



# सेंद्रल ट्रान्समिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

## CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)

(A Government of India Enterprise)

Ref. No.: C/CTU/AI/00/18<sup>th</sup> CCTP

14<sup>th</sup> June 2024

### OFFICE MEMORANDUM

**Sub: Inter-State Transmission Schemes (costing up to Rs.100 Cr.) to be taken up for implementation under Regulated Tariff Mechanism (RTM).**

The undersigned is directed to inform that CTU has approved the implementation of the following ISTS costing less than or equal to Rs.100 Cr. in line with the MoP office order dated 28.10.2021 under the Regulated Tariff Mechanism (RTM) mode by the implementing agencies as indicated in the table below:

Sl. No.	Name of Transmission Scheme	Implementing Agency
<b>Northern Region</b>		
1.	Augmentation of Transformation Capacity at 400/220kV Bassi (PG) S/s in Rajasthan by 400/220kV, 1x500 MVA ICT (4th)	Power Grid Corporation of India Ltd.
2.	Augmentation of Transformation Capacity at 400/220kV Malerkotla(PG) S/s in Punjab by 400/220kV, 1x500MVA ICT (4th)	Power Grid Corporation of India Ltd.
3.	Implementation of 1 no. of 400 kV line bay at 765/400/220kV Bhadla-III PS for interconnection of M/s ReNew Solar (Shakti Six) Pvt. Ltd.	POWERGRID Bhadla III Transmission Ltd. (a subsidiary of Power Grid Corporation of India Ltd.)
<b>Western Region</b>		
4.	Augmentation of Transformation Capacity at 765/400/220kV Vadodara (GIS) S/s in Gujarat by 400/220kV, 1x500MVA ICT (3rd)	Power Grid Corporation of India Ltd.
<b>Southern Region</b>		
5.	Reconductoring of Somanahalli – Bidadi 400kV kV D/c line with HTLS conductor	Power Grid Corporation of India Ltd.
6.	Reconductoring of Maheshwaram (PG) – Hyderabad 400kV S/c line with HTLS conductor	Power Grid Corporation of India Ltd.
<b>Eastern Region</b>		
7.	Eastern Region Bay Scheme-I (ERBS-I)	Power Grid Corporation of India Ltd.
8.	Eastern Region Bay Scheme-II (ERBS-II)	Power Grid Corporation of India Ltd.
<b>North Eastern Region</b>		
9.	North Eastern Region Expansion Scheme-XXIII (NERES-XXIII)	Power Grid Corporation of India Ltd.
10.	North Eastern Region Expansion Scheme-XXVI (NERES-XXVI)	Power Grid Corporation of India Ltd.
11.	North Eastern Region Expansion Scheme-XXVII (NERES-XXVII)	Power Grid Corporation of India Ltd.

12.	North Eastern Region Expansion Scheme-XXVIII (NERES-XXVIII)	Power Grid Corporation of India Ltd.
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The detailed scope of works for the above transmission schemes is given at **Annexure-I**.

The above transmission schemes are awarded to the Implementing Agency for its implementation under RTM mode. The implementing agency shall enter into a concession agreement with CTU for the implementation of the above-mentioned transmission schemes through the Regulated Tariff Mechanism (RTM).

This issues with the approval of Competent Authority.



**(Partha Sarathi Das)**  
**Sr. General Manager**

**Encl: as stated.**

**To:**

<b>1. The Chairman &amp; Managing Director</b> Power Grid Corporation of India Ltd., Saudamini, Plot No. 2, Sector-29, Gurgaon- 122 001	<b>2. POWERGRID Bhadla III Transmission Ltd.</b> (a subsidiary of Power Grid Corporation of India Ltd.) Saudamini, Plot No. 2, Sector-29, Gurgaon – 122009.
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**Copy to:**

<b>1. Shri Rakesh Goyal</b> Chief Engineer & Member Secretary (NCT) Central Electricity Authority Sewa Bhawan, R. K. Puram, New Delhi-110 066.	<b>2. Shri Om Kant Shukla</b> Director (Trans) Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110 001
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**CC:**

<b>1. Shri Amit Kumar</b> Vice President ReNew Solar (Shakti Six) Pvt. Ltd Renew.Hub, Commercial Block-1, Zone-6, Golf Course Road, DLF City Phase V, Gurugram, Haryana 122009 <a href="mailto:amit.kumar1@renew.com">amit.kumar1@renew.com</a> <a href="mailto:rohit.Singh@renew.com">rohit.Singh@renew.com</a>	<i>With a request to take up implementation of DTL in matching timeframe of 1 no. 400kV line bay at Bhadla-III PS as per transmission scheme mentioned at sl. no. 3.</i>
<b>2. Director (Technical)</b> Rajasthan Rajya Vidyut Prasaran Nigam Ltd. Vidyut Bhawan, Jaipur, Rajasthan-302005. <a href="mailto:dir.tech@rvpn.co.in">dir.tech@rvpn.co.in</a> <a href="mailto:se.pp@rvpn.co.in">se.pp@rvpn.co.in</a>	<i>For kind information, please.</i>
<b>3. Director (Technical)</b> Punjab State Transmission Corporation Ltd. Head Office, The Mall, Patiala 147001, Punjab <a href="mailto:dir-tech@pstcl.org">dir-tech@pstcl.org</a> <a href="mailto:se-planning@pstcl.org">se-planning@pstcl.org</a>	<i>For kind information, please.</i>
<b>4. Managing Director</b> Gujarat Energy Transmission Corporation Ltd. Sardar Patel Vidhyut Bhawan, Race Course, Vadodara – 390 007 <a href="mailto:md.getco@gebmail.com">md.getco@gebmail.com</a> ; <a href="mailto:stu.getco@gebmail.com">stu.getco@gebmail.com</a> ;	<i>With a request to take up implementation of Vadodara (PG) – Waghodia 220kV D/c line in matching timeframe of 2 no. 220kV line bays at Vadodara (GIS) S/s as per transmission scheme mentioned at sl. no. 4.</i>
<b>5. Sh. Ravi</b> Addl. GM PE Electrical NTPC Limited NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, Delhi Email: <a href="mailto:kuraravikumar@ntpc.co.in">kuraravikumar@ntpc.co.in</a> ; <a href="mailto:abhishekkhanna@ntpc.co.in">abhishekkhanna@ntpc.co.in</a> ;	<i>With a request to take up implementation of DTL in matching timeframe of 2 nos. 400kV GIS line bays at Pandiabili (POWERGRID) GIS S/s as per transmission scheme mentioned at sl. no. 7.</i> <i>With a request to take up implementation of DTL in matching timeframe of 2 nos. 132kV GIS line bays at Rangpo (POWERGRID) GIS S/s as per transmission scheme mentioned at sl. no. 8.</i>
<b>6. Chief Engineer (Power)</b> Vidyut Bhawan, Department of Power Zero Point Tinali Itanagar (Arunachal Pradesh) – 791111 Email: <a href="mailto:tktara@hotmail.com">tktara@hotmail.com</a> ; <a href="mailto:cmetsarp@gmail.com">cmetsarp@gmail.com</a> ; <a href="mailto:vidyutarunachal@rediffmail.com">vidyutarunachal@rediffmail.com</a> ; <a href="mailto:vidyutarunachal@gmail.com">vidyutarunachal@gmail.com</a>	<i>With a request to provide space for 1 no. 132kV AIS line bay at Pasighat (DoP, Arunachal Pradesh) S/s to the ISTS licensee at no cost.</i>
<b>7. Chief Engineer (T&amp;G)</b> Department of Power, Electricity House, A.G. Colony, Kohima, Nagaland- 797001 Email: <a href="mailto:eedmptrans@gmail.com">eedmptrans@gmail.com</a> ; <a href="mailto:asang.dcare1@gmail.com">asang.dcare1@gmail.com</a> ; <a href="mailto:sldc.ngl@gmail.com">sldc.ngl@gmail.com</a> ; <a href="mailto:tiaquenger@gmail.com">tiaquenger@gmail.com</a> ;	<i>With a request to take up implementation of scope of works under DoP, Nagaland in matching time-frame of North Eastern Region Expansion Scheme-XXVII (NERES-XXVII).</i>

**Northern Region**

**1. Augmentation of Transformation Capacity at 400/220kV Bassi (PG) S/s in Rajasthan by 400/220kV, 1x500 MVA ICT (4<sup>th</sup>)**

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe.</b>
1.	Augmentation of Transformation Capacity at 400/220kV Bassi (PG) S/s in Rajasthan by 400/220kV 1x500MVA ICT(4 <sup>th</sup> ) along with associated transformer bays	<ul style="list-style-type: none"> <li>• 500 MVA, 400/220 kV ICT-1 no.</li> <li>• 400 kV ICT bay – 1no.</li> <li>• 220 kV ICT bay – 1 no.</li> </ul>	18 months from the date of issuance of CTUIL OM i.e. 14.12.2025
<b>Total Estimated Cost:</b>			<b>₹ 49.87 Crore</b>

**2. Augmentation of Transformation Capacity at 400/220kV Malerkotla(PG) S/s in Punjab by 400/220kV, 1x500MVA ICT (4<sup>th</sup>)**

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe.</b>
1.	Augmentation of Transformation Capacity at 400/220kV Malerkotla(PG) S/s in Punjab by 400/220kV, 1x500MVA ICT (4 <sup>th</sup> ) along with associated transformer bays*  <i>*incl. extension of 400kV &amp; 220 kV side of ICT through Cable/GIB. 400kV side bay equipment shall be GIS type</i>	<ul style="list-style-type: none"> <li>• 500 MVA, 400/220 kV ICT - 1 no.</li> <li>• 400 kV ICT bays (GIS) – 1 no. (in new diameter with 1 no. additional bay for diameter completion) (refer note a)</li> <li>• 220 kV ICT bay – 1 no.</li> <li>• 400kV GIS duct (1ph) – 100m approx.</li> <li>• 220kV Cable (1ph) – 3200m approx.</li> <li>• 220 kV Cable Termination Kit: 8 nos.</li> </ul>	21 months from the date of issuance of OM by CTUIL i.e. 14.03.2026 (refer note b)
<b>Total Estimated Cost:</b>			<b>₹ 88 Crore</b>

**Note:**

- a. In view of GIS substation, one complete 400kV diameter with three Circuit Breakers (one and half switching scheme) shall be implemented at 400kV level for interconnection of ICT in one 400kV bay. Utilization of another 400kV bay of the diameter shall be identified in future.
- b. Best efforts shall be carried out to implement the transmission scheme within 18 months from the issuance of OM by CTUIL i.e. 14.12.2025.
- c. PSTCL to provide space to ISTS licensee for implementation of 1 no. 220kV ICT bay (AIS) at 220kV Malerkotla(PSTCL) switchyard for termination of the above 400/220kV, 1x500MVA ICT (4<sup>th</sup>) ICT at 220kV side.

**3. Implementation of 1 no. of 400 kV line bay at 765/400/220kV Bhadla-III PS for interconnection of M/s ReNew Solar (Shakti Six) Pvt. Ltd.**

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe.</b>
1.	1 no. of 400 kV line bay at 765/400/220 kV Bhadla-III PS for interconnection of RE project (M/s ReNew Solar (Shakti Six) Pvt. Ltd.)	• 400 kV line bay – 1 no.	31.03.2026
<b>Total Estimated Cost:</b>			<b>₹ 13.37 Crore</b>

### Western Region

#### 4. Augmentation of Transformation Capacity at 765/400/220kV Vadodara (GIS) S/s in Gujarat by 400/220kV, 1x500MVA ICT (3<sup>rd</sup>)

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe.</b>
1.	Augmentation of Transformation Capacity at 765/400/220kV Vadodara (GIS) S/s in Gujarat by 400/220kV, 1x500MVA ICT (3 <sup>rd</sup> )	<ul style="list-style-type: none"> <li>• 400/220kV, 1x500MVA ICT – 1 No.</li> <li>• 400kV ICT bay (GIS) – 1 no.</li> <li>• 220kV ICT bay GIS) – 1 No.</li> <li>• 400kV GIS Bus duct (m) – 250m. approx.</li> <li>• 220 kV GIS Bus duct (m) – 450m. approx.</li> </ul>	31.03.2026
2.	2 nos. 220kV bays at Vadodara S/s (for Vadodara (PG) – Waghodia D/c line)	<ul style="list-style-type: none"> <li>• 220kV line bays (GIS): 2 Nos.</li> <li>• 220kV GIS Bus duct (m) – 300m. approx.</li> </ul>	
<b>Total Estimated Cost:</b>			<b>₹ 85.79 Crore</b>

**Note:**

- a. Implementation Timeframe has been aligned with the time-frame for implementation of Vadodara (PG) – Waghodia 220kV D/c line as confirmed by GETCO.

### Southern Region

#### 5. Reconductoring of Somanahalli – Bidadi 400kV kV D/c line with HTLS conductor

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe.</b>
1.	Reconductoring of Somanahalli – Bidadi 400kV kV D/c line with HTLS conductor (2100 MVA/ckt)	• Line Length ~17 km	24 months from the date of issuance of OM by CTUIL i.e. 14.06.2026
2.	Upgradation of 400kV bay equipment at Somanahalli end	• Commensurate with line capacity	
3.	Upgradation of 400kV bay equipment at Bidadi (GIS) end	• Commensurate with line capacity	
<b>Total Estimated Cost:</b>			<b>₹ 43.76 Crore</b>

#### 6. Reconductoring of Maheshwaram (PG) – Hyderabad 400kV S/c line with HTLS conductor

Sl. No.	Scope of the Transmission Scheme	Item Description	Implementation Timeframe.
1.	Reconductoring of Maheshwaram (PG) – Hyderabad 400kV S/c line with HTLS conductor (2100 MVA/ckt)	• Line length ~56 km	24 months from the date of issuance of OM by CTUIL i.e. 14.06.2026
2.	Upgradation of 400kV bay equipment at Maheshwaram (PG) GIS end	• Commensurate with line capacity	
3.	Upgradation of 400kV bay equipment at Hyderabad AIS end	• Commensurate with line capacity	
<b>Total Estimated Cost:</b>			<b>₹ 64.83 Crore</b>

## Eastern Region

### 7. Eastern Region Bay Scheme-I (ERBS-I)

Sl. No.	Scope of the Transmission Scheme	Item Description	Implementation Timeframe
1.	Extension at Pandiabili 400/220kV GIS substation	<ul style="list-style-type: none"> <li>400kV <b>GIS line bays</b>: 2 nos. (i.e. one full diameter 413-414-415) <i>[Bay no. 415 shall be used for termination of one circuit of Talcher-III – Pandiabili 400kV D/c dedicated transmission line (line under the scope of NTPC Ltd.)]</i></li> <li>400kV <b>GIB</b>: 600m approx. <i>[for termination of one circuit of Talcher-III – Pandiabili 400kV D/c dedicated transmission line (line under the scope of NTPC Ltd.) in existing bay no. 410]</i></li> </ul>	30-09-2026
<b>Total Estimated Cost:</b>			<b>₹ 46.34 Crore</b>

#### Note:

- a. Pandiabili (POWERGRID) S/s is GIS having one and half breaker switching scheme. One circuit of Talcher-III – Pandiabili 400kV D/c dedicated transmission line (line under the scope of NTPC Ltd.) shall be terminated in bay no. 410 using GIB and other circuit shall be terminated in bay no. 415. Other bay i.e. 413 of diameter 413-414-415 shall be used in future for ICT termination.

### 8. Eastern Region Bay Scheme-II (ERBS-II)

Sl. No.	Scope of the Transmission Scheme	Item Description	Implementation Timeframe
1.	Extension at Rangpo 400/220/132kV GIS substation	<ul style="list-style-type: none"> <li>132kV GIS Line bays: 2 nos. (<b>bay no. 117 &amp; 118</b>) <i>[for termination of Rammam – Rangpo (POWERGRID) 132kV D/c (minimum 680A per circuit) dedicated transmission line (line under the scope of NTPC Ltd.)]</i></li> <li>145kV <b>GIB</b>: 150m approx..</li> </ul>	30-07-2026
<b>Total Estimated Cost:</b>			<b>₹ 17.47 Crore</b>

**Note:**

- a. ISTS licensee should build 132kV line bays of rating commensurate with rating of the dedicated transmission line (DTL).

**North-Eastern Region****9. North Eastern Region Expansion Scheme-XXIII (NERES-XXIII)**

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe</b>
1.	Stringing of 2 <sup>nd</sup> circuit of Pasighat (Arunachal Pradesh) – Roing (POWERGRID) 132kV S/c on D/c line with ACSR Panther conductor commensurate with rating and maximum operating temperature of 1 <sup>st</sup> circuit	• 103km	30 months from the date of issuance of OM by CTUIL i.e. 14.12.2026
2.	Stringing of 2 <sup>nd</sup> circuit of Roing (POWERGRID) – Tezu (POWERGRID) 132kV S/c on D/c line with ACSR Panther conductor commensurate with rating and maximum operating temperature of 1 <sup>st</sup> circuit	• 73km	
3.	Stringing of 2 <sup>nd</sup> circuit of Tezu (POWERGRID) – Namsai (POWERGRID) 132kV S/c on D/c line with ACSR Panther conductor commensurate with rating and maximum operating temperature of 1 <sup>st</sup> circuit	• 95.24km	
4.	Extension at Pasighat (DoP, Arunachal Pradesh) (refer note a): 1 no. 132kV AIS line bay for termination of 2 <sup>nd</sup> circuit of Pasighat (Arunachal Pradesh) – Roing (POWERGRID) 132kV D/c line	• 132kV AIS line bay: 1 no.	
5.	Extension at Roing (POWERGRID) S/s: 2 no. 132kV AIS line bay for termination of 2 <sup>nd</sup> circuit of Pasighat (Arunachal Pradesh) – Roing (POWERGRID) 132kV D/c line and 2 <sup>nd</sup> circuit of Roing (POWERGRID) – Tezu (POWERGRID) 132kV D/c line	• 132kV AIS line bay: 2 no.	
6.	Extension at Tezu (POWERGRID) S/s: 2 no. 132kV AIS line bay for termination of 2 <sup>nd</sup> circuit of Roing (POWERGRID) – Tezu (POWERGRID) 132kV D/c line and 2 <sup>nd</sup> circuit of Tezu (POWERGRID) – Namsai (POWERGRID) 132kV D/c line	• 132kV AIS line bay: 2 no.	
7.	Extension at Namsai (POWERGRID) S/s: 1 no. 132kV AIS line bay for termination of 2 <sup>nd</sup> circuit of Tezu (POWERGRID) – Namsai (POWERGRID) 132kV D/c line	• 132kV AIS line bay: 1 no.	
<b>Total Estimated Cost:</b>			<b>₹ 73.47 Crore</b>

**Note:**

- a. DoP, Arunachal Pradesh shall provide space for 1 no. 132kV AIS line bay at Pasighat (DoP, Arunachal Pradesh) S/s to the ISTS licensee at no cost.

**10. North Eastern Region Expansion Scheme-XXVI (NERES-XXVI)**



<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe</b>
1.	Decommissioning of existing 420kV, 50MVA (Bus Reactor-1) and installation of new 420kV, 125MVA bus reactor in its place along with replacement of associated main and tie bay equipment at Balipara (POWERGRID) S/s	<ul style="list-style-type: none"> <li>420kV, 1x125MVA Bus Reactor: 1 no.</li> <li>Replacement of 400kV main &amp; tie bay equipment of bus reactor bay</li> </ul>	18 months from the date of issuance of OM by CTUIL i.e. 14.12.2025
<b>Total Estimated Cost:</b>			<b>₹ 35.79 Crore</b>

### 11. North Eastern Region Expansion Scheme-XXVII (NERES-XXVII)

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe</b>
1.	Reconductoring of ISTS portion of Dimapur (POWERGRID) – Dimapur (DoP, Nagaland) 132kV (ckt-2) ACSR Panther S/c line with Single HTLS conductor of 800A	Line length: 0.335km	15 months from the date of issuance of OM by CTUIL i.e. 14.09.2025
2.	Reconductoring of ISTS portion of Dimapur (POWERGRID) – Kohima (DoP, Nagaland) 132kV ACSR Panther S/c line with Single HTLS conductor of 800A	Line length: 0.335km	
<b>Total Estimated Cost:</b>			<b>₹ 0.3 Crore</b>

### 12. North Eastern Region Expansion Scheme-XXVIII (NERES-XXVIII)

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Item Description</b>	<b>Implementation Timeframe</b>
1.	Installation of new 420 kV, 1x125 MVA, 3-Ph Variable Shunt Reactor (VSR) having variable range from 63MVA to 125MVA (with at least 25 tap positions) along with associated GIS bay at Misa (POWERGRID) S/s	<ul style="list-style-type: none"> <li>420 kV, 1x125 MVA VSR (having variable range from 63MVA to 125MVA with at least 25 tap positions): 1 No.</li> <li>400 kV VSR bay (GIS): 1 No. (with two circuit breakers) (refer note a)</li> <li>400kV GIB: 1000m (approx.)</li> </ul>	21 months from the date of issuance of OM by CTUIL i.e. 14.03.2026
<b>Total Estimated Cost:</b>			<b>₹ 52.71 Crore</b> (refer note c)

**Note:**

- In view of space constraints for GIS extension and space constraint towards usage of other bay of one and half breaker scheme, VSR is planned to be installed in double bus scheme with two circuit breakers.
- As discussed in the 31<sup>st</sup> CMETS-NER, POWERGRID shall claim the cost of installation of a new 420kV, 1x125 MVA bus reactor along with associated GIS bay at Misa (POWERGRID) S/s under this scheme. The difference in cost between a new 420kV, 1x125MVA bus reactor and a new 420kV, 1x125MVA VSR shall be booked by POWERGRID under its R&D Budget head as informed by POWERGRID.
- The project cost has been estimated considering 420 kV, 1x125 MVA Bus Reactor along with associated GIS bay and GIB. However, as intimated by POWERGRID, implementation of the VSR shall incur additional cost of about 8.5 Cr. approx. (incl. GST).