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 तेईसवीं बैठक की कार्यसूची – के सम्बन्ध में ।

Subject: Agenda for 23rd Meeting of National Committee on Transmission (NCT) – regarding.

महोदया **(Madam)** / महोदय **(Sir),**

The 23rd meeting of the "National Committee on Transmission" (NCT) has been scheduled as given below:

Date: 02.09.2024

Time: 03:00 P.M.

Venue: Chintan, 2nd Floor, CEA, Sewa Bhawan, R.K. Puram Sector-1, New Delhi

Kindly make it convenient to attend the meeting.

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(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

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, Saudamini, Plot No. 2, Sector-29, Gurgaon – 122 001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9, Qutub, Institutional Area, Katwaria Sarai, New Delhi – 110010
9.	Sh. Ravinder Gupta Ex. Chief Engineer CEA		

Agenda for the 23rd meeting of National Committee on Transmission

1. Transmission System for integration of Kurnool-IV IV (Near Aspiri) REZs in Andhra Pradesh

1.1. A comprehensive transmission system for integration of 51 GW RE Potential in Andhra Pradesh have been identified by CEA and a report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022. The details of district wise potential is as below.

District	Potential (GW)		Total (GW)	Maximum Dispatch (GW)	BESS (GW)	Evacuation System (GW)
	Wind	Solar				
Anantapur	10	10	20	15	5	10
Kurnool	**8**	**15**	**23**	**18**	**6**	**12**
Kadapa	0	8	8	8	3	5
Total	18	33	51	41	14	27

1.2. Presently, Connectivity of about 7,740 MW (2390 MW at 220 kV level & 5,350 MW at 400 kV level) has been granted / agreed for grant at Kurnool-III PS and is closed for further grant of Connectivity

1.3. The scheme for "Transmission System for Integration of Kurnool-IV REZ - Phase-I (4.5 GW)" was discussed in the 22nd NCT meeting held on 23.08.2024 wherein NCT opined that a comprehensive plan for evacuation of power from RE potential in Kurnool-IV RE Zone should be prepared and put up in the next meeting of NCT

1.4. Accordingly, matter was deliberated in the meeting convened by CEA with CTU on 23.08.2024 and following comprehensive transmission system has been identified for Integration of Kurnool-IV REZ.

Transmission System for Integration of Kurnool-IV (Near Aspiri) REZ (for 7.5 GW)

- Establishment of 6x1500 MVA, 765/400 & 10x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV PS (4 GW injection at 220 kV level and 3.5 GW injection at 400 kV level)
- ± 300 MVAR STATCOM at Kurnool-IV, 2x125 MVAr MSR
- Establishment of 3x1500 MVA, 765/400 kV Shadnagar Station with 2x330 MVAr (765 kV) bus reactors with provision of establishment of 220 kV switchyard
- Kurnool-IV – Shadnagar 765 kV D/c line (about 230 kms) with 330 MVAR SLR at Kurnool-IV on both circuits
- Shadnagar– Bidar 765kV D/c line (about 210 kms) with 330 MVAR SLR at Bidar end on both circuits

- Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR at Kurnool-IV end on both circuits
- Augmentation of 1x1500 MVA, 765/400 kV ICT at C'Peta
- LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms)
- Shadnagar – Shadnagar (TGTRANSCO) 400 kV quad D/c line (about 50 kms)
- Shadnagar – Kethiredipally (TGTRANSCO) 400 kV quad D/c line (about 60 kms)

1.5. As per present visibility and cost of transmission system, the above transmission system has been segregated into two phases.

A. Transmission System for Integration of Kurnool-IV REZ - Phase-I (for 4.5 GW)
B. Transmission System for Integration of Kurnool-IV REZ - Phase-II (for 3 GW)

1.6. **Transmission System for Integration of Kurnool-IV REZ - Phase-I (for 4.5 GW)**

a) **Scope of the scheme:** "Transmission System for Integration of Kurnool-IV REZ - Phase-I (for 4.5 GW)" with following scope is proposed (detailed agenda is enclosed at (Annexure 1 A)

Sl. No.	***Scope of the Transmission Scheme***	***Capacity /km***
1.	Establishment of 4x1500 MVA, 765/400 kV & 4x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV 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 – 14 nos. • 400kV ICT bays – 14 nos. • 220kV ICT bays – 14 nos. • 765kV line bays – 8 nos. (with provision for SLR) • 400kV line bays – 12 nos. (with provision for SLR) • 220kV line bays – 20 nos.	• 765/400 kV, 1500 MVA, ICTs – 4 nos. (13x500 MVA incl. 1 spare unit) • 765kV ICT bays – 4 nos. • 400kV ICT bays – 4 nos. • 400/220kV, 500 MVA, ICTs – 4 nos. • 400kV ICT bays – 4 nos. • 220kV ICT bays – 4 nos. • 765kV line bays – 4 nos. (at Kurnool-IV PS for termination of Kurnool-IV – Bidar and Kurnool-IV – Kurnool-III 765kV D/c lines) • 765 kV, 330 MVAr Bus Reactor – 2 nos. • 765 kV Bus Reactor bays – 2 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*
	• 220kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos. • 400kV Bus Sectionalizer : 1 set	
2.	Kurnool-IV – Bidar 765 kV D/c line (about 330 kms) with 330 MVAR SLR (convertible) at both ends on both circuits	~ 330 km • 765kV line bays – 2 nos. (at Bidar PS) • 765 kV, 330 MVAr SLR at Kurnool-IV PS – 2 nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV, 330 MVAr SLR at Bidar PS – 2 nos. (7x110 MVAr inc. 1 switchable spare unit)
3.	Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR (convertible) at Kurnool-IV end on both circuits	~ 150 km • 765kV line bays – 2 nos. (at Kurnool-III PS) • 765 kV, 240 MVAr SLR at Kurnool-IV PS – 2 nos. (7x80 MVAr inc. 1 switchable spare unit)
4.	± 300 MVAR STATCOM at Kurnool-IV PS along with 2x125 MVAr MSR	• 400 kV bay – 1 no.
5.	Augmentation of 1x1500 MVA, 765/400 kV ICT (3rd) at C'Peta	• 765/400kV, 1500 MVA, ICT – 1 no. • 765kV ICT bays – 1 no. • 400kV ICT bays – 1 no.
6.	LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms)	~ 20 km • 400 kV line bays – 4 nos. (at C'Peta for termination of LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta)

Note :

a) POWERGRID shall provide space for 2 nos. of 765kV line bays at Kurnool-III for termination of Kurnool-IV – Kurnool-III PS 765 kV D/c line

b) Developer of Bidar PS shall provide space for 2 nos. of 765kV line bays at Bidar PS for termination of Kurnool-IV – Bidar 765kV D/c line

b) The scheme was discussed in the 52nd SRPC meeting held on 03.08.2024. SRPC views are attached at Annex-I.

c) Estimated Cost of the scheme is INR 5550 Crore with implementation timeframe of 24 months.

1.7. **Transmission System for Integration of Kurnool-IV REZ - Phase-II (for 3 GW)**

a) **Scope of the scheme**: "Transmission System for Integration of Kurnool-IV REZ - Phase-II (for 3 GW)" with following scope is proposed (detailed agenda is enclosed at (Annexure 1 B):

Sl. No.	***Scope of the Transmission Scheme***	***Capacity /km***
	Establishment of 3x1500 MVA, 765/400 kV Shadnagar Station with 2x330 MVAr (765 kV) bus reactors with provision of 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. • 400/220kV, 500 MVA, ICTs – 5 nos. • 400kV ICT bays – 5 nos. • 220kV ICT bays – 5 nos. • 765kV line bays – 8 nos. (with provision for SLR) • 400kV line bays – 8 nos. (with provision for SLR) • 220kV line bays – 10 nos. • 220kV Bus Sectionalizer : 1 sets • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos. • 400kV Bus Sectionalizer : 1 set	• 765/400 kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit) • 765kV ICT bays – 3 nos. • 400kV ICT bays – 3 nos. • 765kV line bays – 4 nos. (at Shadnagar for termination of LILO of Bidar- Kurnool-IV – 765kV D/c line) • 765 kV, 330 MVAr Bus Reactor – 2 nos. • 765 kV Bus Reactor bays – 2 nos. • 400kV line bays – 2 nos. (at Shadnagar for termination of Shadnagar – Shadnagar (TGTRANSCO) 400kV D/c lines • 400kV line bays – 2 nos. (at Shadnagar for termination of Shadnagar - Kethiredipally (TGTRANSCO) 400kV D/c lines
2.	LILO of both circuits of Kurnool-IV – Bidar 765kV D/c line at Shadnagar	~ 100 km

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
3.	Shadnagar – Shadnagar (TGTRANSCO) 400 kV quad D/c line	~ 50 km • 400kV line bays – 2 nos. (at Shadnagar (TGTRANSCO) for termination of Shadnagar – Shadnagar (TGTRANSCO) 400kV D/c lines)
4.	Shadnagar – Kethiredipally (TGTRANSCO) 400 kV quad D/c line	~ 60 km • 400kV line bays – 2 nos. (at Kethiredipally (TGTRANSCO) for termination of Shadnagar – Kethiredipally (TGTRANSCO) 400kV D/c lines)
5.	Augmentation of 2x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Kurnool-IV Pooling Station	• 765/400kV, 1500 MVA, ICT – 2 nos. (6x500 MVA units) • 765kV ICT bays – 2 nos. • 400kV ICT bays – 2 nos. • 400/220kV, 500 MVA, ICTs – 6 nos. • 400kV ICT bays – 6 nos. • 220kV ICT bays – 6 nos. • 220kV line bays – 12 nos. • 220kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 1 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 1 nos.

b) Phase-II transmission system is yet to be deliberated with SR constituents and yet to submitted to SRPC for its views.

c) Estimated Cost of the scheme is INR 3508 Crore.

1.8. Members may deliberate.

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Annexure 1 A

Transmission System for Integration of Kurnool-IV REZ - Phase-I (for 4.5 GW)

<table>
<tr><th>Sl. No.</th><th>Items</th><th>Details</th></tr>
<tr><td>1.</td><td>Name of Scheme</td><td>Transmission System for Integration of Kurnool-IV REZ - Phase-I</td></tr>
<tr><td>2.</td><td>Scope of the scheme</td><td>
<table>
<tr><th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr>
<tr><td></td><td>Establishment of 4x1500 MVA, 765/400 kV & 4x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV 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 – 14 nos.
• 400kV ICT bays – 14 nos.
• 220kV ICT bays – 14 nos.
• 765kV line bays – 8 nos. (with provision for SLR)
• 400kV line bays – 12 nos. (with provision for SLR)
• 220kV line bays – 20 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</td><td>• 765/400 kV, 1500 MVA, ICTs – 4 nos. (13x500 MVA incl. 1 spare unit)
• 765kV ICT bays – 4 nos.
• 400kV ICT bays – 4 nos.
• 400/220kV, 500 MVA, ICTs – 4 nos.
• 400kV ICT bays – 4 nos.
• 220kV ICT bays – 4 nos.
• 765kV line bays – 4 nos. (at Kurnool-IV PS for termination of Kurnool-IV – Bidar and Kurnool-IV – Kurnool-III 765kV D/c lines)
• 765 kV, 330 MVAr Bus Reactor – 2 nos.
• 765 kV Bus Reactor bays – 2 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.</td></tr>
<tr><td>2.</td><td>Kurnool-IV – Bidar 765 kV D/c line (about 330 kms) with 330 MVAR SLR (convertible) at both ends on both circuits</td><td>~ 330 km
• 765kV line bays – 2 nos. (at Bidar PS)
• 765 kV, 330 MVAr SLR at Kurnool-IV PS – 2 nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor)
• 765 kV, 330 MVAr SLR at Bidar PS – 2 nos. (7x110 MVAr inc. 1 switchable spare unit)</td></tr>
<tr><td>3.</td><td>Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR (convertible) at Kurnool-IV end on both circuits</td><td>~ 150 km
• 765kV line bays – 2 nos. (at Kurnool-III PS)
• 765 kV, 240 MVAr SLR at Kurnool-IV PS – 2 nos. (7x80 MVAr inc. 1 switchable spare unit)</td></tr>
<tr><td>4.</td><td>± 300 MVAR STATCOM at Kurnool-IV PS along with 2x125 MVAr MSR</td><td>• 400 kV bay – 1 no.</td></tr>
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<tr><td></td><td></td><td>
<table>
<tr><td>5.</td><td>Augmentation of 1x1500 MVA, 765/400 kV ICT (3rd) at C'Peta</td><td>• 765/400kV, 1500 MVA, ICT – 1 no.
• 765kV ICT bays – 1 no.
• 400kV ICT bays – 1 no.</td></tr>
<tr><td>6.</td><td>LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms)</td><td>~ 20 km
• 400 kV line bays – 4 nos. (at C'Peta for termination of LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta)</td></tr>
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</td></tr>
<tr><td>3.</td><td>Depiction of the scheme on Transmission Grid Map</td><td>Annexure-A</td></tr>
<tr><td>4.</td><td>Upstream/downstream system associated with the scheme</td><td>Not applicable</td></tr>
<tr><td>5.</td><td>Objective / Justification</td><td>
Govt. of India has set a target of 500 GW generation capacity from non-fossil fuel resources by 2030. In this direction, MNRE has identified addition of 86 GW RE Potential in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region. Out of the identified (86 GW) RE Potential in Southern Region, 51 GW has been identified in the State of Andhra Pradesh (Ananthapur– 20 GW, Kurnool – 23 GW & Kadapa – 8 GW).

A comprehensive transmission system for integration of 51 GW RE Potential in Andhra Pradesh have been identified by CEA and a report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022. The details of district wise potential is as below.

<table>
<tr><th rowspan="2">District</th><th colspan="2">Potential (GW)</th><th rowspan="2">Total (GW)</th><th rowspan="2">Maximum Dispatch (GW)</th><th rowspan="2">BESS (GW)</th><th rowspan="2">Evacuation System (GW)</th></tr>
<tr><th>Wind</th><th>Solar</th></tr>
<tr><td>Anantapur</td><td>10</td><td>10</td><td>20</td><td>15</td><td>5</td><td>10</td></tr>
<tr><td>Kurnool</td><td>8</td><td>15</td><td>23</td><td>18</td><td>6</td><td>12</td></tr>
<tr><td>Kadapa</td><td>0</td><td>8</td><td>8</td><td>8</td><td>3</td><td>5</td></tr>
<tr><td>Total</td><td>18</td><td>33</td><td>51</td><td>41</td><td>14</td><td>27</td></tr>
</table>

Presently, Connectivity of about 7740 MW (2390 MW at 220kV level & 5350 MW at 400kV level) has been granted / agreed for grant at Kurnool-III PS. Similarly, Connectivity of about 3765 MW (1055 MW at 220kV level & 2710 MW at 400kV level) has been granted / agreed for grant at Ananthapuram PS. Keeping above in view, it is prudent to take up the implementation of Kurnool-IV PS and Anantapur-II PS for integration of RE generation projects in Kurnool and Anantapur areas. The above transmission schemes were deliberated in the 28th CMETS-SR held on 29.02.2024 wherein it was decided that a physical joint study may be carried out for finalization of the transmission system for Kurnool-IV and Ananthapuram-II.

Accordingly, Joint Study meeting of Southern Region Constituents was held from 2nd to 4th May, 2024 at Hyderabad wherein following transmission system was finalized for integration of RE generation projects at Kurnool-IV in Andhra Pradesh :

Transmission System for Integration of Kurnool-IV (Near Aspiri) REZ (for 7.5 GW)

Phase-I (4.5 GW)
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</table>

		• Establishment of 4x1500 MVA, 765/400 & 4x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV PS (1.5 GW injection at 220 kV level and 3 GW injection at 400 kV level) • + 300 MVAR STATCOM at Kurnool-IV, 2x125 MVAr MSR • Kurnool-IV – Bidar 765kV D/c line (about 330 kms) with 330 MVAR SLR at both end on both circuits • Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR at Kurnool-IV end on both circuits • Augmentation of 1x1500 MVA, 765/400 kV ICT at C'Peta **Phase-II (3 GW)** • Augmentation of 2x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Kurnool-IV Pooling Station (2 GW injection at 220 kV level and 2 GW injection at 400 kV level) • Establishment of 3x1500 MVA, 765/400 kV Veltoor-II Station with 2x330 MVAr (765 kV) bus reactors • LILO of Kurnool-IV – Bidar 765kV D/c line at Veltoor-II (about 60 kms) • Veltoor-II – Veltoor TS 400 kV D/c (quad) line (about 60 kms) • Veltoor-II – Udandpur 400 kV D/c (quad) line (about 30 kms) • LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms) The above transmission schemes were deliberated in the 32nd CMETS-SR held on 28.06.2024 wherein it was agreed that initially Kurnool-IV Phase-I may be taken up for implementation and Kurnool-IV Phase-II may be reviewed as per the observations of the SR constituents. It was also agreed that LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms) may be considered in Phase-I. The scheme was discussed in the 22nd NCT meeting held on 23.08.2024 wherein in view of the observations of APTRANSCO regarding LILO of long Kurnool-IV – Bidar 765 kV D/c line at Raichur / Veltoor / Shadnagar in Telengana, Chairperson, CEA directed that the comprehensive transmission schemes for Kurnool-IV may be put-up in the next NCT meeting after deliberations between CEA & CTU. Accordingly, matter was deliberated in the meeting convened by CEA with CTU on 23.08.2024 for finalization of the transmission scheme. In the meeting CTUIL informed that in 32nd CMETS meeting TGTRANSCO stated that *proposed Veltoor-II ISTS substation is planned to be integrated with TGTRANSCO Veltoor and Udandpur LI substations under "Transmission System for Integration of Kurnool-IV (Near Aspiri) REZ (for 7.5 GW)". Same may be reviewed on account of increase in fault level at nearby TGTRANSCO substations and N-1 non-compliance of Udandapur-Shadnagar and Veltoor-Shadnagar 220 kV lines with the above interconnections. TGTRANSCO informed that they are planning Chendenaveli 220 kV substation near Shadnagar wherein a lot of data centers are expected to come-up. Two no. of application for 700 MW each have already been received and the demand is expected to further increase to 3000 MW at these* locations. *Accordingly, 765/400 KV substations may be planned nearer to these locations instead of Veltoor-II for meeting the demand.* As Veltoor was rejected by Telangana and Raichur is a generation hub, Shadnagar may considered for anchoring of Kurnool IV- Bidar line where large nos. of data centers are expected in near future. After detailed deliberations, it was decided that Shadnagar 765/400 kV substations may be considered for anchoring of Kurnool-IV Bidar line alongwith 400kV D/c line

		interconnections with Kethiredipally & Shadnagar substations of Telangana. Accordingly, following comprehensive transmission system has been identified for Integration of Kurnool-IV REZ. **Transmission System for Integration of Kurnool-IV (Near Aspiri) REZ (for 7.5 GW)** • Establishment of 6x1500 MVA, 765/400 kV & 10x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV PS (4 GW injection at 220 kV level and 3.5 GW injection at 400 kV level) • ± 300 MVAR STATCOM at Kurnool-IV, 2x125 MVAr MSR • Establishment of 3x1500 MVA, 765/400 kV Shadnagar Station with 2x330 MVAr (765 kV) bus reactors with provision of establishment of 220 kV switchyard • Kurnool-IV – Shadnagar 765 kV D/c line (about 230 kms) with 330 MVAR SLR at Kurnool-IV on both circuits • Shadnagar– Bidar 765kV D/c line (about 210 kms) with 330 MVAR SLR at Bidar end on both circuits • Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR at Kurnool-IV end on both circuits • Augmentation of 1x1500 MVA, 765/400 kV ICT at C'Peta • LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms) • Shadnagar – Shadnagar (TGTRANSCO) 400 kV quad D/c line (about 50 kms) • Shadnagar – Kethiredipally (TGTRANSCO) 400 kV quad D/c line (about 60 kms) **Phase-I (4.5 GW)** • Establishment of 4x1500 MVA, 765/400 & 4x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV PS (1.5 GW injection at 220 kV level and 3 GW injection at 400 kV level) • ± 300 MVAR STATCOM at Kurnool-IV, 2x125 MVAr MSR • Kurnool-IV – Bidar 765kV D/c line (about 330 kms) with 330 MVAR SLR at both end on both circuits • Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR at Kurnool-IV end on both circuits • Augmentation of 1x1500 MVA, 765/400 kV ICT at C'Peta • LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms) **Phase-II (3 GW)** • Augmentation of 2x1500 MVA, 765/400 kV & 6x500 MVA, 400/220 kV Kurnool-IV Pooling Station (2 GW injection at 220 kV level and 2 GW injection at 400 kV level) • Establishment of 3x1500 MVA, 765/400 kV Shadnagar Station with 2x330 MVAr (765 kV) bus reactors with provision of establishment of 220 kV switchyard • LILO of Kurnool-IV – Bidar 765kV D/c line at Shadnagar (about 100 kms) • Shadnagar – Shadnagar (TGTRANSCO) 400 kV quad D/c line (about 50 kms) • Shadnagar – Kethiredipally (TGTRANSCO) 400 kV quad D/c line (about 60 kms) Further it may be noted that the Phase-I of the above transmission system has been deliberated with SR constituents and SRPC has also forwarded its views. However the Phase-

		II transmission system is yet to be deliberated with SR constituents and yet to submitted to SRPC for its views.
6.	Estimated Cost	**Rs. 5550 Crore**
7.	Impact on the total Annual Transmission charges in % along with the existing ATC	A. ATC (considering Levelized Tariff @15% of estimated cost): Rs. 832.5 Crore B. Present ATC: Rs. 46353.73 Crore * C. A/B (%): 1.796%
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	24 months
10.	Inclusion of any wild life/protected area along the transmission line route	No major National Park, Wildlife Sanctuary or other protected areas observed. However, for details of forest/protected areas, survey is required to be done.
11.	Deliberations with RPC along with their comments	The scheme was discussed in the 52nd SRPC meeting held on 03.08.2024 SRPC has forwarded views of SR constituents on 20.08.2024.
12.	System Study for evolution of the proposal	Transmission System for Integration of Kurnool-IV REZ - Phase-I was agreed in the Joint Study meeting of SR constituents held from 2nd to 4th May, 2024 and 32nd CMETS-SR held on 28.06.2024.

Annexure 1 B

Transmission System for Integration of Kurnool-IV REZ - Phase-II (for 3 GW)

<table>
<tr><th>Sl. No.</th><th>Items</th><th>Details</th></tr>
<tr><td>1.</td><td>Name of Scheme</td><td>Transmission System for Integration of Kurnool-IV REZ - Phase-II</td></tr>
<tr><td>2.</td><td>Scope of the scheme</td><td>
<table>
<tr><th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr>
<tr><td></td><td>Establishment of 3x1500 MVA, 765/400 kV Shadnagar Station with 2x330 MVAr (765 kV) bus reactors with provision of 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.
• 400/220kV, 500 MVA, ICTs – 5 nos.
• 400kV ICT bays – 5 nos.
• 220kV ICT bays – 5 nos.
• 765kV line bays – 8 nos. (with provision for SLR)
• 400kV line bays – 8 nos. (with provision for SLR)
• 220kV line bays – 10 nos.
• 220kV Bus Sectionalizer : 1 sets
• 220 kV Bus Coupler (BC) Bay – 2 nos.
• 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos.
• 400kV Bus Sectionalizer : 1 set</td><td>• 765/400 kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)
• 765kV ICT bays – 3 nos.
• 400kV ICT bays – 3 nos.
• 765kV line bays – 4 nos. (at Shadnagar for termination of LILO of Bidar- Kurnool-IV – 765kV D/c line)
• 765 kV, 330 MVAr Bus Reactor – 2 nos.
• 765 kV Bus Reactor bays – 2 nos.
• 400kV line bays – 2 nos. (at Shadnagar for termination of Shadnagar – Shadnagar (TGTRANSCO) 400kV D/c lines
• 400kV line bays – 2 nos. (at Shadnagar for termination of Shadnagar - Kethiredipally (TGTRANSCO) 400kV D/c lines</td></tr>
<tr><td>2.</td><td>LILO of both circuits of Kurnool-IV – Bidar 765kV D/c line at Shadnagar</td><td>~ 100 km</td></tr>
<tr><td>3.</td><td>Shadnagar – Shadnagar (TGTRANSCO) 400 kV quad D/c line</td><td>~ 50 km
• 400kV line bays – 2 nos. (at Shadnagar (TGTRANSCO) for termination of Shadnagar – Shadnagar (TGTRANSCO) 400kV D/c lines)</td></tr>
<tr><td>4.</td><td>Shadnagar – Kethiredipally (TGTRANSCO) 400 kV quad D/c line</td><td>~ 60 km
• 400kV line bays – 2 nos. (at Kethiredipally (TGTRANSCO) for termination of Shadnagar – Kethiredipally (TGTRANSCO) 400kV D/c lines)</td></tr>
<tr><td>5.</td><td>Augmentation of 2x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Kurnool-IV Pooling Station</td><td>• 765/400kV, 1500 MVA, ICT – 2 nos. (6x500 MVA units)
• 765kV ICT bays – 2 nos.
• 400kV ICT bays – 2 nos.
• 400/220kV, 500 MVA, ICTs – 6 nos.
• 400kV ICT bays – 6 nos.
• 220kV ICT bays – 6 nos.
• 220kV line bays – 12 nos.</td></tr>
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				• 220kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 1 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 1 nos.
3.	Depiction of the scheme on Transmission Grid Map	**Annexure-A**		
4.	Estimated Cost	**Rs. 3508 Crore**		
5.	Impact on the total Annual Transmission charges in % along with the existing ATC	A. ATC (considering Levelized Tariff @15% of estimated cost): Rs. 526.2 Crore B. Present ATC: Rs. 46353.73 Crore * C. A/B (%): 1.135%		

Annexure-A

Transmission System for Integration of Kurnool-IV REZ (7.5 GW)