300 MVA_r STATCOM with 2x125 MVA_r MSC at Kakinada 765/400 kV GIS S/s with control switching arrangement for proposed 1x240 MVA_r bus reactor • Space provision for 2nd \pm 300 MVA_r STATCOM with 2x125 MVA_r MSC at Kakinada 765/400 kV S/s 	<ul style="list-style-type: none"> • 400 kV bay – 1 No. (GIS) *

Note:

- i. * 2 Nos. Of additional 400 kV GIS bays for diameter completion shall be provided at Kakinada with future element as future Line.

Status of the bids under process by BPCs

- .1 Both the Bid Process Coordinators [BPCs], i.e, PFCCCL and RECPDCL made presentations on under bidding Inter State Transmission Schemes. Salient points of the discussion were as under:
- a) Status of transmission projects under bidding by the BPCs:

Sl.No.	Region(s)	RECPDCL	PFCCCL
1	Bids Under Evaluation	02	05
2	RfP issued and bids to be submitted	10	13
3	RfP to be issued	01	-

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4	RfP bid submission on hold	-	01
	TOTAL	13	19

- b) Transmission scheme “Creation of 400/220 kV, 2x315 MVA S/S at Siot, Jammu & Kashmir” is on hold from 2021 due to non-finalization of the downstream network by J&K. PFCCL mentioned that they are also the BPC for downstream network to be implemented as intra-state scheme by J&K, with implementation timeframe of 18 months. NCT, directed BPC to proceed for bidding process of the ISTS scheme in matching timeframe of intra-state scheme.
- c) Chairperson, CEA, desired that the completion timeline of the schemes awarded under RTM vis-à-vis the timeline agreed by NCT should be collated and brought before NCT.
- d) BPCs informed that the bidding process usually takes 130-140 days. On the matter of time table/time elapsed for bid process, Chairperson, CEA, directed BPCs to prepare a note regarding hurdles in the bidding process, remedial measures and suggestions to bring down the bidding timelines to the level mentioned in the SBD and discuss in next NCT meeting,
- e) On the request of RECPDCL for considering them as an agency for implementing transmission projects under regulated tariff mechanism, Chairperson, CEA, suggested RECPDCL to give a presentation in the next NCT meeting regarding their suitability for being considered as an implementing agency for transmission projects.

Summary of the deliberations of the 25th meeting of NCT held on 28th November, 2024**I. Modification in the earlier approved/notified transmission schemes:****1. Post facto approval for modification in the scope of work of Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part 1) (Bikaner Complex) – Part-E**

NCT approved the modification in the scope of work of Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part 1) (Bikaner Complex) – Part-E, i.e, Shifting of existing 01 No. of 765 kV bus reactor bank along with its spare, other related equipment and gantry towers (as required) to new diameter (to be constructed just after Adani line bays) and thereafter the accommodation of 765/400 kV ICT (4th) in this vacant bay at Bikaner S/s.

2. Bid process for selection of Bidder as Transmission Service Provider (TSP) to establish “Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex”

NCT decided to de-notify the scheme from TBCB and approved implementation of the “Transmission system strengthening to facilitate evacuation of power from Bhadla/Bikaner complex” to be undertaken under RTM route to be implemented by POWERGRID.

3. Consideration of GIS station in place of AIS station for the scheme “Transmission System for Offshore wind farm in Tamil Nadu {500 MW VGF}”

NCT approved to establish the Onshore Pooling Station as GIS in place of AIS near Avaraikulam under the scheme “Transmission System for Offshore wind farm in Tamil Nadu {500 MW VGF}”.

4. Modification in the scope of the scheme “Transmission system for proposed Green Hydrogen/ Green Ammonia projects in Tuticorin area”.

NCT recommended the modification in the scope of the transmission scheme “Transmission system for proposed Green Hydrogen/ Green Ammonia projects in Tuticorin area” as mentioned below:

Sl. No	Revised Scope of the Transmission Scheme	Capacity / km	Remarks
12.	Establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s (GIS) with 1x240 MVAR bus Reactor Future Space Provisions: • 765/400 kV, 1500 MVA,	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. (GIS) • 400 kV ICT bays – 3 Nos. (GIS)* 	Substation and bays change from AIS to GIS Future Space

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	<p>ICTs – 3 Nos.</p> <ul style="list-style-type: none"> • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 6 Nos. (with provision for SLR) • 400 kV line bays – 16 Nos. (with provision for SLR) • 400 kV Bus Sectionalizer : 1 set 	<ul style="list-style-type: none"> • 765 kV line bays – 2 Nos. (GIS) (at Tuticorin (GH) S/s for termination of Tuticorin (GH) – Tuticorin PS 765 kV D/c line) • 765 kV, 240 MVA_r Bus Reactor – 1 No. (4x80 MVA_r including 1 switchable spare unit) • 765 kV Bus Reactor bays – 1 No. (GIS) 	Provisions: No Change
13.	Tuticorin PS – Tuticorin (GH) 765 kV D/c line	<p>~ 50 km</p> <ul style="list-style-type: none"> • 765 kV line bays – 2 Nos. (at Tuticorin PS) 	No Change
14.	Upgradation of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level with 1x330 MVA _r switchable Line Reactor on both ends of each circuit	<ul style="list-style-type: none"> • 765 kV line bays Tuticorin PS – 2 Nos. • 765 kV, 330 MVA_r SLR at Tuticorin PS – 2 Nos. (7x110 MVA_r including 1 spare unit for both bus reactor and line reactor) • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVA_r SLR at Dharmapuri (Salem New) – 2 Nos. (7x110 MVA_r including 1 spare unit for both bus reactor and line reactor) 	No Change
15.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Tuticorin PS – Dharmapuri (Salem New) 765 kV D/c line at Tuticorin PS & Dharmapuri (Salem New)	Approx. 1-2 km at each end	No Change
16.	<p>Upgradation of Tuticorin PS to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVA_r, 765 kV bus reactors</p> <p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 1 No. 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVA_r Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No. 	No Change

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	<ul style="list-style-type: none"> • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR) 		
17.	<p>Upgradation of Dharmapuri (Salem New) to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVA_r, 765 kV bus reactor</p> <p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 1 No. • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR) 	<ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVA_r Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No. 	No Change
18.	400 kV line reactors on Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.		No Change
19.	Upgradation of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines (presently charged at 400 kV) to its rated voltage at 765 kV with 1x330 MVA _r switchable Line Reactor on Dharmapuri (Salem New) end of each circuit	<ul style="list-style-type: none"> • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVA_r SLR at Dharmapuri (Salem New) – 2 Nos. (6x110 MVA_r switchable units) • 765 kV line bays at Madhugiri – 2 Nos. 	No Change
20.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c line at Dharmapuri (Salem New) & Madhugiri	Approx. 1-2 km at each end	No Change
21.	400 kV line reactors on		No Change

	Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.		
22.	<ul style="list-style-type: none"> • \pm 300 MVar STATCOM with 2x125 MVar MSC at Tuticorin 765/400 kV GH S/s with control switching arrangement for proposed 1x240 MVar bus reactor • Space provision for 2nd \pm 300 MVar STATCOM with 2x125 MVar MSC at Tuticorin 765/400 kV GH S/s 	• 400 kV bay – 1 No. (GIS) *	New element addition

II. Augmentation of transformation capacity at 765/400 kV Sipat STPS in Chhattisgarh by 1x1500 MVA, 765/400 kV ICT (3rd).

NCT decided that proposed augmentation of transformation capacity at 765/400 kV Sipat STPS switchyard in Chhattisgarh by 1x1500 MVA, 765/400 kV ICT (3rd) needs to be implemented by NTPC.

III. ISTS Transmission schemes, costing greater than ₹ 500 Crore, recommended by NCT to MoP:

The ISTS transmission schemes recommended by NCT to MoP are given below:

Sl. No.	Name of Transmission Scheme	Implementation Mode	Tentative Implementation timeframe	BPC	Estimated Cost (₹ Crs.)
1.	Transmission system for proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh (Phase-I)	TBCB	24 months from date of SPV transfer	PFCCCL	1618.5

The broad scope of the above ISTS schemes to be notified in Gazette of India is as given below:

Sl. No.	Name of Scheme & Tentative implementation timeframe	Broad Scope	Bid Process Coordinator
1.	Transmission system for	i. Establishment of Kakinada	PFCCCL

<p>proposed Green Hydrogen / Green Ammonia projects in Kakinada area, Andhra Pradesh (Phase-I)</p> <p>Implementation Timeframe: 24 Months</p>	<p>765/400 kV, 3x1500 MVA substation (GIS) alongwith 240 MVA bus reactor</p> <p>Future Space Provisions:</p> <ul style="list-style-type: none"> • 765/400 kV, 1500 MVA, ICTs – 3 Nos. • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 400 kV Bus Sectionalizer : 1 set <p>ii. LILO of Vemagiri – Srikakulam 765 kV D/c line at Kakinada substation (~20 km) {with 240 MVA SLR at Kakinada GH end on Srikakulam – Kakinada section (~334 km)}</p> <p>iii.</p> <ul style="list-style-type: none"> • \pm 300 MVA STATCOM with 2x125 MVA MSC at Kakinada 765/400 kV GIS S/s with control switching arrangement for proposed 1x240 MVA bus reactor • Space provision for 2nd \pm 300 MVA STATCOM with 2x125 MVA MSC at Kakinada 765/400 kV S/s <p>(Detailed scope as approved by 25th NCT and subsequent amendments thereof)</p>	
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Annexure-I**List of participants of the 25th 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 (Power Systems)
4. Sh. Ishan Sharan, Chief Engineer (PSPA-I)
5. Sh. Y.K. Swarnkar, Chief Engineer (PSPM)
6. Sh. B.S. Bairwa, Chief Engineer (I/C) (PSPA-II)
7. Sh. Rahul Raj, Director (PSPA-II)
8. Sh. Pranay Garg, Deputy Director (PSPA-II)
9. Sh. Manish Maurya, Deputy Director (PSPA-II)

MoP:

1. Sh. Om Kant Shukla, Director (Trans.)

MNRE:

1. Sh. Tarun Singh, Scientist E

SECI:

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

NITI Aayog:

1. Sh. Manoj Kumar Upadhyay, Dy Advisor
2. Sh. Shravan Kumar, Consultant

CTUIL:

1. Sh. Ashok Pal, Deputy COO
2. Sh. K K Sarkar, Sr GM
3. Sh. P.S. Das, Sr GM
4. Sh. Anil Kumar Meena, GM
5. Sh. Sandeep, DGM
6. Sh. Venkatesh Gorli, Chief Manager

GRID India:

1. Sh. S.R.Narasimhan, CMD
2. Sh. Rajiv Porwal, Director (SO)
3. Sh. Vivek Pandey, Sr. General Manager
4. Sh. Priyam Jain, Chief Manager

RECPDCL

1. Sh. T.S.C. Bosh, CEO
2. Sh. Anil Kumar, Chief Manager

3. Sh. Satyabhan Sahoo, GM (Tech)

PFCCCL

1. Sh. Naveen Phougat, GM
2. Sh. Rishab Jain, GM

Expert Member

1. Sh. Ravinder Gupta, Ex Chief Engineer, CEA
