

सेंटरल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड  
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)  
(भारत सरकार का उद्यम)

**CENTRAL TRANSMISSION UTILITY OF INDIA LTD.**

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

**Ref. No.:** CTUIL/OM/062024

21<sup>st</sup> June 2024

**Director (Projects)**

Power Grid Corporation of India Ltd.,  
Saudamini, Plot No. 2, Sector-29,  
Gurgaon- 122 001

**Sub: Transmission system for evacuation of RE power from renewable energy parks  
in Leh (5 GW Leh - Kaithal transmission corridor)- change in scope reg.**

MoP vide OM dated 13.01.2022 had awarded subject transmission scheme to CTUIL for its implementation under RTM mode by POWERGRID. CTUIL vide its letter dated 14.01.2022 had forwarded MoP OM to POWERGRID.

Now, MoP vide OM dated 18.06.2024 (copy enclosed at **Annexure-I**) has modified the scope of subject transmission scheme. The revised scope of work along with implementation time frame for the above transmission scheme shall be as per the enclosed OM.

POWERGRID shall enter into a concession agreement with CTUIL for implementation of aforementioned transmission scheme. However, pending finalization of concession agreement, it is requested to initiate necessary actions for implementation of the aforementioned transmission scheme.

This is for your kind information and necessary action, please.

Yours faithfully,

*Ashok Pal*  
**(Ashok Pal)**  
Dy. COO

**Encl: As Stated.**



No. 15/3/2018-Trans-Part (5)  
 Government of India  
 Ministry of Power  
 Shram Shakti Bhawan, Rafi Marg, New Delhi-110001  
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Date: 18<sup>th</sup> June, 2024

OFFICE MEMORANDUM

**Subject: Change in scope "Transmission system for evacuation of RE power from renewable energy parks in Leh (5 GW Leh-kaithal transmission corridor), awarded under Regulated Tariff Mechanism (RTM) – reg.**

The undersigned is directed to refer to Ministry of Power Office Memorandum dated 13.01.2022 (copy enclosed) vide which, the transmission scheme, namely "Transmission system for evacuation of RE power from renewable energy parks in Leh (5 GW Leh-kaithal transmission corridor), were awarded to POWERGRID for their implementation under RTM mode. Subsequently change in scope/ allotment of new scheme were also conveyed vide OM dated 06.11.2023 (copy enclosed).

2. Now, based on the recommendations of 19th NCT, the following scope of Transmission system (EHVAC+HVDC) for evacuation of RE power from renewable energy parks in Leh (5 GW Leh- Kaithal transmission corridor) earlier approved in 7th NCT meeting held on 03.12.21 is modified as below:

S. No.	Scope as per OM dated 13.01.2022	Revised Scope
1.	<p><u>ISTS system for RE interconnection at Pang</u></p> <p>i. 400 kV PS-1 - Pang D/C (quad moose) line – 7 km            ii. 400 kV PS-2 -Pang D/C (quad moose) line – 27 km            iii. 400 kV PS-3 -Pang D/C (quad moose) line – 41 km</p> <p><i>Note :400 kV GIS line bays (2 Nos.) each at PS-1, PS-2 &amp; PS-3 (under developer scope)</i></p>	<p><u>ISTS system for RE interconnection at Pang</u></p> <p>i. 400 kV PS-1 - Pang D/C (quad moose) line – 7 km            ii. 400 kV PS-2 -Pang D/C (quad moose) line – 27 km            iii. 400 kV PS-3 -Pang D/C (quad moose) line – 41 km</p> <p><i>Note :400 kV GIS line bays (2 Nos.) each at PS-1, PS-2 &amp; PS-3 (under developer scope)</i></p>
2.	<p><b><u>Battery Energy Storage System (1GWh: 250 MW X 4 hr) at Pang</u></b></p> <p>i. BESS of suitable size (1 GWh: 250 MW x 4 hr)            ii. 220 kV line bay (1 no) for BESS (ISTS) interconnection at Pang</p>	Deleted
3.	<u>HVDC System</u>	<u>HVDC System</u>

S. No.	Scope as per OM dated 13.01.2022	Revised Scope
i.	Pooling point in Pang (Leh): ±350 kV, 2 Nos. of 2500 MW HVDC terminal Future provisions: Space for ❖ 400 kV line bays: 6 Nos. ❖ 400/220 kV ICTs along with bays: 2 Nos. ❖ 220 kV line bays: 4 Nos.	i. Pooling point in Pang (Leh): ±350 kV, 2 Nos. of 2500 MW HVDC terminal Future provisions: Space for ❖ 400 kV line bays: 6 Nos. ❖ 400/220 kV ICTs along with bays: 2 Nos. ❖ 220 kV line bays: 4 Nos.
ii.	Pooling point in Kaithal (Haryana): ±350 kV, 2 Nos. of 2500 MW HVDC terminal Future provisions: Space for ❖ 765/400 kV ICTs along with bays : 1 No. ❖ 765 kV line bays along with switchable line reactor : 2 Nos. ❖ 400kV line bays along with switchable line reactor : 4 Nos. ❖ 400/220 kV ICTs along with bays : 2 Nos. ❖ 220 kV line bay: 4 Nos.	ii. Pooling point in Kaithal (Haryana): ±350 kV, 2 Nos. of 2500 MW HVDC terminal Future provisions: Space for ❖ 765/400 kV ICTs along with bays : 1 No. ❖ 765 kV line bays along with switchable line reactor : 4 Nos. ❖ 400kV line bays along with switchable line reactor : 6 Nos. ❖ 400/220 kV ICTs along with bays : 2 Nos. ❖ 220 kV line bay : 4 Nos.
iii.	4 Nos. of 400 kV converter (VSC) bays at Pang	iii. 4 Nos. of 400 kV converter (VSC) bays at Pang
iv.	4 Nos. of 400 kV converter (VSC) bays at Kaithal	iv. 4 Nos. of 400 kV converter (VSC) bays at Kaithal
v.	2 Nos. of 400/220/33 kV, 315 MVA Transformers along with associated Bays at Pang	v. 2 Nos. of 400/220/33 kV, 315 MVA Transformers along with associated Bays at Pang
vi.	3 Nos. of 765/400/33 kV, 1500 MVA Transformers along with associated bays at Kaithal	vi. 3 Nos. of 765/400/33 kV, 1500 MVA Transformers along with associated bays at Kaithal
vii.	2 Nos. of 400 kV line bays at Kaithal	vii. Deleted
viii.	2 Nos. of 765 kV line bays at Kaithal	viii. Deleted
ix.	6 Nos. of 400kV line bays at Pang for termination of lines from RE park	ix. 6 Nos. of 400kV line bays at Pang for termination of lines from RE park
<i>DC GIS/ AIS</i>		<i>DC GIS/ AIS</i>
i.	DC GIS / AIS at Pang and DC AIS at Kaithal	i. DC GIS / AIS at Pang and DC AIS at Kaithal
ii.	4 Nos. of transition stations	ii. 4 Nos. of transition stations

S. No.	Scope as per OM dated 13.01.2022 with DC GIS/ AIS	Revised Scope with DC GIS/ AIS
	<p data-bbox="491 371 847 394"><i>HVDC Line (OHL and UG Cable)</i></p> <p data-bbox="491 434 906 618">i. HVDC Line (OHL and UG Cable): 480 kms of <math>\pm 350</math> kV HVDC line between Pang &amp; Kaithal PS (combination of 465 km overhead line (Quad) and 15 km underground cable)</p>	<p data-bbox="927 371 1283 394"><i>HVDC Line (OHL and UG Cable)</i></p> <p data-bbox="927 434 1353 618">i. HVDC Line (OHL and UG Cable): 480 kms of <math>\pm 350</math> kV HVDC line between Pang &amp; Kaithal PS (combination of 465 km overhead line (Quad) and 15 km underground cable)</p>
4.	<p data-bbox="491 629 826 651"><u><i>EHVAC System beyond Kaithal</i></u></p> <p data-bbox="491 685 906 775">i. Kaithal – Bahadurgarh (PG) 400 kV D/c Line (Twin HTLS*) – 170 km</p> <p data-bbox="491 786 906 1066">ii. Kaithal – Modipuram (Meerut) (UPPTCL) 765 kV D/c Line along with 1x240 MVAR switchable line reactor on each circuit at Kaithal end (along with 2 Nos. switching equipment for 765 kV, 240 MVAR Switchable line reactor) – 210 km</p> <p data-bbox="491 1077 906 1379">iii. **Augmentation of 765/400 kV. 1500 MVA transformer of Bhiwani S/s (one section has 2x1000 MVA ICT wherein 1500 MVA augmentation will take place, whereas other has 1x1000 MVA ICT through series reactor) along with associated bays incl. 500 MVA spare transformer unit (1-Phase)</p> <p data-bbox="491 1391 906 1447">iv. 2 Nos. of 400 kV line bays at Bahadurgarh (PG)</p> <p data-bbox="491 1458 906 1514">v. 2 Nos. of 765 kV line bays at Modipuram (Meerut) (UPPTCL)</p>	<p data-bbox="927 629 1267 651"><u><i>EHVAC System beyond Kaithal</i></u></p> <p data-bbox="927 685 1353 775">Deleted (Proposed to be delinked and formed as separate scheme)</p>
5.	<p data-bbox="491 1547 906 1603">ISTS system to provide reliable power supply to Ladakh:</p> <p data-bbox="491 1615 906 1823">i. 220 kV Pang – Leh (Phyang) (PG) S/C line (Deer conductor) (S/C line on D/c tower) along with 220 kV line bay each at Pang &amp; Leh (Phyang) for line termination 151 km + 7 km underground cable.</p>	<p data-bbox="927 1547 1353 1603">ISTS system to provide reliable power supply to Ladakh:</p> <p data-bbox="927 1615 1353 1823">i. 220 kV Pang – Leh (Phyang) (PG) S/C line (Deer conductor) (S/C line on D/c tower) along with 220 kV line bay each at Pang &amp; Leh (Phyang) for line termination 151 km + 7 km underground cable.</p>

S. No.	Scope as per OM dated 13.01.2022	Revised Scope
Notes	<p>*With minimum capacity of 2100 MVA on each circuit at nominal voltage</p> <p>i. UPPTCL to provide space for 2 Nos. of 765 kV bays at Modipuram (Merrut) S/s</p> <p>ii. POWERGRID to provide space for 2 Nos. of 400 kV bays at Bahadurgarh S/s</p> <p>iii. The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey</p> <p>iv. implementation Time-frame: 5 years from approval</p>	<p>❖ Deleted</p> <p>i. Deleted</p> <p>ii. Deleted</p> <p>iii. The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey</p> <p>iv. Completion Schedule: <b>FY 2029-30 (by 31<sup>st</sup> March 2030).</b></p>

*\*\* due to urgent requirement of 1500 MVA, 765/400 kV ICT at Bhiwani S/s, this element was delinked from earlier RTM scope in 15<sup>th</sup> NCT meeting and MOP vide OM dated 06/11/23 allocated the implementation of the ICT to POWERGRID in RTM*

3. Further, the above delinked EHVAC system beyond Kaithal would be required in the matching timeframe of the HVDC system i.e. by 31.03.2030. Accordingly, considering the implementation time frame difference between HVDC (about 4.5 years) & EHVAC system (about 2 yrs), implementation of EHVAC system may be taken up with NCT in due course.
4. CTUIL may make note of above modifications for necessary action at their end.
5. This issues with the approval of Hon'ble Minister of Power.

  
 (Naorem Indrakumar Singh)  
 Under Secretary (Trans)  
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 Email: [transdesk-mop@nic.in](mailto:transdesk-mop@nic.in)

To,  
 COO, CTUIL,  
 Gurugram.

Copy to:  
 1. Member (PS), CEA, New Delhi  
 2. CMD, PGCIL, Gurugram.