



Government of India  
Ministry of Power  
Central Electricity Authority  
SP&PA Division

Sewa Bhawan, R. K. Puram, New Delhi-110066



[ISO: 9001:2008]

No. 100/1/EC (36) 2016-PSP&PA-I/ 1028-1037

Dated: 18<sup>th</sup> October, 2016

To

1. Member (Economic & Commercial),  
Central Electricity Authority  
Sewa Bhawan, R.K. Puram,  
New Delhi – 110 066.
2. Joint Secretary (Transmission)  
Ministry of Power  
Shram Shakti Bhawan  
New Delhi-110001
3. Adviser (Energy),  
NITI Ayog,  
Parliament Street,  
New Delhi – 110 001.
4. Director (Projects),  
Power Grid  
Saudamini,  
Plot No. 2, Sector-29,  
Gurgaon – 122 001.
5. Shri V. V. R. K. Rao  
Former Chairperson, CEA  
B-9/C, DDA Flats, Maya Puri,  
New Delhi -110 064.
6. Shri Ravinder  
Former Member (Power System), CEA  
147, Bhagirathi Apartment,  
Sector-9, Rohini, Delhi – 110 085.

**Subject: 36<sup>th</sup> meeting of the Empowered Committee on Transmission – Corrigendum reg.**

Sir/Madam,

The minutes of the 36<sup>th</sup> meeting of Empowered Committee on Transmission held on 26<sup>th</sup> July 2016 were circulated vide our letter no 100/1/EC(36)/2016-PSP&PA-I/963-978 dated 9<sup>th</sup> August 2016.

Subsequently observations/comments have been received from PGCIL. Corrigendum to the minutes is enclosed at **Annexure-I**.

It is also available at CEA's website ([www.cea.nic.in](http://www.cea.nic.in)).

**Encl: As above**

Yours faithfully,

(K. K. Arya)  
Chief Engineer (SP&PA)

---

**Corrigendum to Minutes of the 36<sup>th</sup> meeting of the Empowered Committee on Transmission held on 26<sup>th</sup> July, 2016 at 3:30 PM at Conference Room of CEA, 2<sup>nd</sup> Floor, Sewa Bhawan, R.K. Puram, New Delhi**

---

**1.0** The Minutes of **36<sup>th</sup> meeting** of the Empowered Committee on Transmission were issued vide our letter No. 100/1/EC (36) 2016-PSP&PA-I/963-978 dated 9<sup>th</sup> August' 2016. Following corrigendum is issued based on the observations received from POWERGRID vide their letter dated 19-09-2016 and 14-10-2016.

**Item No. 12.2: Transmission system for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer Rajasthan**

The scope of above mentioned transmission scheme after incorporating the modifications suggested by Powergrid is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ km)</b>	<b>Estimated Cost (Rs. Crore)</b>
(i) Establishment of 400kV Pooling Station at Fatehgarh (with a provision to upgrade at 765kV level)		84
(ii) 765 kV Fatehgarh Pooling sub-station - Bhadla (PG) D/C line (initially to be operated at 400kV)	110	424
(iii) 2 nos of 400kV line bays at Fatehgarh Pooling substation		20
(iv) 1x125 MVAR Bus reactor at 400kV Fatehgarh Pooling sub-station		8
(v) Space for future 220 kV ( 6 Nos), 400 kV ( 6 Nos) and 765 kV (4 nos.) line bays along with line reactors at Fatehgarh Pooling station		
(vi) Space for future 220/400 kV transformers ( 2 nos.), 400/765 kV transformers (2 nos) along with associated transformer bays at each level		
(vii) Space for future 765 kV bus reactor along with associated bays		
<b>Total Estimated Cost (Rs. Crore)</b>		<b>536</b>

Note:

- a. The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey.
- b. Park Developer to construct 400 kV line from M/s AREPL solar park along with 1x125 MVAR bus reactor at generation switchyard.

- c. Powergrid to provide 2 nos. of 400 kV line bays at Bhadla ( PG) for Fatehgarh Pooling Station- Bhadla D/C line ( initially to be operated at 400 kV)
- d. The Solar park developer (M/s AREPL) to provide adequate land for 765/400 kV pooling station adjacent to the proposed solar park for which transmission licensee shall coordinate with M/s AREPL including commercial aspects for transfer of land.
- e. Solar park developer(M/s AREPL) to provide 2 nos. of 400kV line bays at Fatehgarh Pooling Station for termination of 400kV D/C line from AREPL solar park to 400kV Fatehgarh Pooling station.

**Item No. 12.3: Additional 400 kV feed to Goa**

The Note section pertaining to above mentioned scheme after incorporating the modification is as follows:

Note:

- a. The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey.
- b. Narendra (existing) – Narendra (New) 400kV D/c (quad) line: 178KM is without Line Reactor at both ends. After LILO of this line at Xeldem S/s (considering LILO length as 120KM), the length of modified sections i.e. Narendra (existing) - Xeldem 400kV (quad) line: 120KM (approx.) and Narendra (New) – Xeldem 400kV (quad) line: 298KM (approx.). Accordingly, Powergrid to provide 1X 80 MVAR, 420 kV switchable line reactor along with 500 Ohms NGR and its auxiliaries at Narendra (New) S/s
- c. Powergrid to provide 2 nos of 400kV line bays at Mapusa s/s for termination of Xeldem – Mapusa 400kV D/c (quad) line

**Item No. 12.6: Inter State Transmission system strengthening in Chhatarpur area in Madhya Pradesh**

In the heading of the column no. 3 of the table elaborating the scope of the above mentioned scheme, km may be read as ckm.

**Item No. 12.7: Connectivity and Long Term Access (LTA) to HPPTCL 450 MW from Shongtong Karcham HEP**

Item no (iv) under the above mentioned scheme i.e “PTCUL to provide space for 2 Nos. of 400 kV Bays at Wangtoo S/s” is replaced as given below:

- iv) HPPTCL to provide space for 2 Nos. 400 kV bays at Wangtoo S/stn.

**Item No. 12.8 :Eastern Region Strengthening Scheme –XXI (ERSS-XXI)**

The Note section pertaining to above mentioned scheme after incorporating the changes is as follows:

**Note:**

- (a) Rating of 400 kV, 220 kV and 132 kV level line bays at new substations (Sitamarhi, Chandauti and Saharsa, )should match with the rating of the associated transmission lines.

**(b)** Darbhanga and Motihari substations belong to Darbhanga Motihari Transmission Company Ltd. (subsidiary of Essel Infra). **DMTCL to provide space to successful bidder for extension works.**

**(c) BSPTCL would implement following lines:**

- (i) Sitamarhi (New) – Motipur (BSPTCL) 220kV D/c line
- (ii) Sitamarhi (New) – Motihari (New of BSPTCL) 220kV D/c line
- (iii) Sitamarhi (New) – Sitamarhi 132kV D/c (Single Moose) line
- (iv) Sitamarhi (New) – Pupri 132kV D/c line
- (v) LILO of Gaya (POWERGRID) – Sonenagar 220kV D/c at both Bodhgaya (BSPTCL) and Chandauti (New) substations, so as to form Gaya (POWERGRID) – Bodhgaya (BSPTCL) – Chandauti (New) – Sonenagar 220kV D/c line
- (vi) Reconductoring of Chandauti (BSPTCL) – Rafiganj – Sonenagar 132kV S/c line with HTLS conductor of 240MVA (ampacity - 1050A)
- (vii) LILO of Chandauti (BSPTCL) – Rafiganj 132kV S/c line at Chandauti (New)
- (viii) Reconductoring of Chandauti – Sonenagar 132kV S/c line with HTLS conductor of 240MVA (ampacity - 1050A)
- (ix) LILO of Chandauti – Sonenagar 132kV S/c line at Chandauti (New)
- (x) Saharsa (New) – Begusarai 220kV D/c line
- (xi) Saharsa (New) – Khagaria (New) 220kV D/c line
- (xii) Saharsa (New) – Saharsa 132kV D/c

*The systems listed under (b) are intra state systems to be implemented by BSPTCL as agreed in the SCM. These systems should come in matching timeframe with the ISTS substations. BSPTCL has to sign IA with implementing agency for these substations.*

**Item No. 13.3 : Eastern Region Strengthening Scheme –XX (ERSS-XX)**

The capacity for item no (vi) under the above mentioned scheme is modified as given below:

Scope of the Transmission Scheme	Capacity (MVA/km)	Estimated Cost(Rs. Crore)
(vi) Replacement of 220/132kV, 1x50MVA ICT at Malda with 220/132kV, 160MVA ICT along with suitable modification in bay equipment	160 (Replacement against 50 MVA)	18.4

**Item No. 13.8 : Transmission System for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan**

The scope of the above mentioned scheme after incorporating the minor changes is as under:

Sl.	Scope of the Transmission Scheme	Capacity	Estimated

No.		(MVA/KM)	Cost (Rs. Crore)
	<b>Transmission system for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan</b>		
	<p>(i) Establishment of 765/400/220kV (765/400kV: 3x1500MVA, 400/220kV : 3x500 MVA) Pooling Station at Bhadla (PG) along with associated bays.</p> <p>(ii) 765kV Bhadla (PG) – Bikaner (PG) D/c along with associated bays</p> <p>(iii) 400kV Bhadla (PG)- Bhadla (RVPN) D/c (Quad) along with associated bays</p> <p>(iv) 2 nos. 400kV &amp; 4 nos. 220kV line bays line bays at Bhadla (PG) for interconnection of solar parks</p> <p>(v) 1x240 MVAr switchable line reactor at each end (each ckt) of the 765kV Bhadla(PG)-Bikaner(PG) D/c line</p> <p>(vi) 1x240 MVAr (765kV) &amp; 1x125MVAr (400kV) Bus reactor at Bhadla Pooling Station along with associated bays</p> <p>(vii) Space for future expansion.</p>	<p>765/400kV: 3x1500MVA</p> <p>400/220 kV: 3x500 MVA</p>	560
Estimated Cost (Rs. Crore)			1429

- **New Transmission Schemes to be taken up through Regulated Tariff Mechanism**

Under New Transmission Schemes to be taken up through Regulated Tariff Mechanism, the following may be added as **13.11** and **13.12**

**13.11 Name of the scheme: Provision of 2 nos. of 400 kV line bays at Bhadla ( PG) under “Transmission System for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer Rajasthan”**

Scope of the transmission Scheme	Estimated Line Length (km)/ Capacity (MVA)	Estimated Cost (Rs. Crore)
(i) 2 nos. of 400 kV line bays at Bhadla ( PG) for Fatehgarh Pooling Station- Bhadla D/C line ( initially to be operated at 400 kV)		20

**13.12 Name of the scheme: Provision of 1X 80 MVAR, 420 kV switchable line reactor along with 500 Ohms NGR under the scheme “Additional 400 kV feed to Goa.”**

Scope of the transmission Scheme	Estimated Line Length (km)/ Capacity (MVA)	Estimated Cost (Rs. Crore)
(i) 1X 80 MVAR, 420 kV switchable line reactor along with 500 Ohms NGR and its auxiliaries at Narendra (New) S/s { for Narendra (New) – Xeldem 400 kV (quad) line formed after LILO of one ckt of Narendra ( existing) – Narendra (New) 400 kV D/c quad line at Xeldem }	80 MVAR	