

I/6347/2019



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

To

Date: 21/08/2019

-As per list enclosed-

विषय: पश्चिमी क्षेत्र की ट्रांसमिशन पर स्थायी समिति की 21.05.2019 को हुई दूसरी बैठक - कार्यवृत्ति का शुद्धिपत्र

Subject: 2nd meeting of Western Region Standing Committee on Transmission (WRST) held on 21.05.2019 at Indore – Corrigendum to minutes of the meeting

Sir/ Madam,

The minutes of the 2nd meeting of Western Region Standing Committee on Transmission held on 21.05.2019 at Indore were issued vide our letter no. CEA-PS-11-23(19)/1/2019-PSPA-I Division dated 29.06.2019. Based on the observations / comments received by MPPTCL, GETCO and CTU, corrigendum to the above minutes is enclosed as Annexure-I.

Yours faithfully,

(Goutam Roy)
Chief Engineer (PSP&A-I)

I/6347/2019

1.	Member Secretary, WRPC, F-3, MIDC Area, Andheri (East), Mumbai – 400093 Fax – 022-28370193	2.	Managing Director, CSPTCL, Dangania, Raipur (CG)-492013 Fax - 0771 - 2574246/ 4066566	3.	Secretary (Power), Administration of Daman & Diu (U.T.), Fort Area, Moti Daman-396220
4.	Secretary (Power), UT of Dadra & Nagar Haveli, Secretariat, Amli, Silvassa - 396230	5.	Chief Electrical Engineer, Electricity Department, Government of Goa, Vidyut Bhavan, 3rd Floor, Panaji - 403001 Fax – 0832-2222354	6.	Managing Director, GETCO, Sardar Patel Vidyut Bhawan, Race Course, Vadodara-390007 Fax - 0265-2338164
7.	Chairman and Managing Director, MPPTCL, Shakti Bhawan, Rampur, Jabalpur-482008 Fax – 0761-2664141	8.	Chairman and Managing Director, MAHATRANSCO, Plot No.C-19, E-Block, Bandra-Kurla Complex, Bandra (E), Mumbai - 400051 Fax : 022-26591254	9.	CEO, POSOCO B-9, Qutub Institutional Area, Katwaria Sarai New Delhi – 110010 Fax – 011-2682747
10	COO (CTU) POWERGRID, Saudamini, Plot no. 2, Sector -29, Gurgaon-122 001 Fax-0124-2571809				

Nominated STU Members for WRSCT:

11	Shri B B Chauhan, Managing Director, GETCO, Sardar Patel Vidyut Bhawan, Race Course, Vadodara-390007	12	Chief Engineer (Planning & Design), MPPTCL, Block no -2 ,Shakti Bhawan, rampur, Jabalpur – 482008 (M.P)	13	Er. Tripti Sinha, Managing Director, CSPTCL, Dangania, Raipur (CG)-492013
14	Shri Ravindra Chavan Director (Projects), MSETCL, Prakashganga, Plot No.C-19, E-Block, Bandra-Kurla Complex, Bandra (E), Mumbai - 400051	15	Shri Stephen Fernandes, Executive Engineer (IPM), Vidyut Bhavan, 3rd Floor, Panaji, Goa - 403001		

I/6347/2019

Corrigendum to the minutes of 2nd Meeting of Western Region Standing Committee on Transmission held on 21.05.2019

1. The minutes of 2nd meeting of Western Region Standing Committee on Transmission held on 21.05.2019 at Indore were issued vide our letter no. [CEA-PS-11-23\(19\)/1/2019-PSPA-I Division](#) dated 29.06.2019.
2. MPPTCL and GETCO vide their letter nos. 04-02/N-171/1445 dated 03.07.2019 and ACE(R&C)/STU/511/1228 dated 04.07.2019 respectively, have requested for corrigendum in the minutes of the 2nd WRSCT meeting. Further, CTU vide letter no. C/CTU/W/2ndWRST-Corr dated 01.08.2019 has also requested for corrigendum in item no. 25.14 of the minutes of the 2nd WRSCT meeting.
3. The following corrigendum is issued to the minutes of the 2nd WRSCT meeting:

3.1. Modification / corrections in the existing paras:

S.No	Para/ item as recorded in the MoM of 2 nd WRSCT	Modified/ Corrected para/item
1	<p>20.2.5 The following scheme was agreed for establishment of Chiloda 220/132 kV substation: Intra-state system by GETCO</p> <p>(i) Establishment of Chiloda 220/132 kV substation by upgrading of existing Chiloda 132 kV substation</p> <p>(ii) Dehgam (PGCIL) – Chiloda 220 kV D/C line.</p> <p>(iii) LILO of Gandhinagar TPS – Soja / Ranasan 220 kV line at Chiloda substation</p> <p>Inter- State Transmission System</p> <p>(i) Two nos. of 220 kV bays at Dehgam 400/220 sustation.</p> <p>(ii) Implementation time of 24 months (To be coordinated with GETCO to avoid any implementation mismatch).</p>	<p>20.2.5 The following scheme was agreed for establishment of Chiloda 220/132 kV substation: Intra-state system by GETCO</p> <p>(i) Establishment of Chiloda 220/132 kV substation by upgrading of existing Chiloda 132 kV substation</p> <p>(ii) Dehgam (PGCIL) – Chiloda 220 kV D/C line.</p> <p>(iii) LILO of Gandhinagar TPS – Soja / Ranasan 220 kV line at Chiloda substation</p> <p>(iv) Two nos. of 220 kV bays at Dehgam 400/220 sustation (POWERGRID to provide necessary space for implementation of 2 nos. of 220 kV bays at Dehgam)</p>
2	<p>22.7 Members noted and concurred the changes done in the scheme.</p>	<p>22.7 Regarding implementation of 220 kV outlets from Vapi-II 400/220 kV substation, GETCO stated that it would take a minimum of 3-3.5 years of time from submission of</p>

I/6347/2019

		<p>exact location along with bay allocation to GETCO from 400 kV Ambheti / Vapi-II substation.</p> <p>CEA clarified that the scheme is being implemented through TBCB route and the timeline of completion for the different transmission elements under the project has already been fixed. As per the RfP document, the timeline for the implementation of Ambheti / Vapi-II 400/220 kV substation is 34 months. Accordingly, GETCO was requested to complete the 220 kV interconnections from the Ambheti / Vapi-II substation in matching time frame.</p> <p>Members noted and concurred the changes done in the scheme.</p>
	<p>25.14. -----</p> <p>(4) Transmission system associated with RE generations at Bhuj –II, Dwarka & Lakadia:</p> <p>-----</p> <p>3. 240MVAr switchable Line reactor at Lakadia PS end of Lakadia PS – Banaskantha PS 765kV D/c line</p> <p><u>Note:</u></p> <p>a. <i>POWERGRID to provide space for 2 nos of 765kV bays at Banaskantha S/s for Lakadia – Banaskantha 765kV D/c line</i></p> <p>b. <i>Developer of Lakadia S/s to provide space for 2 nos of 765kV bays and space for 2 nos. of 240MVAr switchable line reactors at Lakadia for Lakadia – Banaskantha 765kV D/c line</i></p>	<p>25.14. -----</p> <p>(4) Transmission system associated with RE generations at Bhuj –II, Dwarka & Lakadia:</p> <p>-----</p> <p>3. 240MVAr switchable Line reactor (alongwith 1x80 MVAr, 765 kV, 1ph. spare unit) at Banaskantha PS end of Lakadia PS – Banaskantha PS 765kV D/c line</p> <p><u>Note:</u></p> <p>a. <i>POWERGRID to provide space for 2 nos of 765kV bays and space for 2 nos. of 240 MVAr switchable line reactors at Banaskantha end for Lakadia – Banaskantha 765kV D/c line</i></p> <p>c. <i>Developer of Lakadia S/s to provide space for 2 nos of 765kV bays at Lakadia for Lakadia – Banaskantha 765kV D/c line</i></p> <p>Reason for proposed modification: After the proposed LILO of Lakadia –</p>

I/6347/2019

	<p>-----</p> <p>(8) Name of Scheme: Transmission System for providing connectivity to RE projects in Gujarat [Lakadia (2000MW)]:</p> <p>1. Establishment of 4x500MVA, 400/220kV ICTs at Lakadia PS (GIS)</p> <p>4x500MVA, 400/220kV 400kV ICT bay-4 220kV ICT bay- 4 220kV line bays -7</p>	<p>Banaskantha 765kV D/c line at Rapar (under REZ Phase-II), the Rapar – Banaskantha 765kV line section (~150km.) shall remain uncompensated whereas Rapar – Lakadia 765kV line section (~70-80km) shall become over-compensated. In view of the above, it is proposed that the 240MVAr switchable LR at Lakadia end of Lakadia – Banaskantha 765kV D/c line (instead of Lakadia end).</p> <p>-----</p> <p>(8) Name of Scheme: Transmission System for providing connectivity to RE projects in Gujarat [Lakadia (2000MW)]:</p> <p>1. Establishment of 4x500MVA, 400/220kV ICTs at Lakadia PS (400kV AIS and 220kV GIS)</p> <p>4x500MVA, 400/220kV 400kV ICT bay-4 (AIS) 220kV ICT bay- 4 (GIS) 220kV line bays -7 (GIS)</p> <p>Reason for proposed modification: 765/400kV Lakadia PS is being developed under WRSS -21 Part-A as AIS. Accordingly, 400 kV ICT bays may be developed as AIS and 220 bays (for ICT's and lines) may be developed as GIS]</p>
3	<p>26.16 A. Gujarat REZs [8GW Solar + 0.5GW Wind]</p> <p>(a) Kutch (Rapar) SEZ 5000 MW (3000MW near Rapar and 2000MW near Lakadia (S/s augmentation at Lakadia already planned in the 1st WRSCT)) & Banskantha SEZ 2500 MW</p> <p>Estimated cost: ~Rs. 5250Cr.</p>	<p>26.16 A. Gujarat REZs [8GW Solar + 0.5GW Wind]</p> <p>(b) Kutch (Rapar) SEZ 5000 MW (3000MW near Rapar and 2000MW near Lakadia (S/s augmentation at Lakadia already planned in the 1st WRSCT)) & Banskantha SEZ 2500 MW</p> <p>Estimated cost: ~Rs. 5250Cr.</p>

I/6347/2019

<p>-----</p> <p>(ii) Augmentation of transformation capacity at Lakadia PS by 1x1500MVA, 765/400kV and 4x500MVA, 400/220kV ICTs for interconnection with SEZ</p> <p>-----</p> <p>(v) Radhanesda PS - Sankhari 400 kV D/c line (Twin HTLS)</p>	<p>-----</p> <p>(ii) Augmentation of 765/400 kV transformation capacity at Lakadia PS by 1x1500MVA, 765/400kV ICT. Augmentation of 400/220 kV transformation capacity by 4x500MVA, 400/220kV ICTs (400kV AIS and 220kV GIS) for interconnection with SEZ in case of injection from RE projects are at 220 kV level at Lakadia</p> <p>Reason for proposed modification: The augmentation of 400/220 kV transformation capacity to be taken up only in case of injection from RE projects are at 220 kV level at Lakadia.</p> <p>-----</p> <p>(v) Radhanesda PS - Banaskantha 400 kV D/c line (Twin HTLS) and Banaskantha – Zerda 400 kV D/c line</p> <p>Reason for proposed modification: The required changes based on the request of GETCO to reduce the loadings of their Intra State Transmissin Lines</p>
<p>26.16 B. Maharashtra SEZs [4GW Solar]</p> <p>(a) Solapur SEZ 2500 MW (Phase-I (1000MW) + Phase-II (1500MW) under ISTS)</p> <p>Estimated cost: ~Rs. 400Cr.</p> <p><u>Phase-I (1000MW)</u></p> <p>i) Toramba – Solapur (PG) 400kV S/c line (dedicated line, of M/s TREPL with St-I connectivity of 900MW & St-II connectivity of 300MW)</p> <p><u>Phase-II (1500MW) (under ISTS)</u></p> <p>-----</p> <p>(iv) 220 kV line bays for interconnection of solar projects(8 nos)</p> <p>*Already agreed in the 1st WRSCT</p>	<p>26.16 B. Maharashtra SEZs [4GW Solar]</p> <p>(b) Solapur SEZ 2500 MW (Phase-I (1000MW) + Phase-II (1500MW) under ISTS)</p> <p>Estimated cost: ~Rs. 400Cr.</p> <p><u>Phase-I (1000MW)</u></p> <p>i) Toramba – Solapur (PG) 400kV S/c line (dedicated line, of M/s TREPL with St-I connectivity of 900MW & St-II connectivity of 300MW)*</p> <p><u>Phase-II (1500MW) (under ISTS)</u></p> <p>-----</p> <p>(iv) 220 kV line bays for interconnection of solar projects(8 nos)*</p> <p>*Already agreed in the 1st WRSCT</p>

3.2. Addition of new paras between item no. 26.15 and 26.16:

26.15-A Regarding commercial aspects of the scheme, MPPTCL stated that PoC charges for the proposed transmission system associated with Renewable

I/6347/2019

Energy Projects shall not be passed on to the other utilities and shall be solely born by the beneficiaries from the Renewable Energy projects.

GETCO stated that the proposed interconnections with STU grid need to be checked with respect to powerflow impact on intra-state network as well as DISCOM views from commercial impact thereof.

4. The modified/added para nos. 20.2.5, 22.7, 25.14, 26.15A and 26.16 of the minutes of the 2nd WRSCT meeting issued vide letter no. [CEA-PS-11-23\(19\)/1/2019-PSPA-I Division](#) dated 29.06.2019, may be read as given below:

A. Modified para 20.2.5

20.2.5 The following scheme was agreed for establishment of Chiloda 220/132 kV substation:

Intra-state system by GETCO

- (i) Establishment of Chiloda 220/132 kV substation by upgrading of existing Chiloda 132 kV substation
- (ii) Dehgam (PGCIL) – Chiloda 220 kV D/C line.
- (iii) LILO of Gandhinagar TPS – Soja / Ranasan 220 kV line at Chiloda substation
- (iv) Two nos. of 220 kV bays at Dehgam 400/220 sustation
(POWERGRID to provide necessary space for implementation of 2 nos. of 220 kV bays at Dehgam)

B. Modified para 22.7

22.7 Regarding implementation of 220 kV outlets from Vapi-II 400/220 kV substation, GETCO stated that it would take a minimum of 3-3.5 years of time from submission of exact location along with bay allocation to GETCO from 400 kV Ambheti / Vapi-II substation.

CEA clarified that the scheme is being implemented through TBCB route and the timeline of completion for the different transmission elements under the project has already been fixed. As per the RfP document, the timeline for the implementation of Ambheti / Vapi-II 400/220 kV substation is 34 months. Accordingly, GETCO was requested to complete the 220 kV interconnections from the Ambheti / Vapi-II substation in matching time frame.

Members noted and concurred the changes done in the scheme.

C. Modified point no. 4 & 8 of para 25.14

4. Transmission system associated with RE generations at Bhuj –II, Dwarka & Lakadia:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1	Lakadia PS – Banaskantha PS 765kV D/c	200km

I/6347/2019

	line	
2	765kV Bays at Lakadia and Banaskantha for Lakadia PS – Banaskantha PS 765kV D/c line	4 nos. 765kV Bays
3	240MVAR switchable Line reactor at Banaskantha PS end of Lakadia PS – Banaskantha PS 765kV D/c line	2x240 MVAR 765kV reactor Bays -2 1x80 MVAR, 765 kV, 1 ph switchable line Reactor (spare unit) at Banaskantha end

Note:

- POWERGRID to provide space for 2 nos of 765kV bays and space for 2 nos. of 240MVAR switchable line reactors at Banaskantha S/s for Lakadia – Banaskantha 765kV D/c line*
- Developer of Lakadia S/s to provide space for 2 nos of 765 kV bays at Lakadia for Lakadia – Banaskantha 765kV D/c line*

Implementation time frame is June 2021 or as per the progress of connectivity/LTA applications of RE projects from WEZ in Gujarat.

8. Name of Scheme: Transmission System for providing connectivity to RE projects in Gujarat [Lakadia (2000MW)]:

Sl. No.	Scope of the Transmission Scheme	Capacity /ckm
1.	Establishment of 4x500MVA, 400/220kV ICTs at Lakadia PS (400kV AIS and 220kV GIS)	4x500MVA, 400/220kV 400kV ICT bay-4 (AIS) 220kV ICT bay- 4 (GIS) 220kV line bays -7 (GIS)

D. Added para 26.15-A

26.15-A Regarding commercial aspects of the scheme, MPPTCL stated that PoC charges for the proposed transmission system associated with Renewable Energy Projects shall not be passed on to the other utilities and shall be solely born by the beneficiaries from the Renewable Energy projects.

GETCO stated that the proposed interconnections with STU grid need to be checked with respect to powerflow impact on intra-state network as well as DISCOM views from commercial impact thereof.

E. Modified para 26.16

26.16 The members deliberated on the technical and commercial aspects of the scheme. Restricting the deliberations to technical aspects, members broadly agreed with the transmission system for 17.5 GW RE projects in WR under Phase-II and immediate connectivity to Dholera UMSP. The details of the transmission scheme technically agreed by the members is as given below:

A. Gujarat REZs [8GW Solar + 0.5GW Wind]

I/6347/2019

- (a) **Kutch (Rapar) SEZ 5000 MW (3000MW near Rapar and 2000MW near Lakadia (S/s augmentation at Lakadia already planned in the 1st WRSCT)) & Banskantha SEZ 2500 MW**

Estimated cost: ~Rs. 5250Cr.

- i) Establishment of 765/400 kV, 3x1500 MVA & 400/220kV, 6x500MVA Kutch(Rapar) SEZ Pooling Point
- ii) Augmentation of 765/400 kV transformation capacity at Lakadia PS by 1x1500MVA, 765/400kV ICT. Augmentation of 400/220 kV transformation capacity by 4x500MVA, 400/220kV ICTs (400kV AIS and 220kV GIS) for interconnection with SEZ in case of injection from RE projects are at 220 kV level at Lakadia.
- iii) Augmentation of transformation capacity at Radhanesda PS by 5X500 MVA, 400/220kV ICTs for interconnection with SEZ
- iv) Establishment of 765/400kV, 2X1500 MVA at suitable location near Ahmedabad (towards eastern side of Ahmedabad)
- v) Radhanesda PS - Banaskantha 400 kV D/c line (Twin HTLS) and Banaskantha – Zerda 400 kV D/c line
- vi) Kutch (Rapar) SEZ PP - Ahmedabad 765kV D/c line
- vii) LILO of Lakadia – Banaskantha 765kV D/c line at Kutch (Rapar) SEZ PP
- viii) LILO of Pirana(T) – Pirana(PG) 400kV D/c line at Ahmedabad with twin HTLS along with reconductoring of Pirana – Pirana(T) line with twin HTLS conductor
- ix) Ahmedabad – Indore 765 kV D/c line
- x) 220 kV line bays for interconnection of solar projects(25 nos)
- xi) Associated Reactive Compensation (Line + Bus)
- xii) Spare reactors and transformers

- (b) **Jamnagar SEZ 2500 MW**

Estimated cost: ~Rs. 1300Cr.

- i) Establishment of 400/220 kV, 5X500 MVA at Lalpur (Jamnagar) SEZ PP
- ii) Establishment of 400kV switching station at Rajkot
- iii) Lalpur (Jamnagar) SEZ PP - Rajkot 400 kV 2xD/c line (Twin HTLS)
- iv) Lalpur (Jamnagar) SEZ PP – Jam Khamabliya PS 400 kV D/c line (Twin HTLS)
- v) LILO of CGPL- Jetpur 400 kV D/C(triple) at Rajkot
- vi) Rajkot – Ahmedabad 400 kV D/c line (Twin HTLS)
- vii) 220 kV line bays for interconnection of solar projects (8 nos)
- viii) Associated Reactive Compensation (Line + Bus)

B. Maharashtra SEZs [4GW Solar]

- (a) **Solapur SEZ 2500 MW (Phase-I (1000MW) + Phase-II (1500MW) under ISTS)**

Estimated cost: ~Rs. 400Cr.

Phase-I (1000MW)

- ii) Toramba – Solapur (PG) 400kV S/c line (dedicated line, of M/s TREPL with St-I connectivity of 900MW & St-II connectivity of 300MW)*

Phase-II (1500MW) (under ISTS)

- i) Establishment of 400/220 kV, 2X500 MVA at Solapur PP*
 - ii) Augmentation of 400/220 kV, Solapur PP with 1x500MVA, 400/220kV transformer
 - iii) Solapur PP – Solapur(PG) 400 kV D/c line (Twin HTLS)*
 - iv) 220 kV line bays for interconnection of solar projects(8 nos)*
 - v) 1x125 MVAR, 420 kV Bus Reactor at Solapur PP*
- *Already agreed in the 1st WRSCT

Parli(PG) - Parli(MSETCL) 400kV D/c line is observed to be overloaded under N-1 condition. Line reconductoring may be considered.

(b) Wardha SEZ 2500 MW

Estimated cost: ~Rs. 500Cr.

- i) Establishment of 400/220 kV, 5X500 MVA at Wardha SEZ PP
- ii) LILO of Wardha - Warora Pool 400 kV D/c (Quad) line at Wardha SEZ PP
- iii) 220 kV line bays for interconnection of Solar projects (8 nos)
- iv) 1x125MVA bus reactor at Wardha SEZ PP

C. Madhya Pradesh SEZs [5GW Solar]**(a) Rajgarh 2500 MW**

Estimated cost: ~Rs. 800Cr.

- i) Establishment of 400/220 kV, 5X500 MVA at Rajgarh SEZ PP
- ii) Rajgarh SEZ PP -Bhopal (Sterlite) 400 kV D/c line (HTLS)
- iii) Rajgarh SEZ PP – Shujalpur 400 kV D/c line (HTLS)
- iv) 220 kV line bays for interconnection of solar & wind projects (8 nos)
- v) 1X125 MVAR, 420 kV Bus Reactor at Rajgarh SEZ PP

** Shujalpur(PG) - Shujalpur(MPPTCL) 220kV D/c line is observed to be overloaded under N-1 condition. Line reconductoring or 2nd 220 kV DC line may be considered.*

(b) Khandwa SEZ: 2500 MW

Estimated cost: ~Rs. 700Cr.

- i) Establishment of 400/220 kV, 5X500 MVA at Khandwa SEZ PP
- ii) Khandwa SEZ PP - Khandwa Pool 2XD/c line (Twin HTLS)
- iii) Augmentation of 1X1500 MVA, 765/400kV ICT at Khandwa Pool (Sterlite)
- iv) 220 kV line bays for interconnection of solar projects (8 nos)
- v) Associated Reactive Compensation

D. Dholera UMSP : The transmission system for providing immediate connectivity to Dholera UMSP broadly agreed:

- (i) Power injection from the Solar Park at 400kV level.
- (ii) Establishment of 765/400kV Dholera Pooling station
- (iii) LILO of Lakadia – Vadodara 765 kV D/c line at Dholera UMSP
- (iv) Dholera UMSP – Ahmedabad 765kV D/c line