

I/34189/2024



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 &amp; Appraisal Division-II

सेवा में /To

As per list of Addresses

विषय: ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की अठारहवीं बैठक की कार्यसूची - के सम्बन्ध में ।

Subject: Agenda for the 18<sup>th</sup> Meeting of National Committee on Transmission (NCT) – regarding.

महोदया (Madam) / महोदय (Sir),

The 18<sup>th</sup> meeting of the "National Committee on Transmission" (NCT) is scheduled as given below:**Date:** 05<sup>th</sup> March, 2024**Time:** 03:00 PM**Venue:** Chintan, 2<sup>nd</sup> Floor, CEA, Sewa Bhawan, R.K. Puram Sector-1, New Delhi

The agenda for the meeting is enclosed herewith. Kindly make it convenient to attend the meeting.

भवदीय/Yours faithfully,

(राकेश गोयल / Rakesh Goyal)

मुख्य अभियन्ता एवं सदस्य सचिव, एन.सी.टी.

/Chief Engineer &amp; Member Secretary (NCT)

प्रतिलिपि / Copy to:

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

I/34189/2024

**List of Addressees:**

1.	Chairperson, Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	2.	Member (Power System), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.
3.	Member (Economic & Commercial), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	4.	Director (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh. Lalit Bohra, Joint Secretary Room no 602, Atal Akshay Urja Bhawan Opposite CGO Complex gate no 2, Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Saudamini, Plot No. 2, Sector-29, Gurgaon – 122 001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9, Qutub, Institutional Area, Katwaria Sarai, New Delhi – 110010
9.	Sh. Ravinder Gupta Ex. Chief Engineer CEA		

**Special Invitee**

Chief Engineer (PCD), CEA

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## **Agenda for the 18<sup>th</sup> meeting of National Committee on Transmission**

### **1 Confirmation of the minutes of the 17<sup>th</sup> meeting of National Committee on Transmission.**

- 1.1 The minutes of the 17<sup>th</sup> meeting of NCT held on 31.01.2024 were issued vide CEA letter no CEA-PS-12-13/3/2019-PSPA-II dated 16.02.2024.
- 1.2 Members may confirm the minutes.

### **2 Status of the transmission schemes noted/approved/recommended to MoP in the 17<sup>th</sup> meeting of NCT:**

- 2.1 The status of the transmission schemes noted/approved/recommended in the 17<sup>th</sup> meeting of NCT is tabulated below:

#### **2.1.1 Status of new transmission schemes approved/recommended:**

<b>Sr. No</b>	<b>Name of the Transmission Scheme</b>	<b>Noted/Recommended/Approved</b>	<b>Mode of Implementation</b>	<b>MoP approval</b>	<b>BPC</b>
1.	Augmentation of transformation capacity by 2x500 MVA (7 <sup>th</sup> & 8 <sup>th</sup> ), 400/220 kV ICTs at Tumkur (Pavagada) 400/220 kV Pooling Station.	Approved	RTM	Not applicable	POWERGR ID
2.	Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL)	Approved	RTM	Not applicable	JKTL Adani Energy Solutions Ltd.
3.	Augmentation of transformation capacity at 765/400kV Lakadia S/s (WRSS XXI(A) Transco Ltd) in Gujarat-Part A	Approved	RTM	Not applicable	WRSS XXI(A) Transco Ltd Adani Energy Solution s Ltd.
4.	Additional transmission system for evacuation of power from BhadlaIII PS as part of Rajasthan REZ PhaseIII scheme (20GW)	Approved	TBCB	Not applicable	RECPDCL

2.1.2 Status of transmission schemes where modifications was suggested:

S. No.	Scheme where modifications was suggested	Status
1.	Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area	Informed to BPCs vide letter dated 16.02.2024
2.	Transmission system for evacuation of power from Shongtong Karcham HEP (450MW) and Tidong HEP (150 MW)	
3.	Timeline for 1500 MVA, 765/400 kV ICT Augmentation at Jhatikara S/s	Informed to CTU vide letter dated 16.02.2024
4.	Change in Scope of the transmission scheme “Transmission Scheme for North Eastern Region Expansion Scheme-XVI (NERES-XVI)”	Informed to BPCs vide letter dated 16.02.2024
5.	Change in Scope of transmission scheme “Eastern Region Expansion Scheme-XXXIV (ERES-XXXIV)”	
6.	Change in implementation timeframe for Augmentation of transformation capacity at Bhuj-II PS	
7.	Change in Completion Schedule of transmission scheme North Eastern Region Generation Scheme-I (NERGS-I)	

**3 Modifications in the earlier approved/notified transmission schemes:**

**3.1 Modification in scope of work of Eastern Region Expansion Scheme-XXXIX (ERES-XXXIX)**

3.1.1 The above scheme was agreed in 16<sup>th</sup> meeting of NCT and following changes are required in the scope of scheme.

	As agreed in the 16 <sup>th</sup> meeting of NCT		Proposed correction	
Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
i.	Establishment of new 765/400kV, 2x1500MVA GIS substation at Gopalpur in Odisha  <b>Additional space for future expansion:</b>	765/400kV, 1500MVA ICTs: 2 nos. (7x500MVA single phase units including one spare)  765kV ICT bays: 2 nos.  400kV ICT bays: 2	No change.	No change.

	As agreed in the 16 <sup>th</sup> meeting of NCT		Proposed correction	
Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
	<ul style="list-style-type: none"> <li>- 765/400kV, 4x1500MVA ICTs (12x500MVA single phase units) along with associated ICT bays at both voltage levels</li> <li>- 400/220kV, 4x500MVA ICTs along with associated ICT bays at both voltage levels</li> <li>- 765kV, 2x330MVA (6x110MVA single phase units) bus reactor along with associated bays</li> <li>- 420kV, 2x125MVA bus reactor along with associated bays</li> <li>- 8 nos. of 765kV line bays (along with space for switchable line reactor) for future lines</li> <li>- 10 nos. of 400kV line bays (along with space for switchable line reactor) for future lines</li> </ul>	<p>nos.</p> <p>765kV, 330MVA Bus reactor: 2 nos. (7x110MVA single phase units including one spare unit for both bus and line reactors)</p> <p>765kV Bus reactor bays: 2 nos.</p> <p>420kV, 125MVA Bus reactor: 2 nos.</p> <p>400kV Bus reactor bays: 2 nos.</p> <p>765kV line bays: 2 nos.</p> <p><i>[for termination of Angul (POWERGRID) – Gopalpur 765kV D/c line along with 765kV, 1x330MVA switchable line reactor at Gopalpur end in both circuits]</i></p> <p>400kV line bays: 2 nos.</p>		

	As agreed in the 16 <sup>th</sup> meeting of NCT		Proposed correction	
Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
	<ul style="list-style-type: none"> <li>- 12 nos. of 220kV line bays for future lines</li> <li>- 765kV bus sectionaliser bay: 1 set</li> <li>- 400kV bus sectionaliser bay: 1 set</li> <li>- 220kV bus sectionaliser bay :1 set</li> <li>- 220kV bus coupler bay: 2 no.</li> </ul>	<p><i>[for termination of Gopalpur – Gopalpur (OPTCL) 400kV D/c (Quad) line]</i></p> <p>765kV, 330MVA<sub>r</sub> (3x110MVA<sub>r</sub> single phase units) switchable line reactor along with associated bay and 500ohm NGR (with NGR bypass arrangement) <i>[at Gopalpur end in both circuits of Angul (POWERGRID) – Gopalpur 765kV D/c line]</i>: 2 nos.</p>		
ii.	Angul – Gopalpur 765kV D/c line	205km	No change.	No change.
iii.	Extension at 765kV level at Angul (POWERGRID) S/s including bus extension in GIS	765kV GIS/Hybrid line bays (along with space for future switchable line reactor): 2 nos. <i>[for termination of Angul (POWERGRID) – Gopalpur 765kV D/c line]</i> including bus extension in GIS of about 3000m	No change.	765kV <del>GIS/Hybrid</del> AIS line bays (along with space for future switchable line reactor): 2 nos. <i>[for termination of Angul (POWERGRID) – Gopalpur 765kV D/c line]</i> including bus

	As agreed in the 16 <sup>th</sup> meeting of NCT		Proposed correction	
Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
				extension in GIS of about 3000m
iv.	Gopalpur – Gopalpur (OPTCL) 400kV D/c (Quad) line@	@20km	No change.	No change.
v.	Extension at 400kV level at #Gopalpur (OPTCL) GIS S/s	400kV GIS line bays: 2 nos. [for termination of Gopalpur – Gopalpur (OPTCL) 400kV D/c (Quad) line] + #2 nos. for diameter completion	No change.	No change.
	<b>Note:</b> (a) @Gopalpur (OPTCL) is being taken up for implementation and is expected to be awarded by Mar 2024. As per OPTCL's input 20km line has been considered between 765/400kV (ISTS) and 400/220kV (Intra-state) substations at Gopalpur. (b) #The bus scheme of 400kV level at Gopalpur (OPTCL) GIS S/s shall be one and half breaker scheme, 2 nos. full diameter i.e. 4 nos. of GIS bays needs to be implemented in the scheme for requirement of 2 nos. GIS bays for termination of Gopalpur (OPTCL) – Gopalpur 400kV D/c (Quad) line in two different diameters. Utilisation of other 2 nos. GIS bays of these diameters shall be identified in future. (c) OPTCL shall provide space at under implementation Gopalpur (OPTCL) 400/220kV GIS S/s for implementation		No change.	



	As agreed in the 16 <sup>th</sup> meeting of NCT		Proposed correction	
Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
	<p><i>of 2 nos. of 400kV GIS line bays for termination of Gopalpur (ISTS) – Gopalpur (OPTCL) 400kV D/c (Quad) line. 2 nos. full diameter i.e. 4 nos. GIS bays shall be established.</i></p> <p><i>(d) POWERGRID shall provide space at Angul (POWERGRID) 765/400kV S/s for implementation of 2 nos. of 765kV line bays (along with space for future switchable line reactor) along with bus extension in GIS for termination Angul (POWERGRID) – Gopalpur 765kV D/c line.</i></p> <p><i>(e) The line lengths mentioned above are approximate, as the exact length shall be obtained after detailed survey.</i></p>			

3.1.2 Members may deliberate.

#### 4 New Transmission Schemes:

##### 4.1 Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-3 :6GW) [Bikaner complex]

4.1.1 Considering grant of connectivity to RE generators in Bikaner complex as well as for evacuation of power beyond above complex, transmission scheme was agreed in Joint study meetings as well as in 27<sup>th</sup> CMETS-NR meeting for evacuation of power from Bikaner Complex as part of Rajasthan REZ Ph-IV (Part-3 : 6 GW).

4.1.2 The transmission scheme was discussed and agreed in the 71<sup>st</sup> NRPC meeting held on 29.01.24

4.1.3 Detailed scope of the scheme is given below:

S. No.	Items	Details
1.	Name of Scheme	Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-3 : 6GW) [Bikaner complex]

S. No.	Items	Details
2.	Scope of the scheme	<p><b>Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-3 : 6GW) Bikaner-IV: 6 GW (Solar)</b></p> <p>➤ Establishment of 6x1500 MVA, 765/400 kV &amp; 6x500 MVA, 400/220 kV Bikaner-IV Pooling Station along with 2x240 MVar (765kV) &amp; 2x125 MVar (420kV) Bus Reactors at a suitable location near Bikaner *</p> <p><b>Future provisions at Bikaner-IV PS (excl. scope for present scheme): Space for</b></p> <ul style="list-style-type: none"> <li>▪ 765 kV line bays along with switchable line reactors – 6 nos.</li> <li>▪ 765kV Bus Reactor along with bay: 1 no.</li> <li>▪ 400 kV line bays along with switchable line reactor –4 nos.</li> <li>▪ 400 kV line bays–2 nos.</li> <li>▪ 400/220kV ICT along with bays -4 nos.</li> <li>▪ 400 kV Bus Reactor along with bay: 1 no.</li> <li>▪ 400kV Sectionalizer bay: 2 sets</li> <li>▪ 220 kV line bays for connectivity of RE Applications -5 nos.</li> <li>▪ 220kV Sectionalizer bay: 2 sets</li> <li>▪ 220 kV BC (2 nos.) bays and 220 kV TBC (2 nos.) bays</li> </ul> <p><i>*along with provision of 80MVar spare reactor (Single phase) &amp; 500MVA spare transformer unit (Single phase)</i></p> <p>➤ 220kV line bays (6 nos.) for RE connectivity at Bikaner-IV PS</p> <p>➤ 400kV line bays (3 no.) for RE connectivity at Bikaner-IV PS</p> <p>➤ 220kV Sectionalizer bay (1 set) along with BC (2 nos.) bays and 220 kV TBC (2 nos.) bays at Bikaner-IV PS</p> <p>➤ 400kV Sectionalizer bay (1 set) at Bikaner-IV PS</p> <p>➤ STATCOM (2x±300MVar) along with MSC (4x125 MVar) &amp; MSR (2x125 MVar) along with 2 nos. 400kV bays at Bikaner-IV PS</p> <p>➤ LILO of both ckts of 400kV Bikaner II PS- Bikaner III PS (Quad) direct line at Bikaner-IV PS (~20kms)</p> <p>➤ Establishment of 765/400 kV, 6x1500 MVA S/s at suitable location near Siwani (Distt. Bhiwani) along with 2x240 MVar (765kV) Bus Reactor &amp; 2x125 MVar (420kV) Bus Reactor*</p> <p><b>Future provisions at Siwani S/s(excl. scope for present scheme): Space for</b></p> <ul style="list-style-type: none"> <li>▪ 765 kV line bays along with switchable line reactors – 6</li> <li>▪ 765kV Bus Reactor along with bay: 1 nos.</li> </ul>

S. No.	Items	Details
		<ul style="list-style-type: none"> <li>▪ 400 kV line bays along with switchable line reactor –4</li> <li>▪ 400 kV Bus Reactor along with bays: 1 no.</li> <li>▪ 400kV Sectionalizer bay: 1 set</li> </ul> <p><b>*along with provision of 80MVar spare reactor (Single phase) &amp; 500MVA spare transformer unit (Single phase)</b></p> <ul style="list-style-type: none"> <li>➤ Bikaner-IV PS – Siwani 765 kV 2xD/c line along with 240 MVar switchable line reactor for each circuit at each end (~260 km)</li> <li>➤ Siwani – Jind (PG) 400 kV D/c line (Quad) (~110 km)</li> <li>➤ Siwani – Patran (Indi Grid) 400 kV D/c line (Quad) (~160 km) (400kV GIS duct :700m) along with 80 MVar switchable line reactor for each circuit at Siwani S/s end</li> <li>➤ Siwani – Fatehabad (PG) 400 kV D/c line (Quad) (~80 km)</li> <li>➤ Siwani – Sonipat (PG) 400 kV D/c line (Quad) (~150 km) along with 63 MVar switchable line reactor for each circuit at Siwani S/s end</li> <li>➤ STATCOM (2x±300MVar) along with MSC (4x125 MVar) &amp; MSR (2x125 MVar) along with 2 nos. 400kV bays at Siwani S/s</li> <li>➤ 400kV Sectionalizer bay (1 set) at at Siwani S/s</li> </ul>
3.	<b>Depiction of the scheme on Transmission Grid Map</b>	Given below
4.	<b>Upstream/downstream system associated with the scheme</b>	<p>400/220kV Jind (PG), Patran (Indi Grid), Fatehabad (PG) &amp; Sonipat (PG) are existing ISTS substation. 400kV Fatehabad S/s is interconnected with Khedar, Bhiwani and Nuhiyanwali S/s whereas Patran S/s is connected with Patiala and Kaithal S/s. 400kV Jind S/s is interconnected with Kirori, Kurukshetra and Bhiwani S/s. 400kv Sonipat S/s is interconnected with Kurukshetra &amp; Bahadurgarh S/s.</p> <p>765/400/220kV Bikaner-III PS is under implementation by Bikaner-III Neemrana transmission ltd. (POWERGRID) and proposed to be interconnected with Neemrana-II S/s through 765kV 2xD/c lines and Bikaner (PG) and Bikaner-II S/s through 400kV D/c lines. Bikaner-II PS S/s is existing substation of POWERGRID Bikaner transmission system Ltd. (POWERGRD) interconnected with Khetri S/s through 2xD/c lines at 400kv level.</p>

S. No.	Items	Details
5.	Objective / Justification	<p>1. The present scheme comprises Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-3 ) from Bikaner complex (Bikaner-IV: 6GW)</p> <p>2. Joint Study Meeting(s) were held in virtual mode on 28.12.23 and 09.01.24 with SECI, CEA, GRID-INDIA, RVPN, HVPN, PSTCL, UPPTCL and other STUs of Northern region to discuss the Transmission system for evacuation of power from Bikaner Complex as part of Rajasthan REZ Ph-IV (Part-3) scheme.</p> <p>3. In 25th CMETS-NR meeting for about 3.6 GW (Solar) as part of Rajasthan REZ Ph-IV (Part-3 :3.6GW) (Bikaner Complex) for injection at Bikaner-IV in Rajasthan. The scheme was approved in 48th TCC/70th NRPC meeting held on 17<sup>th</sup> - 18<sup>th</sup> Nov'23</p> <p><b>Estimated Cost : Rs 8600Cr (Rs 2.4Cr/MW)</b></p> <p>Based on subsequent discussions &amp; studies, a comprehensive optimal scheme for 6 GW RE potential (Bikaner) is evolved with lesser cost (Rs 1.9 Cr/MW as compared to earlier Rs 2.4 Cr/MW). Background of the modified transmission scheme is enclosed.</p> <p><b>Gist of discussion in Joint study meeting held on 28.12.23</b></p> <p>4. In the meeting, it was stated that at present connectivity of about 6 GW is already agreed/received against its total potential (6GW). As part of EHVAC system, evacuation system is planned for 2.4GW capacity (thus makes total capacity of 6 GW at Bikaner-IV PS). For EHVAC system, studies were carried out in 2026-27 time frame in solar maximized scenario and Study files for solar maximized scenario was shared on 20.12.23 with all constituents. Following transmission scheme is proposed for evacuation of power from Rajasthan REZ Ph-IV (Part-3a :2.4GW) [Bikaner complex]</p> <ul style="list-style-type: none"> <li>➤ Bikaner-IV PS – Churu 765 kV D/c line (2<sup>nd</sup>)</li> <li>➤ LILO of other ckt of 765 kV Sikar-II (PG) -Khetri (PG) D/c line at Churu S/s</li> <li>➤ Siwani – Sonipat (PG) 400 kV D/c line (Quad Moose)</li> </ul> <p>5. In the meeting, CEA stated that with Phase-IV Part-3a (2.4GW) proposed scheme, there will be no requirement of 765/400kV Churu S/s &amp; associated interconnections, which were earlier agreed in 25th CMETS-NR meeting as part of Phase-IV Part 3 (3.6GW) scheme.</p> <p>6. CEA stated that in the earlier agreed Phase-IV Part 3 (3.6 GW)</p>

S. No.	Items	Details
		<p>scheme, Churu S/s &amp; associated transmission scheme (LILO of one ckt of 765 kV Sikar-II (PG) -Khetri (PG) D/c line at Churu S/s and Churu- Fatehabad (PG) 400 kV D/c line) was considered to address issue on synchronization of line after corridor outage (765kV Bikaner-IV-Siwani D/c line) in N-1-1/N-2 in peak solar hours as emphasized by Grid-India. CEA stated that in place of Bikaner-IV – Churu D/c line, a parallel corridor towards Siwani S/s i.e. 765kV Bikaner-IV- Siwani D/c line may be considered for additional 2.4GW evacuation of power as part of scheme. With the above parallel 765kV corridor i.e. 765kV Bikaner-IV – Siwani D/c line, angular stability issue under N-1-1 contingency will be resolved as 4 nos. of 765kV circuits are available towards Siwani S/s. Further in future, if there is requirement of establishment of Churu S/s, Bikaner-IV – Siwani D/c line may be LILOed at Churu S/s.</p> <p>7. Further, it was deliberated that Transmission system for evacuation of power from Bikaner Complex as part of Rajasthan REZ Ph-IV (Part-3 :3.6GW) is being taken up for approval in next NCT. In view of that both the schemes viz Ph-IV: Part 3 (3.6GW) &amp; Ph-IV: Part 3a (2.4GW)) may be considered comprehensively for 6GW evacuation.</p> <p>8. CTU stated that they will review the proposal based on CEA observations and deliberations in meeting and evaluate various alternatives (with and wo Churu S/s) in a comprehensive manner. Accordingly, the scheme will be further deliberated and finalized in next Joint study meeting.</p> <p><b>Gist of discussion in Joint study meeting held on 09.01.24</b></p> <p>9. As per deliberation held in Joint study meeting held on 28.12.23, CTU examined both the proposals as below with two alternatives</p> <ul style="list-style-type: none"> <li>• <b>Alternative-1 :</b> Bikaner-IV- Churu- Siwani 765kV D/c &amp; Bikaner-IV- Siwani 765kV D/c &amp; associated transmission interconnection at Churu S/s i.e. LILO of one ckt of 765 kV Sikar-II (PG) -Khetri (PG) D/c line at Churu S/s and Churu- Fatehabad (PG) 400 kV D/c line &amp; onwards 400kV transmission system from Siwani S/s (Towards Jind, Patran, Sonipat)</li> <li>• <b>Alternative-2:</b> Bikaner-IV- Siwani 765kV 2xD/c line &amp; onwards 400kV transmission system from Siwani S/s (Towards Jind, Patran, Fatehabad, Sonipat)</li> </ul> <p>10. It was stated that in place of LILO of one ckt of 765 kV Bikaner-III -Neemrana-II D/c line at Bikaner-IV PS, LILO of both ckts of 400kV Bikaner II- Bikaner-III D/c line (Quad) at Bikaner-IV is proposed which will relieve the ICT loadings at</p>

S. No.	Items	Details
		<p>Bikaner(PG) &amp; Bikaner-III PS and increase the operational margin on above ICTs. Additionally, STATCOM at Siwani (+300MVAR) is proposed in Alternate-2 to mitigate low voltage issue.</p> <p>11. Further, Observations were received on 04.01.24 from Grid-India and CEA on both the alternatives for transmission system for evacuation of power from Bikaner complex as part of Rajasthan REZ Ph-IV (Part-3). Major observations are as under</p> <p><b>A. <u>Grid-India Observations/Comments</u></b></p> <ul style="list-style-type: none"> <li>During peak solar period, voltages at Siwani (730kV) and Bikaner-IV (740kV) are very low even after taking B/Rs out. If line reactors are to be taken out of service for maintaining voltages, the same needs to be mentioned along with the scheme.</li> <li>Considering the identified solar potential at Churu by SECI, establishment of Churu substation will help in tapping the solar generation in that complex. CTUIL may clarify its plan and the timelines for establishing the ISTS Churu substation, if the same is not being taken up right now.</li> </ul> <p>Additionally, Grid-India in 25th CMETS-NR meeting opined that in case of direct interconnection of Bikaner-IV to Siwani i.e. not considering 765/400kV Churu in between and onward transmission system, the Transmission system is kind of radial system connected with RE generation pocket and poses stability issues in various operational scenarios in future. Further Grid-India also requested to share Study cases for off peak scenarios. Other study related comments received from Grid-India was also deliberated in above Joint study meeting</p> <p><b>B. <u>CEA Observations/Comments</u></b></p> <ul style="list-style-type: none"> <li>Power flow in both the alternatives seems to be in order. Transmission system requirement is less in Alt 2. This would result in saving of hundreds of crore.</li> <li>In Alt 2, with Bikaner-IV- Siwani 765 kV 2xD/c line, issue of synchronization of line after corridor outage (765 kV Bikaner-IV-Siwani D/c line) in N-1-1/N-2 in peak solar hours as highlighted by Grid-India gets resolved.</li> <li>As intimated by CTUIL, connectivity applications of 5.4 GW RE has already been received against potential of 6 GW. Therefore, a comprehensive scheme for 6 GW RE evacuation could be implemented.</li> <li>In view of the above, Alt 2 seems to be preferable at present. Churu substation could be implemented in future, if required, with LILO of Bikaner-IV- Siwani 765 kV line to cater to the</li> </ul>

S. No.	Items	Details
		<p>potential in Churu district.</p> <p>12. CTU analysed both the alternatives with above changes and observations are as under :</p> <ul style="list-style-type: none"> <li>• <b>Estimated Cost of scheme is about 12% lower (about Rs 1200 Cr) in Alt-2 than Alt-1</b></li> <li>• In Alt-2, due to longer line length, under N-1 contingency of 765kV Bikaner-IV-Siwani , voltage dipping will be higher (about 10kV than Alt-1) and in the range of 730-740kV considering STATCOM at Bikaner-IV under various operating scenario. In above scenario STATCOM (<math>\pm 300</math>MVar) at Siwani may also be required (in case of operational difficulty of line reactors switching on EHVAC lines in RE pockets).</li> <li>• With Alt-2, Churu Substation may be planned with future transmission proposals i.e. Bikaner-V, other strengthening schemes based on requirement. Therefore, RE evacuation from Churu S/s will only be possible at later stage (beyond 2027) in Alt-2.</li> <li>• Comprehensive scheme for 6GW will be implemented with <b>tentative timeline of Sep'26 in Alt-2, however in Alt-1 tentative timeline for part scheme (3.6GW) was Jul'26</b></li> </ul> <p>13. Revised study files with proposed changes (LILO of both ckts of 400kV Bikaner II- Bikaner-III D/c line at Bikaner-IV PS in place of LILO of one ckt of 765 kV Bikaner-III -Neemrana-II D/c line at Bikaner-IV PS &amp; Siwani STATCOM (in Alt-2)) was circulated on 06.05.24 along with study plots.</p> <p>14. SECI stated that Churu complex was not identified in solar potential zone as part of 500GW report and thereafter potential was indicated only because the substation was planned as part of agreed Bikaner-IV transmission scheme (3.6GW), however no response from RE developers is yet received to assess &amp; harness RE potential at Churu complex. CTU stated that in above case till no confirmation received from SECI, RE potential at Churu will not be considered and may be evolved based on SECI inputs at later stage.</p> <p>15. Grid-India stated that in June solar scenario studies, pf of Punjab/Haryana load is considered near to 0.99 pf which is very optimistic. However, in real time they have faced voltage dipping issues in Punjab and Haryana intra state network and interstate network (incident to intra state) due to high reactive power drawl in paddy season. This Intra state reactive support may further reduce in paddy season due to envisaged hydro generation from J&amp;K/HP and solar generation from Rajasthan.</p> <p>16. CTU enquired to Grid-India about capacitive support by STUs/DISCOMs in real time to improve load pf and mitigate</p>

S. No.	Items	Details
		<p>voltage dipping issues in peak loading season. Grid-India stated that in real time capacitor bank support is available in Punjab, however in Haryana low voltage issue is still persist in June-July peak loading season.</p> <p>17. CTU stated that in the integrated planning of transmission system, reactive power (MVar) drawl/absorption requirement at load end to be compensated at intra state network level only and ISTS system is not supposed to be planned to compensate MVar injection/ drawl from intra state network under various operating scenario as it will also increase losses due to MVar flow to downstream network from upstream network which is not desirable. In view of that load pf (<math>&gt;0.98</math>pf) may be maintained by STUs/DISCOMs specially in Punjab &amp; Haryana through new capacitive banks, if required and also provide progress of installing new capacitors in monthly OCC/NRPC meetings.</p> <p>18. Considering above, it was decided that STUs specially Haryana may assess the reactive compensation requirement for peak load season in next 2-3 years and may take necessary actions to maintain pf and mitigating low voltage issues in intra state network. HVPN told that they have planned capacitor banks installation at downstream network.</p> <p>19. Grid-India highlighted the voltage dipping issue at Siwani substation (<math>\sim 730</math>kV) in N-1 contingency. The voltage will further decreases to 725kV, with no STATCOM reactive support (STATCOM support reserved for dynamic support only).CEA stated that line reactors on EHVAC lines can be switched off during low voltage as it will give direct relief to improve voltage to 15-20kV, however operational difficulties in switching on/off of line reactors may be deliberated. Further STATCOM at Siwani S/s may be considered +600MVar (earlier +300MVar proposed in scheme) along with MSC/MSR to provide voltage support.</p> <p>20. Grid-India stated that earlier, voltage in Fatehgarh complex was observed up to 720kV in peak solar hours and under such condition, sequential line reactor switching was carried out in for volage control, however they have faced resistance from TSPs regarding line reactor switching and line opening for voltage control. In view of that provision of switching of line reactors may be clearly stipulated in the RfP of proposed scheme.</p> <p>21. CEA stated that line reactor switching in RE pockets is in general operational requirement and need not to be specific for one scheme and should be carried out in real time as per Grid requirement. CTU stated that presently as per IEC standard followed for breaker duty cycle, class M2 circuit breakers i.e frequently operated CBs for special service requirements and designed so as to require only limited maintenance, mechanical type tested for 10,000 operations,</p>



S. No.	Items	Details
		<p>however whenever such line reactor switching issue raised by TSP in future, it should come with proper reasoning &amp; justification from TSP side.</p> <p>22. Grid-India stated that in steady state study file, STATCOMs along with MSC/MSR may be kept off for worst scenario (reserved for dynamic range). To mitigate low voltage issues without STATCOM support, line reactors to be switched off as per requirement.</p> <p>23. CTU stated that in base case voltage at Siwani S/s is about 733kV and in N-1 contingency of one ckt of Bikaner-IV-Siwani 2xD/c lines, voltage may further reduce to 728kV. In above scenario, voltage will be improved to 740kV considering STATCOM (at Bikaner-IV and Siwani) and 748kV with STATCOM+MSC at Bikaner-IV &amp; Siwani S/s. However, in case STATCOM along with MSCs is kept off as suggested by Grid-India and line reactor switching is carried out, it will further improve the voltage of Siwani S/s by 750kV (line reactors on other 3 ckts of 765kV Bikaner-IV-Siwani kept off). In view of that it is recommended that steady state voltage to be maintained over 750kV in planning files considering line reactor switching (760kV at Siwani S/s in present case with line reactor on 765kV Bikaner-IV - Siwani kept off) . Accordingly, it was decided by CEA, CTU &amp; Grid-India that line reactor switching may be carried out in a sequential manner in RE pockets for better voltage control.</p> <p>24. CTU stated that in Feb solar maximized scenario, loading of 400kV RAPP- Shujalpur D/c line is critical (about 950MW) in N-1 contingency. To relieve loading of above line, EHVAC corridor from RAPP generating station or other transmission corridor in parallel to above line to be planned. In 500GW report also, 765kV Ajmer-Kota-Shujalpur transmission corridor was planned to integrate RE complexes of Ajmer. In view of that, it was decided that loading of above line will be reviewed with progress of RE generation projects at Rajasthan and planning to be carried out in next phase to relieve loading on above line. Grid-India &amp; CEA agreed for the same</p> <p>25. Grid-India enquired that timeline for implementation of two nos. of Bikaner-IV-Siwani D/c lines will be same or different. CEA stated that scheme will be segregated in various packages and efforts to be made that all the packages are implemented simultaneously with implementation timeline decided in NCT meeting. Grid-India stated that as per past experiences, there will be always some mismatch (up to 6 months) in implementation time of two parallel double ckt corridors from same RE pooling stations. In such situation, in the event of only one corridor i.e. 765kV Bikaner-IV-Siwani D/c is commissioned and 2nd 765kV D/c gets delayed, RE generation of 2-3GW may only be evacuated in base case with one D/c and in N-1 contingency, however in N-1-1</p>

S. No.	Items	Details
		<p>contingency, restoration of line becomes delayed in solar peak hours and shall impact the RE generation.</p> <p>26. CTU stated that considering HVPNL existing &amp; proposed interconnections, interconnections as well as GNA granted to bulk consumer for 100MW GNA at 220kV Jind(PG), 400/220kV ICTs (3x500 MVA) at Jind(PG) are critically loaded in N-1 contingency. Grid-India stated that at present 400/220kV Jind(PG) S/s has 2x500MVA ICTs &amp; 4 nos. of 220kV interconnections whereas 3<sup>rd</sup> ICT (500MVA) in ISTS by POWERGRID and 4 nos. of STU feeders are under implementation by HVPNL. At present loading on 2x500MVA ICT is about 500MW (peak) and in view of that ICT augmentation at Jind may considered at later stage with commissioning of HVPNL interconnections &amp; 400/220kV ICT (3<sup>rd</sup>) at Jind(PG). HVPNL stated that 400kV Munakh S/s for power evacuation of YTPP (800MW) is under planning. Additionally, 640MVA load will be envisaged progressively from 2027 by IOCL. Accordingly, requirements will be assessed based on Grid-India operational feedback report and loading diversion in planning studies considering HVPNL proposal for evacuation of power from YTPP generation (800MW). CEA agreed for the same</p> <p>27. Considering grant of connectivity to RE generators in Bikaner complex as well as for evacuation of power beyond above complex, transmission scheme (as per S.No.2) was agreed in Joint study meetings (28.12.23 &amp; 09.01.24) as well as in 27<sup>th</sup> CMETS-NR meeting held on 10.01.24 for evacuation of power from Bikaner Complex as part of Rajasthan REZ Ph-IV (Part-3 : 6 GW). The transmission scheme was discussed and agreed in the 71<sup>st</sup> NRPC meeting held on 29.01.24</p>
6.	Estimated Cost	<b>Rs. 11325.86 Cr. (Rs 1.88 Cr./MW)</b>
7.	Impact on the total Annual Transmission charges in % along with the existing ATC	<p>A. ATC (considering Levelized Tariff @15% of estimated cost): Rs 1698.88 Cr.</p> <p>B. Present ATC: Rs. ₹46043.07 Cr.*</p> <p>C. A/B (%): 3.689 %</p>
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	24 months from allocation of project
10.	Inclusion of any wild life/protected area along the transmission line route	Line lengths were reviewed in Gati Shakti portal w.r.t. any wildlife/protected area, airport along the transmission line route No major NP, WLS, other protected areas observed on bee line of transmission line under the scheme. However, for details of other forest/protected areas survey is required to be done.
11.	Deliberations with RPC along with their comments	The transmission scheme was discussed and agreed in the 71 <sup>st</sup> NRPC meeting held on 29.01.24

S. No.	Items	Details
12.	System Study for evolution of the proposal	<p>Studies discussed and agreed in following meeting</p> <ul style="list-style-type: none"> <li>Joint study meeting (s) held on 28.12.23 and 09.01.24</li> <li>27<sup>th</sup> CMETS-NR meeting held on 10.01.24 71<sup>st</sup> NRPC meeting held on 29.01.24</li> </ul>

4.1.4 Accordingly, the two alternatives of the scheme with detailed scope is given below:

**Alternative-1: 2 Packages**

**A. REZ Ph-IV (Part 3: 6GW) (Bikaner Complex) :Part A**

**Estimated Cost: Rs 5968.5 Cr**

Sl. No.	Description of Transmission Element	Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)
1	<p>➤ Establishment of 6x1500 MVA, 765/400 kV &amp; 6x500 MVA, 400/220 kV Bikaner-IV Pooling Station along with 2x240 MVar (765kV) &amp; 2x125 MVar (420kV) Bus Reactors at a suitable location near Bikaner</p> <p><b>Future provisions at Bikaner-IV PS: Space for</b></p> <ul style="list-style-type: none"> <li>765 kV line bays along with switchable line reactors – 8 nos.</li> <li>765kV Bus Reactor along with bay: 1 no.</li> <li>400 kV line bays along with switchable line reactor –4 nos.</li> <li>400 kV line bays–2 nos.</li> <li>400/220kV ICT along with bays -4 nos.</li> <li>400 kV Bus Reactor along with bay: 1 no.</li> <li>400kV Sectionalizer bay: 1 set</li> <li>220 kV line bays for connectivity of RE Applications -5 nos.</li> <li>220kV Sectionalizer bay: 2 sets</li> <li>220 kV BC (2 nos.) bays and 220 kV TBC (2 nos.) bays</li> </ul>	<p><b>Bikaner-IV PS -AIS</b></p> <ul style="list-style-type: none"> <li>765/400 kV 1500 MVA ICTs- 6 nos. (19x500 MVA including one spare unit)</li> <li>400/220 kV 500 MVA ICTs -6 no.</li> <li>765 kV line bays – 2 nos. (for 765kV interconnection with Siwani S/s)</li> <li>400 kV line bays - 4 nos.(For LILO of both ckts of Bikaner II PS- Bikaner III PS)</li> <li>765 kV ICT bays-6 no.</li> <li>400 kV ICT bays- 12 no.</li> <li>220 kV ICT bays- 6 no.</li> <li>240 MVar Bus Reactor-2 no. (7x80 MVar, including one spare unit)</li> <li>765 kV Bus reactor bays-2 no.</li> <li>125 MVar Bus Reactor-2 nos.</li> <li>400 kV Bus reactor bays- 2 no.</li> <li>220 kV line bays: 6 nos. (for RE connectivity)</li> <li>400kV line bays (for RE connectivity) - 3 nos.</li> <li>400kV Sectionalizer bay: 1 set</li> </ul>

		<ul style="list-style-type: none"> <li>• 220 kV Sectionalizer bay: 1 set</li> <li>• 220 kV BC (2 nos.) bays and 220 kV TBC (2 nos.) bays</li> <li>• 400kV bays: 2 nos. (for STATCOM)</li> </ul>
2	STATCOM (2x±300MVar) along with MSC (4x125 MVar) & MSR (2x125 MVar) at Bikaner-IV PS	<ul style="list-style-type: none"> <li>• STATCOM (2x±300MVar) along with MSC (4x125 MVar) &amp; MSR (2x125 MVar)</li> </ul>
3	LILO of both ckts of Bikaner II PS- Bikaner III PS (Quad) direct line at Bikaner-IV PS	Length -20 km (Quad) (LILO length)
4	Bikaner-IV PS – Siwani 765 kV D/c line along with 240 MVar switchable line reactor for each circuit at each end	<p>Line Length -260 km</p> <ul style="list-style-type: none"> <li>• 765 kV, 240 MVar switchable line reactors at Bikaner-IV PS end– 2 nos.</li> <li>• 765 kV, 240 MVar switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 765kV, 240 MVar switchable line reactors at Bikaner-IV PS end – 2 nos.</li> <li>• Switching equipment for 765kV, 240 MVar switchable line reactors at Siwani S/s end – 2 nos.</li> </ul>
5	Siwani– Fatehabad (PG) 400 kV D/c line (Quad)	Line Length ~80 km (Quad)
6	Siwani – Patran (Indi Grid) 400 kV D/c line (Quad) along with 80 MVar switchable line reactor for each circuit at Siwani S/s end	<p>Line Length -160 km (Quad)</p> <ul style="list-style-type: none"> <li>• 420 kV, 80 MVar switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 420kV, 80 MVar switchable line reactors at Siwani S/s end – 2 nos.</li> <li>• 400kV GIS duct :700m at Patran S/s</li> </ul>
7	2nos. 400 kV line bays each at Fatehabad (PG) & Patran (Indi Grid) S/s	<ul style="list-style-type: none"> <li>• 400 kV line bays at Fatehabad (PG) S/s – 2 nos.</li> <li>• 400 kV line bays at Patran (Indi Grid) S/s – 2 nos.</li> </ul>
8	2nos. 765 kV line bays at Siwani S/s	<ul style="list-style-type: none"> <li>• 765 kV line bays at Siwani S/s – 2 nos.</li> </ul>

#### **B. REZ Ph-IV (Part 3: 6GW) (Bikaner Complex) :Part B**

**Estimated Cost: Rs 5357.36 Cr**

Sl. No.	Description of Transmission Element	Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)
1	<p>➤ Establishment of 765/400kV, 6x1500 MVA S/s at suitable location near Siwani (Distt. Bhiwani) along with 2x240 MVar (765kV) Bus Reactor &amp; 2x125 MVar (420kV) Bus Reactor</p> <p><b>Future provisions at Siwani S/s:</b></p> <p><b>Space for</b></p> <ul style="list-style-type: none"> <li>▪ 765 kV line bays along with switchable line reactors – 8</li> <li>▪ 765kV Bus Reactor along with bay: 1 nos.</li> <li>▪ 400 kV line bays along with switchable line reactor –8 nos.</li> <li>▪ 400 kV Bus Reactor along with bays: 1 no.</li> <li>▪ 400kV Sectionalizer bay: 1 set</li> </ul>	<p><b>Siwani S/s- AIS</b></p> <ul style="list-style-type: none"> <li>• 765/400 kV 1500 MVA ICTs- 6 nos. (19x500 MVA including one spare unit)</li> <li>• 765 kV ICT bays-6 no.</li> <li>• 400 kV ICT bays- 6 no.</li> <li>• 765 kV line bays – 2 nos. (for 765kV interconnection with Bikaner-IV PS)</li> <li>• 400 kV line bays – 4 nos. (for 400kV interconnections)</li> <li>• 240 MVar Bus Reactor-2 no. (7x80 MVar, including one spare unit)</li> <li>• 765 kV Bus reactor bays-2 no.</li> <li>• 125 MVar Bus Reactor-2 nos.</li> <li>• 400 kV Bus reactor bays- 2 nos.</li> <li>• 400kV Sectionalizer bay: 1 set</li> <li>• 400kV bays : 2 nos. (for STATCOM)</li> </ul>
2	Bikaner-IV PS – Siwani 765 kV D/c (2 <sup>nd</sup> ) line along with 240 MVar switchable line reactor for each circuit at each end	<p>Line Length -260 km</p> <ul style="list-style-type: none"> <li>• 765 kV, 240 MVar switchable line reactors at Bikaner-IV PS end– 2 nos.</li> <li>• 765 kV, 240 MVar switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 765kV, 240 MVar switchable line reactors at Bikaner-IV PS end – 2 nos.</li> <li>• Switching equipment for 765kV, 240 MVar switchable line reactors at Siwani S/s end – 2 nos.</li> </ul>
3	STATCOM (2x±300MVar) along with MSC (4x125 MVar) & MSR (2x125 MVar) at Siwani S/s	<ul style="list-style-type: none"> <li>• STATCOM (2x±300MVar) along with MSC (4x125 MVar) &amp; MSR (2x125 MVar)</li> </ul>
4	Siwani – Sonipat (PG) 400 kV D/c line (Quad) along with 63 MVar switchable line reactor for each circuit at Siwani S/s end	<p>Line Length -150 km (Quad)</p> <ul style="list-style-type: none"> <li>• 420 kV, 63 MVar switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 420kV, 63</li> </ul>

		MVAr switchable line reactors at Siwani S/s end – 2 nos.
5	Siwani – Jind (PG) 400 kV D/c line (Quad)	Line Length -110 km (Quad)
6	2 nos. 400 kV line bays each at Jind(PG) & Sonipat (PG) S/s	<ul style="list-style-type: none"> <li>• 400 kV line bays at Jind (PG) S/s – 2 nos.</li> <li>• 400 kV line bays at Sonipat (PG) S/s – 2 nos.</li> </ul>
7	2 nos. 765 kV line bays at Bikaner-IV PS	<ul style="list-style-type: none"> <li>• 765 kV line bays at Bikaner-IV PS – 2 nos.</li> </ul>

### Alternative-2: 3 Packages

#### A. REZ Ph-IV (Part 3: 6GW) (Bikaner Complex) :Part A

**Estimated Cost: Rs 4715.08 Cr**

Sl. No.	Description of Transmission Element	Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)
1	<p>➤ Establishment of 6x1500 MVA, 765/400 kV &amp; 6x500 MVA, 400/220 kV Bikaner-IV Pooling Station along with 2x240 MVAr (765kV) &amp; 2x125 MVAr (420kV) Bus Reactors at a suitable location near Bikaner</p> <p><b>Future provisions at Bikaner-IV PS: Space for</b></p> <ul style="list-style-type: none"> <li>▪ 765 kV line bays along with switchable line reactors – 8 nos.</li> <li>▪ 765kV Bus Reactor along with bay: 1 no.</li> <li>▪ 400 kV line bays along with switchable line reactor –4 nos.</li> <li>▪ 400 kV line bays–2 nos.</li> <li>▪ 400/220kV ICT along with bays -4 nos.</li> <li>▪ 400 kV Bus Reactor along with bay:</li> </ul>	<p><b>Bikaner-IV PS -AIS</b></p> <ul style="list-style-type: none"> <li>• 765/400 kV 1500 MVA ICTs- 6 nos. (19x500 MVA including one spare unit)</li> <li>• 400/220 kV 500 MVA ICTs -6 no.</li> <li>• 765 kV line bays – 2 nos. (for 765kV interconnection with Siwani S/s)</li> <li>• 400 kV line bays - 4 nos.(For LILO of both ckts of Bikaner II PS- Bikaner III PS)</li> <li>• 765 kV ICT bays-6 no.</li> <li>• 400 kV ICT bays- 12 no.</li> <li>• 220 kV ICT bays- 6 no.</li> <li>• 240 MVAr Bus Reactor-2 no. (7x80 MVAr, including one spare unit)</li> <li>• 765 kV Bus reactor bays-2 no.</li> <li>• 125 MVAr Bus Reactor-2 nos.</li> <li>• 400 kV Bus reactor bays- 2 no.</li> <li>• 220 kV line bays: 6 nos. (for RE</li> </ul>

	<i>1 no.</i> <ul style="list-style-type: none"> <li>400kV Sectionalizer bay: 1 set</li> <li>220 kV line bays for connectivity of RE Applications -5 nos.</li> <li>220kV Sectionalizer bay: 2 sets</li> <li>220 kV BC (2 nos.) bays and 220 kV TBC (2 nos.) bays</li> </ul>	connectivity) <ul style="list-style-type: none"> <li>400kV line bays (for RE connectivity)- 3 nos.</li> <li>400kV Sectionalizer bay: 1 set</li> <li>220 kV Sectionalizer bay: 1 set</li> <li>220 kV BC (2 nos.) bays and 220 kV TBC (2 nos.) bays</li> <li>400kV bays : 2 nos. (for STATCOM)</li> </ul>
2	STATCOM (2x±300MVar) along with MSC (4x125 MVar) & MSR (2x125 MVar) at Bikaner-IV PS	<ul style="list-style-type: none"> <li>STATCOM (2x±300MVar) along with MSC (4x125 MVar) &amp; MSR (2x125 MVar)</li> </ul>
3	LILLO of both ckts of Bikaner II PS- Bikaner III PS (Quad) direct line at Bikaner-IV PS	Length -20 km (Quad) (LILLO length)
4	Bikaner-IV PS – Siwani 765 kV D/c line along with 240 MVar switchable line reactor for each circuit at each end	Line Length -260 km <ul style="list-style-type: none"> <li>765 kV, 240 MVar switchable line reactors at Bikaner-IV PS end– 2 nos.</li> <li>765 kV, 240 MVar switchable line reactors at Siwani S/s end– 2 nos.</li> <li>Switching equipment for 765kV, 240 MVar switchable line reactors at Bikaner-IV PS end – 2 nos.</li> <li>Switching equipment for 765kV, 240 MVar switchable line reactors at Siwani S/s end – 2 nos.</li> </ul>
5	2 nos. 765 kV line bays at Siwani S/s	<ul style="list-style-type: none"> <li>765 kV line bays at Siwani S/s – 2 nos.</li> </ul>

#### **B. REZ Ph-IV (Part 3: 6GW) (Bikaner Complex) :Part B**

**Estimated Cost: Rs 4041.15 Cr**

<b>Sl. No.</b>	<b>Description of Transmission Element</b>	<b>Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)</b>
1	➤ Establishment of 765/400kV, 6x1500 MVA S/s at suitable location near Siwani (Distt. Bhiwani) along with 2x240 MVar (765kV) Bus Reactor & 2x125 MVar (420kV) Bus Reactor*	<b>Siwani S/s- AIS</b> <ul style="list-style-type: none"> <li>765/400 kV 1500 MVA ICTs- 6 nos. (19x500 MVA including one spare unit)</li> <li>765 kV ICT bays-6 no.</li> <li>400 kV ICT bays- 6 no.</li> </ul>

	<b>Future provisions at Siwani S/s*:</b>  <b>Space for</b> <ul style="list-style-type: none"> <li>▪ 765 kV line bays along with switchable line reactors – 8</li> <li>▪ 765kV Bus Reactor along with bay: 1 nos.</li> <li>▪ 400 kV line bays along with switchable line reactor –12 nos.</li> <li>▪ 400 kV Bus Reactor along with bays: 1 no.</li> <li>▪ 400kV Sectionalizer bay: 1 set</li> </ul>	<ul style="list-style-type: none"> <li>• 765 kV line bays – 2 nos. (for 765kV interconnection with Bikaner-IV PS)</li> <li>• 240 MVar Bus Reactor-2 no. (7x80 MVar, including one spare unit)</li> <li>• 765 kV Bus reactor bays-2 no.</li> <li>• 125 MVar Bus Reactor-2 nos.</li> <li>• 400 kV Bus reactor bays- 2 nos.</li> <li>• 400kV Sectionalizer bay: 1 set</li> <li>• 400kV bays : 2 nos. (for STATCOM)</li> </ul>
2	Bikaner-IV PS – Siwani 765 kV D/c (2 <sup>nd</sup> ) line along with 240 MVar switchable line reactor for each circuit at each end	Line Length -260 km  <ul style="list-style-type: none"> <li>• 765 kV, 240 MVar switchable line reactors at Bikaner-IV PS end– 2 nos.</li> <li>• 765 kV, 240 MVar switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 765kV, 240 MVar switchable line reactors at Bikaner-IV PS end – 2 nos.</li> <li>• Switching equipment for 765kV, 240 MVar switchable line reactors at Siwani S/s end – 2 nos.</li> </ul>
3	STATCOM (2x±300MVar) along with MSC (4x125 MVar) & MSR (2x125 MVar) at Siwani S/s	• STATCOM (2x±300MVar) along with MSC (4x125 MVar) & MSR (2x125 MVar)
4	2 nos. 765 kV line bays at Bikaner-IV PS	• 765 kV line bays at Bikaner-IV PS – 2 nos.

### **C. REZ Ph-IV (Part 3: 6GW) (Bikaner Complex) :Part C**

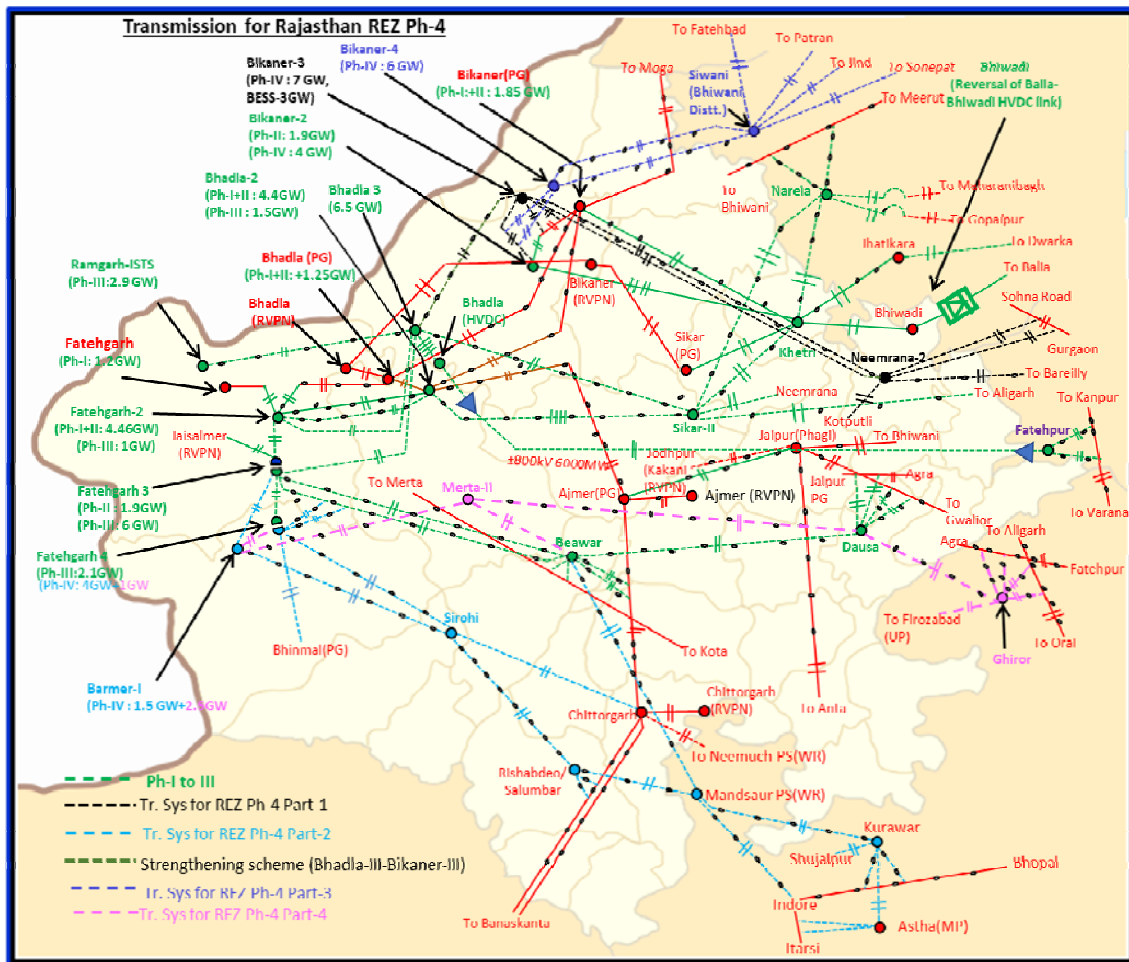
**Estimated Cost: Rs 2569.63**

Sl. No.	Description of Transmission Element	Scope of work  (Type of Substation/Conductor capacity/km/no. of bays etc.)
1	Siwani – Jind (PG) 400 kV D/c line (Quad)	Line Length -110 km (Quad)  <ul style="list-style-type: none"> <li>• 400 kV line bays at Siwani S/s – 2 nos.</li> <li>• 400 kV line bays at Jind (PG) – 2 nos.</li> </ul>



2	Siwani – Patran (Indi Grid) 400 kV D/c line (Quad) along with 80 MVAR switchable line reactor for each circuit at Siwani S/s end	Line Length -160 km (Quad) <ul style="list-style-type: none"> <li>• 400 kV line bays at Siwani S/s – 2 nos.</li> <li>• 400 kV line bays at Patran (Indi Grid) S/s – 2 nos.</li> <li>• 420 kV, 80 MVAR switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 420kV, 80 MVAR switchable line reactors at Siwani S/s end – 2 nos.</li> <li>• 400kV GIS duct :700m at Patran S/s</li> </ul>
3	Siwani – Sonipat (PG) 400 kV D/c line (Quad) along with 63 MVAR switchable line reactor for each circuit at Siwani S/s end	Line Length -150 km (Quad) <ul style="list-style-type: none"> <li>• 400 kV line bays at Siwani S/s – 2 nos.</li> <li>• 400 kV line bays at Sonipat S/s – 2 nos.</li> <li>• 420 kV, 63 MVAR switchable line reactors at Siwani S/s end– 2 nos.</li> <li>• Switching equipment for 420kV, 63 MVAR switchable line reactors at Siwani S/s end – 2 nos.</li> </ul>
4	Siwani– Fatehabad (PG) 400 kV D/c line (Quad)	Line Length ~80 km <ul style="list-style-type: none"> <li>• 400 kV line bays at Siwani S/s – 2 nos.</li> <li>• 400 kV line bays at Fatehabad S/s – 2 nos.</li> </ul>

4.1.5 Schematic of the above scheme is given below:



4.1.6 Members may deliberate.

#### 4.2 Transmission Scheme for integration of Davanagere / Chitradurga REZ in Karnataka

4.2.1 The Davanagere / Chitradurga PS, Bellary PS and Bijapur PS were initially proposed to be integrated with Koppal-II PS for onward evacuation of power from these REZs. However, CTU has received large number of applications from various RE developers seeking connectivity at Koppal-II PS / Gadag-II PS beyond the planned evacuation capacity and without BESS. Accordingly, the transmission system beyond Koppal-II PS may not be able to cater to the requirement of Davanagere / Chitradurga REZ, Bellary REZ and Bijapur REZ.

4.2.2 In view of the above, the interconnection of Davanagere/Chitradurga, Bijapur and Bellary REZs was reviewed and separate transmission system for evacuation of power is identified. The revised transmission schemes were discussed in the 25<sup>th</sup> CMETS-SR held on 28.11.2023. Further the scheme was also discussed and agreed by all the

Southern Region constituents in the Joint Study meeting held on 21-22<sup>nd</sup> December 2023.

4.2.3 The transmission scheme was discussed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023 and SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme.

4.2.4 Detailed scope of the scheme is given below:

S. No.	Items	Details						
1.	Name of Scheme	Transmission Scheme for integration of Davanagere / Chitradurga REZ in Karnataka						
2.	Scope of the scheme	<p><b>Phase-A</b></p> <table> <tr> <th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr> <tr> <td>1.</td><td> <p>Establishment of 765/400kV 3x1500 MVA, 400/220kV 3x500 MVA Pooling Station near Davanagere / Chitradurga, Karnataka with provision of two (2) sections of 4500 MVA each at 400kV level and provision of four (4) sections of 2500 MVA each at 220kV level</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 4 nos.</li> <li>• 765kV ICT bays – 4 nos.</li> <li>• 400kV ICT bays – 4 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 765kV line bays – 8 nos. (with provision for SLR)</li> <li>• 400kV line bays – 10 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Bus Sectionalizer : 2 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> <li>• 400kV Bus Sectionalizer : 1 set</li> </ul> </td><td> <ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 765kV line bays – 4 nos. (at Davanagere / Chitradurga PS for termination of LILO of Koppal-II-Narendra (New) 765kV D/c line)</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220kV Bus Sectionalizer : 1 set</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul> </td></tr> </table>	Sl. No.	Scope of the Transmission Scheme	Capacity /km	1.	<p>Establishment of 765/400kV 3x1500 MVA, 400/220kV 3x500 MVA Pooling Station near Davanagere / Chitradurga, Karnataka with provision of two (2) sections of 4500 MVA each at 400kV level and provision of four (4) sections of 2500 MVA each at 220kV level</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 4 nos.</li> <li>• 765kV ICT bays – 4 nos.</li> <li>• 400kV ICT bays – 4 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 765kV line bays – 8 nos. (with provision for SLR)</li> <li>• 400kV line bays – 10 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Bus Sectionalizer : 2 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> <li>• 400kV Bus Sectionalizer : 1 set</li> </ul>	<ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 765kV line bays – 4 nos. (at Davanagere / Chitradurga PS for termination of LILO of Koppal-II-Narendra (New) 765kV D/c line)</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220kV Bus Sectionalizer : 1 set</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul>
Sl. No.	Scope of the Transmission Scheme	Capacity /km						
1.	<p>Establishment of 765/400kV 3x1500 MVA, 400/220kV 3x500 MVA Pooling Station near Davanagere / Chitradurga, Karnataka with provision of two (2) sections of 4500 MVA each at 400kV level and provision of four (4) sections of 2500 MVA each at 220kV level</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 4 nos.</li> <li>• 765kV ICT bays – 4 nos.</li> <li>• 400kV ICT bays – 4 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 765kV line bays – 8 nos. (with provision for SLR)</li> <li>• 400kV line bays – 10 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Bus Sectionalizer : 2 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> <li>• 400kV Bus Sectionalizer : 1 set</li> </ul>	<ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 765kV line bays – 4 nos. (at Davanagere / Chitradurga PS for termination of LILO of Koppal-II-Narendra (New) 765kV D/c line)</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220kV Bus Sectionalizer : 1 set</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul>						

		2.	LILO of Narendra New – Madhugiri 765kV D/c line at Davanagere / Chitradurga 765/400kV PS (~40 km) {with 240 MVar SLR at both ends on Narendra New – Davanagere section (~280 km) and 330 MVar SLR at Davanagere end on Davanagere – Madhugiri section (~200 km)}	~40 km <ul style="list-style-type: none"> <li>• 765 kV, 240 MVar SLR at Davanagere / Chitradurga PS – 2 nos. (7x80 MVar inc. 1 switchable spare unit)</li> <li>• 765 kV, 240 MVar SLR at Narendra New – 2 nos. (7x80 MVar inc. 1 switchable spare unit)</li> <li>• 765 kV, 330 MVar SLR at Davanagere / Chitradurga PS – 2 nos. (6x80 MVar switchable spare units)</li> </ul>
		3.	2x330 MVar (765kV) bus reactors at Davanagere/ Chitradurga PS	<ul style="list-style-type: none"> <li>• 765 kV, 330 MVar Bus Reactor – 2 nos. (7x110 MVar inc. 1 switchable spare unit for both bus reactor and line reactor)</li> <li>• 765 kV Bus Reactor bays – 2 nos.</li> </ul>
		4.	Upgradation of Narendra New – Madhugiri 765kV D/c line (presently charged at 400kV level) at its rated 765kV voltage level	<ul style="list-style-type: none"> <li>• 765kV line bays – 2 nos. (at Narendra New)</li> <li>• 765kV line bays – 2 nos. (at Madhugiri)</li> </ul>
		5.	Upgradation of Madhugiri {Tumkur(Vasantnarsapura)} to its rated voltage of 765kV level alongwith 3x1500 MVA, 765/400kV ICTs and 2x330 MVar, 765kV bus reactors #	<ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 765 kV, 330 MVar Bus Reactor – 2 nos. {7x110 MVar inc. 1 spare unit}</li> <li>• 765 kV Bus Reactor bays – 2 nos.</li> </ul>
		6.	400 kV line reactors (80 MVar) on both ends of Narendra New – Madhugiri 765kV D/c line shall be utilized as bus reactors at respective 400kV substations based on	

		<table><tr><td></td><td>availability of bays or may be utilized as line reactor / bus reactor at other line / substation as per requirements.</td><td></td></tr></table>		availability of bays or may be utilized as line reactor / bus reactor at other line / substation as per requirements.							
	availability of bays or may be utilized as line reactor / bus reactor at other line / substation as per requirements.										
		<div>Phase-B</div> <table><tr><th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr><tr><td>1.</td><td>Augmentation of 1x1500 MVA, 765/400kV ICT at Davanagere / Chitradurga PS</td><td><ul style="list-style-type: none"><li>• 765/400kV, 1500 MVA, ICTs – 1 nos.</li><li>• 765kV ICT bays – 1 nos.</li><li>• 400kV ICT bays – 1 nos.</li></ul></td></tr><tr><td>2.</td><td>Augmentation of 1x500 MVA, 400/220kV ICT at Davanagere / Chitradurga PS</td><td><ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 1 nos.</li><li>• 400kV ICT bays – 1 nos.</li><li>• 220kV ICT bays – 1 nos.</li></ul></td></tr></table> <p><i># Upgradation of Madhugiri {Tumkur(Vasanthnarsapura)} to its rated 765kv level was earlier allocated to POWERGRID for implementation through RTM route under the scheme “Common transmission system strengthening in Southern Region for enabling evacuation and export of power from Solar &amp; Wind Energy Zones in Southern Region” vide MOP OM No.15/3/2018-Trans-Pt(1) dated 23.01.2020 (Copy of OM attached at Annexure-IX)</i></p>	Sl. No.	Scope of the Transmission Scheme	Capacity /km	1.	Augmentation of 1x1500 MVA, 765/400kV ICT at Davanagere / Chitradurga PS	<ul style="list-style-type: none"><li>• 765/400kV, 1500 MVA, ICTs – 1 nos.</li><li>• 765kV ICT bays – 1 nos.</li><li>• 400kV ICT bays – 1 nos.</li></ul>	2.	Augmentation of 1x500 MVA, 400/220kV ICT at Davanagere / Chitradurga PS	<ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 1 nos.</li><li>• 400kV ICT bays – 1 nos.</li><li>• 220kV ICT bays – 1 nos.</li></ul>
Sl. No.	Scope of the Transmission Scheme	Capacity /km									
1.	Augmentation of 1x1500 MVA, 765/400kV ICT at Davanagere / Chitradurga PS	<ul style="list-style-type: none"><li>• 765/400kV, 1500 MVA, ICTs – 1 nos.</li><li>• 765kV ICT bays – 1 nos.</li><li>• 400kV ICT bays – 1 nos.</li></ul>									
2.	Augmentation of 1x500 MVA, 400/220kV ICT at Davanagere / Chitradurga PS	<ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 1 nos.</li><li>• 400kV ICT bays – 1 nos.</li><li>• 220kV ICT bays – 1 nos.</li></ul>									
3.	Depiction of the scheme on Transmission Grid Map	<b>Given below</b>									
4.	Upstream/downstream system associated with the scheme	Not applicable									
5.	Objective / Justification	<p>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 181.5 GW RE Potential in the States of Andhra Pradesh, Telangana, Karnataka, Rajasthan, Madhya Pradesh and Tamil Nadu (Offshore). Out of the identified 181.5 GW Potential, 86 GW RE Potential is identified in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region.</p> <p>The transmission system for integration of 181.5 GW RE Potential has 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.</p>									

Out of the identified (86 GW) RE Potential in Southern Region, 17 GW has been identified in the State of Karnataka. MNRE have indicated that out of the 17 GW REZ potential in Karnataka, transmission system for evacuation capacity of about 11 GW may be identified considering the Energy Storage System. The details of district wise potential is as below:

District	Potential (GW)		Total (GW)	Dispatch (90% S + 55% W)	BESS	Evacuation capacity to be planned (GW)
	Wind	Solar				
Koppal	2	2	4	2.9	1	2
Gadag	2	2	4	2.9	1	2
Davanagere / Chitradurga	2	2	4	2.9	1	2
Bijapur	2		2	1.1		2
Bellary		1.5	1.5	1.35		1.5
Tumkur		1.5	1.5	1.35		1.5
Total	8	9	17	12.5	3	11

The transmission system for integration of additional RE potential in Koppal-II and Gadag-II area of Karnataka has already been agreed and is under bidding. Further, for optimal utilization of transmission system, interconnection of RE Zones in Karnataka viz. Gadag-II, Davanagere/Chitradurga, Bijapur and Bellary area were planned earlier at Koppal-II PS itself through 400kV lines for further transfer of power beyond Koppal-II PS.

However, CTU has received large number of applications from various RE developers seeking connectivity at Koppal-II PS and Gadag-II PS beyond the planned evacuation capacity and without BESS. Presently, the total connectivity applications granted / agreed for grant at Koppal-II are about 2950 MW and Gadag-II are about 3900 MW which has already surpassed the capacity of evacuation transmission system identified considering the dispatch factors & BESS in CEA's 500 GW report.

Accordingly, it is observed that the transmission system beyond Koppal-II PS for evacuation of power shall be able to cater to the evacuation requirements of connectivity at Gadag-II PS and Koppal-II PS. Further, the interconnection of Davanagere/Chitradurga, Bijapur and Bellary REZs needs to be reviewed and separate transmission system for evacuation of power may be identified. CTU has already received connectivity of about 300 MW at Bijapur PS and 250 MW at Davanagere/Chitradurga.

Presently, Narendra New – Madhugiri 765kV D/c line is under operation at 400kV level. It is proposed to upgrade Narendra New – Madhugiri 765kV D/c line (presently charged at 400kV level) at its rated 765kV voltage level. Further, Davanagere REZ is proposed to be integrated with the grid through LILO of

		<p>Narendra New – Madhugiri 765kV D/c line at Davanagere/Chitradurga 765/400kV PS. Further, for optimal utilization of transmission system, Bellary REZ is proposed to be integrated with Davanagere/Chitradurga PS through Bellary – Davanagere/Chitradurga PS 400kV (Quad ACSR moose) D/c line. Accordingly, Davanagere/Chitradurga PS is being proposed at 765kV level.</p> <p>The schemes were discussed in the 25<sup>th</sup> CMETS-SR held on 28.11.2023 (Minutes of meeting attached at <b>Annexure-II</b>).</p> <p>The scheme was discussed and agreed by all the Southern Region constituents in the Joint Study meeting held on 21-22<sup>nd</sup> December 2023</p>
6.	Estimated Cost	<b>Rs. 2640 Crore</b>
7.	Impact on the total Annual Transmission charges in % along with the existing ATC	<p>A. ATC (considering Levelized Tariff @15% of estimated cost): Rs. 396 Crore</p> <p>B. Present ATC: Rs. 46024.49 Crore #</p> <p>C. A/B (%): 0.86 %</p>
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	<p><b>24 months</b> from date of allocation to implementing agency / SPV Transfer (as the case may be).</p> <p>Tentative time-frame: <b>May/Jun'26</b> (Considering 4-6 months for necessary approvals &amp; subsequent award of the project)</p>
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	<p>The scheme was discussed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023</p> <p>SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme</p>
12.	System Study for evolution of the proposal	

# Total YTC allowed for Nov'23 as per Notification of Transmission Charges payable by DICs for Billing Month of Jan, 2024 dated 25.12.2023 posted on NLDC website.

4.2.5 Accordingly, the detailed scope of the scheme is given below:

#### Transmission Scheme for integration of Davanagere / Chitradurga REZ in Karnataka

##### Phase-A

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of 765/400kV 3x1500 MVA, 400/220kV 3x500 MVA Pooling Station near Davanagere / Chitradurga, Karnataka with provision of two (2) sections of 4500 MVA each	<ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> </ul>

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Capacity /km</b>
	<p>at 400kV level and provision of four (4) sections of 2500 MVA each at 220kV level</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos.</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 400/220kV, 500 MVA, ICTs – 7 nos.</li> <li>• 400kV ICT bays – 7 nos.</li> <li>• 220kV ICT bays – 7 nos.</li> <li>• 765kV line bays – 8 nos. (with provision for SLR)</li> <li>• 400kV line bays – 10 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Bus Sectionalizer : 2 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> <li>• 400kV Bus Sectionalizer : 1 set</li> </ul>	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 765kV line bays – 4 nos. (at Davanagere / Chitradurga PS for termination of LILO of Koppal-II-Narendra (New) 765kV D/c line)</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220kV Bus Sectionalizer : 1 set</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul>
2.	LILO of Narendra New – Madhugiri 765kV D/c line at Davanagere / Chitradurga 765/400kV PS (~40 km) {with 240 MVar SLR at both ends on Narendra New – Davanagere section (~280 km) and 330 MVar SLR at Davanagere end on Davanagere – Madhugiri section (~200 km)}	<p>~40 km</p> <ul style="list-style-type: none"> <li>• 765 kV, 240 MVar SLR at Davanagere / Chitradurga PS – 2 nos. (7x80 MVar inc. 1 switchable spare unit)</li> <li>• 765 kV, 240 MVar SLR at Narendra New – 2 nos. (7x80 MVar inc. 1 switchable spare unit)</li> <li>• 765 kV, 330 MVar SLR at Davanagere / Chitradurga PS – 2 nos. (6x80 MVar switchable spare units)</li> </ul>
3.	2x330 MVar (765kV) bus reactors at Davanagere/ Chitradurga PS	<ul style="list-style-type: none"> <li>• 765 kV, 330 MVar Bus Reactor – 2 nos. (7x110 MVar inc. 1 switchable spare unit for both bus reactor and line reactor)</li> <li>• 765 kV Bus Reactor bays – 2 nos.</li> </ul>
4.	Upgradation of Narendra New – Madhugiri 765kV D/c line (presently charged at 400kV level) at its rated 765kV voltage level	<ul style="list-style-type: none"> <li>• 765kV line bays – 2 nos. (at Narendra New)</li> <li>• 765kV line bays – 2 nos. (at Madhugiri)</li> </ul>
5.	Upgradation of Madhugiri {Tumkur(Vasantnarsapura)} to its rated voltage of 765kV level alongwith 3x1500 MVA, 765/400kV ICTs and 2x330 MVar, 765kV bus reactors #	<ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 3 nos. (10x500 MVA incl. 1 spare unit)</li> <li>• 765kV ICT bays – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 765 kV, 330 MVar Bus Reactor – 2 nos. {7x110 MVar inc. 1 spare unit}</li> <li>• 765 kV Bus Reactor bays – 2 nos.</li> </ul>
6.	400 kV line reactors (80 MVar) on both ends of Narendra New – Madhugiri 765kV D/c line shall be utilized as bus reactors at respective 400kV substations based on availability of bays	



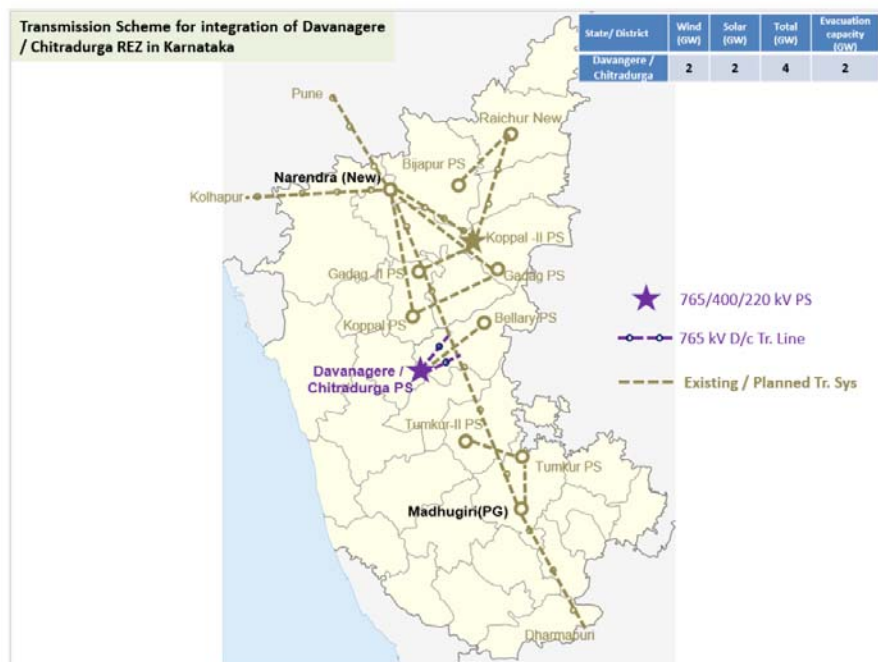
Sl. No.	Scope of the Transmission Scheme	Capacity /km
	or may be utilized as line reactor / bus reactor at other line / substation as per requirements.	

#### Phase-B

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Augmentation of 1x1500 MVA, 765/400kV (4 <sup>th</sup> ) ICT at Davanagere / Chitradurga PS	<ul style="list-style-type: none"> <li>• 765/400kV, 1500 MVA, ICTs – 1 nos.</li> <li>• 765kV ICT bays – 1 nos.</li> <li>• 400kV ICT bays – 1 nos.</li> </ul>
2.	Augmentation of 1x500 MVA, 400/220kV (4 <sup>th</sup> ) ICT at Davanagere / Chitradurga PS	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 1 nos.</li> <li>• 400kV ICT bays – 1 nos.</li> <li>• 220kV ICT bays – 1 nos.</li> </ul>

# Upgradation of Madhugiri {Tumkur(Vasanthnarsapura)} to its rated 765kv level was earlier allocated to POWERGRID for implementation through RTM route under the scheme “Common transmission system strengthening in Southern Region for enabling evacuation and export of power from Solar & Wind Energy Zones in Southern Region” vide MOP OM No.15/3/2018-Trans-Pt(1) dated 23.01.2020 (Copy of OM attached at Annexure-IX)

4.2.6 Schematic of the above scheme is given below:



4.2.7 Members may deliberate.

### 4.3 Transmission Scheme for integration of Bellary REZ in Karnataka

4.3.1 The Davanagere / Chitradurga PS, Bellary PS and Bijapur PS were initially proposed to be integrated with Koppal-II PS for onward evacuation of power from these REZs. However, CTU has received large number of applications from various RE developers seeking connectivity at Koppal-II PS / Gadag-II PS beyond the planned evacuation capacity and without BESS. Accordingly, the transmission system beyond Koppal-II PS may not be able to cater to the requirement of Davanagere / Chitradurga REZ, Bellary REZ and Bijapur REZ.

4.3.2 In view of the above, the interconnection of Davanagere/Chitradurga, Bijapur and Bellary REZs was reviewed and separate transmission system for evacuation of power is identified. Further the scheme was discussed and agreed by all the Southern Region constituents in the Joint Study meeting held on 21-22<sup>nd</sup> December 2023.

4.3.3 The transmission scheme was discussed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023 and SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme.

4.3.4 Detailed scope of the scheme is given below:

Sl. No.	Items	Details						
1.	Name of Scheme	Transmission Scheme for integration of Bellary REZ in Karnataka						
2.	Scope of the scheme	<p><b>Phase-A</b></p> <table> <tr> <th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr> <tr> <td>1.</td><td> <p>Establishment of 3x500 MVA, 400/220kV Pooling Station near Bellary area (Bellary PS), Karnataka</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 400kV line bays – 6 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Sectionalizer : 3 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> </ul> </td><td> <ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 400kV line bays – 2 nos. (at Bellary PS for termination of Bellary PS – Davanagere / Chitradurga line))</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul> </td></tr> </table>	Sl. No.	Scope of the Transmission Scheme	Capacity /km	1.	<p>Establishment of 3x500 MVA, 400/220kV Pooling Station near Bellary area (Bellary PS), Karnataka</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 400kV line bays – 6 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Sectionalizer : 3 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> </ul>	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 400kV line bays – 2 nos. (at Bellary PS for termination of Bellary PS – Davanagere / Chitradurga line))</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul>
Sl. No.	Scope of the Transmission Scheme	Capacity /km						
1.	<p>Establishment of 3x500 MVA, 400/220kV Pooling Station near Bellary area (Bellary PS), Karnataka</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 400kV line bays – 6 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Sectionalizer : 3 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> </ul>	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 400kV line bays – 2 nos. (at Bellary PS for termination of Bellary PS – Davanagere / Chitradurga line))</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul>						

		<table><tr><td>2.</td><td>Bellary PS – Davanagere / Chitradurga 400kV (Quad ACSR moose) D/c line</td><td>~100 km • 400kV line bays – 2 nos. (at Davanagere / Chitradurga )</td></tr><tr><td>3.</td><td>2x125MVar 420kV bus reactors at Bellary PS</td><td>• 420kV, 125 MVar bus reactors – 2 nos. • 420kV, 125 MVar bus reactor bays – 2 nos.</td></tr></table>	2.	Bellary PS – Davanagere / Chitradurga 400kV (Quad ACSR moose) D/c line	~100 km • 400kV line bays – 2 nos. (at Davanagere / Chitradurga )	3.	2x125MVar 420kV bus reactors at Bellary PS	• 420kV, 125 MVar bus reactors – 2 nos. • 420kV, 125 MVar bus reactor bays – 2 nos.										
2.	Bellary PS – Davanagere / Chitradurga 400kV (Quad ACSR moose) D/c line	~100 km • 400kV line bays – 2 nos. (at Davanagere / Chitradurga )																
3.	2x125MVar 420kV bus reactors at Bellary PS	• 420kV, 125 MVar bus reactors – 2 nos. • 420kV, 125 MVar bus reactor bays – 2 nos.																
		<b>Phase-B</b> <table><tr><th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr><tr><td>1.</td><td>Augmentation of 1x500 MVA, 400/220kV ICT at Bellary PS</td><td>• 400/220kV, 500 MVA, ICTs – 1 nos. • 400kV ICT bays – 1 nos. • 220kV ICT bays – 1 nos.</td></tr></table>	Sl. No.	Scope of the Transmission Scheme	Capacity /km	1.	Augmentation of 1x500 MVA, 400/220kV ICT at Bellary PS	• 400/220kV, 500 MVA, ICTs – 1 nos. • 400kV ICT bays – 1 nos. • 220kV ICT bays – 1 nos.										
Sl. No.	Scope of the Transmission Scheme	Capacity /km																
1.	Augmentation of 1x500 MVA, 400/220kV ICT at Bellary PS	• 400/220kV, 500 MVA, ICTs – 1 nos. • 400kV ICT bays – 1 nos. • 220kV ICT bays – 1 nos.																
3.	Depiction of the scheme on Transmission Grid Map	<b>Given below</b>																
4.	Upstream/downstream system associated with the scheme	Not applicable																
5.	Objective / Justification	<p>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 181.5 GW RE Potential in the States of Andhra Pradesh, Telangana, Karnataka, Rajasthan, Madhya Pradesh and Tamil Nadu (Offshore). Out of the identified 181.5 GW Potential, 86 GW RE Potential is identified in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region.</p> <p>The transmission system for integration of 181.5 GW RE Potential has 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. In the report, implementation of transmission system has been phased out in 3 parts; Phase-I by March 2025, Phase-II by December 2027 and Phase-III by December 2030.</p> <p>Out of the identified (86 GW) RE Potential in Southern Region, 17 GW has been identified in the State of Karnataka. MNRE have indicated that out of the 17 GW REZ potential in Karnataka, transmission system for evacuation capacity of about 11 GW may be identified considering the Energy Storage System. The details of district wise potential is as below:</p> <table><tr><th rowspan="2">District</th><th colspan="2">Potential (GW)</th><th rowspan="2">Total (GW)</th><th rowspan="2">Dispatch (90% S + 55% W)</th><th rowspan="2">BESS</th><th rowspan="2">Evacuation capacity to be planned (GW)</th></tr><tr><th>Wind</th><th>Solar</th></tr><tr><td>Koppal</td><td>2</td><td>2</td><td>4</td><td>2.9</td><td>1</td><td>2</td></tr></table>	District	Potential (GW)		Total (GW)	Dispatch (90% S + 55% W)	BESS	Evacuation capacity to be planned (GW)	Wind	Solar	Koppal	2	2	4	2.9	1	2
District	Potential (GW)			Total (GW)	Dispatch (90% S + 55% W)					BESS	Evacuation capacity to be planned (GW)							
	Wind	Solar																
Koppal	2	2	4	2.9	1	2												

		<table><tr><td>Gadag</td><td>2</td><td>2</td><td>4</td><td>2.9</td><td>1</td><td>2</td></tr><tr><td>Davanagere / Chitradurga</td><td>2</td><td>2</td><td>4</td><td>2.9</td><td>1</td><td>2</td></tr><tr><td>Bijapur</td><td>2</td><td></td><td>2</td><td>1.1</td><td></td><td>2</td></tr><tr><td>Bellary</td><td></td><td>1.5</td><td>1.5</td><td>1.35</td><td></td><td>1.5</td></tr><tr><td>Tumkur</td><td></td><td>1.5</td><td>1.5</td><td>1.35</td><td></td><td>1.5</td></tr><tr><td>Total</td><td>8</td><td>9</td><td>17</td><td>12.5</td><td>3</td><td>11</td></tr></table>	Gadag	2	2	4	2.9	1	2	Davanagere / Chitradurga	2	2	4	2.9	1	2	Bijapur	2		2	1.1		2	Bellary		1.5	1.5	1.35		1.5	Tumkur		1.5	1.5	1.35		1.5	Total	8	9	17	12.5	3	11
		Gadag	2	2	4	2.9	1	2																																				
		Davanagere / Chitradurga	2	2	4	2.9	1	2																																				
		Bijapur	2		2	1.1		2																																				
		Bellary		1.5	1.5	1.35		1.5																																				
		Tumkur		1.5	1.5	1.35		1.5																																				
		Total	8	9	17	12.5	3	11																																				
		<p>The transmission system for integration of additional RE potential in Koppal-II and Gadag-II area of Karnataka has already been agreed and is under bidding. Further, for optimal utilization of transmission system, interconnection of RE Zones in Karnataka viz. Gadag-II, Davanagere/Chitradurga, Bijapur and Bellary area were planned earlier at Koppal-II PS itself through 400kV lines for further transfer of power beyond Koppal-II PS.</p> <p>However, CTU has received large number of applications from various RE developers seeking connectivity at Koppal-II PS and Gadag-II PS beyond the planned evacuation capacity and without BESS. Presently, the total connectivity applications granted / agreed for grant at Koppal-II are about 2950 MW and Gadag-II are about 3900 MW which has already surpassed the capacity of evacuation transmission system identified considering the dispatch factors &amp; BESS in CEA's 500 GW report.</p> <p>Accordingly, it is observed that the transmission system beyond Koppal-II PS for evacuation of power shall be able to cater to the evacuation requirements of connectivity at Gadag-II PS and Koppal-II PS. Further, the interconnection of Davanagere/Chitradurga, Bijapur and Bellary REZs needs to be reviewed and separate transmission system for evacuation of power may be identified. CTU has already received connectivity of about 300 MW at Bijapur PS and 250 MW at Davanagere/Chitradurga.</p> <p>Presently, Narendra New – Madhugiri 765kV D/c line is under operation at 400kV level. It is proposed to upgrade Narendra New – Madhugiri 765kV D/c line (presently charged at 400kV level) at its rated 765kV voltage level. Further, Davanagere REZ is proposed to be integrated with the grid through LILO of Narendra New – Madhugiri 765kV D/c line at Davanagere/Chitradurga 765/400kV PS. Further, for optimal utilization of transmission system, Bellary REZ is proposed to be integrated with Davanagere/Chitradurga PS through Bellary – Davanagere/Chitradurga PS 400kV (Quad ACSR moose) D/c line.</p> <p>The schemes were discussed in the 25<sup>th</sup> CMETS-SR held on 28.11.2023 The scheme was discussed and agreed by all the Southern Region constituents in the Joint Study meeting held on 21-22<sup>nd</sup> December 2023</p>																																										
		6.	Estimated Cost	Rs. 813 Crore																																								
		7.	Impact on the total	A. ATC (considering Levelized Tariff @15% of estimated																																								

	Annual Transmission charges in % along with the existing ATC	cost): Rs. 121.95 Crore B. Present ATC: Rs. 46024.49 Crore # C. A/B (%): 0.2649 %
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	<b>24 months</b> from date of allocation to implementing agency / SPV Transfer (as the case may be).  Tentative time-frame: <b>May/Jun'26</b> (Considering 4-6 months for necessary approvals & subsequent award of the project)
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 49 <sup>th</sup> SRPC meeting held on 08.12.2023  SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme
12.	System Study for evolution of the proposal	

# Total YTC allowed for Nov'23 as per Notification of Transmission Charges payable by DICs for Billing Month of Jan, 2024 dated 25.12.2023 posted on NLDC website.

4.3.5 Accordingly, the detailed scope of the scheme is given below:

#### Transmission Scheme for integration of Bellary REZ in Karnataka

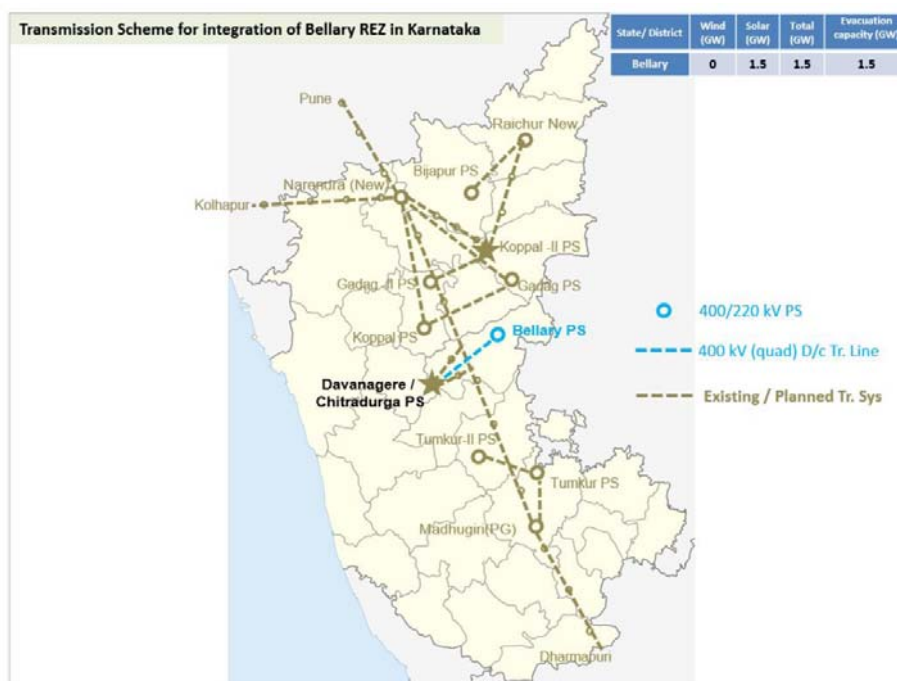
##### Phase-A

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Establishment of 3x500 MVA, 400/220kV Pooling Station near Bellary area (Bellary PS), Karnataka  <b>Future Space Provisions:</b> <ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 7 nos.</li> <li>• 400kV ICT bays – 7 nos.</li> <li>• 220kV ICT bays – 7 nos.</li> <li>• 400kV line bays – 6 nos. (with provision for SLR)</li> <li>• 220kV line bays – 12 nos.</li> <li>• 220kV Sectionalizer : 3 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> </ul>	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 3 nos.</li> <li>• 400kV ICT bays – 3 nos.</li> <li>• 220kV ICT bays – 3 nos.</li> <li>• 400kV line bays – 2 nos. (at Bellary PS for termination of Bellary PS – Davanagere / Chitradurga line))</li> <li>• 220kV line bays – 6 nos.</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> <li>•</li> </ul>
2.	Bellary PS – Davanagere / Chitradurga 400kV (Quad ACSR moose) D/c line	~100 km <ul style="list-style-type: none"> <li>• 400kV line bays – 2 nos. (at Davanagere / Chitradurga )</li> </ul>
3.	2x125MVA 420kV bus reactors at Bellary PS	<ul style="list-style-type: none"> <li>• 420kV, 125 MVA bus reactors – 2 nos.</li> <li>• 420kV, 125 MVA bus reactor bays – 2 nos.</li> </ul>

## Phase-B

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Augmentation of 1x500 MVA, 400/220kV (4 <sup>th</sup> ) ICT at Bellary PS	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 1 nos.</li> <li>• 400kV ICT bays – 1 nos.</li> <li>• 220kV ICT bays – 1 nos.</li> </ul>

4.3.6 Schematic of the above scheme is given below:



4.3.7 Members may deliberate.

## 4.4 Transmission Scheme for integration of Bijapur REZ in Karnataka

4.4.1 The Davanagere / Chitradurga PS, Bellary PS and Bijapur PS were initially proposed to be integrated with Koppal-II PS for onward evacuation of power from these REZs. However, CTU has received large number of applications from various RE developers seeking connectivity at Koppal-II PS / Gadag-II PS beyond the planned evacuation capacity and without BESS. Accordingly, the transmission system beyond Koppal-II PS may not be able to cater to the requirement of Davanagere / Chitradurga REZ, Bellary REZ and Bijapur REZ.

4.4.2 The transmission scheme was discussed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023 and SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme.

4.4.3 Detailed scope of the scheme is given below:

Sl. No.	Items	Details
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1.	Name of Scheme	Transmission Scheme for integration of Bijapur REZ in Karnataka															
2.	Scope of the scheme	<table><tr><th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity /km</th></tr><tr><td>1.</td><td>Establishment of 400/220kV 2x500 MVA Pooling Station near Bijapur (Vijayapura), Karnataka  <b>Future Space Provisions:</b><ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 9 nos.</li><li>• 400kV ICT bays – 9 nos.</li><li>• 220kV ICT bays – 9 nos.</li><li>• 400kV line bays – 6 nos. (with provision for SLR)</li><li>• 220kV line bays – 14 nos.</li><li>• 220kV Sectionalizer : 3 sets</li><li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li><li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li></ul></td><td><ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 2 nos.</li><li>• 400kV ICT bays – 2 nos.</li><li>• 220kV ICT bays – 2 nos.</li><li>• 400kV line bays – 2 nos. (at Bijapur PS for termination of Bijapur PS – Raichur New line))</li><li>• 220kV line bays – 4 nos.</li><li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li><li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li></ul></td></tr><tr><td>2.</td><td>Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line</td><td>~150 km</td><td><ul style="list-style-type: none"><li>• 400kV line bays – 2 nos. (at Raichur New)</li></ul></td></tr><tr><td>3.</td><td>2x125MVA 420kV bus reactors at Bijapur PS</td><td><ul style="list-style-type: none"><li>• 420kV, 125 MVA bus reactors – 2 nos.</li><li>• 420kV, 125 MVA bus reactor bays – 2 nos.</li></ul></td></tr></table> <p><b>Note :</b> POWERGRID shall provide space for 2 nos. of 400 kV line bays at Raichur New for termination of Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line</p>			Sl. No.	Scope of the Transmission Scheme	Capacity /km	1.	Establishment of 400/220kV 2x500 MVA Pooling Station near Bijapur (Vijayapura), Karnataka  <b>Future Space Provisions:</b> <ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 9 nos.</li><li>• 400kV ICT bays – 9 nos.</li><li>• 220kV ICT bays – 9 nos.</li><li>• 400kV line bays – 6 nos. (with provision for SLR)</li><li>• 220kV line bays – 14 nos.</li><li>• 220kV Sectionalizer : 3 sets</li><li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li><li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li></ul>	<ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 2 nos.</li><li>• 400kV ICT bays – 2 nos.</li><li>• 220kV ICT bays – 2 nos.</li><li>• 400kV line bays – 2 nos. (at Bijapur PS for termination of Bijapur PS – Raichur New line))</li><li>• 220kV line bays – 4 nos.</li><li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li><li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li></ul>	2.	Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line	~150 km	<ul style="list-style-type: none"><li>• 400kV line bays – 2 nos. (at Raichur New)</li></ul>	3.	2x125MVA 420kV bus reactors at Bijapur PS	<ul style="list-style-type: none"><li>• 420kV, 125 MVA bus reactors – 2 nos.</li><li>• 420kV, 125 MVA bus reactor bays – 2 nos.</li></ul>
Sl. No.	Scope of the Transmission Scheme	Capacity /km															
1.	Establishment of 400/220kV 2x500 MVA Pooling Station near Bijapur (Vijayapura), Karnataka  <b>Future Space Provisions:</b> <ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 9 nos.</li><li>• 400kV ICT bays – 9 nos.</li><li>• 220kV ICT bays – 9 nos.</li><li>• 400kV line bays – 6 nos. (with provision for SLR)</li><li>• 220kV line bays – 14 nos.</li><li>• 220kV Sectionalizer : 3 sets</li><li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li><li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li></ul>	<ul style="list-style-type: none"><li>• 400/220kV, 500 MVA, ICTs – 2 nos.</li><li>• 400kV ICT bays – 2 nos.</li><li>• 220kV ICT bays – 2 nos.</li><li>• 400kV line bays – 2 nos. (at Bijapur PS for termination of Bijapur PS – Raichur New line))</li><li>• 220kV line bays – 4 nos.</li><li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li><li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li></ul>															
2.	Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line	~150 km	<ul style="list-style-type: none"><li>• 400kV line bays – 2 nos. (at Raichur New)</li></ul>														
3.	2x125MVA 420kV bus reactors at Bijapur PS	<ul style="list-style-type: none"><li>• 420kV, 125 MVA bus reactors – 2 nos.</li><li>• 420kV, 125 MVA bus reactor bays – 2 nos.</li></ul>															
3.	Depiction of the scheme on Transmission Grid Map	Given below															
4.	Upstream/downstream system associated with the scheme	Not applicable															
5.	Objective / Justification	<p>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 181.5 GW RE Potential in the States of Andhra Pradesh, Telangana, Karnataka, Rajasthan, Madhya Pradesh and Tamil Nadu (Offshore). Out of the identified 181.5 GW Potential, 86 GW RE Potential is identified in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region.</p> <p>The transmission system for integration of 181.5 GW RE Potential has been identified by CEA and a report on</p>															

		<p>Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022. In the report, implementation of transmission system has been phased out in 3 parts; Phase-I by March 2025, Phase-II by December 2027 and Phase-III by December 2030.</p> <p>Out of the identified (86 GW) RE Potential in Southern Region, 17 GW has been identified in the State of Karnataka. MNRE have indicated that out of the 17 GW REZ potential in Karnataka, transmission system for evacuation capacity of about 11 GW may be identified considering the Energy Storage System. The details of district wise potential is as below:</p> <table><tr><th rowspan="2">District</th><th colspan="2">Potential (GW)</th><th rowspan="2">Total (GW)</th><th rowspan="2">Dispatch (90% S + 55% W)</th><th rowspan="2">BESS</th><th rowspan="2">Evacuation capacity to be planned (GW)</th></tr><tr><th>Wind</th><th>Solar</th></tr><tr><td>Koppal</td><td>2</td><td>2</td><td>4</td><td>2.9</td><td>1</td><td>2</td></tr><tr><td>Gadag</td><td>2</td><td>2</td><td>4</td><td>2.9</td><td>1</td><td>2</td></tr><tr><td>Davanagere / Chitradurga</td><td>2</td><td>2</td><td>4</td><td>2.9</td><td>1</td><td>2</td></tr><tr><td>Bijapur</td><td>2</td><td></td><td>2</td><td>1.1</td><td></td><td>2</td></tr><tr><td>Bellary</td><td></td><td>1.5</td><td>1.5</td><td>1.35</td><td></td><td>1.5</td></tr><tr><td>Tumkur</td><td></td><td>1.5</td><td>1.5</td><td>1.35</td><td></td><td>1.5</td></tr><tr><td>Total</td><td>8</td><td>9</td><td>17</td><td>12.5</td><td>3</td><td>11</td></tr></table> <p>The transmission system for integration of additional RE potential in Koppal-II and Gadag-II area of Karnataka has already been agreed and is under bidding. Further, for optimal utilization of transmission system, interconnection of RE Zones in Karnataka viz. Gadag-II, Davanagere/Chitradurga, Bijapur and Bellary area were planned earlier at Koppal-II PS itself through 400kV lines for further transfer of power beyond Koppal-II PS.</p> <p>However, CTU has received large number of applications from various RE developers seeking connectivity at Koppal-II PS and Gadag-II PS beyond the planned evacuation capacity and without BESS. Presently, the total connectivity applications granted / agreed for grant at Koppal-II are about 2950 MW and Gadag-II are about 3900 MW which has already surpassed the capacity of evacuation transmission system identified considering the dispatch factors &amp; BESS in CEA's 500 GW report.</p> <p>Accordingly, it is observed that the transmission system beyond Koppal-II PS for evacuation of power shall be able to cater to the evacuation requirements of connectivity at Gadag-II PS and Koppal-II PS. Further, the interconnection of Davanagere/Chitradurga, Bijapur and Bellary REZs needs to be reviewed and separate transmission system for evacuation of power may be identified. CTU has already received connectivity of about 300 MW at Bijapur PS and 250 MW at Davanagere/Chitradurga.</p> <p>Accordingly, Bijapur REZ is being integrated with existing</p>	District	Potential (GW)		Total (GW)	Dispatch (90% S + 55% W)	BESS	Evacuation capacity to be planned (GW)	Wind	Solar	Koppal	2	2	4	2.9	1	2	Gadag	2	2	4	2.9	1	2	Davanagere / Chitradurga	2	2	4	2.9	1	2	Bijapur	2		2	1.1		2	Bellary		1.5	1.5	1.35		1.5	Tumkur		1.5	1.5	1.35		1.5	Total	8	9	17	12.5	3	11
District	Potential (GW)			Total (GW)	Dispatch (90% S + 55% W)					BESS	Evacuation capacity to be planned (GW)																																																	
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Koppal	2	2	4	2.9	1	2																																																						
Gadag	2	2	4	2.9	1	2																																																						
Davanagere / Chitradurga	2	2	4	2.9	1	2																																																						
Bijapur	2		2	1.1		2																																																						
Bellary		1.5	1.5	1.35		1.5																																																						
Tumkur		1.5	1.5	1.35		1.5																																																						
Total	8	9	17	12.5	3	11																																																						



		<p>Raichur New through Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line.</p> <p>The schemes were discussed in the 25<sup>th</sup> CMETS-SR held on 28.11.2023</p> <p>The scheme was discussed and agreed by all the Southern Region constituents in the Joint Study meeting held on 21-22<sup>nd</sup> December 2023</p>
6.	Estimated Cost	<b>Rs. 896 Crore</b>
7.	Impact on the total Annual Transmission charges in % along with the existing ATC	<p>A. ATC (considering Levelized Tariff @15% of estimated cost): Rs. 134.4 Crore</p> <p>B. Present ATC: Rs. 46024.49 Crore #</p> <p>C. A/B (%): 0.292 %</p>
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	<p><b>24 months</b> from date of allocation to implementing agency / SPV Transfer (as the case may be).</p> <p>Tentative time-frame: <b>May/Jun'26</b> (Considering 4-6 months for necessary approvals &amp; subsequent award of the project)</p>
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	<p>The scheme was discussed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023</p> <p>SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme</p>
12.	System Study for evolution of the proposal	

# Total YTC allowed for Nov'23 as per Notification of Transmission Charges payable by DICs for Billing Month of Jan, 2024 dated 25.12.2023 posted on NLDC website.

4.4.4 Accordingly, the detailed scope of the scheme is given below:

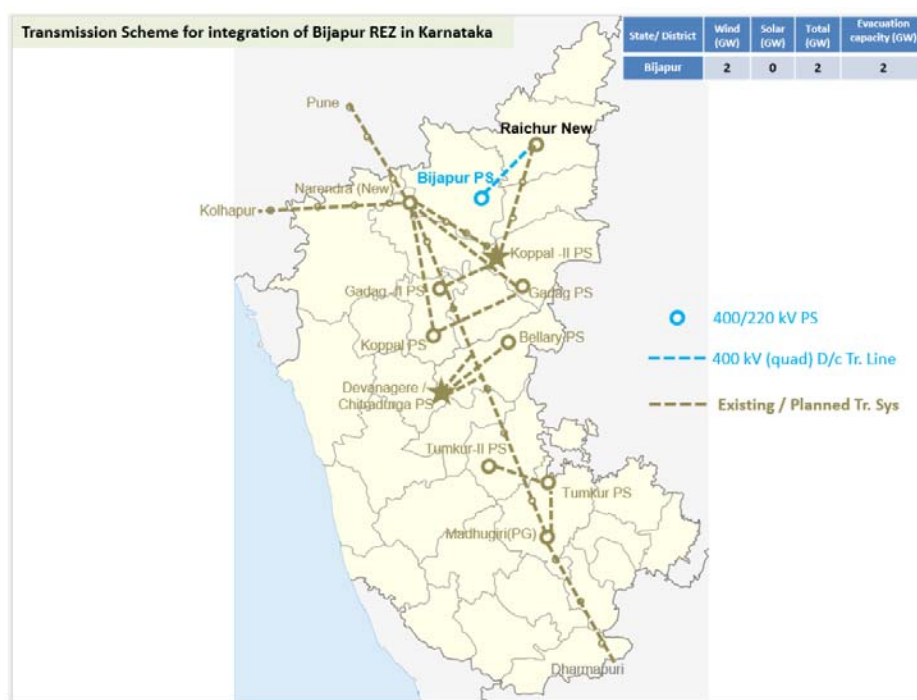
Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	<p>Establishment of 400/220kV 2x500 MVA Pooling Station near Bijapur (Vijayapura), Karnataka</p> <p><b>Future Space Provisions:</b></p> <ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 8 nos.</li> <li>• 400kV ICT bays – 8 nos.</li> <li>• 220kV ICT bays – 8 nos.</li> <li>• 400kV line bays – 6 nos. (with provision for SLR)</li> <li>• 220kV line bays – 14 nos.</li> <li>• 220kV Sectionalizer : 3 sets</li> <li>• 220 kV Bus Coupler (BC) Bay – 3 nos.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 3 nos.</li> </ul>	<ul style="list-style-type: none"> <li>• 400/220kV, 500 MVA, ICTs – 2 nos.</li> <li>• 400kV ICT bays – 2 nos.</li> <li>• 220kV ICT bays – 2 nos.</li> <li>• 400kV line bays – 2 nos. (at Bijapur PS for termination of Bijapur PS – Raichur New line))</li> <li>• 220kV line bays – 4 nos.</li> <li>• 220 kV Bus Coupler (BC) Bay – 1 no.</li> <li>• 220 kV Transfer Bus Coupler (TBC) Bay – 1 no.</li> </ul>

Sl. No.	Scope of the Transmission Scheme	Capacity /km
2.	Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line	~150 km • 400kV line bays – 2 nos. (at Raichur New)
3.	2x125MVar 420kV bus reactors at Bijapur PS	• 420kV, 125 MVar bus reactors – 2 nos. • 420kV, 125 MVar bus reactor bays – 2 nos.

**Note :**

POWERGRID shall provide space for 2 nos. of 400 kV line bays at Raichur New for termination of Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line

4.4.5 Schematic of the above scheme is given below:



4.4.6 Members may deliberate.

#### 4.5 Transmission System under ISTS for evacuation of power from Kudankulam Unit - 3 & 4 (2x1000 MW)

4.5.1 The transmission system for KNPP Unit - 3&4 has been identified under the scope of ISTS and TANTRANSCO. The transmission system under the scope of TANTRANSCO shall facilitate in drawl of its share allocation from Kudankulam Unit-3&4 and relieve them from payment of ISTS transmission charges. The transmission system under the scope of ISTS shall facilitate in evacuation & transfer of power to other beneficiaries in Southern Region from Kudankulam Unit-3&4 generation project.

The identified transmission system under ISTS shall be implemented with the time frame of Kudankulam Unit-3 as sought under the GNA.

4.5.2 The transmission scheme was discussed and agreed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023 and SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme.

4.5.3 Detailed scope of the scheme is given below:

Sl. No.	Items	Details						
1.	Name of Scheme	Transmission System for evacuation of power from Kudankulam Unit - 3 & 4 (2x1000 MW)						
2.	Scope of the scheme	<table> <tr> <th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity / km</th></tr> <tr> <td>1.</td><td>KNPP 3&amp;4 – Tuticorin-II GIS PS 400kV (quad) D/c line (~120 km) {<b>Line &amp; bays at Tuticorin-II GIS under ISTS scope and bays at KNPP under NPCIL scope</b>}</td><td>~120 km • 400kV GIS line bays at Tuticorin-II GIS – 2 nos.</td></tr> </table>	Sl. No.	Scope of the Transmission Scheme	Capacity / km	1.	KNPP 3&4 – Tuticorin-II GIS PS 400kV (quad) D/c line (~120 km) { <b>Line &amp; bays at Tuticorin-II GIS under ISTS scope and bays at KNPP under NPCIL scope</b> }	~120 km • 400kV GIS line bays at Tuticorin-II GIS – 2 nos.
Sl. No.	Scope of the Transmission Scheme	Capacity / km						
1.	KNPP 3&4 – Tuticorin-II GIS PS 400kV (quad) D/c line (~120 km) { <b>Line &amp; bays at Tuticorin-II GIS under ISTS scope and bays at KNPP under NPCIL scope</b> }	~120 km • 400kV GIS line bays at Tuticorin-II GIS – 2 nos.						
3.	Depiction of the scheme on Transmission Grid Map	<b>Given below</b>						
4.	Upstream/downstream system associated with the scheme	Not applicable						
5.	Objective / Justification	<p>Applications for grant of connectivity &amp; LTA was received from NPCIL for KNPP-3&amp;4 and for grant of connectivity for KNPP-5&amp;6 under the CERC Connectivity Regulations. The transmission system for evacuation of power from KNPP-3&amp;4 and KNPP- 5&amp;6 was finalised during Joint Study meeting of Southern Regional constituents held on 22<sup>nd</sup> Feb to 23<sup>rd</sup> Feb 2023, at SRPC, Bengaluru.</p> <p>Subsequently, with the effectiveness of CERC GNA Regulations 2022, NPCIL opted for transition under the GNA Regulations for KNPP-3&amp;4 (2x1000 MW) only. Accordingly, transmission scheme was reviewed and Transmission System for evacuation of power from KNPP-3&amp;4 (2x1000 MW) was agreed in the 25<sup>th</sup> CMETS-SR held on 28.11.2023</p> <p>Further Govt. of India has notified policy on 19.07.2022 for implementation of intra-state transmission lines for drawl of its share allocation from CPSE generating stations mentions that <u>“in case the State, where the CPSE generating Station is located, needs to draw the</u></p>						

		<p><u>free power / their share from the generating station, they can plan and build the Intra State transmission lines of required capacity at their own cost. This will relieve them from using the ISTS network for drawal of their share and thus, will not have the burden of paying the ISTS charges”.</u></p> <p>Accordingly, the transmission system for KNPP Unit - 3&amp;4 has been identified under the scope of ISTS and TANTRANSCO. The transmission system under the scope of TANTRANSCO shall facilitate in drawl of its share allocation from Kudankulam Unit-3&amp;4 and relieve them from payment of ISTS transmission charges. The transmission system under the scope of ISTS shall facilitate in evacuation &amp; transfer of power to other beneficiaries in Southern Region from Kudankulam Unit-3&amp;4 generation project. The identified transmission system under ISTS shall be implemented with the time frame of Kudankulam Unit-3 as sought under the GNA.</p>
6.	Estimated Cost	<b>Rs. 548 Crore</b>
7.	Impact on the total Annual Transmission charges in % along with the existing ATC	<p>A. ATC (considering Levelized Tariff @15% of estimated cost): Rs. 82.2 Crore</p> <p>B. Present ATC: Rs. 46024.49 Crore #</p> <p>C. A/B (%): 0.1786 %</p>
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	<p><b>30 months</b> from date of allocation to implementing agency / SPV Transfer (as the case may be).</p> <p>Dec' 2026 {As per the start date sought by NPCIL in GNA transition for KNPP Unit-3}</p>
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	<p>The scheme was discussed and agreed in the 49<sup>th</sup> SRPC meeting held on 08.12.2023</p> <p>SRPC vide letter dated 12.01.2024 has forwarded the views on the scheme</p>
12.	System Study for evolution of the proposal	Joint study meeting of SR constituents held on 21.02.2023 & 22.02.2023 at SRPC, Bengaluru and 25 <sup>th</sup> CMETS held on 28.11.2023

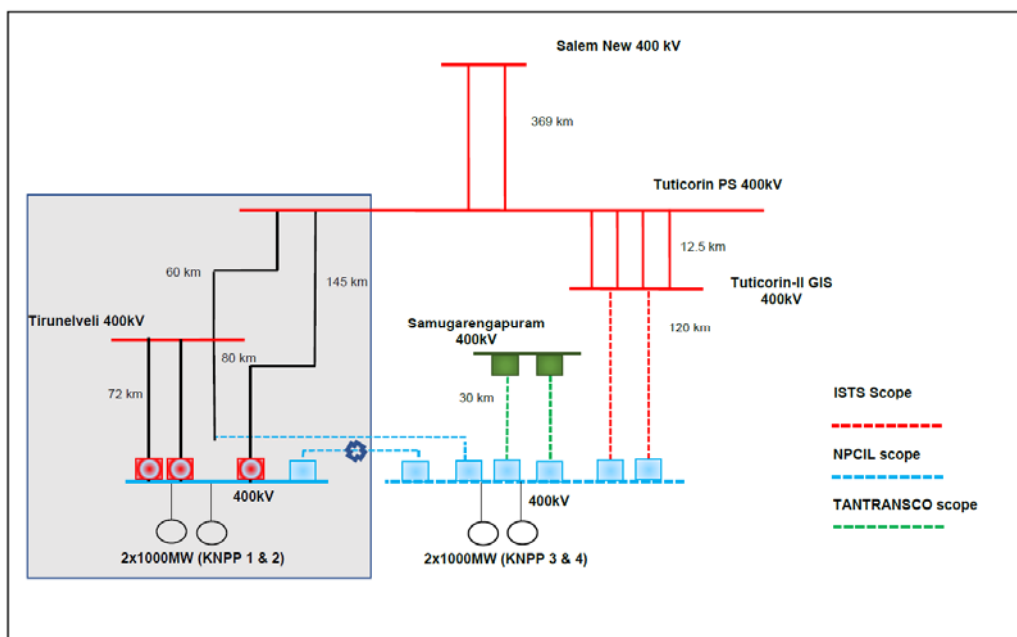
# Total YTC allowed for Nov'23 as per Notification of Transmission Charges payable by DICs for Billing Month of Jan, 2024 dated 25.12.2023 posted on NLDC website.

4.5.4 Accordingly, the detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
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Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	KNPP 3&4 – Tuticorin-II GIS PS 400kV (quad) D/c line (~120 km) {Line & bays at Tuticorin-II GIS under ISTS scope and bays at KNPP under NPCIL scope}	~120 km • 400kV GIS line bays at Tuticorin-II GIS – 2 nos.

4.5.5 Schematic of the above scheme is given below:



4.5.6 Members may deliberate.

#### 4.6 Augmentation of 2x500 MVA, 400/230 kV transformation capacity (3<sup>rd</sup> & 4<sup>th</sup> ICTs) at Karur PS

4.6.1 The 3<sup>rd</sup> ICT is required for connectivity to RE generation projects and 4<sup>th</sup> ICT is required for meeting the N-1 contingency criteria.

4.6.2 The estimated cost of the scheme is about INR 115 Cr. Accordingly, concurrence of SRPC is not required.

4.6.3 Detailed scope of the scheme is given below:

S. No.	Items	Details
1.	Name of Scheme	Augmentation of 2x500 MVA, 400/230 kV transformation capacity (3 <sup>rd</sup> & 4 <sup>th</sup> ICTs) at Karur PS
2.	Scope of the scheme	Augmentation of 2x500 MVA, 400/230 kV transformation capacity (3 <sup>rd</sup> & 4 <sup>th</sup> ICTs) at Karur PS

		i. 500 MVA, 400/230kV ICTs – 2 Nos. ii. 400kV ICT bay – 2 Nos. iii. 230kV ICT bay – 2 Nos.
3.	Depiction of the scheme on Transmission Grid Map	
4.	Upstream/downstream system associated with the scheme	NA
5.	Objective / Justification	1. Presently, Karur PS is under operation with 2x500 MVA, 400/230kV ICTs. Connectivity for 618 MW has been granted / agreed for grant at Karur PS. 2. Further, additional Connectivity of 300 MW has also been agreed for grant to M/s JSP Green Wind 1 Private Limited at Karur PS in the existing margins in the 27 <sup>th</sup> CMETS-SR held on 30.01.2024 (MoM awaited). 3. Further, additional connectivity of 100 MW and 93.6 MW to M/s First Energy Pvt. Ltd. and M/s Tata Power Renewable Energy Ltd. respectively has also been agreed for grant at Karur PS during the above meeting with augmentation of 2x500 MVA 400/230 kV ICTs (3 <sup>rd</sup> & 4 <sup>th</sup> ). With this, the total connectivity granted / agreed for grant at Karur PS shall be about 1112 MW. 4. The 3 <sup>rd</sup> ICT is required for connectivity to RE generation projects and 4 <sup>th</sup> ICT is required for meeting the N-1 contingency criteria.
6.	Estimated Cost	<b>INR 115 Crore</b>
7.	Impact on the total Annual Transmission charges (ATC) in % along with the existing ATC	A. ATC (considering Levelized Tariff @15% of estimated cost): INR 17.25 Crore B. Present ATC: INR 46024.95 Crore * C. A/B (%): Less than 0.03747 %
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	18 months from date of allocation to implementing agency / SPV Transfer (as the case may be).
10.	Inclusion of any wildlife/protected area along the transmission line route	None envisaged
11.	Deliberations with RPC along with their comments	The estimated cost of the scheme is less than INR 500 Cr. Accordingly, the same is not required to be sent to SRPC for deliberation

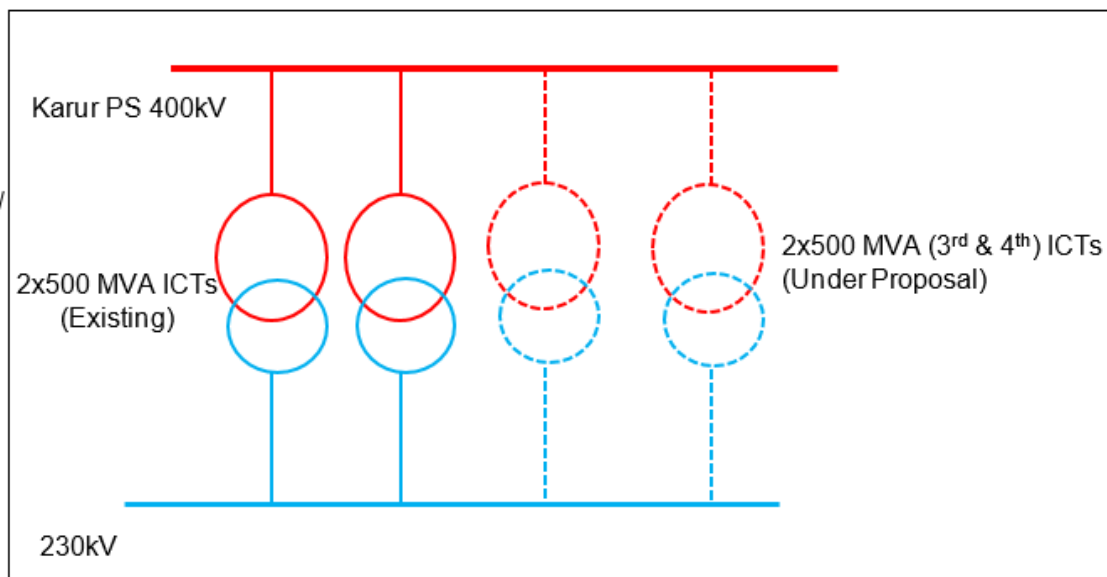
		in line with MoP office order no. 15/3/2018-Trans-Pt(5) dated 28-10-2021 regarding reconstitution of NCT.
12.	System Study for the evolution of the proposal	<p>The augmentation of 1x500 MVA, 400/230kV ICT (3<sup>rd</sup>) at Karur PS has been agreed for grant of connectivity to RE generation projects.</p> <p>The augmentation of addl. 1x500 MVA, 400/230kV ICT (4<sup>th</sup>) at Karur PS has been agreed for meeting N-1 criteria as per CEA's revised Planning Criteria.</p>

*\*Total YTC allowed for Dec'23 as per Notification of Transmission Charges payable by DICs for Billing Month of February, 2024 dated 25.01.2024 posted on NLDC website.*

4.6.4 Detailed scope of the scheme is given below:

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Capacity /km</b>
1.	<p>Augmentation of 2x500 MVA, 400/230 kV transformation capacity (3<sup>rd</sup> &amp; 4<sup>th</sup> ICTs) at Karur PS</p> <p>i. 500 MVA, 400/230kV ICTs – 2 Nos.  ii. 400kV ICT bay – 2 Nos.  iii. 230kV ICT bay – 2 Nos.</p>	

4.6.5 Schematic of the above scheme is given below:



4.6.6 Members may deliberate.

#### 4.7 Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL) – Part B

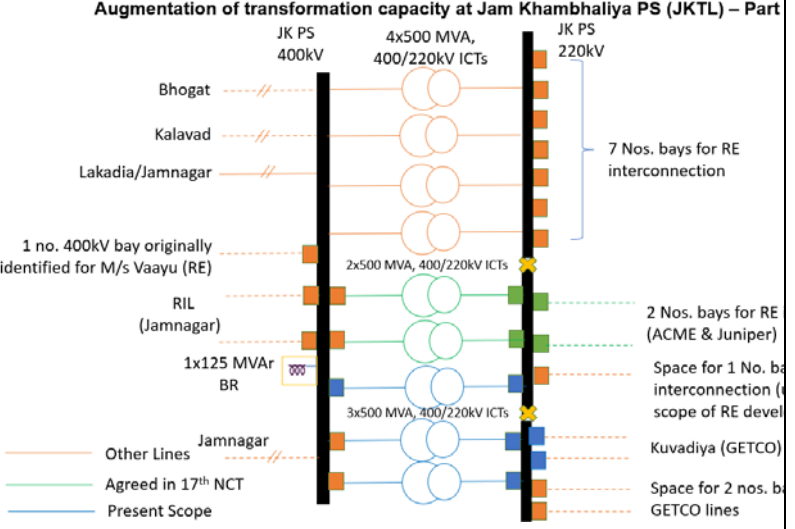
4.7.1 The proposed system i.e. 7<sup>th</sup> 400/220kV, 1x500MVA ICT shall enable evacuation of RE power from various generation projects mentioned above in Jam Khambhaliya area who have applied for connectivity under GNA at Jam Khambhaliya PS at 220kV level. Further, the 8<sup>th</sup> & 9<sup>th</sup> 400/220kV, 2x500MVA ICTs shall enable drawal of power by GETCO from Jam Khambhaliya PS.

4.7.2 The estimated cost of the scheme is less than INR 500 Cr and accordingly, same was not sent to WRPC for deliberations.

4.7.3 Details of the proposed scheme is given below:

S. No.	Items	Details			
1.	Name of Scheme	Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL) – Part B			
2.	Scope of the scheme	Sl. No.	Scope of the Transmission Scheme	Capacity /km	
		1.	Augmentation of transformation capacity at Jam Khambhaliya PS (GIS) by 1x500MVA, 400/220kV (9 <sup>th</sup> ) ICT terminated on New 220kV bus section-3	500MVA, 400/220kV Nos. 400kV ICT bays: 1 No. (TSP to implement complete dia. in all respect with the other 400kV bay to be utilized by EETFEL (Bulk consumer)) 220kV ICT bays: 1 No.	ICTs: 1
		2.	Creation of New 220kV Bus Section at Jam Khambhaliya PS (Section 3) (with space for 2 nos. 220kV line bays: future in same GIS hall)	220kV Bus sectionaliser bay - 1 Set ( <i>to be kept normally OPEN and may be closed based on system requirement</i> ) 220kV BC – 1 No.	1
		3.	Augmentation of transformation capacity at Jam Khambhaliya PS (GIS) by 2x500MVA, 400/220kV ICT (7 <sup>th</sup> & 8 <sup>th</sup> ) [7 <sup>th</sup> ICT terminated on New 220kV bus section-2 & 8 <sup>th</sup> ICT terminated on New 220kV bus section-3)	500MVA, 400/220kV Nos. 400kV ICT bays: NIL (bays being implemented under Jamnagar scheme, which is currently under tendering, with schedule of Apr/May-26). Bus duct outside GIS hall along with termination	ICTs: 2



S. No.	Items	Details	
			equipment shall be provided. 220kV ICT bays: 2 Nos.
		4. Implementation of 220kV GIS line bays at Jam Khambhaliya PS for Kuvadia 220kV D/c line	220kV line bay – 2 No. (GIS) (on Bus Section-3)
		<p><i>Note:</i></p> <ol style="list-style-type: none"> <li>JKTL to provide space for above scope of work.</li> <li>GETCO shall implement Jam Khambhaliya PS - Kuvadia 220kV D/c line in matching time-frame</li> </ol>	
3.	Depiction of the scheme on Transmission Grid Map	<p><b>Augmentation of transformation capacity at Jam Khambhaliya PS (JKTL) – Part</b></p>  <p>JK PS 400kV 4x500 MVA, 400/220kV ICTs JK PS 220kV</p> <p>Bhogat //</p> <p>Kalavad //</p> <p>Lakadia/Jamnagar //</p> <p>1 no. 400kV bay originally identified for M/s Vaayu (RE)</p> <p>2x500 MVA, 400/220kV ICTs</p> <p>RIL (Jamnagar)</p> <p>1x125 MVar BR</p> <p>3x500 MVA, 400/220kV ICTs</p> <p>Jamnagar</p> <p>Other Lines //</p> <p>Agreed in 17<sup>th</sup> NCT</p> <p>Present Scope</p> <p>7 Nos. bays for RE interconnection</p> <p>2 Nos. bays for RE (ACME &amp; Juniper)</p> <p>Space for 1 No. bay interconnection (scope of RE devel)</p> <p>Kuvadiya (GETCO)</p> <p>Space for 2 nos. bay GETCO lines</p>	
4.	Upstream/downstream system associated with the scheme	<p><b>Upstream for 7<sup>th</sup> ICT:</b></p> <ul style="list-style-type: none"> <li>Juniper Green Energy Private Limited (200MW) (Appl. No. 2200000379 ) (Start date as per CMETS-WR: 30.06.2028)</li> <li>Avaada Energy Pvt. Ltd. (AEPL) (100MW) (Appl. No. 2200000445) (Start date as per CMETS-WR: 30.04.2026)</li> </ul> <p><b>Downstream for 8<sup>th</sup> &amp; 9<sup>th</sup> ICTs:</b></p> <ul style="list-style-type: none"> <li>Kuvadiya (GETCO) 220kV D/c line</li> </ul>	
5.	Objective / Justification	The proposed system i.e. 7 <sup>th</sup> 400/220kV, 1x500MVA ICT shall enable evacuation of RE power from various generation projects	

S. No.	Items	Details
		mentioned above in Jam Khambhaliya area who have applied for connectivity under GNA at Jam Khambhaliya PS at 220kV level. Further, the 8 <sup>th</sup> & 9 <sup>th</sup> 400/220kV, 2x500MVA ICTs shall enable drawal of power by GETCO from Jam Khambhaliya PS.
6.	Estimated Cost	<b>INR 200 Crore</b>
7.	Impact on the total Annual Transmission charges (ATC) in % along with the existing ATC	A. ATC (considering levelized tariff @15% of estimated cost): about ₹30Cr. B. Present ATC: ₹44582.2 Cr.* C. A/B: about 0.0673%
8.	Need of phasing, if any	Not Applicable
9.	Implementation timeframe	21 months from date of allocation to implementing agency (30.04.2026 on best effort basis)
10.	Inclusion of any wildlife/protected area along the transmission line route	Not Applicable
11.	Deliberations with RPC along with their comments	The estimated cost of the scheme is less than INR 500 Cr. Accordingly, the same is not required to be sent to WRPC for deliberation in line with MoP office order no. 15/3/2018-Trans-Pt(5) dated 28-10-2021 regarding reconstitution of NCT.
12.	System Study for the evolution of the proposal	The scheme was agreed in the 25 <sup>th</sup> Consultation Meetings for Evolving Transmission Schemes in Western Region held on 29.01.2024.

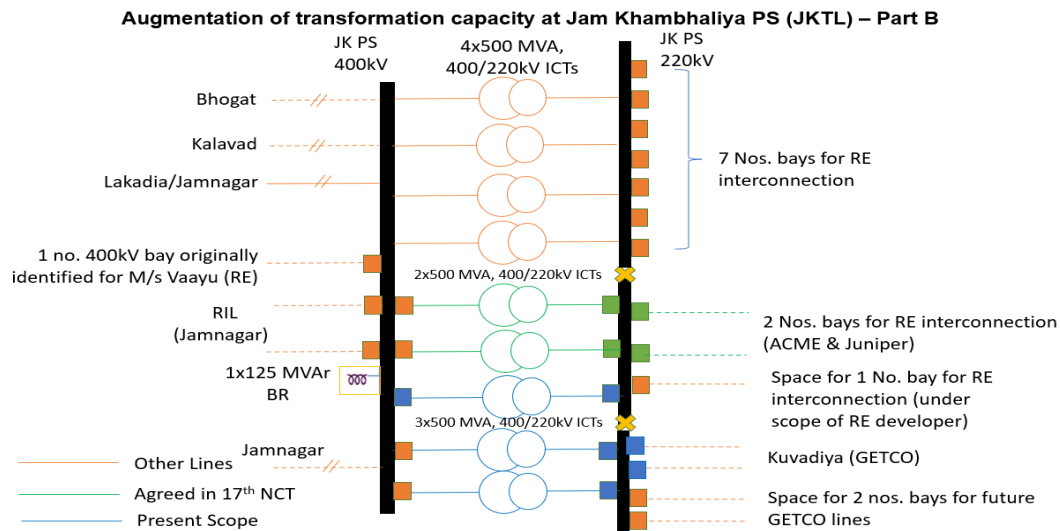
*\* Total YTC allowed for Aug'23 as per Notification of Transmission Charges payable by DICs for Billing Month of October, 2023 dated 25.09.2023 posted on NLDC website.*

4.7.4 Detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Augmentation of transformation capacity at Jam Khambhaliya PS (GIS) by 1x500MVA, 400/220kV (9 <sup>th</sup> ) ICT terminated on New 220kV bus section-3	500MVA, 400/220kV ICTs: 1 Nos.  400kV ICT bays: 1 No. (TSP to implement complete dia. in all respect with the other 400kV bay to be utilized by EETFEL (Bulk consumer))

Sl. No.	Scope of the Transmission Scheme	Capacity /km
		220kV ICT bays: 1 No.
2.	Creation of New 220kV Bus Section at Jam Khambhaliya PS (Section 3)  (with space for 2 nos. 220kV line bays: future in same GIS hall)	220kV Bus sectionaliser bay - 1 Set <i>(to be kept normally OPEN and may be closed based on system requirement)</i>  220kV BC – 1 No.
3.	Augmentation of transformation capacity at Jam Khambhaliya PS (GIS) by 2x500MVA, 400/220kV ICT (7 <sup>th</sup> & 8 <sup>th</sup> ) [7 <sup>th</sup> ICT terminated on New 220kV bus section-2 & 8 <sup>th</sup> ICT terminated on New 220kV bus section-3)	500MVA, 400/220kV ICTs: 2 Nos.  400kV ICT bays: NIL (bays being implemented under Jamnagar scheme, which is currently under tendering, with schedule of Apr/May-26). Bus duct outside GIS hall along with termination equipment shall be provided.  220kV ICT bays: 2 Nos.
4.	Implementation of 220kV GIS line bays at Jam Khambhaliya PS for Kuvadiah 220kV D/c line	220kV line bay – 2 No. (GIS) (on Bus Section-3)
<p><i>Note:</i></p> <p>1. JKTL to provide space for above scope of work.</p> <p>2. GETCO shall implement Jam Khambhaliya PS - Kuvadiah 220kV D/c line in matching time-frame</p>		

4.7.5 Schematic of the above scheme is given below:



4.7.6 Members may deliberate.

#### 4.8 Requirement of Additional FOTE for redundancy at AGC locations in ER

- 4.8.1 Additional FOTE at all AGC operated generating stations in Eastern region are required in view of resource disjoint and criticality of AGC operation for grid operation purpose as failure of single equipment may lead to disruption in AGC operation. Further, at many locations redundant ethernet port are not available as per NLDC requirement
- 4.8.2 This scheme was reviewed in 51<sup>st</sup> ERPC meeting (where in ERPC approved the scheme).
- 4.8.3 Detailed scope of the scheme is given below:

S. No.	Items	Details
1.	Scope of the scheme	Eight numbers of FOTE STM-16 at AGC locations of Eastern Region for redundancy.
2.	Depiction of the scheme on FO Map	NA
3.	Objective / Justification	<p>Additional FOTE at all AGC operated generating stations in Eastern region are required in view of resource disjoint and criticality of AGC operation for grid operation purpose as failure of single equipment may lead to disruption in AGC operation. Further, at many locations redundant ethernet port are not available as per NLDC requirement. The NLDC requirement is as follows:</p> <ul style="list-style-type: none"><li>➤ 1+1 Ethernet port for main NLDC</li><li>➤ 1+1 Ethernet ports are for backup NLDC</li></ul> <p>The list for Requirement of Additional FOTE in ER at AGC locations is enclosed The total eight nos. of STM16 FOTE are required for redundancy as per enclosed list.</p>
4.	Estimated Cost	Rs. 2.40 crores (approx.) (Two crores & forty lacs only)
5.	Implementation time frame	06 months from date of allocation.
6.	Implementation mode	To be implemented by POWERGRID in RTM mode.
7.	Deliberations	The proposed scheme was deliberated in the 3rd & 4th Communication Planning meeting (CPM) of CTUIL where in POWERGRID confirmed the quantity of additional FOTE required at AGC locations. The agenda for this scheme was also deliberated in 12 <sup>th</sup> ERTeST meeting This scheme was reviewed in 51 <sup>st</sup> ERPC meeting (where in ERPC approved the scheme. Now, this scheme shall be put up to NCT for approval.

4.8.4 Detailed scope of the scheme is given below:

<i><b>Sl.</b></i>	<i><b>Scope of the Transmission Scheme</b></i>
<b>1.</b>	Eight numbers of FOTE STM-16 at AGC locations of Eastern Region for redundancy.

4.8.5 List for Requirement of Additional FOTE in ER at AGC locations:

<b>Sr No.</b>	<b>Name</b>	<b>Required FOTE (Qty in No.)</b>
1	Talcher STPS Stage I	1
	Talcher STPS Stage II	
2	Barh STPS Stage I	1
	Barh STPS Stage II	
3	KBUNL Stage II	1
4	Nabinagar STPP Stage I	1
5	Darlipali STPP	1
6	Northkaranpura STPP	1
7	Teesta V	1
8	Rangit	1
<b>Total FOTE required</b>		<b>08</b>

4.8.6 Members may deliberate.

#### **4.9 OPGW laying work on 400kV BokaroA-Kodarma line**

4.9.1 DVC had proposed laying of OPGW along with terminal equipment in nine (09) links through POWERGRID. Out of these 09 links, BokaroA-Koderma link (105km) is an ISTS link owned by POWERGRID, the remaining 07 links (owned by DVC) have already been taken up for implementation and the same is presently in tendering stage. BokaroA-Koderma owned by POWERGRID is an ISTS link and OPGW on this line may be laid under ISTS.

4.9.2 This scheme for OPGW laying work on 400kV BokaroA-Kodarma line was approved in 51<sup>st</sup> ERPC meeting held on 12.01.2024.

4.9.3 Detailed scope of the scheme is given below:

<b>S. No.</b>	<b>Items</b>	<b>Details</b>
1.	Scope of the scheme	OPGW laying work on 400kV BokaroA-Kodarma line (105km) with required terminal equipments.
2.	Depiction of the scheme on FO Map	NA

3.	Objective / Justification	<p>During the discussion held in the 47<sup>th</sup> ERPC meeting held on 25.11.2022, DVC had proposed laying of OPGW along with terminal equipment in nine (09) links through POWERGRID. It was deliberated that out of these 09 links, BokaroA-Koderma link (105km) is an ISTS link owned by POWERGRID. Also, Joda-Jamshedpur (DVC) link (140km) is a tie line between DVC &amp; Odisha, regarding which decision is to be taken. Accordingly, the remaining 07 links (owned by DVC) have already been taken up for implementation and the same is presently in tendering stage. BokaroA-Koderma owned by POWERGRID is an ISTS link and OPGW on this line may be laid under ISTS.</p> <p>POWERGRID stated in 51<sup>st</sup> ERPC meeting that the total cost of the scheme is Rs 6.83 crores.</p> <p>This scheme for OPGW laying work on 400kV BokaroA-Kodarma line was approved in 51<sup>st</sup> ERPC meeting held on 12.01.2024.</p>
4.	Estimated Cost	Rs. 6.83 crores (approx.) (Six Crores & Eighty Three Lacs only)
5.	Implementation time frame	18 months from date of allocation.
6.	Implementation agency	To be implemented by POWERGRID in RTM mode.
7.	Deliberations	<p>The proposed scheme was deliberated in the 47<sup>th</sup> ERPC meeting. Further, the scheme was also deliberated w.r.t the BokaroA-Kodarma in 4th Communication Planning meeting (CPM) of CTUIL for ER region wherein it was suggested that as BokaroA-Kodarma line is an ISTS line, OPGW on this line may be laid under ISTS. Accordingly, this scheme i.e. <b>laying of OPGW on 400kV BokaroA-Kodarma line</b>, was put up for ERPC review in the 51<sup>st</sup> ERPC meeting. In the meeting, CTU highlighted that as per scheme, the implementation mode for replacement of earth wire by OPGW by POWERGRID is proposed in line with CERC order dtd. 27.12.2023 for petition no. 94/MP/2021 under Change in Law.</p> <p>ERPC opined that the decision of CERC is applicable for replacement of earth wire with OPGW in TBCB projects. However, as the Bokaro-Koderma line was implemented in RTM, the replacement of earth wire by OPGW on this line shall be done in RTM mode. ERPC approved the scheme with following comments.</p> <p>i. The scheme for OPGW laying work on the 400kV Bokaro-Koderma line in the Eastern Region was approved.</p>

		ii. Approval given with the condition that there will be no further cost escalation beyond the amount as intimated in the 51st TCC meeting. iii. ERPC emphasized that the project must be completed within the stipulated timeline. The scheme shall be put up to NCT for approval.
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4.9.4 Detailed scope of the scheme is given below:

<i>Sl.</i>	<i>Scope of the Transmission Scheme</i>
1.	OPGW laying work on 400kV BokaroA-Kodarma line (105km) with required terminal equipments.

4.9.5 Members may deliberate.

## **5 Modification in SCOD of under construction schemes**

### **5.1 Transmission System for Evacuation of Power from REZ in Rajasthan (20 GW) under Phase-III Part-G and Part-F**

5.1.1 CERC vide Order dated 01.02.2024 in Petition 253/TL/2023 (Fatehgarh-III Beawar Transmission Limited) has directed CTUIL to align the SCODs of Transmission System for Evacuation of Power from REZ in Rajasthan (20 GW) under Phase-III Part-G [Fatehgarh-III-Beawar 765 kV (2nd D/c) line] and Phase-III Part-F [Fatehgarh-III-Beawar 765 kV (1st D/c) line, Beawar S/s & its interconnections along with STATCOM] schemes, as per para 7 mentioned below:

*“Keeping in view of the above submissions, we proceed to consider the grant of the transmission licence to the Petitioner Company. With regard to the revision of the TSA with modified/aligned schedules, CTUIL, Nodal Agency is directed to resolve the issue on or before 15.2.2024 and to file an affidavit in this regard before the next date of the hearing. PFCCCL is also directed to file its response on an affidavit regarding mismatches in the transfer of the SPV for both schemes in the instant case within ten days.”*

5.1.2 Both schemes under Part-F and Part-G were recommended in the 5<sup>th</sup> meeting of National Committee on Transmission (NCT) held on 25.08.2021 & 02.09.2021 with matching timeframe and Gazette was notified on 06.12.2021.

5.1.3 Further, prior to SPV transfer for both the schemes, a meeting was held on 11.07.2023 amongst CEA, CTUIL, PFCCCL and RECPDCL for discussion on the issue of SPV transfer of Phase-III transmission schemes in Rajasthan wherein, it was deliberated that Rajasthan REZ Ph-III Part G (Fatehgarh-III-Beawar 765 kV D/c line) is interlinked with Phase-III Part F (Beawar S/s and its interconnections). However, both SPVs were on different dates (Part-G on 01.08.2023) and (Part-F on 20.09.2023) resulting into mismatch in commissioning schedules of both the schemes as follows:



Sl. No.	Project/Scheme Name	BPC	Date of SPV transfer/ TSA signing	Name of TSP	SCOD
1	Transmission System for Evacuation of Power from REZ In Rajasthan (20 GW) Under Phase-III Part G	PFCCL	01.08.2023	Fatehgarh III Beawar Transmission Limited (Subsidiary of M/s Sterlite Grid 19 Ltd.)	<b>31.01.2025</b> (18 months from effective date)
2	Transmission System for Evacuation of Power from REZ In Rajasthan (20GW) Under Phase-III Part F	RECPDC	20.09.2023	Beawar Transmission Limited (Subsidiary of M/s Sterlite Grid 27 Ltd.)	<b>Line &amp; S/s: 19.03.2025</b> (18 months from the effective date).  <b>STATCOM: 19.09.2025</b> (24 months from the effective date)

From the above, it is observed that there is a mismatch of 47 days in schedule commissioning dates of both schemes due to different signing date of TSA/date of transfer of SPV.

- 5.1.4 In compliance to CERC directions, a meeting was convened by CTUIL on 16.02.2024 amongst CEA, CTUIL, PFCCL, RECPDCL, Sterlite Grid 19 Limited and Sterlite Grid 27 Limited to resolve the issue of mismatch in aforesaid projects, wherein M/s Sterlite Grid 19 Ltd. (implementing Rajasthan Phase-III Part-G) has agreed to align its SCOD with Rajasthan Phase-III Part-F scheme. i.e. 19.03.2025. Minutes of the meeting have been circulated vide CTU letter dated 20.02.2024 amongst the concerned stakeholders and the same is also being submitted to Hon'ble CERC in compliance with it's order dated 01.02.2024 in Petition 253/TL/2023.
- 5.1.5 As the commissioning schedule was recommended by 5<sup>th</sup> NCT, it is proposed that SCOD of "Transmission System for Evacuation of Power from REZ in Rajasthan (20 GW) under Phase-III Part-G" may be revised in line with the SCOD of "Transmission

System for Evacuation of Power from REZ in Rajasthan (20 GW) under Phase-III Part-F” as follows:

Sl. No.	Project/Scheme Name	Name of TSP	Original SCOD	Revised SCOD
1	Transmission System for Evacuation of Power from REZ In Rajasthan (20 GW) Under Phase-III Part G	Fatehgarh III Beawar Transmission Limited (Subsidiary of M/s Sterlite Grid 19 Ltd.)	<b>31.01.2025</b> (18 months from effective date)	<b>19.03.2025</b>
2	Transmission System for Evacuation of Power from REZ In Rajasthan (20GW) Under Phase-III Part F	Beawar Transmission Limited (Subsidiary of M/s Sterlite Grid 27 Ltd.)	<b>Line &amp; S/s: 19.03.2025</b> (18 months from the effective date).  <b>STATCOM: 19.09.2025</b> (24 months from the effective date)	No change

5.1.6 Members may deliberate

## 5.2 Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part A

5.2.1 CERC vide order dated 31.07.2023 in petition no. 128/TL/2023 (Khavda II C Transmission Limited) has directed CTUIL to amend the TSAs for Part A to part D to align the SCOD of all interlinked packages as per para 7 mentioned below:

“7. As per the Transmission Service Agreement, all four parts are interlinked and are to be taken up in a similar time frame. However, from the above information submitted by CTUIL, there is a mismatch in the SCOD of Part A which is 28.3.2025, and the SCOD of Part-B, Part- C & Part-D is 21.3.2025, with each part being implemented by a different entity. In case Part B, Part-C & Part-D are declared COD on the SCOD date, there shall be commercial liabilities in the absence of Part-A, whose SCOD is on 21.3.2023. Accordingly, CTUIL is directed to amend the TSAs for Parts-A to D to align the SCOD of all the interlinked packages. CTUIL is also directed to finalize the SCOD dates without creating mismatches in the interlinked schemes.”

5.2.2 Another transmission scheme namely “Transmission Network Expansion in Gujarat Associated with Integration of RE Projects from Khavda Potential RE Zone” is also required to be implemented in matching timeframe of Khavda Phase-II (Part A to Part D) schemes. These schemes were progressively approved in 3<sup>rd</sup> National Committee on Transmission (NCT) meeting held on 26.05.2020 & 28.05.2020 and 5<sup>th</sup> meeting of NCT held on 25.08.2021 & 02.09.2021 with implementation in matching timeframe. Transmission system under Part-A, Part-B, Part-C and Khavda RE zone were approved to be implemented under TBCB mode whereas, transmission system under Part-D was approved in 11<sup>th</sup> NCT meeting dated 28.12.2022 & 17.01.2023 under RTM mode. The details are as follows:

Sl. No .	Project Name	Broad Scope of works	BPC	Date of SPV transfer (TSA signing) award under RTM	Name of TSP	SCOD
1	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part B	<ul style="list-style-type: none"> <li>Lakadia PS- Ahmedabad 765kV D/c line</li> </ul>	RECPDC L	21.03.2023	POWERGRID	21.03.2025
2	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part C	<ul style="list-style-type: none"> <li>Establishment of 3x1500MVA, 765/400 kV Ahmedabad S/s</li> <li>Ahmedabad-South Gujarat/ Navsari (new) 765 kV D/c line with 240 MVar switchable line reactor at both ends.</li> <li>400 kV line bays – 04 (LILO of Pirana (PG) - Pirana (T) 400kV D/c line at Ahmedabad S/s</li> </ul>		21.03.2023	POWERGRID	21.03.2025
3	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under	<ul style="list-style-type: none"> <li>KPS2 (GIS)- Lakadia 765 kV D/C line</li> </ul>		28.03.2023	Adani	28.03.2025

Sl. No.	Project Name	Broad Scope of works	BPC	Date of SPV transfer (TSA signing) award under RTM	Name of TSP	SCOD
	Phase II Part A					
4	Transmission Network Expansion in Gujarat Associated with Integration of RE Projects from Khavda Potential RE Zone	• Banaskantha – Ahmedabad 765kV D/c line		21.03.2023	POWERGRID	21.03.2025
5	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part D	• LILO of Pirana (PG)- Pirana (T) 400 kV D/c line at Ahmedabad S/s	RTM	RTM (16.02.2023)	Torrent Power	21.03.2025 (matching with aforesaid schemes)

5.2.3 From the above, it is observed that there is a mismatch of 07 days in SCODs of above schemes due to different date of SPV transfer (TSA signing date) of Part A scheme. The utilization of transmission system under Khavda Phase-II Part B, Part C, Part D and Khavda RE Zone may not be possible till the commissioning of Khavda Phase II Part A scheme.

5.2.4 In compliance to CERC directions, a meeting was convened by CTUIL on 23.02.2024 amongst CEA, CTUIL, RECPDCL, Khavda II A Transmission Limited, Khavda II B Transmission Limited, Khavda II C Transmission Limited, Khavda RE Transmission Limited and Torrent Power Grid Limited to align the SCOD of aforesaid projects wherein it was agreed to revise the SCOD of Khavda Part A from 28.03.2025 to 21.03.2025 matching with other interlinked schemes. Minutes of the meeting have been circulated vide CTU letter dated 01.03.2024 amongst the concerned stakeholders.

5.2.5 As the commissioning schedule was recommended by NCT, it is proposed that SCOD of “Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under

Phase II Part A” may be revised in line with the SCOD of Transmission System under Khavda Phase-II Part B, Part C, Part D and Khavda RE Zones as follows:

<b>Sl. No</b>	<b>Project Name</b>	<b>Date of SPV transfer (TSA signing) award under RTM</b>	<b>Name of TSP</b>	<b>SCOD</b>	<b>Revised SCOD</b>
1	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part B	21.03.2023	POWERGRID	<b>21.03.2025</b>	No Change
2	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part C	21.03.2023	POWERGRID	<b>21.03.2025</b>	No Change
3	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part A	28.03.2023	Adani	<b>28.03.2025</b>	<b>21.03.2025</b>
4	Transmission Network Expansion in Gujarat Associated with Integration of RE Projects from Khavda Potential RE Zone	21.03.2023	POWERGRID	<b>21.03.2025</b>	No Change
5	Transmission scheme for evacuation of 4.5GW RE injection at Khavda PS under Phase II Part D	<b>RTM</b> (16.02.2023)	Torrent Power	<b>21.03.2025</b> (matching with aforesaid schemes)	No Change

5.2.6 Members may deliberate.

## **6 Evaluation of functioning of National Grid.**

Grid-India may make the requisite presentation apprising NCT of the performance of national Grid.

## **7 Any other issues, with permission of chair**

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