

I/25378/2022



भारत सरकार  
Government of India  
विद्युत मंत्रालय  
Ministry of Power  
केंद्रीय विद्युत प्राधिकरण  
Central Electricity Authority  
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग- II  
Power System Planning & Appraisal Division-II

सेवा में/To

As per list of Addresses

विषय : ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की ग्यारहवी बैठक की अतिरिक्त कार्यसूची – के सम्बन्ध में।

Subject : Additional Agenda for the 11<sup>th</sup> Meeting of National Committee on Transmission (NCT) –regarding.

महोदया (Madam) / महोदय (Sir),

11<sup>th</sup> meeting of the "National Committee on Transmission" (NCT) is to be held on 28<sup>th</sup> December, 2022 at 12:00 Hrs as per details given below:

**Venue:** Chintan, 2<sup>nd</sup> Floor, CEA, Sewa Bhawan, R.K. Puram Sector-1, New Delhi

**Date:** 28<sup>th</sup> December, 2022

**Time:** 12:00 hrs.

The additional agenda for the meeting is enclosed herewith.

Kindly make it convenient to attend the meeting.

भवदीय/Yours faithfully,

(ईशान शरण/Ishan Sharan)

मुख्य अभियंता एवं सदस्य सचिव (एनसीटी)  
/Chief Engineer & Member Secretary (NCT)

प्रतिलिपि / Copy to:

संयुक्त सचिव (पारेषण), विद्युत मंत्रालय /Joint Secretary (Trans), Ministry of Power

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**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. Dilip Nigam, Scientist 'G', MNRE, Block no. 14, CGO Complex, 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, POSOCO, B-9, Qutub, Institutional Area, Katwaria Sarai, New Delhi – 110010
9.	Dr. Radheshyam Saha, Ex. Chief Engineer, Central Electricity Authority		

**Additional Agenda for the 11<sup>th</sup> meeting of NCT****1. Modifications in the scheme “Transmission scheme for evacuation of 4.5 GW RE injection at Khavda PS under Phase II- Part D”.**

In the 10<sup>th</sup> meeting of NCT held on 07.11.2022 w.r.t. Agenda Item 3.3 (Implementation modalities of Transmission scheme for evacuation of 4.5 GW RE injection at Khavda PS under Phase II- Part D), following was agreed:

- The mode of implementation for the “Transmission scheme for evacuation of 4.5 GW RE injection at Khavda PS under Phase II- Part D” would be changed from TBCB to RTM.
- Further, as implementation of all the transmission packages proposed for evacuation of 4.5 GW RE injection at Khavda RE park under Phase-II (Part A to Part D) needs to be taken up in similar timeframe, accordingly, the implementing agency under RTM would coordinate with the BPC/SPV of Khavda Phase II (Part A – C) schemes to match the commissioning timeframe. This would entail the following actions:
  - i. Denotification of the scheme “Transmission scheme for evacuation of 4.5 GW RE injection at Khavda PS under Phase II- Part D” that was issued by MoP vide Gazette Notification dated 25.09.2020.
  - ii. Allocation of the aforesaid scheme to CTUIL for implementation through RTM route by the respective asset owners i.e.
    - a. LILO of Pirana (PG) – Pirana (T) 400 kV D/c line at Ahmedabad S/s with twin HTLS conductor alongwith reconductoring of Pirana (PG) – Pirana (T) line with twin HTLS conductor (with OPGW for both main & LILO portion) and Bay upgradation work at Pirana (T) along with requisite FOTE - to be awarded to TPGL.
    - b. Bay upgradation work at Pirana (PG) along with requisite FOTE - to be awarded to Powergrid.

Now, CTUIL mentioned that M/s TPGL vide letter dated 20.12.2022 to CTUIL informed that they are the owner of 2 nos. 400kV line bays at Pirana(PG) S/s.

Accordingly, revised scheme is mentioned as below:

S.No	Scope of the Transmission Scheme (Original)	Scope of the Transmission Scheme (Revised)
1.	LILO of Pirana (PG) – Pirana (T) 400 kV D/c line at Ahmedabad S/s with twin HTLS conductor alongwith reconductoring of Pirana (PG) – Pirana (T) line with twin HTLS conductor (with OPGW for both main & LILO portion) and Bay upgradation work at Pirana (T) along with requisite FOTE - to be awarded to TPGL	LILO of Pirana (PG) – Pirana (T) 400 kV D/c line at Ahmedabad S/s with twin HTLS conductor alongwith reconductoring of Pirana (PG) – Pirana (T) line with twin HTLS conductor (with OPGW for both main & LILO portion) and Bay upgradation work at Pirana (T) <b>and at Pirana (PG)</b> along with requisite FOTE - to be awarded to TPGL
2.	Bay upgradation work at Pirana (PG) along with requisite FOTE - to be awarded to Powergrid.	

**Members may deliberate.**

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## 2. Modification in scope of work of “Transmission Network Expansion in Gujarat to increase ATC from ISTS: Part C” scheme – Agenda by GETCO

The Transmission Network Expansion in Gujarat to increase its ATC from ISTS: Part C scheme was agreed in the 7<sup>th</sup> NCT meeting held on 03.12.2021 with following scope of work:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1	Augmentation of transformation capacity at 765/400 kV ICT Banaskantha S/S by 1x1500MVA	765/400 kV, 1500 MVA ICT: 1 no. 765 kV ICT bay – 1no 400 kV ICT bay– 1 no
2	Banaskantha -Sankhari 400 kV 2 <sup>nd</sup> D/c line	26 km 400 kV line bays- 4 nos (2 nos at Banaskantha and 2 nos at Sankhari)

**Estimated Cost:** Rs 148 Crore

**Implementation Time-frame:** Matching with establishment of Prantij 400/220 kV and Sankhari- Prantij 400 kV D/C line by GETCO (presently expected by Mar’25)

The scheme is presently under implementation by POWERGRID (under RTM) as per NCT letter dated 22.12.2021.

Subsequently, in meeting amongst CTU & GETCO on 09.11.2022, GETCO requested CTU to review the Banaskantha -Sankhari 400 kV 2<sup>nd</sup> D/c line considering the issue of high fault level at 400kV level of Sankhari(Veloda) S/s (~45kA in 2026-27 time-frame) as well as RE connectivity to the tune of 700-800MW which has been granted by GETCO at 220kV level of Sakhari S/s.

The matter was deliberated in meetings held on 16.11.2022 & 18.11.2022 amongst CEA, CTU, POSOCO & GETCO wherein following emerged:

- GETCO informed that Sankhari – Prantij 400kV D/c line along with Prantij 400/220kV S/s is currently under tendering stage with target completion by Mar’25.
- POWERGRID informed that they have already awarded the Banaskantha – Sakhari 400kV 2nd D/c line.
- To resolve the issues raised by GETCO, it was decided that instead of establishing Banaskantha -Sankhari 400 kV 2<sup>nd</sup> D/c line under ISTS and Sankhari – Prantij 400kV D/c (twin AL-59) line under Intra-state, *Banaskantha – Prantij 400kV D/c direct line (~150km.) along with 63MVAR, 420kV switchable line reactors on each ckt at Prantij S/s end* may be established. This would reduce the fault level at Sankhari to below 40kA and would also help to feed load in Prantij area directly from Banaskatha (PG) S/s thereby relieving overloading issues on Banaskantha – Sankhari 400kV D/c line.
- POWERGRID and GETCO were requested to coordinate with each other and confirm the modalities of implementation of Banaskantha – Prantij 400kV D/c direct line.

In this direction, POWERGRID vide e-mail dated 25.11.2022 informed that although they have awarded Tr Line and S/s Extention packages at both sides (i.e. Banaskantha & Sankhari ends) and construction work is in progress, they are ready to implement Banaskantha – Prantij 400kV D/c line along with 63MVAR, 420kV switchable line reactor on each ckt at Prantij S/s end (instead of earlier scope of Banaskantha – Sankhari 400kV 2<sup>nd</sup> D/c line).

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Subsequently, GETCO vide e-mail dated 20.12.2022 informed that in order to avoid sectionalisation arrangement at Sankhari or bypassing of lines at later stage (i.e. idle bays at Sankhari substation), it would be advisable to review the planned scheme at this stage itself. In view of the same, GETCO requested that the Bansakantha - Prantij 400kV D/c line may be implemented under ISTS and 400 kV D/C Sankhari - Prantij line under Intra-State scheme may be dropped.

In view of the above, the scope of the subject transmission scheme being implemented by POWERGRID (under RTM) as per NCT letter dated 22.12.2021 is proposed to be revised as per details given below:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1	Augmentation of transformation capacity at 765/400 kV ICT Banaskantha S/S by 1x1500MVA	765/400 kV, 1500 MVA ICT: 1 no. 765 kV ICT bay – 1no 400 kV ICT bay– 1 no
2	Banaskantha – Prantij 400kV D/c (Quad ACSR/AAAC/AL59 moose equivalent) line along with 63MVA <sub>r</sub> , 420kV switchable line reactors on each ckt at Prantij S/s end	150km 400 kV line bays- 4 nos (2 nos at Banaskantha and 2 nos at Prantij) 63MVA <sub>r</sub> , 420kV Switchable Line Reactors- 4 nos. (at Prantij end) along with associated switching equipment

**Estimated Cost:** Rs ~840 Cr. (tentative) on Mar'22 price level.

**Implementation Time-frame:** Matching with establishment of Prantij 400/220 kV (presently expected by **Mar'25**: As informed by GETCO vide e-mail dated 22.12.2022, Prantij S/s is planned to be awarded by March-2023 with an execution time of 24 months.)

**Members may deliberate.**

### 3. Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part C3 and E3

Transmission system for additional 20 GW REZ in Northern Region (Phase-III) was agreed in the 3<sup>rd</sup> NRPC (TP) meeting held on 19.02.2021 and 49<sup>th</sup> Northern Region Power Committee (NRPC) meeting held on 27.09.21. Subsequently in the 5<sup>th</sup> NCT meeting held on 25.08.2021 & 02.09.2021, above scheme was agreed for implementation

As part of above scheme, in 5<sup>th</sup> NCT meeting, STATCOM along with MSC & MSR each at Ramgarh and Fatehgarh-III PS was also discussed in following two packages:

#### 3.1 Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part C3

S.No.	Scope of the Transmission Scheme	Capacity (MVA <sub>r</sub> )	Estimated Cost
1	Ramgarh PS: STATCOM along with MSC+MSR	±2x300MVA <sub>r</sub> STATCOM, 4x125 MVA <sub>r</sub> MSC, 2x125 MVA <sub>r</sub> MSR	Rs 300 Cr

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### 3.2 Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part E3

S.No.	Scope of the Transmission Scheme	Capacity (MVar)
1	Fatehgarh – III PS : STATCOM along with MSC+MSR	±2x300 MVar, 4x125 MVar MSC, 2x125 MVar MSR

In the NCT Meeting, it was deliberated that Battery Energy Storage System could be treated as an alternative to STATCOM and therefore needs to be explored. Further, studies pertaining to Battery Storage System could be done and accordingly revised proposal could be taken up, if required.

It was also decided, implementation of Phase-III Part C3 to be taken up after grant of LTA beyond 2000 MW (about) at Ramgarh PS, if required, as per the studies. It is to mention that CTU has already granted 2600 MW LTA at Ramgarh and about 3800 MW LTA at Fatehgarh-III PS (Section-2) along with onward common transmission system to various RE Applicants.

Presently due to cost consideration, BESS technology at Grid scale level in India is yet to evolve. However, RE penetration (solar/Hybrid) is increasing continuously in western Rajasthan and phase-III system is also under advance stage of bidding & approval by GIB committee

Further to mention, in Western Rajasthan many issues related to reactive power management i.e. Oscillations, abrupt voltage variations, low voltages in peak RE & high voltage in off solar period etc. have been observed which also necessitate urgent deployment of STATCOM to support the grid. In various MOP meetings, need of STATCOMs in RE complexes is already emphasised by various stakeholders viz. SECI, POSOCO etc. . Therefore, studies pertaining to Battery Storage System shall be carried out for future STATCOMs.

Accordingly, proposed STATCOMs in Ph-III package C3 & E3 may be taken up for approval.

#### A. Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part C3

S.No	Scope of the Transmission Scheme	Capacity (MVar)	Estimated Cost
1	Ramgarh PS: STATCOM along with MSC+MSR	± 2x300MVar STATCOM, 4x125 MVar MSC, 2x125 MVar MSR	Rs 302 Cr

Note:

- Scheme to be implemented in matching time frame of Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part C1 [ Ramgarh PS & onwards]

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**B. Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part E3**

S.No	Scope of the Transmission Scheme	Capacity (MVA <sub>r</sub> )	Estimated Cost
1	Fatehgarh – III PS : STATCOM along with MSC+MSR	±2x300 MVA <sub>r</sub> , 4x125 MVA <sub>r</sub> MSC, 2x125 MVA <sub>r</sub> MSR	Rs 302 Cr

Note:

- STATCOM to be placed at new section of Fatehgarh-III PS from where Phase-III scheme is emanating
- Scheme to be implemented in matching time frame of Transmission system for evacuation of power from REZ in Rajasthan (20GW) under Phase-III Part E1 [Fatehgarh-III PS & onwards]

**Members may deliberate.**

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