



भारत सरकार / Government of India  
विद्युत मंत्रालय / Ministry of Power  
केन्द्रीय विद्युत प्राधिकरण / Central Electricity Authority  
विद्युत प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग - I  
Power System Planning & Project Appraisal Division  
सेवा भवन, आर.के.पुरम, नई दिल्ली - 110066  
Sewa Bhawan, R. K. Puram, New Delhi-110066



[ISO: 9001:2008]

No. 100/1/EC (36) 2016-PSP&PA-I/ 983-978

Dated: 9<sup>th</sup> August, 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 – Minutes of the meeting**

Sir,

The 36<sup>th</sup> meeting of the Empowered Committee on Transmission was held on **26<sup>th</sup> July, 2016 (Tuesday) at 3:30 PM** under the Chairmanship of Shri S.D.Dubey, Chairperson & Member (Power System), CEA in the Conference Room of CEA, New Delhi.

The minutes of the meeting is attached herewith. The same is also available at <http://cea.nic.in/reports/committee/empowered/minutes/36.pdf>.

This issues with the approval of Member(Power System), CEA

Yours faithfully,

(K. K. Arya)

Chief Engineer &  
Member Secretary (Empowered Committee)

**Copy to:**

- (i) COO (CTU), POWERGRID, 'Saudamini', Plot No.2, Sector – 29, Gurgaon – 122 001 (Haryana)
- (ii) CEO, RECTPCL, 12-21, Upper Ground Floor, Antriksh Bhawan, 22, KG Marg, New Delhi – 110 001.
- (iii) CEO, PFC Consulting Ltd, First Floor, Urjanidhi, 1 Barakhmba Lane, New Delhi - 110001 (Fax- 011-2345617)

## **Minutes of the 36<sup>th</sup> meeting of the Empowered Committee on Transmission**

**Date and Time: 26<sup>th</sup> July, 2016 at 3:30 PM**

**Venue: Conference Room of CEA, 2<sup>nd</sup> Floor, Sewa Bhawan, R.K. Puram, New Delhi**

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List of Participants is enclosed at **Annexure-I**.

Member (Power System), CEA as Chairman of the Empowered Committee welcomed the members of the 36<sup>th</sup> meeting of the Empowered Committee on Transmission. After a brief opening remarks, he requested Chief Engineer (PSP&PA-I), CEA to take up the agenda for discussion.

Chief Engineer (PSP&PA-I), CEA welcoming all the participants of the meeting stated that MoP vide Gazette notification dated 28<sup>th</sup> January, 2016 has notified the revised tariff policy, wherein, following is mentioned for exemption of inter-state transmission projects from TBCB:

- *While all the future inter-state transmission projects shall, ordinarily, be developed through competitive bidding process, the Central Government may give exemption from competitive bidding for (a) specific category of projects of strategic importance, technical upgradation etc. or (b) works required to be done to cater to an urgent situation on case to case basis.*

He further stated that MoP vide order dated 15.7.2015 has approved the Policy for incentivizing early commissioning of Transmission projects, w.e.f 12.6.2015 as given below:

For transmission system strengthening schemes under TBCB and also for such schemes awarded to PGCIL under compressed time schedule the developer should get following incentive for early commissioning of transmission:

- *Entitlement of the transmission charges from the actual date of commercial operation(COD) prior to the original scheduled COD. However, the number of years of applicability of tariff would remain unchanged i.e. for 25/35years, as the case may be.*

He added that the above incentive will be applicable for the transmission projects/elements which are under implementation /yet to be bid out under TBCB/yet to be assigned to CTU under compressed time schedule

### **1.0 Confirmation of the minutes of 35<sup>th</sup> meeting of Empowered Committee**

1.1 Chief Engineer (PSP&PA-I), CEA informed that the minutes of 35<sup>th</sup> meeting of Empowered Committee on Transmission held on 14<sup>th</sup> September, 2015 were issued vide letter No. 100/ 1 / EC (35) /2015 –PSP&PA-I dated 24<sup>th</sup> September, 2015. Subsequently, an Addendum to the minutes was issued vide letter No. 100/ 1 / EC (35) /2015 – PSP&PA-I dated 27<sup>th</sup> October, 2015. A corrigendum to the minutes was also issued vide letter No. 100/ 1 / EC (35) /2015 –PSP&PA-I/363-368 dated 6<sup>th</sup> November, 2015.

1.2 COO, CTU stated that one no. of 220 kV bay at Roorkee 400/220kV S/s which was proposed as a part of NRSS-XXXVI, to be implemented by POWERGRID, was not included in the minutes of 35<sup>th</sup> meeting of Empowered Committee on Transmission.

Chief Engineer (PSP&PA-I), CEA stated that this would be included in the minutes of the 36<sup>th</sup> EC meeting on Transmission.

- 1.3 As no other comments on the minutes were received from any member, the minutes of the 35<sup>th</sup> EC meeting on Transmission were confirmed.

## 2.0 Implementing of the transmission schemes after approval by 35<sup>th</sup> Empowered Committee on Transmission (EC):

- 2.1 The following transmission schemes approved in the 35<sup>th</sup> meeting of EC for implementation under TBCB have been notified vide Gazette notification dated 17<sup>th</sup> November, 2015:

Sl. No.	Name of the schemes	Name of the BPCs
1.	Transmission System Strengthening in WR associated with Khargone TPP (1320 MW)	RECTPCL
2.	765 kV System Strengthening Scheme in Eastern Region (ERSS-XVIII)	PFCCL
3.	A. Immediate evacuation for North Karanpura (3x660MW) generation project of NTPC B. Creation of 400/220 kV sub-station at Dhanbad - Proposal of JUSNL (ERSS-XIX)	RECTPCL
4.	A. North Eastern Region Strengthening Scheme – V (NERSS-V) B. North Eastern Region Strengthening Scheme – II (NERSS-II) Part B	RECTPCL
5.	North Eastern Region Strengthening Scheme (NERSS)-VI	PFCCL
6.	Transmission System for Phase- I generation projects in Arunachal Pradesh	RECTPCL

- 2.2 The schemes approved in the 35<sup>th</sup> meeting of EC to be implemented *under Regulated Tariff mechanism* are given at **Annexure-II**.

The members noted the same.

## 3.0 Recommendations of the Committee for revision of Standard Bidding Documents for procurement of transmission services under Tariff Based Competitive Bidding (TBCB)

- 3.1 Chief Engineer (PSP&PA-I), CEA informed that Ministry of Power vide Office Memorandum No.15/1/2010-Trans dated 31<sup>st</sup> August, 2015 has constituted a Committee under the Chairmanship of Member (E&C), CEA to discuss, deliberate and finalise the changes required in the Standard Bidding Document for procurement of Transmission Services under Tariff Based Competitive Bidding (TBCB). The Committee after rounds of meetings has finalised the SBD for procurement of Inter-State transmission services and submitted its recommendations to the Ministry of Power vide letter dated 8<sup>th</sup> April, 2016.

- 3.2 Member(E&C), CEA stated that the above document is available on the Ministry of Power's website and suggestion/comment are invited from the stake holders.

**The members noted the same.**

**4.0 Reimbursement Expenditure incurred by PFCCL as BPC for Northern Region System Strengthening Scheme – XXXV Independent Transmission Project “Northern Region System Strengthening Scheme XXXV through TBCB**

- 4.1 Chief Engineer (PSP&PA-I), CEA stated that the scheme Northern Region System Strengthening Scheme – XXXV consisting of Mohindergarh – Bhiwani 400 kV D/C line with twin moose conductor (55km) has been de-notified as per the decision taken in the 35<sup>th</sup> meeting of EC held on 14<sup>th</sup> September, 2015 and decided to be implemented by CTU under compressed time schedule through regulated tariff mechanism.
- 4.2 Subsequently, Powergrid vide their letter TBCB/NRSSXXXV/RFP/03 dated 13.4.2016 has requested PFCCL to refund the document fees towards purchase of Request for Proposal (RFP) document for selection of Transmission Service Provider for the above scheme stating that the de-notification of the project from TBCB is not attributable to them and bidders cannot be penalized in such circumstances and the amount of Rs. 10,00,000/- should be refunded to them. On the other hand, PFCCL vide their letter 03/ITP/16-17/MBTL/RfP dated 29.2.2016 and 25.4.2016 had requested PGCIL to reimburse the expenditure of Rs 56,35,027/- incurred towards the Bid process as the above project is being implemented by PGCIL under compressed time schedule through regulated tariff mechanism.
- 4.4 CTU informed that there is no such provision and amount cannot be reimbursed by POWERGRID and same has already been communicated through letter.
- 4.5 Shri Ravinder, Expert Member (Empowered Committee) stated that the above issue does not come under the purview of Empowered Committee and suggested that BPC may take up the matter with Ministry of Power.
- 4.6 The issue was deliberated and it was decided that PFCCL/Powergrid may take up the issue of reimbursement of the expenditure /refund of document fee with MoP.

**5.0 De-notification of the Scheme Northern Region System Strengthening Scheme – XXXIII:**

- 5.1 Chief Engineer (PSP&PA-I), CEA stated that the transmission scheme NRSS-XXXIII comprising of establishment of 400/220 kV Greater Noida ISTS substation along with Ballabahgarh – Greater Noida 400 kV D/c with estimated cost of around Rs 260 Crore, was notified for implementation through TBCB route vide MoP Gazette notification dated 20.05.2013 by PFC Consulting Limited (PFCCL) as the Bid Process Coordinator (BPC).
- 5.2 The representative of PFCCL stated this transmission project was kept in abeyance as there was a dispute of PPA between Essar Power (Jharkhand) Ltd (EPJL) and Noida Power Company Ltd (NPCL) for which the system strengthening scheme was agreed in the Standing Committee. In the 37<sup>th</sup> SCPSP of NR held on 20.1.2016, it was decided that the transmission scheme NRSS-XXXIII may be dropped. He further stated that an expenditure of *Rs 62.34 Lakhs* has been incurred towards the bidding process for the ITP

‘Northern Region System Strengthening Scheme – XXXIII’. He requested the committee to kindly confirm about the closure of the project and its de-notification in the Gazette and recovery of expenditure incurred in the bidding process.

- 5.3 The Empowered Committee agreed that the Scheme “Northern Region System Strengthening Scheme – XXXIII” may be closed and the same may be de-notified through Gazette by MoP. Regarding expenditure of Rs. 62.34 lakhs incurred by PFCCL it was suggested that PFCCL may take up the issue with Ministry of Power.

## **6.0 De-notification of transmission projects from tariff based competitive bidding process**

- 6.1 Chief Engineer (PSP&PA-I), CEA stated that Ministry of Power, GoI vide its notification no. 15/1/2011-Trans dated 16<sup>th</sup> March, 2011 has notified REC Transmission Projects Company Limited (RECTPCL) as Bid Process Coordinator for selection of developer transmission projects ‘Transmission System associated with IPPs of Vemagiri Area: Package – A, Package – B and Package – C’. The bidding process for the transmission project for Package – A had been concluded successfully and the process for Package –B and Package-C was kept on hold by RECTPCL since Jan, 2012 based on the instructions issued by CEA/CTU.
- 6.2 RECTPCL informed that CERC in its order dated 06.04.2015 in respect of Transmission System associated with IPPs of Vemagiri Area: Package – A has stated that, *Vemagiri-Khammam-Hyderabad 765 kV D/C lines is neither required as an evacuation line nor as a system strengthening line, no useful purpose will be served by adopting the transmission charges and granting license to the petitioner for the said transmission line.* The packages B and C were linked to the Transmission System associated with IPPs of Vemagiri Area: Package – A. Thus, RECTPCL requested that the transmission projects under Package – B and Package – C may be examined & decision in this regard may be taken at the earliest.
- 6.3 CEA informed that the scheme mentioned in the agenda was evolved primarily for evacuation of power from gas projects located in Vemagiri area. However due to non-materialisation of gas projects, Scheme-A has been dropped by CERC. Regarding Scheme B, it was informed that the scheme has been modified and being implemented by POWERGRID under compressed time schedule. Further Scheme-C was only extension of Scheme-A and is not required in present scenario.
- 6.4 After deliberations, it was decided that the schemes ‘Transmission System associated with IPPs of Vemagiri Area: Package – B & Package – C’ for which the bidding process has been kept on hold needs to be closed and the same may be communicated to MoP for its de-notification through gazette from tariff based competitive bidding route.

## **7.0 Difficulties faced by Bid Process Coordinators in signing of Transmission Service Agreement (TSA) under tariff based competitive bidding process:**

- 7.1 Chief Engineer (PSP&PA-I), CEA stated that both the BPCs informed that they are facing lot of problems in getting the TSA signed by the identified Long Term Transmission Customers (LTTCs) of the project. Major problems faced are as follows:
1. In few cases, the LTA has been not been signed between CTU and the LTTCs and the transmission scheme has been approved. Due to non-signing of the LTA between CTU & LTTCs, the LTTCs are not willing to sign the TSA.

2. In some cases, the LTA has been signed between CTU & LTTCs for more quantum than the PPA entered between Generator & LTTCs. This mismatch in quantum is also causing significant delay in signing of the TSA by the LTTCs.
- 7.2 Both the BPCs informed that they are facing extreme difficulties in signing of Transmission Service Agreement by the LTTCs specifically for the transmission projects related to generation projects and in turn is delaying the tariff based competitive bidding project. In some cases, the TSA was signed after approx. 4 months after completion of bidding process.
- 7.3 The issue of non-signing of TSA by the LTTCs was deliberated in detail and Empowered Committee observed that the modification in the Standard Bidding Document for procurement of transmission services would overcome these issues. As far as non-signing of TSA as per the existing bidding documents are concerned, BPC has to pursue with LTTCs and also through CEA/MoP. Further, issue of non-signing of TSA needs to be discussed on case to case basis.
- 8.0 **Delay in transfer of SPV due to Non signing of TSA by the LTTCs namely (i) Punjab State Power Corporation Ltd (PSPCL) (ii) Tata Power Delhi Distribution Ltd. (iii) BSES Rajdhani Power Ltd. for the project “ATS for Tanda Expansion TPS (2X660) MW”**
- 8.1 PFCCL informed that Ministry of Power vide Gazette Notification dated May 20, 2013 had appointed PFCCL as the BPC for ATS for Tanda Expansion TPS (2x660) MW. The bid process for the transmission scheme has been completed and the Letter of Intent (LoI) has been issued to the successful bidder “Essel Infraprojects Limited”, on October 09, 2015. Out of 11 LTTCs, 8 LTTCs has executed the TSA except for three LTTCs. The SPV could not be transferred due to non-signing of TSA by the LTTCs viz.(i) Punjab State Power Corporation Ltd (PSPCL) (ii)Tata Power Delhi Distribution Ltd and (iii) BSES Rajdhani Power Ltd. He further stated that these three LTTCs wanted MoP to divert/re-allocate their share from Tanda TPS stage II to other bulk power customer and hence not willing to sign the TSA for this project.
- 8.2 CTU informed that LTA is granted based on the quantum specified in the LTA application made by the applicant, NTPC in this case. They have taken legal opinion on non-signing of LTA by the beneficiaries on whose behalf NTPC has applied for LTA. As per legal opinion applicant / CSGS need to assume responsibility for the balance quantum of power for which LTA agreement has not been signed. In case of NTPC projects, the applications are submitted on behalf of the beneficiaries, however the applicant cannot act on behalf of non interested parties. Accordingly, the applicant i.e. NTPC should sign the agreement for balance quantum
- 8.3 The representative from NTPC stated that as per the PPA signed with the beneficiaries of Tanda St-II, the responsibility of evacuation of allocated power beyond the generating station switchyard to their drawl point lies with the beneficiaries. To facilitate the implementation of Tanda St-II ATS, NTPC had applied for LTA on behalf of the beneficiaries based on the undertaking given by individual beneficiaries to sign all the required documents/agreements related to transmission system implementation. The power from NTPC stations is supplied as per the allocations issued by MoP. As such, NTPC does not use the ISTS for evacuation of power. Therefore, NTPC in no way can be expected to take the obligation of transmission charge liability for the beneficiaries. NTPC can only facilitate the process of signing of the TSA/LTA. The

non-signing of LTAs/TSAs cannot be used by the beneficiaries to wriggle out from the terms agreed by them in the PPAs signed with NTPC.

- 8.4 After detailed deliberations, it was decided that the PFCCCL may take up the issue with MoP and MoP may direct NTPC to sign the TSA for balance portion of 140.42 MW for which the designated LTTCs i) PSPCL (53.96 MW) ii) Tata Power (51.79 MW) and iii) BSES Rajdhani (34.67 MW) have not signed the TSA. In case of non-signing of LTA & TSA, the implementation of the system cannot be taken up.

**9.0 Difficulties faced by Bid Process Coordinators due to inclusion of construction of line bays in the scope of TBCB process:**

- 9.1 Chief Engineer (PSP&PA-I), CEA stated that during the last EC meeting, both the BPCs informed that they are facing lot of problems, due to inclusion of construction of line bays in the Sub-stations where CTU is not the owner. After deliberations, it was decided that Member (PS), CEA would hold a meeting with the CTU and BPCs to further devise modalities in this respect. Accordingly, a meeting among officials of CEA, CTU & BPCs was held under Chairmanship of Member (PS), CEA and the matter was deliberated. After detailed deliberations and in order to avoid any conflict during construction, the committee decided that the owners of the sub-stations/ switchyards (viz. State Transmission Utilities, NTPC, etc.) would provide the necessary space for the bays in their respective sub-stations/ switchyards and the execution of the bay extension works would be entrusted under the scope of successful bidder.
- 9.2 It was also pointed out that generally, provision of space for future requirement is kept in all sub-stations being implemented through TBCB. However, provision of LT transformer spare capacity, ACDB and DCDB spare feeders, spare capacity in battery & battery charger etc., is not being considered by TSP for future scope.
- 9.3 After deliberations, following was decided:
- i). The owners of the sub-stations/ switchyards (viz. State Transmission Utilities, NTPC, etc.) would provide the necessary space for the bays in their respective sub-stations/ switchyards. However, bays at Powergrid substations may be implemented by Powergrid.
  - ii). They should keep provisions like auxiliary AC/DC power supply and firefighting scheme for future and give it to the new TSP free of cost.
  - iii). A fixed cost per bay / per Circuit Breaker may be given by the new TSP to the sub-station owner as supervision charge
  - iv). The sub-station/ switchyard owner would also do the necessary facilitation at RfQ/RfP stage.

**10.0 (A) Implementation of transmission line and associated sub-station works by single agency.**

**(B) Implementation of bays of other agencies at a new sub-station**

- 10.1 COO(CTU-Plg) stated that in certain cases when the new line and new substation works are awarded to different TSPs, mismatches in completion schedule of transmission lines and associated sub-station works are observed mainly due to time difference in award process. This is evident in case of three projects (namely

Additional System Strengthening Scheme for Sipat STPS with schedule of March 2019, Additional System Strengthening Scheme for Chhattisgarh IPPs - Part B with schedule of November 2018 and Transmission system associated with 2x800MW Gadarwara STPS of NTPC Ltd.-Part A with schedule of November 2017), which are inter-linked and should have ideally the same schedule. She further stated that transmission licensees are allowed to commission their assets before scheduled date of commissioning and their tariff can be claimed from that date. Under such circumstances, it is even more difficult to ensure matching of commissioning schedule of different transmission elements by multiple implementing agencies.

10.2 RECTPCL informed that there are cases where immediate evacuation line along with bays at both ends (generation end and new substation end) are implemented by the generation developer, and the new sub-station along with other transmission lines is implemented through TBCB route. In such cases, the generation developer has no option but to wait for finalization of the TBCB process and then to request the successful bidder to execute generation developer's bays at the new sub-station on deposit work basis. The situation gets more complicated if the sub-station involves GIS. Dinchang GIS Pooling Station is to be implemented through TBCB route (under Transmission System for Ph-1 Generation Project in Arunachal Pradesh) whereas, construction of 2 no. 220kV GIS bays at Dichang S/s for termination of dedicated line from Dirang HEP is under the scope of Dirang Energy Pvt. Ltd. The generation developer has proposed that its 2 nos. 220 kV GIS bays may be included in the RfP document and they shall bear the price of the same.

10.3 **The issue was deliberated and it was decided that issue would be further deliberated in next Empowered Committee meeting.**

#### **11.0 Briefing by BPCs on the schemes under bidding process**

11.1 Progress of Transmission Projects Awarded Through Tariff Based Competitive Bidding Route to RECTPCL and PFCL is given at **Annexure-III(A) and III(B)**.

**The members noted the same.**

#### **12.0 New transmission schemes to be taken up through Tariff Based Competitive Bidding (TBCB)**

##### **12.1 Name of the Scheme: New WR- NR 765 kV Inter-regional corridor**

The transmission scheme has been approved in the 38<sup>th</sup> Standing Committee on Power System Planning of Northern Region held on 30<sup>th</sup> May, 2016 and 40<sup>th</sup> Standing Committee Meeting on Power System Planning in WR held on 01.06.2016. The corridor shall provide strong connectivity of NR and WR grid and would facilitate flow of power under various contingencies.

The scope of the transmission scheme is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ km)</b>	<b>Estimated Cost (Rs. Crore)</b>
(i) 765 kV Vindhyanchal Pooling Station – Varanasi D/C line	225	916
<b>Total</b>		<b>916</b>

Note:

- a. The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey.
- b. POWERGRID to provide 2 nos. of 765kV Line Bays at Vindhychal 765/400 kV Pooling Station
- c. POWERGRID to provide 2 nos. of 765kV Line Bays along with 765kV, 1x330 MVA line reactor in each bay at Varanasi 765/400 kV GIS sub-station

**Members approved the above scheme for implementation through TBCB route.**

**12.2 Name of the Scheme: Transmission system for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer Rajasthan**

Chief Engineer (PSP&PA-I), CEA stated that the transmission scheme has been approved in the 38<sup>th</sup> Standing Committee on Power System Planning of Northern Region held on 30<sup>th</sup> May, 2016. The scope of the transmission scheme 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 2 nos. of 400kV bays for termination of 400kV D/C line from AREPLSolar Park		
(vi) Space for future 400kV and 765kV bays at Fatehgarh Pooling Station		
<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 two nos. of 400kV line bays at Bhadla PS
- d. The solar park developer (M/s AREPL) would provide adequate land for 765/400 kV Pooling sub-station adjacent to the proposed solar park for which transmission licensee shall coordinate with M/s AREPL
- 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

CTU informed that the commissioning schedule as per ARPEL for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer Rajasthan is December 2017.

**After deliberations, members approved the above scheme for implementation through TBCB route.**

### 12.3 Name of the Scheme: Additional 400kV feed to Goa

Following Transmission system strengthening was agreed in the 39<sup>th</sup> and 40<sup>th</sup> Standing Committee Meeting on Power System Planning in WR held on 30.11.2015 and 01.06.2016 respectively for providing second 400kV feed to Goa:

Sl. No	Scope of the Transmission Scheme	Capacity (MVA/KM)	Estimated Cost (Rs. Crore)
<b>A</b>	<b>Additional 400kV Feed to Goa</b>		
	(i) LILO of one ckt. of Narendra (existing) – Narendra (New) 400kV D/c quad line at Xeldem	120	286
	(ii) Xeldem – Mapusa 400kV D/c (quad) line	40	84
	(iii) Establishment of 2x500MVA, 400/220kV substation at Xeldem		
	<u>400kV</u>	1000 MVA	224
	<ul style="list-style-type: none"> <li>• ICTs : 2x500MVA, 400/220kV</li> <li>• ICT bays: 2 nos</li> <li>• Line bays: 4 nos (2no. for Xeldem – Mapusa 400kV D/c (quad) line &amp; 2 nos for LILO of one ckt of Narendra (existing) – Narendra (New) 400kV D/c quad line at Xeldem)</li> <li>• Bus Reactor: 1x125MVAR</li> <li>• Bus Reactor Bay: 1 no</li> <li>• Space for 2x500MVA, 400/220kV ICTs (future)</li> <li>• Space for ICT bays (future): 2 nos</li> <li>• Space for Line bays along with Line Reactors (future): 4 nos</li> <li>• 1x63MVAR switchable line reactor along with 500 Ohms NGR and its auxiliaries (for Narendra (existing) – Xeldem 400kV line formed after LILO of one ckt of Narendra (existing) – Narendra (New) 400kV D/c quad line at Xeldem)</li> <li>• 1x80MVAR switchable line reactor along with 500 Ohms NGR and its auxiliaries (for Narendra (New) –Xeldem 400kV (quad) line formed after LILO of one ckt of Narendra (existing) – Narendra (New) 400kV D/c quad line at</li> </ul>		

	<p>Xeldem)</p> <p><u>220kV</u></p> <ul style="list-style-type: none"> <li>• 220kV inter-connection with Xeldem (existing)* substation</li> <li>• ICT bays: 2 nos</li> <li>• Line bays: 6 nos</li> <li>• Space for ICT bays (future): 2 nos</li> <li>• Space for Line bays (future): 6 nos</li> </ul> <p>*- CEA, CTU and BPC to work out the necessary changes to be incorporated at RfP stage after discussion with Goa Electricity deptt.</p>		
	<b>Total(in crore)</b>		<b>594</b>

Note:

- The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey.
- 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.)
- Powergrid to provide 2 nos of 400kV line bays at Mapusa s/s for termination of Xeldem – Mapusa 400kV D/c (quad) line

**Members approved the above scheme for implementation through TBCB route.**

#### **12.4 Name of the Scheme: Additional System for Power Evacuation from Generation Projects pooled at Raigarh (Tamnar) Pool**

Following proposal was agreed in the 39<sup>th</sup> Standing Committee Meeting on Power System Planning in WR held on 30.11.2015 as additional system for Power evacuation form Generation projects pooled at Raigarh (Tamnar) Pool:

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA/KM)	Estimated Cost (Rs. Crore)
<b>A</b>	<b>Additional System for Power Evacuation from Generation Projects pooled at Raigarh (Tamnar) Pool</b>		
	(i) Dharamjaygarh Pool section B - Raigarh (Tamnar) Pool 765kV D/c line	70	269
	<b>Total(in crore)</b>		<b>269</b>

Note:

- The line lengths mentioned above are approximate, as the exact length shall be obtained after the detailed survey.

- b. *POWERGRID to provide 2 nos. of 765kV Line Bays each at Dharamjaygarh Pool and Raigarh (Tannar) Pool*

**Members approved the above scheme for implementation through TBCB route.**

**Members further agreed that the above two schemes at Sl. No. 12.3 and 12.4 may be clubbed together as a single package. The scheme may be notified by the Government accordingly.**

### **12.5 Name of the Scheme: Connectivity System for Lanco Vidarbha Thermal Power Ltd. (LVTPL)**

Following Transmission scheme was agreed in the 40<sup>th</sup> Standing Committee Meeting on Power System Planning in WR held on 01.06.2016 for Lanco Vidarbha Thermal Power Ltd..

<b>Sl. No.</b>	<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/K M)</b>	<b>Estimated Cost (Rs. Crore)</b>
<b>A</b>	<b>Connectivity System for Lanco Vidarbha Thermal Power Ltd.</b>		
	(i) LVTPL TPS switchyard – Warora Pool 765kV D/c line	80	312
	(ii) 2 nos of 765kV Line bays at Warora Pool (for LVTPL TPS switchyard – Warora Pool 765kV D/c line)		39
	<b>Total(in crore)</b>		<b>351</b>

Note:

- The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey.*
- LVTPL to provide following at their Generation switchyard*
  - *765kV line bay: 2 no. (for LVTPL TPS switchyard – Warora Pool 765kV D/c line)*
  - *765kV Bus Reactor: 1 x240MVAR*
  - *765kV Bus Reactor Bay: 1 no*
- M/s Gadarwara (A) Transco Ltd. to provide space for two nos of 765kV line bays at Wroora Pool 765kV S/s*
- Interim arrangement to be implemented by M/s LVTPL (LILO of Seoni –Wardha 765kV S/C line at LVTPL TPS. This would be by passed/ dismantled by M/s LVTPL at its own cost after completion of the connectivity line i.e. LVTPL TPS switchyard – Warora Pool 765kV D/c line)-*

Shri Ravinder, Expert Member (Empowered Committee) enquired about the progress of the generation project and signing of transmission agreements for taking up the transmission schemes. CEA informed that as per progress status in January 2016, Unit-I and II are expected to be commissioned in June-17 and September-17 respectively. The HT(Hydro Test ) is expected in Oct. 2016 and Jan 2017 for unit-I and II respectively.

CTU informed that LVTPL has signed the Transmission Agreement on 31.03.2016, Transmission Service Agreement on 19.04.2016 and have submitted Bank Guarantee (BG)

of 50.29 crores (out of total 66 Cr.) as on July'16. Balance BG Amount of 15.71 Cr.is under process with banks.

**After deliberations, members approved the above scheme for implementation through TBCB route. The regular review of the status of the generation project needs to be done through CEA and Joint Coordination Committee of CTU.**

## **12.6 Name of the Scheme: Inter State Transmission system strengthening in Chhatarpur area in Madhya Pradesh**

Following Transmission system strengthening scheme was agreed in the 40<sup>th</sup> Standing Committee Meeting on Power System Planning in WR held on 01.06.2016 to cater to the demand of Chhatarpur/Khajuraho area of Madhya Pradesh:

<b>Sl. No</b>	<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/KM)</b>	<b>Estimated Cost (Rs. Crore)</b>
<b>A</b>	<b>Inter State Transmission system strengthening in Chhatarpur area in Madhya Pradesh</b>		
	(i) LILO of both circuits of Satna – Bina 400kV (1st) D/c line at Bijawar. (There are 2 nos. of 400kV D/c lines between Satna and Bina. One circuit of 2 <sup>nd</sup> D/c line is proposed to be LILOed at Sagar (MPPTCL) Substation. This LILO is to be done on the other D/c line).	140	210
	(ii) Establishment of 2x500MVA, 400/220kV substation at Bijawar*		
	<u>400kV</u>	1000	
	<ul style="list-style-type: none"> <li>• ICTs : 2x500MVA, 400/220kV</li> <li>• ICT bays: 2 nos</li> <li>• Line bays: 4 nos (for LILO of both circuits of Satna – Bina 400kV (1st) D/c line at Bijawar)</li> <li>• Bus Reactor: 1x125MVAR</li> <li>• Bus Reactor Bay: 1 no</li> <li>• Space for ICT bays (future): 2 nos</li> <li>• Space for Line bays along with Switchable Line Reactors (future): 4 nos</li> <li>• Space for Bus Reactor (Future) : 1 no.</li> </ul>	MVA	182
	<u>220kV</u>		
	<ul style="list-style-type: none"> <li>• ICT bays: 2 nos</li> <li>• Line bays: 4 nos (for termination of LILO of both ckts of Tikamgarh - Chatarpur 220 kV D/c line)</li> <li>• Space for future ICT bays : 2 nos</li> <li>• Space for future line bays (future): 8 nos (4 nos. for Bijawar solar park interconnection and 4 nos. additional space for future expansion)</li> </ul>		
	Space for 2x500MVA, 400/220kV ICTs (future)		

<b>Total(in crore)</b>	<b>392</b>
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Note:

- a. *The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey.*
- b. *SPPD to provide land contiguous to Chhatarpur solar park for establishment of 400/220kV Bijawar substation to the Bidder.*
- c. *Intra-state transmission strengthening in Chhatarpur area in MP to be implemented by MPPTCL in matching time frame of the above scheme.*
  - (i) *Second circuit stringing of 220kV Tikamgarh –Chhatarpur line*
  - (ii) *LILO of both circuits of Tikamgarh –Chhatarpur 220kV D/c line at Bijawar 400/220kV S/s.*

**Members approved the above scheme for implementation through TBCB route.**

**Members further agreed that the above two schemes at Sl. No. 12.5 and 12.6 may be clubbed together as a single package. The scheme may be notified by the Government accordingly.**

**12.7 Name of the Scheme: Connectivity and Long Term Access (LTA) to HPPCL 450 MW from Shongtong Karcham HEP.**

The transmission scheme has been approved in the 30<sup>th</sup> Standing Committee on Power System Planning in Northern Region held on 19<sup>th</sup> December, 2011. The scheme involves Shongtong Karcham HEP– Wangtoo 400 kV D/C (Quad HTLS) conductor and creation of 400/220kV, GIS S/s at Wangtoo. The scheme was discussed in 33<sup>rd</sup> meeting of Empowered Committee on Transmission held on 30<sup>th</sup> September, 2014 wherein it was decided to seek the status of generating project at site. Accordingly, the proposal was deferred for the next meeting. HPPTCL vide their letter dated 31.5.2016 had submitted that HPPTCL has completed all the conditions mentioned by CEA and PGCIL and requested to take up the matter to finalize the implementing agency. Further, HPPTCL has informed that they are implementing the Wangtoo Substation.

CTU further informed that there are many other projects totaling to about 3000MW in the upstream of Shongtong project which would come up in a very wide time frame. A team of officials from CEA, CTU and HP visited upper part of Satluj Basin and Lahual & Spiti area. There are severe ROW constraints. Only one transmission corridor is available from Shongtong to Wangtoo substation. This is very difficult terrain. It was proposed that some international consultant may be involved in line design. The cost of line would be much higher side as compared to the cost given in the agenda.

After detailed deliberations the following scheme was agreed to be implemented though TBCB route:

S. No.	Scope of the Transmission Scheme	Capacity (MVA/KM)	Estimated Cost (Rs. Crore)
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1.	Shongtong Karcham – Wangtoo 400 kV D/c Line (Quad HTLS Conductor Equivalent to about 3000MW on each ckt) – (ISTS)	18 km	300
2.	2 Nos 400kV Bays at Wangtoo S/s		18
<b>Total(in crore)</b>			<b>318</b>

- i). *The estimated cost is rough estimate in view of difficult terrain and limited corridor available. The realistic estimate would be possible after the detailed survey.*
- ii). *Establishment of 220/400kV GIS Pooling Station at Wangtoo along with LILO of both circuits of 400 kV Karcham Wangtoo-Abdullapur D/c line at Wangtoo S/s -Implementation by STU*
- iii). *400kV Bays at Shontong Generation switchyard are to be implemented by Generation developer*
- iv). *PTCUL to provide space for 2 Nos 400kV Bays at Wangtoo S/s.*

**Members approved the above scheme for implementation through TBCB route.**

### **12.8 Name of the Scheme: Eastern Region Strengthening Scheme –XXI (ERSS-XXI)**

The following transmission scheme has been approved in the 18<sup>th</sup> Standing Committee on Power System Planning of Eastern Region held on 13<sup>th</sup> June, 2016. The scope of the transmission scheme is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA)</b>	<b>Estimated Cost (Rs. Crore)</b>
<p><b>(i) Establishment of 400/220/132 kV, 2x500 MVA + 2x200 MVA S/s at Sitamarhi (New)</b></p> <p><b><u>400 kV</u></b> ICTs: 400/220 kV, 2x500 MVA ICTs bays: 2 no. Line bays with space for switchable line reactor: 4 no. <i>[2 no. for Darbhanga – Sitamarhi (New) 400kV D/c line with Triple Snowbird conductor and 2 no. for Sitamarhi (New) – Motihari 400kV D/c line with Triple Snowbird conductor]</i> Bus reactor: 420kV, 2x125 MVAR Bus reactor bay: 2 no. Space for future line bays (including space for switchable line reactor): 6 no.</p>	<p><b>1000MVA+</b> <b>400 MVA</b></p>	<p><b>258</b></p>

Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs. Crore)
<p>Space for future ICT bays: 2 no.</p> <p><b><u>220 kV</u></b>  ICTs: 220/132 kV, 2x200 MVA  ICTs bays: 4 no.  Line bays: 4 no.  [2 no. for Sitamarhi (New) – Motipur (BSPTCL) and 2 no. for Sitamarhi (New) – Motihari (New of BSPTCL) 220kV D/c lines]  Space for future line bays: 4 no.  Space for future ICT bays: 4 no.</p> <p><b><u>132 kV</u></b>  ICTs bays: 2 no.  Line bays: 4 no.  [2no. for Sitamarhi (New) – Sitamarhi 132kV D/c (Single Moose) line and 2 no. for Sitamarhi (New) – Pupri 132kV D/c line]  Space for future line bays: 4 no.  Space for future ICT bays: 2 no.</p> <p>Space for 400/220 kV, 2x500 MVA ICTs  Space for 220/132 kV, 2x200 MVA ICTs</p>		
<p><b>(ii) Establishment of 400/220/132 kV, 3x500 MVA + 3x200 MVA S/s at Chandauti (New)</b></p> <p><b><u>400 kV</u></b>  ICTs: 400/220 kV, 3x500 MVA  ICTs bays: 3 no.  Line bays with space for switchable line reactor: 4 no.  [4 no. for LILO of both circuits of Nabinagar-II – Gaya 400kV D/c (Quad Moose) line of POWERGRID at Chandauti (New)]  Bus reactor: 420kV, 2x125 MVAR  Bus reactor bay: 2 no.  Space for future line bays (including space for switchable line reactor): 6 no.  Space for future ICT bays: 2 no.</p> <p><b><u>220 kV</u></b>  ICTs: 220/132 kV, 3x200 MVA  ICTs bays: 6 no.</p>	<p><b>1500 MVA+ 600 MVA</b></p>	<p><b>316</b></p>

Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs. Crore)
<p>Line bays: 4 no.  <i>[4 no. for LILO of Gaya (POWERGRID) – Sonenagar 220kV D/c at Chandauti (New). Gaya (POWERGRID) – Sonenagar shall be LILOed at Bodhgaya (BSPTCL) also, so as to form Gaya (POWERGRID) – Bodhgaya (BSPTCL) – Chandauti (New) – Sonenagar 220kV D/c line]</i></p> <p>Space for future line bays: 4 no.  Space for future ICT bays: 4 no.</p> <p><b><u>132 kV</u></b>  ICTs bays: 3 no.  Line bays: 4 no.  <i>[2 no. for LILO of Chandauti (BSPTCL) – Rafiganj and 2 no. for LILO Chandauti (BSPTCL) – Sonenagar 132kV S/c (HTLS conductor of 240MVA, ampacity - 1050A) lines at Chandauti (New)]</i></p> <p>Space for future line bays: 4 no.  Space for future ICT bays: 2 no.</p> <p>Space for 400/220 kV, 2x500 MVA ICTs  Space for 220/132 kV, 2x200 MVA ICTs</p>		
<p><b>(iii) Establishment of 400/220/132 kV, 2x500 MVA + 2x200 MVA S/s at Saharsa (New)</b></p> <p><b><u>400 kV</u></b>  ICTs: 400/220 kV, 2x500 MVA  ICTs bays: 2 no.  Line bays with space for switchable line reactor: 4 no.  <i>[4 no. for LILO of Kishanganj – Patna 400kV D/c (Quad Moose) line of POWERGRID at Saharsa (New)]</i></p> <p>Bus reactor: 420kV, 2x125 MVAR  Bus reactor bay: 2 no.  Space for future line bays (including space for switchable line reactor): 6 no.  Space for future ICT bays: 2 no.</p> <p><b><u>220 kV</u></b></p>	<p><b>1000MVA+ 400 MVA</b></p>	<p><b>258</b></p>

Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs. Crore)
ICTs: 220/132 kV, 2x200 MVA ICTs bays: 4 no. Line bays: 4 no. <i>[2 no. for Saharsa (New) – Begusarai and 2 no. for Saharsa (New) – Khagaria (New) 220kV D/c lines]</i> Space for future line bays: 4 no. Space for future ICT bays: 4 no. <b>132 kV</b> ICTs bays: 2 no. Line bays: 2 no. <i>[2 no. for Saharsa (New) – Saharsa 132kV D/c line]</i> Space for future line bays: 6 no. Space for future ICT bays: 2 no. <b>Space for 400/220 kV, 2x500 MVA ICTs</b> <b>Space for 220/132 kV, 2x200 MVA ICTs</b>		
<b>(iv) Substation extension at Darbhanga S/s</b> 400kV Line bays with space for switchable line reactor: 2 no. <i>[2 no. for Darbhanga – Sitamarhi (New) 400kV D/c line with Triple Snowbird conductor]</i>		<b>20</b>
<b>(v) Substation extension at Motihari S/s</b> <b>400kV</b> ICTs: 400/132kV, 315MVA (3 <sup>rd</sup> ) ICT bays: 1 no. Line bays with space for switchable line reactor: 2 no. <i>[2 no. for Sitamarhi (New) – Motihari 400kV D/c line with Triple Snowbird conductor]</i> <b>132kV</b> ICT bays: 1 no.		<b>37</b>
<b>(vi) Darbhanga – Sitamarhi (New) 400kV D/c line with Triple Snowbird conductor</b>	<b>80</b>	<b>182</b>
<b>(vii) Sitamarhi (New) – Motihari 400kV D/c line with Triple Snowbird conductor</b>	<b>80</b>	<b>182</b>
<b>(viii) LILO of both circuits of Nabinagar-II – Gaya 400kV D/c (Quad Moose) line of POWERGRID at Chandauti (New)</b>	<b>10</b>	<b>23</b>
<b>(ix) LILO of Kishanganj – Patna 400kV D/c (Quad Moose) line of POWERGRID at Saharsa (New)</b>	<b>20</b>	<b>45</b>
<b>Estimated Cost (Rs. Crore)</b>	<b>1321</b>	

**Note:**

(a) *Darbhanga and Motihari substations belong to Darbhanga Motihari Transmission Company Ltd. (subsidiary of Essel Infra).*

**(b) 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.*

Shri Ravinder, Expert Member EC, enquired about the requirement of proposed three number of new 400kV substations in Bihar.

Director, PSP&PA-II, CEA explained that maximum demand of Bihar 3735 MW for the year 2015-16 and may go up to 8774 MW by 2018-19 due to segregation of agricultural feeders. BSPTCL and POWERGRID have carried out detailed load flow studies jointly to evolve transmission system requirement for the end of 13<sup>th</sup> plan period i.e. 2021-22 considering load demand of Bihar as 11000 MW. The studies have, inter alia, recommended establishment of 2 no. 400/220/132 kV sub-stations in North Bihar at Sitamarhi & Saharsa and one no. 400/220/132 kV sub-stations in South Bihar i.e. Chandauti (Gaya) along with augmentation of 400/132 kV Motihari S/s of Essel Infra by 315 MVA and 3<sup>rd</sup> ICT at Banka and Lakhisarai 400/132 kV S/S.

**After deliberations, members approved the above scheme for implementation through TBCB route.**

**13.0 New transmission schemes to be taken up through regulated tariff mechanism:**

As per the new tariff policy dated 28<sup>th</sup> January, 2016 the following schemes fall under the category of projects of strategic importance, technical upgradation etc. and be recommended to be implemented under Regulated Tariff Mechanism by Powergrid.

The schemes also involve some projects which were given to Powergrid as upgradation /strengthening works of the existing substations, some projects which are urgent in nature and have already been allocated to Powergrid by MoP under compressed time schedule as per previous tariff policy.

**Following schemes were agreed to be implemented through regulated tariff mechanism:**

**13.1 Name of the Scheme: Provision of 765kV line bays at 765/400 kV Ajmer Substation for 765 kV D/C line Korna (RRVNL) S/S to Ajmer (Pg) 765/400 kV S/S**

Scope of the Transmission Scheme	Capacity (MVA/ km)	Estimated Cost (Rs. Crore)
<b>Intra- State Transmission corridor in Rajasthan for evacuation of RE generation</b>		
(i) 2 nos. of 765kV line bays at 765/400 kV Ajmer S/s alongwith 2x240 MVAR, 765 kV line type switchable shunt reactors for Korna – Ajmer 765 kV D/c line of RVPNL under ISTS		70
(ii) 2 nos. of 400 kV line bays at 765/400 kV Bikaner S/s for LILO of second circuit of 400 kV D/c Bhadla (RVPN) – Bikaner (RVPN) Quad line		20
<b>Estimated Cost (Rs. Crore)</b>		90

Note: Bhadla (RVPN) – Bikaner (RVPN) 400 kV D/c is a quad conductor line and LILO would also be with quad conductor

**13.2 Name of the Scheme: 400kV line bays at Bhinmal(PG) & Sikar(PG) along with 50 MVA line reactor at Sikar(PG)(30<sup>th</sup> & 38<sup>th</sup> SCM)**

Sl. No	Scope of the Transmission Scheme	Capacity (MVA/KM)	Estimated Cost (Crore)
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	<b>400kV line bays at Bhinmal(PG) &amp; Sikar(PG) along with 50 MVA line reactor at Sikar(PG)</b>	
	i). 2 nos. of 400kV line bays at Bhinmal(PG) for Barmer– Bhinmal 400kV D/c line (Line is being constructed by RRVPNL–Expected commissioning schedule is May’18).	20
	ii). 2 nos. of 400kV line bays at Sikar(PG) for 400kV Bikaner-Sikar D/c line along with 50MVA line reactor at Sikar(PG) on both circuits (Line is being constructed by RRVPNL-Expected commissioning schedule is Jan.’18).	30
<b>Estimated Cost (Rs. Crore)</b>		<b>50</b>

### 13.3 Name of the Scheme: Eastern Region Strengthening Scheme –XX (ERSS-XX)

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ km)</b>	<b>Estimated Cost (Rs. Crore)</b>
(i) Installation of 4 <sup>th</sup> 400/220kV, 500MVA ICT at Biharsharif with associated bays	500	35.60
(ii) Installation of 3 <sup>rd</sup> 400/220kV, 500MVA ICT at Maithon with associated bays	500	35.60
(iii) Installation of 3 <sup>rd</sup> 400/132kV, 315MVA ICT at Banka with associated bays	315	27.74
(iv) Installation of 3 <sup>rd</sup> 400/132kV, 315MVA ICT at Lakhisarai with associated bays	315	27.74
(v) Installation of 4 <sup>th</sup> 220/132kV, 160MVA ICT at Rangpo with associated bays	160	19.00
(vi) Replacement of 220/132kV, 1x50MVA ICT at Malda with 220/132kV, 160MVA ICT along with suitable modification in bay equipment	150	18.4
(vii) Installation of 420kV, 1x125MVAR bus reactor at Subhasgram S/s of POWERGRID with associated bays	-	17.7
(viii) Conversion of 420kV, 63MVAR fixed line reactor at Purnea end of Kishanganj – Purnea 400kV D/c line to switchable line reactor	-	2

Scope of the Transmission Scheme	Capacity (MVA/km)	Estimated Cost (Rs. Crore)
(ix)Reconductoring of Rangpo – Siliguri 400kV D/c Twin Moose line with Twin HTLS conductor along with suitable modification in line bay equipment at both ends ( <i>Ampacity of single HTLS shall be 1596A – equivalent to Twin ACSR Moose cond. for 45°C ambient and 85°C maximum conductor temperature</i> ).	110	171.6
(x) 80MVAR, 765kV, Single Phase Spare Reactor unit at Ranchi (New) 765/400kV sub-station of POWERGRID	-	7
(xi)Reconductoring of New Purnea(400/220kV) – Purnea(220/132kV) 220kV D/c line with Single HTLS conductor along with suitable modification in line bay equipment at both ends ( <i>Ampacity of single HTLS shall be 1596A – equivalent to Twin ACSR Moose cond. for 45°C ambient and 85°C maximum conductor temperature</i> ).	1	1
Estimated Cost (Rs. Crore)		<b>363.38</b>

#### 13.4 Conversion of Fixed Line Reactors to Switchable Line Reactors in Southern Region

Sl. No.	Transmission line	Proposal agreed in 39 <sup>th</sup> SCM	Reactor Capacity (MVar)		Estimated Cost (Rs. Crore)
			Sending end	Receiving end	
1	Gazwel-Hyderabad II	Line Reactor at Hyderabad end to be made switchable	-	50	
2	Nellore-Tiruvellam I & II	Line Reactor at both ends to be made switchable	50	50	
3	Sriperumbdur-Chittoor	Line Reactor at Sriperumbadur end to be made switchable	50	-	
4	Udumalpet-Salem II	Line Reactor at Udumalpet end to be made switchable	63	-	
5	Madurai-Karaikudi	Line Reactor at Madurai end to be made switchable	63	-	
6	Sriperumbadur-SV Chatram	Line Reactor at Sriperumbadur to be made switchable	50	-	

Sl. No.	Transmission line	Proposal agreed in 39 <sup>th</sup> SCM	Reactor Capacity (MVA)		Estimated Cost (Rs. Crore)
			Sending end	Receiving end	
7	Kochi-Tirunelveli-I & II	Line Reactor at Kochi end to be made switchable. Line Reactor at Tirunelveli end to be retained as fixed line reactor.	63	63	
8	Madurai-Trichy	Line Reactor at Madurai end to be made switchable	50	-	
9	Trichy- Nagapattinam I	Line Reactor at Trichy end to be made switchable	50	-	
10	Trichy- Nagapattinam –II	Line Reactor at Trichy end to be made switchable	63	-	
11	Salem- Hosur II	Reactor at Salem end to be made switchable	50	-	
12	Malakaram-Hyderabad II (Upto LILO point)	Reactor at Hyderabad end to be made switchable	-	50	
13	Kurnool-Gooty	Reactor at Gooty end to be made switchable	-	50	
<b>Estimated Cost (Rs. Crore)</b>					<b>25</b>

### 13.5 Augmentation of Transformation Capacity in Southern Region

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs. Crore)
1.	400/230 kV, ICT at Arasur	1X500 MVA	
2.	400/230 kV, ICT at Karaikudi	1X500 MVA	
3.	400/230 kV, ICT at Tirunelveli	1X500 MVA	
4.	400/230 kV, ICT at Pondicherry	1X500 MVA	
5.	400/220 kV, ICT at Kozhikode	1X500 MVA	
<b>Estimated Cost (Rs. Crore)</b>			<b>90</b>

### 13.6 Installation of Bus Reactors at Cuddapah, Nellore, Kurnool, Raichur and Thiruvallam

Substation	MVAr Rating	Estimated Cost (Rs. Crore)
Cuddapah (400 kV)	125	
Kurnool(765 kV)	240	
Nellore PS(765 kV)	240	
Raichur(765kV)	240	
Thiruvalam(765kV)	2X 240	
<b>Estimated Cost (Rs. Crore)</b>		<b>100</b>

### 13.7 Transmission System for Tumkur (Pavagada) Ultra Mega Solar Park

#### Phase-I:

Scope of the Transmission Scheme	Estimated Cost (Rs. Crore)
<u>Transmission line</u> <ul style="list-style-type: none"> <li>• Tumkur (Pavagada) Pool - Hiriyur 400 kV D/c line - 109 km</li> <li>• LILO of 400kV D/C Gooty-Tumkur (Vasantnarsapur) at Tumkur (Pavagada) Pool</li> <li>• LILO of 400 kV D/C (Quad) Bellary Pool-Tumkur (Vasantnarsapur) at Tumkur (Pavagada) Pooling Station</li> </ul>	
<u>Sub-station</u> <ul style="list-style-type: none"> <li>• Establishment of 3x500 MVA, 400/220KV Pooling station at Tumkur (Pavagada) along with 1x125MVAr bus reactor</li> <li>• 8 nos. 220kV line Bays at 400/220kV Tumkur (Pavagada) Pooling Station</li> </ul>	
<b>Estimated Cost (Rs. Crore)</b>	<b>600</b>

#### i. Phase-II:

Scope of the Transmission Scheme		Estimated Cost (Rs. Crore)
<u>Part-A</u>	<u>Part-B</u>	

<u>Transmission line</u>		
<ul style="list-style-type: none"> <li>Hiriyur – Mysore 400kV D/C line</li> </ul>	<ul style="list-style-type: none"> <li>Tumkur (Pavagada) Pooling Station - Devanahally (KPTCL) 400kV D/C (Quad) line</li> <li>Extension of 400/200kV Tumkur (Pavagada) Pooling Station and Devanahally (KPTCL) substations</li> </ul>	
<u>Sub-station</u>		
<ul style="list-style-type: none"> <li>Augmentation of 2x500 MVA, 400/220kV transformer at Tumkur (Pavagada) Pooling Station</li> <li>1x125MVAR bus reactor (2<sup>nd</sup>) at Tumkur (Pavagada) Pooling Station</li> <li>Third 400/220kV, 1x500 MVA transformer at Tumkur (Vasantnarsapur)</li> <li>1x80 MVAR switchable line reactor at Mysore end of Hiriyur - Mysore D/C line for each circuit</li> <li>Extension of 400/200kV Mysore substation</li> </ul>		
<b>Estimated Cost (Rs. Crore)</b>		<b>730</b>

**13.8 Name of the Scheme: Transmission system for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan**

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA/KM)	Estimated Cost (Rs. Crore)
	<b>Transmission system for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan</b>		
(i)	Establishment of 765/400/220kV (765/400kV: 3x1500MVA, 400/220kV : 3x500 MVA) Pooling Station at Bhadla (PG)	765/400kV:	560

	(ii) 765kV Bhadla (PG) – Bikaner (PG) D/c (iii) 400kV Bhadla (PG)- Bhadla (RVPN) D/c (Quad) (iv) 2 nos. 400kV & 4 nos. 220kV line bays line bays at Bhadla (PG) for interconnection of solar parks (v) 1x240 MVAr switchable line reactor at each end (each ckt) of the 765kV Bhadla(PG)-Bikaner(PG) D/c line (vi) 1x240 MVAr (765kV) & 1x125MVAr (400kV) Bus reactor at Bhadla Pooling Station	3x1500MVA  400/220 kV: 3x500 MVA	
<b>Estimated Cost (Rs. Crore)</b>			<b>1429</b>

CTU informed that Ministry of Power vide the letter dated 8/1/2015 has assigned POWERGRID to implement transmission system for evacuation of power from nine solar parks including from Bhadla Ultra Mega Solar Park to POWERGRID.

CE (PSP&PA-I) informed that in the meeting taken by Secretary, MoP held on 24.2.2016, it was decided that the evacuation system under ISTS for future solar parks would be constructed through TBCB.

### 13.9 Name of the Scheme: Transmission System for Banaskantha (Radhanesda) Ultra Mega Solar Power Park in dist. Banaskantha, Gujarat (700 MW)

Sl. No.	Scope of the Transmission Scheme	Capacity/Estimated Line Length (MVA/Rkm)	Cost (in Cr.)
<b>A</b>	<b>Transmission System for Banaskantha (Radhanesda) Ultra Mega Solar Power Park in dist. Banaskantha, Gujarat (700 MW)</b>		
	(i) Banaskantha (Radhanesda) Pooling Station – Banaskantha (PG) 400 kV D/C	95 km	168
	(ii) 2 nos. 400 kV line bays at Banaskantha (PG) S/S		18
	<b>Total(in crore)</b>		<b>186</b>

*Note: 400 kV Banaskantha (Radhanesda) Pooling Station shall be under the scope of the SPPD and SPPD shall provide 2 no. 400 kV line bays for interconnection of ISTS line*

CTU informed that Ministry of Power vide the letter dated 8/1/2015 has assigned POWERGRID to implement transmission system for evacuation of power from nine

solar parks including Banaskantha UMSP (700 MW) in Gujarat on compressed time schedule basis.

CE (PSP&PA-I) informed that in the meeting taken by Secretary, MoP held on 24.2.2016, it was decided that the evacuation system under ISTS for future solar parks would be constructed through TBCB.

**13.10 Name of the Scheme: Provision of One no. of 220 kV bay at Roorkee under NRSS XXXVI**

Scope of the Transmission Scheme	Capacity (MVA/ ckt. km)	Estimated Cost (Rs. Crore)
1 no. of 220 kV bays at Roorkee (PG) substation		5

**14.0 Change/modification in the scope of transmission schemes already awarded/ under award through TBCB route**

**14.1 Name of the Scheme: Modification in the Agreed Scope for “765kV Strengthening in Eastern Region (ERSS-XVIII)”**

This scheme was agreed in the 35<sup>th</sup> meeting of the Empowered Committee ( EC) on Transmission held on 14<sup>th</sup> September, 2015 and notified in Gazette Notification dated November 17, 2015 for implementation through TBCB to PFC Consulting Ltd.

Subsequently, CEA vide its letter No. 70/1/PSPA-2/2016/289-293 dated 06.04.2016 had modified the scope of the transmission scheme by deleting the following elements:-

- i) Medinipur- Haldia New (NIZ) (WBSETCL) 400 kV D/c line.  
2 nos. 400 kV line bays at Haldia New (NIZ) (WBSETCL)

Further, due to space constraints for termination of 2 nos. of bays at existing Jeerat (WBSETCL) 400 kV substation, it has been proposed for construction of 2 nos. GIS 400 kV bays at Jeerat (WBSETCL) substation for termination of Jeerat (new)-Jeerat (WBSETCL) 400 kV D/C PFCL for which WBSETCL has to provide space for the GIS bays.

CEA advised PFCL to redo the RfQ process with the modified scope.

**The modified scheme is given below;**

Transmission Scheme	Estimated Line Length (km)	Estimated Cost (Rs. Crore)
<b>Name of Scheme-I : 765 kV System Strengthening Scheme in Eastern Region (ERSS-XVIII)</b>  (i) Establishment of 765/400kV, 2x1500MVA substation at Medinipur <b>765 kV</b> • ICTs: 7x500 MVA, 765/400 kV (1 spare unit)	3000 MVA	364

<ul style="list-style-type: none"> <li>• ICT bays: 2 no.</li> <li>• Line bays: 4 no.</li> <li>• Bus reactor: 7x110MVAR single phase units including one (1) spare unit</li> <li>• Bus reactor bay: 2 no.</li> <li>• Space for future line bays (along with space for switchable line reactor): 4 no.</li> <li>• Space for future ICT bays: 2 no.</li> <li>• Space for future 765/400kV ICT: 6x500 MVA single phase unit</li> </ul> <p><b>400 kV</b></p> <ul style="list-style-type: none"> <li>• ICT bays: 2 no.</li> <li>• Line bays: 4 no.</li> <li>• Bus reactor: 2x125 MVAR</li> <li>• Bus reactor bay: 2 no.</li> <li>• Space for future line bays (along with space for switchable line reactor): 6 no.</li> <li>• Space for future ICT bays: 2 no.</li> </ul> <p>(ii) Establishment of 765/400kV, 2x1500MVA substations at Jeerat (New)</p>	3000 MVA	271
<p><b>765 kV</b></p> <ul style="list-style-type: none"> <li>• ICTs: 7x500MVA, 765/400 kV (1 spare unit)</li> <li>• ICT bays: 2 no.</li> <li>• Line bays: 2 no.</li> <li>• Bus reactor: 7x110MVAR single phase units including one (1) spare unit</li> <li>• Bus reactor bay: 2 no.</li> <li>• Space for future line bays (along with space for switchable line reactor): 4 no.</li> <li>• Space for future ICT bays: 2 no.</li> <li>• Space for future 765/400kV ICT: 6x500 MVA single phase unit</li> </ul> <p><b>400 kV</b></p> <ul style="list-style-type: none"> <li>• ICT bays: 2 no.</li> <li>• Line bays: 4 no.</li> <li>• Bus reactor: 2x125 MVAR</li> <li>• Bus reactor bay: 2 no.</li> <li>• Space for line bays (along with space for switchable line reactor): 4 no.</li> <li>• Space for future ICT bays: 2 no.</li> </ul>	300	1750
<p>(iii) Ranchi (New) – Medinipur 765kV D/c line with Hexa ACSR Zebra conductor along with 765kV, 240MVAR switchable line reactor with 750Ω NGR in each circuit at Medinipur end (total: 765kV, 7x80MVAR single phase units, 1 unit as spare)</p>	200	1166
<p>(iv) Medinipur – Jeerat (New) 765kV D/c line with Hexa ACSR Zebra conductor along with</p>		

765kV, 240MVAR switchable line reactor with 600Ω NGR in each circuit at Jeerat (New) end (total: 765kV, 7x80MVAR single phase units, 1 unit as spare)		10
(v) LILO of both circuits of Chandithala – Kharagpur 400 kV D/c line at Medinipur.	120	367
(vi) Jeerat (New) – Subhasgram 400 kV D/c line (ACSR Quad Moose current rating at 85°C)		40
(vii) Jeerat (New) – Jeerat (WBSETCL) 400 kV D/c line (ACSR Quad Moose current rating at 85°C)		10
(viii) LILO of Jeerat (WBSETCL) – Subhasgram (PG) 400 kV S/c section at Rajarhat (PG)		16
(ix) 2 no. 400 kV GIS line bays at Jeerat (WBSETCL).		
		<b>3994</b>

**Note:**

1. CTU (POWERGRID) would provide 2 no. 400kV line bays at Subhasgram (PG) for termination of Jeerat (New) - Subhasgram 400kV D/c line (ACSR Quad Moose)
2. CTU (POWERGRID) would provide 2 no. 400kV line bays at Rajarhat (PG) for termination of LILO of Jeerat (WB) – Subhasgram (PG) 400kV S/c section at Rajarhat (PG)
3. CTU (POWERGRID) would provide 2 no. 765kV line bays along with 765kV, 2x240MVAR switchable line reactor with 750Ω NGR at Ranchi (New) (PG) for termination of Ranchi (New) - Medinipur 765kV D/c line
4. WBSETCL would provide space for 2 no. 400kV GIS line bays at Jeerat (WBSETCL) for termination of Jeerat (New) - Jeerat (WBSETCL) 400 kV D/c line

**The modified scheme to be notified in the Gazette.**

**14.2 Name of the Scheme: Reactive compensation of various schemes agreed to be implemented through TBCB**

Rajnandgaon – Warora PS 765kV D/c is covered under “*Additional System Strengthening Scheme for Chhattisgarh IPPs – Part B*”. Presently, the scheme is under implementation by Adani Power Ltd. through TBCB route. As per the route survey done by PFCCCL during bidding stage, the length of the line comes out to be about 275KM. On this line only 2x330MVAR switchable line reactor had been provided at Rajnandgaon end. In order to have required reactive compensation, provision of 2x240MVAR switchable line reactor at Warora PS end of Rajnandgaon – Warora PS 765kV D/c line was agreed in the 39<sup>th</sup> meeting of Standing Committee on Power System Planning in Western Region held on 30-11-2015. It was also agreed to include the scope of 2x240MVAR switchable line reactor at Warora PS under “*Additional inter-regional AC*”

*link for import of power into Southern Region*” (Warora – Warangal line) and the same has been included accordingly.

**Members noted the same.**

### **14.3 Name of the Scheme: North Eastern Region Strengthening Scheme–V (NERSS-V)**

The transmission scheme has been approved in the 5<sup>th</sup> Standing Committee on Power System Planning of North Eastern Region held on 8<sup>th</sup> August, 2015. The same was also approved in the 35<sup>th</sup> Empowered Committee Meeting.

Subsequently, implementation of 2 no. 400kV line bays at Palatana generation switchyard for operation of Palatana – Surajmaninagar 400kV (presently operated at 132kV) D/c line at rated voltage level (under the scope of POWERGRID under NERSS-V) has been proposed to be implemented through the TBCB process under the subject scheme. Additionally, it has been proposed to incorporate space for switchable line reactor in the scope along with the space for future 400kV line bays.

Accordingly, revised scope of the transmission scheme is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ ckt. km)</b>	<b>Estimated Cost (Rs. Crore)</b>
<p><b>(i) Establishment of 400/132 kV, 2x315 MVA S/s at Surajmaninagar</b></p> <p><b><u>400 kV</u></b>  ICTs: 400/132 kV, 2x315 MVA  ICTs bays: 2 no.  Line bays: 4 no.  [2 no. for Palatana – Surajmaninagar and 2 no. for Surajmaninagar – P.K.Bari 400kV D/c lines]  Bus reactor: 2x125 MVAR  Bus reactor bay: 2 no.  Space for future line bays (Incl. space for sw. line reactor): 4 no.  Space for ICT bays: 1 no.</p> <p><b><u>132 kV</u></b>  ICTs bays: 2 no.  Line bays: 4 no.  [2 no. for Surajmaninagar (TSECL) – Surajmaninagar (TBCB) 132kV line with high capacity / HTLS (equivalent of single moose) and 2 no. for future line]</p>		<b>171.25</b>

<p>Space for future line bays: 4 no. Space for ICT bays: 1 no. <b>Space for future 400/132kV, 315MVA ICT</b></p> <p><i>Land for the Surajmaninagar 400/132kV S/s is identified and available with Tripura and the same would be provided to the TSP at cost.</i></p>		
<p><b>(ii) Establishment of 400/132 kV, 2x315 MVA S/s at P. K. Bari</b></p> <p><b><u>400 kV</u></b> ICTs: 400/132 kV, 2x315 MVA ICTs bays: 2 no. Line bays: 4 no. <i>[2 no. for Surajmaninagar – P.K.Bari and 2 no. for P.K.Bari – Silchar 400kV D/c lines]</i> Bus reactor: 2x125 MVAR Bus reactor bay: 2 no. Space for future line bays (Incl. space for sw. line reactor): 4 no. Space for ICT bays: 1 no.</p> <p><b><u>132 kV</u></b> ICTs bays: 2 no. Line bays: 4 no. <i>[2 no. for P.K.Bari (TSECL) – P.K.Bari (TBCB) 132kV D/c line with high capacity / HTLS (equivalent of single moose) and 2 no. for future line]</i> Space for future line bays: 4 no. Space for ICT bays: 1 no.</p> <p><b>Space for future 400/132kV, 315MVA ICT</b></p>		<b>171.25</b>
<b>(iii) Surajmaninagar - P. K. Bari 400 kV D/C line with Twin ACSR Moose</b>	<b>100</b>	<b>272.78</b>
<b>(iv) 2 no. 400 kV line bays at Palatana GBPP switchyard for termination of Palatana – Surajmaninagar 400kV D/C line</b>		<b>15</b>
<b>(v) AGTPP (NEEPCO) – P.K.Bari (TSECL) 132kV D/c line with high capacity HTLS conductor (equivalent to Single ACSR Moose)</b>	<b>100</b>	<b>192.53</b>
<b>(vi) 2 no. 132 kV line bays each at AGTPP (NEEPCO) and P. K. Bari (TSECL)</b>		<b>15.10</b>
<b>Estimated Cost (Rs. Crore)</b>		<b>837.91</b>

**Note:****a. TSECL would implement following:**

- (i) Surajmaninagar (TSECL) – Surajmaninagar (TBCB) 132kV line with high capacity / HTLS (equivalent of single moose)
- (ii) P.K.Bari (TSECL) – P.K.Bari (TBCB) 132kV D/c line with high capacity / HTLS (equivalent of single moose)
- (iii) To provide space for 2 no. 132kV line bays at P.K.Bari (TSECL) for termination of AGTPP (NEEPCO) – P.K.Bari (TSECL) 132kV D/c line

**b. OTPC would implement following:**

- (i) 1 no. 132kV bay at Palatana GBPP
- (ii) To provide space for 2 no. 400kV line bays at Palatana generation switchyard for termination of Palatana – Surajmaninagar 400kV D/c line (presently charged at 132kV) at 400kV

c. NEEPCO to provide space for 2 no. 132kV line bays at AGTPP generation switchyard for termination of AGTPP (NEEPCO) – P.K.Bari (TSECL) 132kV D/c line

**Members agreed.**

#### 14.4 Name of Scheme: Eastern Region Strengthening Scheme – VII (Schemes approved in 29<sup>th</sup> meeting of the Empowered Committee on Transmission: Scope of Works Revised

The scope of the scheme agreed in the 29<sup>th</sup> meeting of EC is as under:

<b>Transmission Scheme</b>	<b>Estimated Line Length (km)</b>	<b>Estimated Cost (Rs. Crores)</b>
(i) Purulia PSP (WB) – Ranchi (PG) 400 KV D/c line.	140	170
(ii) Kharagur (WBSTCL) - Chaibasa(PG) 400 kV D/c line	170	200
<b>Estimated Cost (Rs. Crore)</b>		<b>370</b>

**Note:**

- (a) POWERGRID to provide 2 no. of 400kV bays with line reactor(s) at Ranchi(PG) and Chaibasa(PG) - to be implemented under regulated tariff mechanism
- (b) POWERGRID to provide 2 no. of 400kV bays at Purulia(WB) and Kharagpur(WB) to be implemented under regulated tariff mechanism as ISTS.
- (c) Associated bays to be provided by POWERGRID/Generator to be matched with commissioning of the transmission scheme – CTU to coordinate.

Director(PSP&PA-II) informed that in a meeting taken by Member (PS), CEA on 29-3-2016, WBSETCL informed that there was a space constraint at Purulia PSP generation switchyard and the Ranchi (New)–Purulia PSP 400kV D/c line could not be terminated

at Purullia PSP. WBSETCL further informed that they were establishing New Purulia 400 kV GIS near Purulia PSP by LILO of both circuit of Purulia PSP-Arambagh 400 kV D/C line and had proposed to PKTCL to terminate the line at New Purulia GIS substation instead of earlier approved Purulia PSP generation switchyard. This change in scope of the scheme was approved in 18<sup>th</sup> Standing Committee on Power System Planning of Eastern Region held on 13<sup>th</sup> June, 2016. The revised scope of the transmission scheme is as under:

<b>Transmission Scheme</b>	<b>Estimated Line Length (km)</b>	<b>Estimated Cost (Rs. Crores)</b>
(i) New Purulia (WBSETCL) – Ranchi 765/400kV (PG) 400kV D/c line	140	170
(ii) Kharagur (WBSTCL) - Chaibasa(PG) 400kV D/c line	170	200
<b>Estimated Cost (Rs. Crore)</b>		<b>370</b>

**Note:**

- (a) POWERGRID to provide 2 no. of 400kV bays with line reactor(s) at Ranchi (New) (PG) and Chaibasa(PG) - to be implemented under regulated tariff mechanism as ISTS
- (b) POWERGRID to provide 2 no. of 400kV bays at Purulia PSP New (WBSETCL) and Kharagpur (WBSETCL) - to be implemented under regulated tariff mechanism as ISTS
- (c) West Bengal will establish New Purulia 400kV GIS S/s near Purulia PSP along with LILO of both circuit of Purulia PSP-Arambagh 400kV D/c line

**Members noted the same.**

**14.5 Name of Scheme: Eastern Region Strengthening Scheme-XIX (ERSS-XIX): Creation of 400/220 kV sub-station at Dhanbad (Schemes approved in 35<sup>th</sup> meeting of the Empowered Committee on Transmission : Cost Estimate Revised)**

The transmission scheme has been approved in the 17<sup>th</sup> Standing Committee on Power System Planning of Eastern Region held on 25<sup>th</sup> May, 2015. The scope of the transmission scheme is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ ckt. km)</b>	<b>Estimated Cost (Rs. Crore)</b>
(i) <b>Establishment of 400/220 kV, 2x500 MVA sub-station at Dhanbad</b>  <b>400 kV</b> ICTs: 400/220 kV, 2x500 MVA ICTs bays: 2 no. Line bays: 4 no. Bus reactor: 2x125 MVAR	1000	207.70

Bus reactor bay: 2 no. Space for future line bays: 4 no. Space for ICT bays: 1 no.  <u><b>220 kV</b></u> ICTs bays: 2 no. Line bays: 4 no. Space for future bays: 4 no. Space for ICT bays: 1 no.  <b>Space for 400/220kV, 500MVA ICT</b>		
<b>(ii)</b> LILO of both circuits of Ranchi-Maithon RB 400 kV D/C line at Dhanbad	20	27.33
<b>Estimated Cost (Rs. Crore)</b>		<b>235.3</b>

**Note:**

- (a) JUSNL, Jharkhand would construct Dhanbad – Govindpur and Dhanbad – Jainamore 220kV D/c lines for drawl from Dhanbad S/s.

**Members noted the same.**

**14.6 Name of Scheme: North Eastern Region Strengthening Scheme – II (NERSS– II): Part B**

The transmission scheme has been approved in the 5<sup>th</sup> Standing Committee on Power System Planning of North Eastern Region held on 8<sup>th</sup> August, 2015. The scope of the transmission scheme is as under:

Scope of the Transmission Scheme	Capacity (MVA/ ckt. km)	Estimated Cost (Rs. Crore)
(i) Biswanath Chariali - Itanagar (Zebra conductor) 132 kV D/C line	95	61.09
(ii) Silchar - Misa 400kV D/C line (Quad Moose) line	200	807.55
(iii) 2 no. 132 kV line bays at Itanagar for termination of Biswanath Chariali - Itanagar (Zebra conductor) 132 kV D/C line		7.55
<b>Estimated Cost (Rs. Crore)</b>		<b>876.19</b>

**Note:**

- (a) CTU (POWERGRID) would provide following:
- 2 no. 400kV GIS line bays each at Silchar and Misa substations for termination of Silchar - Misa 400kV D/c line (Quad) line

- 2 no. 132kV line bays at Biswanath Chariali for termination of Biswanath Chariali - Itanagar (Zebra conductor) 132 kV D/c line. In case of space constraint, GIS bays would be provided.
- 420kV, 1x80 MVAR bus reactor at Misa (POWERGRID) along with GIS bay
- 80 MVAR switchable line reactor at Misa end of Silchar– Misa 400kV D/C (Quad) line on either circuits

(b) DoP, Arunachal Pradesh to provide space for 2 no. 132kV line bays at Itanagar S/s for termination of Biswanath Chariali - Itanagar (Zebra conductor) 132 kV D/c line

**Members noted the same.**

#### **14.7 Transmission system for Phase-I generation projects in Arunachal Pradesh**

This scheme was approved in the 3<sup>rd</sup> standing committee meeting of power system planning in North Eastern Region held on 21st Dec., 2011 at NRPC, New Delhi as evacuation system from 4 no. of hydro projects in Arunachal Pradesh in Kameng basin. The scope of the transmission scheme is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ ckt. km)</b>	<b>Estimated Cost (Rs. Crore)</b>
(i) Dinchang-Rangia / Rowta Pooling Point 400kV D/c (Quad)	120	574.26
(ii) LILO of both ckts of Balipara - Bongaigaon 400kV D/c (ACSR Twin Moose) line at Rangia / Rowta Pooling station	20	52.29
<p><b>(iii) Establishment of 7x166 MVA 400/220 kV Pooling station (GIS) at Dinchang in Arunachal Pradesh</b></p> <p><b>400 kV</b></p> <ul style="list-style-type: none"> <li>• ICT single phase 7x166 MVA, 400/220 kV (including 1 spare unit)</li> <li>• ICT bays – 2 no.</li> <li>• Line bays – 2 no.</li> <li>• Bus Reactor 80 MVAR – 2 no.</li> <li>• Bus reactor bays – 2 no.</li> <li>• Space for future line bays (Incl. space for sw. line reactor) – 4 no.</li> <li>• Space for future ICT bay – 2 no.</li> </ul> <p><b>220 kV</b></p> <ul style="list-style-type: none"> <li>• ICT bays – 2 no.</li> <li>• Space for future line bays – 18 no.</li> <li>• Space for future ICT bay – 2 no.</li> </ul>		244.35

<p><b>Space for future ICT</b></p> <ul style="list-style-type: none"> <li>• Space for 1-phase 6x166MVA 400/220kV future ICT</li> </ul>		
<p><b>(iv) Establishment of 2x500MVA 400/220 kV Pooling station at Rangia / Rowta in Assam</b></p> <p><b>400 kV</b></p> <ul style="list-style-type: none"> <li>• ICT 2x500MVA 400/220 kV</li> <li>• ICT bays – 2 no.</li> <li>• Line bays – 6 no.</li> <li>• Bus Reactor 125 MVAR – 2 no.</li> <li>• Bus Reactor bays – 2 no.</li> <li>• Switchable Line Reactor of 63 MVAR at Rangia / Rowta end for Dinchang - Rangia / Rowta Pooling Point 400 kV D/c (Quad) line- 2 no.</li> <li>• Space for future line bays (Incl. space for sw. line reactor) – 12no.</li> <li>• Space for future ICT bays – 2 no.</li> </ul> <p><b>220 kV</b></p> <ul style="list-style-type: none"> <li>• ICT bays – 2 no.</li> <li>• Line bays – 4 no.</li> <li>• Space for future line bays – 4 no.</li> <li>• Space for future ICT bays – 2 no.</li> </ul> <p><b>Space for future ICT</b></p> <ul style="list-style-type: none"> <li>• Space for 2x500MVA 400/220kV ICT</li> </ul>		252.91
<b>Estimated Cost (Rs. Crore)</b>		<b>1123.81</b>

**Note:**

(a) M/s Dirang Energy Pvt. Ltd. to construct 2 no. 220kV line bays at Dinchang pooling station for termination of their Dirang HEP – Dinchang 220kV D/c line.

**Members noted the same.**

#### 14.8 North Eastern Region Strengthening Scheme (NERSS)-VI

The transmission scheme has been approved in the 5<sup>th</sup> Standing Committee on Power System Planning of North Eastern Region held on 8<sup>th</sup> August, 2015. The scope of the transmission scheme is as under:

Scope of the Transmission Scheme	Capacity (MVA/ ckt. km)	Estimated Cost (Rs. Crore)
(i) <b>Establishment of 400/220 kV, 2x500 MVA S/S at New Kohima</b> <b>400 kV</b>	1000 MVA	199

<p>ICTs: 400/220 kV, 2x500 MVA  ICTs bays: 2 no.  Line bays: 4 no.  Bus reactor: 2x125 MVAR  Bus reactor bay: 2 no.  Space for future line bays (Incl. space for sw. line reactor): 4 no.  Space for ICT bays: 1 no.</p> <p><b><u>220 kV</u></b>  ICTs bays: 2 no.  Line bays: 4 no.  Space for future bays: 4 no.  Space for ICT bays: 1 no.</p> <p><b>Space for 400/220kV, 500MVA ICT</b></p>		
<b>(ii)</b> Imphal – New Kohima 400 kV D/C line with Twin ACSR Moose	120	331
<b>(iii)</b> New Kohima – New Mariani 400kV D/C line with Twin ACSR Moose	110	304
<b>Estimated Cost (Rs. Crore)</b>		<b>835</b>

**Note:**

- (a) CTU (POWERGRID) to provide 2 no. 400 kV line bays at Imphal (POWERGRID) S/s for termination of Imphal – New Kohima 400kV D/C line and 420kV, 1x125MVAR bus reactor (2<sup>nd</sup>) at Imphal (POWERGRID) S/s
- (b) Powergrid to provide 2 no. 400kV line bays at New Mariani S/s for termination of New Kohima – New Mariani 400kV D/C line
- (c) **AEGCL, Assam would implement following:**
- (i) New Mariani – Mariani 220kV D/c line (with high capacity Conductor)
- (ii) Termination of Samaguri – Mariani 220kV 2xS/c lines at New Mariani
- (iii) Establishment of 220/132kV, 2x160MVA substation at Khumtai
- (iv) LILO of Samaguri – New Mariani 220kV 2xS/c lines at Khumtai
- (d) **Nagaland would implement following:**
- (i) New Kohima (400/220kV TBCB) – New Kohima (220/132kV - Nagaland) 220kV D/c line with high capacity / HTLS conductor equivalent to twin moose

**Members noted the same.**

**14.9 Immediate evacuation for North Karanpura (3x660MW) generation project of NTPC**

The transmission scheme has been approved in the 17<sup>th</sup> Standing Committee on Power System Planning of Eastern Region held on 25<sup>th</sup> May, 2015. The scope of the transmission scheme is as under:

<b>Scope of the Transmission Scheme</b>	<b>Capacity (MVA/ ckt. km)</b>	<b>Estimated Cost (Rs. Crore)</b>
(i) North Karanpura – Gaya 400 kV D/C with quad moose conductor.	120	304.90
(ii) North Karanpura – Chandwa (Jharkhand) Pooling Station 400 kV D/C with quad moose conductor.	65	152.84
<b>Total Estimated Cost (Rs. Crore)</b>		<b>457.74</b>

**Note:**

**a. CTU (POWERGRID) shall provide**

- (i) 2 no. 400 kV line bays at Gaya (POWERGRID) S/s for termination of North Karanpura - Gaya 400kV D/c line
- (ii) 2 no. 400 kV line bays at under construction Chandwa (Jharkhand) Pooling Station (POWERGRID) for termination of North Karanpura - Chandwa 400kV D/c line

**b. NTPC shall provide**

- (ii) 2 no. 400kV line bays for North Karanpura - Gaya 400 kV D/C line at their North Karanpura generation switchyard
- (iii) 2 no. 400kV line bays for North Karanpura - Chandwa (Jharkhand) Pooling Station 400kV D/C line at their North Karanpura generation switchyard

**Members noted the same.**

**14.10 Name of the Scheme: Strengthening of transmission system beyond Vemagiri**

The modified scope of the “Strengthening of transmission system beyond Vemagiri” is:

<b>Scope as per Gazette Notification</b>	<b>Modified Scope</b>
(i) Vemagiri-II – Chilakaluripeta 765kV D/C line with 240 MVAR switchable line reactors at both ends.	(i) Vemagiri-II – Chilakaluripeta 765kV D/C line with 240 MVAR switchable line reactors at both ends of each circuit. (The line bays and line reactors at Chilakaluripeta to be in the scope of TSP and those at Vemagiri end in the scope of CTU).
(ii) Chilakaluripeta – Cuddapah 765kV D/C line with 240 MVAR switchable line reactors at both ends.	(ii) Chilakaluripeta – Cuddapah 765kV D/C line with 240 MVAR switchable line reactors at both ends of each circuit. (The line bays and line reactors at Chilakaluripeta to be in the scope of TSP and those at Cuddapah end in the scope of CTU).

Scope as per Gazette Notification	Modified Scope
<p>(iii) Chilakaluripeta – <b>Narsaraopeta</b> 400kV (quad) D/C line</p> <p>(iv) Cuddapah – Madhugiri 400kV (quad) D/C line with <b>80 MVAR</b> switchable line reactors at both ends.</p> <p>(v) <b>Cuddapah – Hindupur 400kV (quad) D/C line with 80 MVAR switchable line reactors at Hindupur end.</b></p> <p>(vi) Srikakulam Pooling Station – Garividi 400 kV (Quad) D/C line <b>with 80 MVAR switchable line reactor at Garividi end.</b></p> <p>(vii) Establishment of 765/400 kV substation at Chilakaluripeta with 2x1500 MVA transformers and 2x240 MVAR bus reactors each. Transformers: 765/400 kV, 7 x 500 MVA ( One unit spare)</p>	<p>(iii) Chilakaluripeta – <b>Narsaraopeta (Sattenapalli)</b> 400kV (quad) D/C line (The line bays at both ends to be in the scope of TSP)</p> <p>(iv) Cuddapah – Madhugiri 400kV (quad) D/C line with <b>50 MVAR</b> switchable line reactors at both ends of each circuit. (The line bays and reactors at both ends to be in the scope of CTU)</p> <p>(v) Srikakulam Pooling Station – Garividi 400 kV (Quad) D/C line (The line bays at Garividi end to be in the scope of TSP and those at Srikakulam Pooling Station end in the scope of CTU).</p> <p>(vi) Establishment of 765/400 kV substation at Chilakaluripeta with 2x1500 MVA transformers and 2x240 MVAR bus reactors each.  <b>Transformers: 765/400 kV, 7x500 MVA (Single-Phase units with one spare)</b></p>
<p><b><u>765 &amp; 400 kV Bay Requirements</u></b></p> <p>(i) <b>765 kV line bays at Chilakaluripeta: 4 no.</b></p> <p>(ii) 765/400 kV Transformer bays at Chilakaluripeta: 2 no.</p> <p>(iii) 400 kV line bays Chilakaluripeta : 2 no.</p> <p>(iv) Space for future 765 kV line bays at Chilakaluripeta: 6 no.</p> <p>(v) Space for future 400 kV line bays at Chilakaluripeta: 8 no.</p>	<p><b><u>765 kV Bays (at Chilakaluripeta)</u></b></p> <p>ICT bays : 2 nos.</p> <p><b>Line bays : 4 nos.</b></p> <p><b>765 kV Bus Reactor Bays : 2 nos.</b></p> <p>Spare bays (Space) : 6 nos.</p> <p><b><u>400 kV Bays</u></b></p> <p>ICT bays : 2 nos.</p> <p>Line bays : 2 nos.</p> <p>Spare bays (Space) : 8 nos.</p>
<p><b>Note:</b> CTU to provide two nos. 765 kV</p>	<p>(vii) <b><u>Note about provision of line reactors and bays:</u></b></p>

Scope as per Gazette Notification	Modified Scope
<p>bays at Vemagiri-II Pooling station for Vemagiri-II – Chilakaluripeta 765 kV D/C line</p> <p>CTU to provide requisite no. of 765 kV and 400 kV bays and line reactors for termination of transmission lines at Cuddapah</p> <p>CTU to provide two nos. 400kV bays &amp; line reactors at Madhugiri 400 kV substation for Cuddapah – Madhugiri 400kV (quad) D/C line</p> <p>CTU to provide two nos. 400 kV bays at Srikakulam 400kV substation for Srikakulam Pooling Station – Garividi 400 kV (Quad) D/C line</p>	<p>a) CTU to provide 2 nos. 765kV line bays along with 240 MVAR switchable line reactors at Vemagiri-II Pooling station for termination of Vemagiri-II –Chilakaluripeta 765kV D/c line.</p> <p>b) CTU to provide 2 nos. 765kV line bays along with 240 MVAR switchable line reactors at Cuddapah 765/400kV substation for termination of Chilakaluripeta – Cuddapah 765kV D/c line.</p> <p>c) CTU to provide 2 nos. 400kV line bays along with 50 MVAR switchable line reactors at Cuddapah 765/400kV substation for termination of Cuddapah – Madhugiri 400kV (quad) D/c line.</p> <p>d) CTU to provide 2 nos of 400kV line bays along with 50 MVAR switchable line reactors at Madhugiri 400kV substation for termination of Cuddapah – Madhugiri 400kV (quad) D/c line.</p> <p>e) CTU to provide 2 nos. 400kV line bays at Srikakulam 400kV substation for termination of Srikakulam Pooling Station – Garividi 400 kV (Quad) D/c line.</p> <p>f) APTRANSCO to provide space for 2 no 400 kV line bays at Narsaraopeta (Sattenapalli) 400kV sub- station</p> <p>g) APTRANSCO to provide space for 2 no 400 kV line bays at Garividi 400kV sub-station</p>

**Note:** The “Cuddapah – Hindupur 400kV (quad) D/C line with 80 MVAR switchable line reactors at Hindupur end” has been given to CTU for implementation under compressed time schedule in the SSSR-XXIV scheme.

**14.11 Name of the Scheme: Additional inter-regional AC links for import of power into Southern Region**

The modified scope of the “Additional inter-regional AC links for import of power into Southern Region” is:

<b>Transmission Scheme as per Gazette Notification</b>	<b>Modified Scope</b>
<p>1. Establishment of 765/400kV substations at Warangal (New) with 2x1500 MVA transformers and 2x240 MVAR bus reactors</p> <p>Transformers: 765/400 kV, 7x500 MVA (One unit Spare)</p> <p><u>765 &amp; 400 kV Bay Requirements</u></p> <p>(i) 765 kV line bays : 6 no.</p> <p>(ii) 765/400 kV Transformer bays : 2 no.</p> <p>(iii)400 kV line bays : 2 no.</p> <p>(iv)Space for future 765 kV line bays : 6 no.</p> <p>(v) Space for future 400 kV line bays : 8 no</p>	<p>1. Establishment of 765/400kV substations at Warangal (New) with 2x1500 MVA transformers and 2x240 MVAR bus reactors.</p> <p>Transformers: 765/400 kV, 7x500 MVA (Single-Phase units with one spare)</p> <p><u>765 kV &amp; 400 kV Bay Requirements (in Warangal)</u></p> <p>(i) 765 kV line bays : 6 nos.</p> <p>(ii) 765 kV Transformer bays : 2 no.</p> <p>(iii)400kV Transformer bays : 2 no.</p> <p>(iv)400 kV line bays : 2 no.</p> <p>(v) Space for future 765 kV line bays : 6 no.</p> <p>(vi)Space for future 400 kV line bays : 8 no</p>
<p>2. Warora Pool – Warangal (New) 765kV D/c line with 240 MVAR switchable line reactor at both ends</p>	<p>2. Warora Pool – Warangal (New) 765kV D/c line with 240 MVAR switchable line Reactor at both ends of each circuit</p> <p>(The line bays and reactors at both ends to be in the scope of TSP)</p>
<p>3. Warangal (New) –Hyderabad 765 kV D/c line with 330 MVAR switchable line reactor at Warangal end</p>	<p>3. Warangal (New) –Hyderabad 765 kV D/c line with <b>240 MVAR switchable</b> line reactor at Warangal end of each circuit.</p> <p>(The line bays and reactors at Warangal end to be in the scope of TSP and the line bays at Hyderabad end in the scope of CTU)</p>
<p>4. Warangal (New) – Warangal (existing) 400 kV (quad) D/c line</p>	<p>4. Warangal (New) – Warangal (Existing) 400 kV (quad) D/c line</p> <p>(The line bays at Warangal (New) end to be in the scope of TSP and the line bays at Warangal (Existing) end in the scope of CTU)</p>
<p>5. Hyderabad – Kurnool 765 kV D/c line with</p>	<p>5. Hyderabad – Kurnool 765 kV D/c line</p>

<b>Transmission Scheme as per Gazette Notification</b>	<b>Modified Scope</b>
240 MVAR switchable line reactor at Kurnool end	with 240 MVAR switchable line reactor at Kurnool end of each circuit  (The line bays and reactors in the scope of CTU)
6. Warangal (New) – Chilakaluripeta 765kV D/c line with 240 MVAR switchable line reactor at both ends	6. Warangal (New) – Chilakaluripeta 765kV D/c line with 240 MVAR switchable line reactor at both ends of each circuit.  (The line bays and reactors at both ends to be in the scope of TSP)
7. Cuddapah – Hoodi 400kV (quad) D/c line with 63 MVAR switchable line reactor at both ends	
<p>Note :</p> <ul style="list-style-type: none"> <li>i) Warora Pool developer to provide space for two nos. 765 kV line bays at Warora Pool for termination of Warora Pool – Warangal (New) 765kV D/c line alongwith 240 MVAR switchable line reactor</li> <li>ii) CTU to provide two nos. 765 kV bays at Hyderabad for termination of Warangal (New) –Hyderabad 765 kV D/c line</li> <li>iii) CTU to provide two nos. 765 kV bays at Hyderabad for termination of Hyderabad – Kurnool 765 kV D/c line</li> <li>iv) CTU to provide two nos. 765 kV line bays at Kurnool for Hyderabad – Kurnool 765 kV D/c line with 240 MVAR switchable line reactor at Kurnool end</li> <li>v) CTU to provide four nos. 400 kV bays</li> </ul>	<p>7. <b><u>Note about provision of line reactors and bays</u></b></p> <ul style="list-style-type: none"> <li>i) Warora Pool developer to provide space for 2 nos. 765 kV line bays at Warora Pool for termination of Warora Pool – Warangal (New) 765kV D/c line with 240 MVAR <b>switchable line reactor</b></li> <li>ii) CTU to provide 2 nos. 765 kV bays at Hyderabad for termination of Warangal (New) –Hyderabad 765 kV D/c line</li> <li>iii) CTU to provide 2 nos. 765 kV bays at Hyderabad for termination of Hyderabad – Kurnool 765 kV D/c line</li> <li>iv) CTU to provide 2 nos. 765 kV line bays along with 240 MVAR switchable line reactor at Kurnool end for Hyderabad – Kurnool 765 kV D/c line.</li> <li>v) CTU to provide 2 nos. 400 kV bays at Warangal (existing) for Warangal (New) – Warangal (existing) 400 kV (quad) D/c line</li> </ul>

<b>Transmission Scheme as per Gazette Notification</b>	<b>Modified Scope</b>
<p>at Warangal (existing) for Warangal (New) – Warangal (existing) 400 kV (quad) D/c line</p> <p>vi) M/s KPTCL to provide two nos. 400 kV bays at Hoodi for termination of Cuddapah – Hoodi 400kV (quad) D/c line along with 63 MVar switchable line reactors</p>	

### 15.0 Cost of the Project as per the Cost Committee

Empowered Committee during its 32<sup>nd</sup> meeting held on 17.01.2014, decided that a realistic assessment of the cost estimates of transmission scheme under TBCB route may be worked out by a committee, which will be formed with the representative from CEA, POWERGRID/CTU and Bid Process Coordinators (BPCs).

After carrying out survey of the lines, the cost of the Transmission Projects have been worked out by cost committee. The estimated cost of the transmission projects vis-à-vis estimated cost as per EC is tabulated below for the information and approval of EC:

<b>S.No.</b>	<b>Name of the Transmission Project</b>	<b>Estimated Cost as per EC Minutes (in Rs. Crore)</b>	<b>Estimated Cost derived by Cost Committee (in Rs. Crore)</b>
<b>RECTPCL</b>			
1.	System Strengthening Scheme in Northern Region (NRSS-XXXVI) along with LILO of Sikar-Neemrana 400kV D/C line at Babai (RRVPNL)	558	401
2.	Transmission System Strengthening in WR associated with Khargone TPP (1320 MW)	2370	2137
3.	Immediate evacuation for North Karanpura (3x660MW) generation project of NTPC alongwith creation of 400/220 kV sub-station at Dhanbad – Proposal of JUSNL (ERSS-XIX)	1390	472
<b>PFCCL</b>			

4	Common Transmission System for Phase-II Generation Projects in Odisha and Immediate Evacuation System for OPGC (1320 MW) Project in Odisha	2596	1698
5	Additional inter-Regional AC link for import into Southern Region i.e. Warora – Warangal and Chilakaluripeta - Hyderabad - Kurnool 765kV link	7760	5200
6	Creation of new 400kV GIS Substations in Gurgaon and Palwal area as a part of ISTS	1759	1640

## 16.0 Constitution of the Bid Evaluation Committees (BEC's) for the new transmission schemes

### 1). Bid Evaluation Committee (BEC) for “Transmission System Strengthening in WR associated with Khargone TPP (1320 MW)” – RECTPCL

S. No.	Name	Designation
1.	Head, SBI Capital Markets, 6th floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770 Fax: 011 -23418773	Chairman
2.	Shri S.P. Gupta, Chief Engineer (Procurement), WRPC Mobile No. 09425805230	Member
3.	Shri Ravindra D. Chavan Director (Projects) Fax No. 0761-2665593 Mob. No. 09769006280	Member
4.	Chief Engineer (F&CA) Central Electricity Authority Room No. 626, 6th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26732688, 26732668,	Member (CEA)
5.	Director (PSP&PA-I) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110066	Member (CEA)
6.	Chairman of SPV constituted by RECTPCL	Convener - Member

**2). Bid Evaluation Committee (BEC) for “765 kV System Strengthening Scheme in Eastern Region (ERSS-XVIII)” - PFCCL**

<b>S. No.</b>	<b>Name</b>	<b>Designation</b>
1.	Head, SBI Capital Markets, 6th floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770 Fax: 011 -23418773	Chairman
2.	Shri Partha Sarthi Dey, Chief Engineer (Procurement),O/o Director(Operations), WBSEDCL, Vidyut Bhawan, Bidhannagar, Block DJ, Sector-II, Kolkata- 700091	Member
3.	Shri M.C. Rakshit, Dy. Chief Engineer(Electrical), DVC headquarter, DVC Tower , VIP Road, Kolkata-700054	Member
4.	Chief Engineer (F&CA) Central Electricity Authority Room No. 626, 6th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26732688, 26732668,	Member
5.	Director (PSP&PA-II) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110066	Member
6.	Chairman of SPV constituted by PFCCL	Convener - Member

**3). Bid Evaluation Committee (BEC) for “Immediate evacuation for North Karanpura (3x660 MW) generation project of NTPC & Creation of 400/220 kV sub-station at Dhanbad-proposal of JUSNL (ERSS-XIX)” RECTPCL**

<b>S. No.</b>	<b>Name</b>	<b>Designation</b>
1.	Head, SBI Capital Markets, 6 <sup>th</sup> floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770 Fax: 011 -23418773	Chairman
2.	Shri Partha Sarthi Dey, Chief Engineer (Procurement),O/o Director(Operations), WBSEDCL, Vidyut Bhawan, Bidhannagar, Block DJ,	Member

	Sector-II, Kolkata- 700091	
3.	Shri M.C. Rakshit, Dy. Chief Engineer(Electrical), DVC headquarter, DVC Tower , VIP Road, Kolkata-700054	Member
4.	Chief Engineer (F&CA) Central Electricity Authority Room No. 626, 6th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26732688, 26732668,	Member
5.	Director (PSP&PA-I) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26711015,	Member
6.	Chairman of SPV constituted by RECTPCL	Convener - Member

**4). Bid Evaluation Committee (BEC) for “North Eastern Region Strengthening Scheme–V (NERSS-V) & North Eastern Region Strengthening Scheme – II (NERSS-II) Part – B” - RECTPCL**

<b>S. No.</b>	<b>Name</b>	<b>Designation</b>
1.	Head, SBI Capital Markets, 6 <sup>th</sup> floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770 Fax: 011 -23418773	Chairman
2.	Shri Anong Perme, Chief Engineer(EE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111 Phone no. 0360-2217301, 2217302 (Fax) Email: anongperme@yahoo.com	Member
3.	Shri K. Miachieo, Chief Engineer(Power), Department of Power, Govt. of Nagaland, Kohima-707001 Phone no: 0370-2243149 Email: cepower1@gmail.com	Member
4.	Chief Engineer (F&CA) Central Electricity Authority Room No. 626, 6th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26732688, 26732668	Member

5.	Director (PSP&PA-I) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110066	Member
6.	Chairman of SPV constituted by RECTPCL	Convener - Member

**5). Bid Evaluation Committee (BEC) for “North Eastern Region Strengthening Scheme (NERSS)- VI” - PFCCL**

<b>S. No.</b>	<b>Name</b>	<b>Designation</b>
1.	Head, SBI Capital Markets, 6th floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770 Fax: 011 -23418773	Chairman
2.	Shri Anong Perme, Chief Engineer(EE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111 Phone no. 0360-2217301, 2217302 (Fax) Email: anongperme@yahoo.com	Member
3.	Shri K. Miachieo, Chief Engineer(Power), Department of Power, Govt. of Nagaland, Kohima-707001 Phone no: 0370-2243149 Email: cepower1@gmail.com	Member
4.	Chief Engineer (F&CA) Central Electricity Authority Room No. 626, 6th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26732688, 26732668,	Member
5.	Director (PSP&PA-II) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110066	Member
6.	Chairman of SPV constituted by PFCCL	Convener - Member

**6). Bid Evaluation Committee (BEC) for “Transmission system for Phase-I generation projects in Arunachal Pradesh”- RECTPCL**

<b>S. No.</b>	<b>Name</b>	<b>Designation</b>
1.	Head, SBI Capital Markets, 6th floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770 Fax: 011 -23418773	Chairman
2.	Shri Anong Perme, Chief Engineer(EE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111 Phone no. 0360-2217301, 2217302 (Fax) Email: anongperme@yahoo.com	Member
3.	Shri K. Miachieo, Chief Engineer(Power), Department of Power, Govt. of Nagaland, Kohima-707001 Phone no: 0370-2243149 Email: cepower1@gmail.com	Member
4.	Chief Engineer (F&CA) Central Electricity Authority Room No. 626, 6th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26732688, 26732668,	Member
5.	Director (PSP&PA-I) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26711015	Member
6.	Chairman of SPV constituted by RECTPCL	Convener - Member

Meeting ended with thanks to the chair.

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**List of participants in the 36<sup>th</sup> Meeting of Empowered Committee on Transmission chaired by Member (PS), CEA on 26.07.2016**

<b>Sl. No.</b>	<b>Name Shri/Smt</b>	<b>Designation</b>
1.	S.D. Dubey	- Member (PS), CEA – in Chair
2.	Dr. Somit Dasgupta	- Member (E&C) CEA, Member EC
3.	V.V.R.K. Rao	- Former Chair Person, CEA
4.	Ravinder	- Former Member (PS), CEA
5.	K.K.Arya	- Member Secretary, EC & CE (PSP&PA-I), CEA
6.	Pradeep Jindal	- Chief Engineer, CEA
7.	Ravinder Gupta	- Director, CEA
8.	Rishika Sharan	- Director, CEA
9.	Awdhesh Kumar Yadav	- Director (PSP&PA-I), CEA
10.	Manjari Chaturvedi	- Dy. Director, CEA
11.	Shivani Sharma	- Dy. Director, CEA
12.	Shiva Suman	- Dy. Director, CEA
13.	Satyendra Dotan	- Dy. Director, CEA
14.	Vikas Sachan	- Astt Director,CEA
15.	Surinder Singh	- Joint Adviser NITI Ayog
16.	R.P. Sasmal	- Dir., (Op.&Proj.), POWERGRID
17.	Seema Gupta	- COO (CTU-Plg.), POWERGRID
18.	Ashok Pal	- GM, POWERGRID
19.	Mukesh Khanna	- AGM (CTU-Plg.), POWERGRID
20.	Sanjay Nayak	- AVP, PFCCL
21.	P.C. Hembram	- AGM, PFCCL
22.	Yogesh Juneja	- GM, PFCCL
23.	Bhupender Gupta	- ACEO, RECTPL
24.	Shyam Kumar	- AGM (Comml.), NTPC
25.	A. Basu Roy	- AGM (Comml.), NTPC
26.	S.P. Kesarwani	- DGM (Comml.), NTPC

**Schemes approved in the 35<sup>th</sup> meeting of EC to be implemented under Regulated Tariff mechanism**

- 12.1** Name of the Scheme: Modification of Suratgarh Substation Location in Green Energy Corridor
- 12.2** Name of the Scheme: Maharaniabagh – Rajghat 400kV D/C additional line
- 12.3** Name of the Scheme: Provision of 2 nos. of 400/220kV, 315MVA ICTs (7x105 MVA single phase units) at Parbati Pooling Station
- 12.4** Name of the Scheme: Provision of 2 x 500MVA, 400/220kV ICTs at Parli (PG) switching station
- 12.5** Name of the Scheme: Provision of 2 no. of 220 kV bays for LILO of Khedamara – Borjhara line at 400/220 kV Raipur PGCIL substation
- 12.6** Name of the Scheme: Additional 2nd 1 X 500 MVA, 400/220 kV ICT at Itarsi (PG) 400 kV substation
- 12.7** Name of the Scheme: Provision of 2 no. of 400 kV GIS bays for termination of Gwalior-Morena 400 kV D/C quad line at Gwalior substation
- 12.8** Name of the Scheme: Provision of 2 no. of 400 kV bays for termination of Indore (PG) – Ujjain D/C 400 kV D/C line at Indore (765/400) S/S
- 12.9** Name of the Scheme: Additional 3rd 500MVA, 400/220kV ICT along with 2 no. of 220 kV bay at Satna (PG) S/s
- 12.10** Name of the Scheme: Provision of 2 no. of 220 kV bays at Mapusa (Colvale) 400/220 kV substation for termination of the proposed Mapusa (Colvale) - Teum 220 kV D/C line of GED.
- 12.11** Name of the Scheme: Provision of 330 MVAR, 765 kV Line Reactor with reactor bays along with 850 Ω NGR for Vindhyachal Pooling station – Jabalpur pool 765 kV D/C line (in each circuit at both ends ).
- 12.12** Name of the Scheme: Transmission system for Ultra Mega Solar Power Parks in Rewa, MP
- 12.13** Name of the Scheme: Eastern Region Strengthening Scheme-XV (ERSS-XV): System strengthening in Eastern Region for transfer of additional 500MW power to Bangladesh
- 12.14** Name of the Scheme: Re-conductoring of Maithon RB - Maithon 400kV D/C line of POWERGRID (ERSS-XVII) with HTLS conductor
- 12.15** Name of the Scheme: Transformer augmentation requirements in Eastern Region -XVII (ERSS-XVII)
- 12.16** Name of the Scheme: Conversion of fixed Line Reactors to switchable Line Reactors (ERSS-XVII) (to be used as Bus Reactors) for Lakhisarai – Biharsharif 400kV D/C and Keonjhar – Rengali 400 kV S/C
- 12.17** Name of the Scheme: Proposal of JUSNL (Jharkhand Urja Sancharan Nigam Limited) for provision of 2x160 MVA, 220/132 kV Auto transformer in proposed 400/220 kV GSS of M/s POWERGRID at Daltonganj with provision of 02 nos. 132 kV bays for JUSNL (POWERGRID Scope)
- 12.18** Name of the Scheme: Bypassing arrangement of LILO of 400kV lines at Angul (ERSS

**12.19-17) (POWERGRID Scope)**

**12.20** Name of the Scheme: North Eastern Region Strengthening Scheme – V (NERSS - V)

**12.21** Name of the Scheme: North Eastern Region Strengthening Scheme – VI (NERSS-VI)

**12.22** Name of the Scheme: Upgradation of existing inter-state 132 kV link between Imphal (PG) and Imphal (State)

**12.23** Name of the Scheme: Installation of 3rd 315 MVA Transformer at 400/132/33kV at Silchar Sub Station

**12.24** Name of the Scheme: Installation of 31.5 MVAR, 220 kV bus reactor at 220/132kV Mokokchung sub-station of POWERGRID

**Annexure-III (A)****Progress of Transmission Projects Awarded Through Tariff Based Competitive Bidding Route to REC Transmission Projects Company Limited**

As on 26.7.2016

S. No	Name of the Project	BPC	Implementing Agency/ Transmission service provider	Scope of Project	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
<b>BIDDING COMPLETED</b>							
1	System Strengthening in NR for import of Power from North Karanpura and other projects outside NR and System Strengthening in WR for import of power from North Karanpura and other projects outside Western Region and also for projects within western Region  <b>(Est. Cost : Rs. 2700 Crore)</b>	RECTPCL	Reliance Power Transmission Limited	Sipat/Korba (Pooling) –Seoni, S/C  Lucknow-Bareilly, S/C Bareilly-Meerut Agra-Gurgaon Gurgaon-Gurgaon (PG) Gurgaon S/S	765 kV S/C  765 kV S/C 765 kV S/C 400 kV D/C 400 kV D/C 400/220 kV	370  250 220 220 30 2x500 MVA GIS	(i) LOI placed on 18/12/2009 (ii) Special purpose vehicle acquired on 20/05/2010 (iii) Transmission License received on 22/12/2010 (iv) Proposal for clearance under section 164 received on 12.9.2011 (v) Tariff adoption approval on 13.09.2011. (vi) North Karanpura Transmission Company Limited has filed a petition seeking relief under force majeure and the matter is currently being heard in Supreme Court.  (vii) Project was scheduled for commissioning in November, 2013.

2	Augmentation of Talcher II Transmission System  (Est. Cost : Rs. 1400 Crore)	RECTPCL	Reliance Power Transmission Limited	Talcher II-Rourkela	400 kV D/C (Quad)	170	(i) LOI placed on 18/12/09
				Talcher II-Behrampur	400 kV D/C	220	(ii) Special purpose vehicle acquired on 27/04/10
				Behrampur-Gazuwaka	400 kV D/C	220	(iii) Transmission License received on 08/11/10
				Behrampur sub-station	400/220 kV	2x315 MVA	(iv) Proposal for clearance under section 164 received on 12.9.2011 (v) Tariff adoption approval on 4.11.2010 (vi) Talcher-II Transmission Company Limited has filed a petition seeking relief under force majeure and the matter is currently being heard in Supreme Court. (vii) Project was scheduled for commissioning in Oct, 2012
3	Transmission System Associated with Krishnapattnam UMPP – Synchronous interconnection between SR and WR (Part-B)  (Est. Cost : Rs. 440 Crore)	RECTPCL	Consortium of M/S Patel Engineering Ltd, M/S Simplex Infrastructure Ltd and M/s B S Transcom Ltd. Patel Estate Road Jogeswari (West), Mumbai-400102	Raichur - Solapur	765 kV S/C	250	(i) LOI placed on 16/12/2010 (ii) Special purpose vehicle acquired on 07/01/2011 (iii) Transmission license received on 24/08/2011 (iv) Tariff adoption by CERC on 12.8.2011 (v) Schedule date of Commissioning 06.01.2014.

4	Transmission System associated with IPPs of Vemagiri Area – Package – A  <b>(Est. Cost : Rs. 1300 Crore)</b>	RECTPCL	M/s Power Grid Corporation of India Limited.	Vemagiri Pooling Station – Khammam (1 <sup>st</sup> ckt.)	765 kV D/C	250	(i) LOI placed on 20/03/2012 (ii) Special purpose vehicle acquired on 18/04/2012 (iii) Transmission license application filed in CERC but License not issued. Requirement of transmission project being discussed in CERC / CEA due to non-availability of gas for gas based generation projects. (iv) Tariff adoption petition filed in CERC, however, tariff adoption not done. (v) Scheduled date of completion : April 2015
				Khammam – Hyderabad (1 <sup>st</sup> ckt.)	765 kV D/C	250	
5	System Strengthening in Southern Region for import of power from Eastern Region.  <b>(Est. Cost : Rs. 1180 Crore)</b>	RECTPCL	M/s Power Grid Corporation of India Limited	Srikakulam PP – Vemagiri-II Pooling Station	765 kV	350	(i) LOI placed on 31/07/2013 (ii) Special purpose vehicle acquired on 30/08/2013 (iii) Transmission license received on 08.01.2014. (iv) Tariff adoption by CERC on 23.01.2014. (v) Scheduled completion : 30/08/2016
				Khammam (Existing) – NagarjunaSagar	400 kV	150	
6	Transmission System required for evacuation of power from Kudgi TPS (3 x 800 MW in Phase-I) of NTPC Limited.  <b>(Est. Cost : Rs. 1240 Crore)</b>	RECTPCL	M/s L&T Infrastructure Development Projects Limited	Kudgi TPS – Narendra (New)	400 kV 2x D/C quad lines	10	(i) LOI placed on 31/07/2013 (ii) Special purpose vehicle acquired on 30/08/2013 (iii) Transmission license received on 21.11.2013 (iv) Tariff adoption by CERC on 08.01.2014. (v) Scheduled completion : 29/12/2015
				Narendra (New) - Madhugiri	765 kV D/C Line	350	
				Madhugiri - Bidadi	400 kV D/C (quad) line	100	
7	ATS of Unchahar TPS	RECTPCL	M/s Power Grid Corporation of	Unchahar - Fatehpur	400 kV (D/C)	60	<ul style="list-style-type: none"> <li>• LOI placed on 14/02/14</li> <li>• Special Purpose Vehicle</li> </ul>

	<b>(Est. Cost : Rs. 70 Crore)</b>		India Limited				<p>acquired on 24/03/2014. Transmission license received on 21.07.2014</p> <ul style="list-style-type: none"> <li>• Tariff adoption by CERC: 03.07.2014</li> <li>• Scheduled completion : 23/09/2016</li> </ul>
8	<p>Northern Region System Strengthening Scheme, NRSS-XXXI (Part-A)</p> <p><b>(Est. Cost : Rs. 225 Crore)</b></p>	RECTPCL	M/s Power Grid Corporation of India Limited	<p>GIS Sub-station at Kala Amb</p> <p>LILO of of both circuits of Karcham Wangtoo-Abdullapur Line</p> <p>40% series Compensation on Karcham Wangtoo-Kala Amb quad D/C line at Kala Amb ends</p>	<p>400/220 kV</p> <p>400 kV (D/C)</p> <p>400 kV</p>	<p>7x105 MVA (1-ph)</p> <p>5</p>	<p>(i) LOI placed on 26/02/14.</p> <p>(ii) Special Purpose Vehicle acquired on 12/05/2014.</p> <p>(iii) Transmission license received on: 04.09.2014.</p> <p>(iv) Tariff adoption by CERC: 22.08.2014.</p> <p>(v) Scheduled completion : 12/07/2017</p>
9	<p>Northern Region System Strengthening Scheme, NRSS-XXXI (Part-B)</p> <p><b>(Est. Cost : Rs. 370 Crore)</b></p>	RECTPCL	M/s Essel Infraprojects Ltd.	<p>Kurukshetra-Malerkotla</p> <p>Malerkotla-Amritsar</p>	<p>400 kV (D/C)</p> <p>400 kV (D/C)</p>	<p>125</p> <p>180</p>	<p>(i) LOI placed on 26/02/14.</p> <p>(ii) Special Purpose Vehicle acquired on 12/05/2014.</p> <p>(iii) Transmission license received on 25.08.2014.</p> <p>(iv) Tariff adoption by CERC: 07.08.2014.</p> <p>(v) Scheduled completion : 12/09/2016</p>
10.	<p>Northern Region System Strengthening Scheme, NRSS-XXIX</p>	RECTPCL	M/s Sterlite Grid Limited	GIS Sub-station at Amargarh	400/220 kV	7x105 MVA (1-ph)	<ul style="list-style-type: none"> <li>• LOI placed on 23.05.2014</li> <li>• Special Purpose Vehicle</li> </ul>

	<b>(Est. Cost : Rs. 2621 Crore)</b>			LILO of Uri – Wagora	400kV (D/C)	.5	acquired on 04.08.2014.
				Jullundhar – Sambha	400kV (D/C)	146	• Transmission license received on 14.11.2014
				Sambha-Amargarh	400kV (D/C)	311	• Tariff adoption by CERC: 10.12.2014 • Scheduled completion : 04.10.2018
11.	Transmission System Strengthening associated with Vindhyachal – V <b>(Est. Cost : Rs. 2845 Crore)</b>	RECTPCL	M/s Power Grid Corporation of India Limited	Vindhyachal Pooling Station-Jabalpur Pooling Station	765kV D/c Line	382	• LOI placed on 10.02.2015. • Special Purpose Vehicle acquired on 26.02.2015. • Transmission license received on 15.06.2015 • Tariff adoption by CERC: 28.05.2015 • Scheduled completion : 26.06.2018
12.	Transmission System associated with Gadawara STPS (2x800 MW) of NTPC (Part- A) <b>(Est. Cost : Rs. 4070 Crore)</b>	RECTPCL	M/s Power Grid Corporation of India Limited	AIS Sub-station at Warora	765/400	2X1500 MVA (1-ph)	• LOI placed on 11.03.2015. • Special Purpose Vehicle acquired on 24.04.2015. • Transmission license received on 05.08.2015 • Tariff adoption by CERC: 23.06.2015 • Scheduled completion : November, 2017
				LILO of Wardha – Parli ckt	400 kV (D/C)	45	• Transmission license received on 05.08.2015
				Gadarwara – Jabalpur	765 kV(D/c)	100	• Tariff adoption by CERC: 23.06.2015
				Gadarwara - Warora	765 kV(D/c)	348	• Scheduled completion : November, 2017
13.	Transmission System associated with Gadawara STPS (2x800 MW) of NTPC (Part- B) <b>(Est. Cost : Rs. 3684 Crore)</b>	RECTPCL	M/s Power Grid Corporation of India Limited	Warora – Parli (New)	765 kV(D/c)	314	• LOI placed on 11.03.2015. • Special Purpose Vehicle acquired on 24.04.2015. • Transmission license received on 10.07.2015 • Tariff adoption by CERC: 23.06.2015 • Scheduled completion : January, 2018
				Parli (New) - Sholapur	765 kV(D/c)	154	• Transmission license received on 10.07.2015
				Parli (New) – Parli (PG)	400 kV D/C	21	• Tariff adoption by CERC: 23.06.2015
				AIS Sub-station at Parli	765/400	2X1500 MVA (1-ph)	• Scheduled completion : January, 2018

14.	Connectivity Lines for Maheshwaram (Hyderabad) 765/400 kV Pooling S/s  <b>(Est. Cost : Rs. 534 Crore)</b>	RECTPCL	M/s Sterlite Grid 3 Limited	Maheshwaram (PG) – Mehboob Nagar	400 kV D/c line	100	<ul style="list-style-type: none"> <li>• LOI placed on 21.07.2015.</li> <li>• Special Purpose Vehicle acquired on 20.08.2015.</li> <li>• Transmission license application filed in CERC on 21.08.2015.</li> <li>• Tariff adoption by CERC: under process in CERC for adoption.</li> <li>• Scheduled completion : 20.06.2018</li> </ul>
				Nizamabad – Yeddumailaram (Shankarpalli)	400 kV D/c line	158	
				2 No. of 400 kV line bays at Mehboob Nagar S/S of TSTRANSCO  2 No. of 400 kV line bays at Yeddumailaram S/S of TSTRANSCO.			
15.	Strengthening of transmission system beyond Vemagiri  <b>(Est. Cost : Rs. 5050 Crore)</b>	RECTPCL	M/s Power Grid Corporation of India Limited	Vemagiri-II – Chilakaluripeta line	765kV D/C	257	<ul style="list-style-type: none"> <li>(i) LOI placed on 29.10.2015.</li> <li>(ii) Special Purpose Vehicle acquired on 04.12.2015.</li> <li>(iii) Transmission license received on 14.03.2016.</li> <li>(iv) Tariff adoption by CERC: 09.02.2016.</li> <li>(v) Scheduled completion : 04.04.2019</li> </ul>
				Chilakaluripeta – Cuddapah line	765kV D/C	260	
				<ul style="list-style-type: none"> <li>• Chilakaluripeta – Narsaraopeta</li> <li>• 2 nos.400 kV line bays at Narsaraopeta</li> </ul>	400kV (quad) D/C	47	
				Cuddapah – Madhugiri line	400kV (quad) D/C	248	
				<ul style="list-style-type: none"> <li>• Srikaikulam Pooling Station – Garividi line</li> <li>• 2 nos.400 kV line bays at Garividi</li> </ul>	400 kV (Quad) D/C	144	

				Establishment of substation at Chilakaluripeta	765/400 kV	2x1500 MVA	
16.	Transmission System Strengthening in Indian System for transfer of power from new HEPs in Bhutan.  <b>(Est. Cost : Rs. 1272 Crore)</b>	RECTPCL	M/s Kalpataru Power Transmission Limited	Alipurduar - Siliguri	400 kV D/C	115	(i) LOI placed on 29.10.2015. (ii) Special Purpose Vehicle acquired on 06.01.2016.
				Kishanganj - Darbhanga	400 kV D/C	213	(iii) Transmission license received on 21.03.2016. (iv) Tariff adoption by CERC: 22.03.2016. (v) Scheduled completion : 06.03.2019
17.	Immediate evacuation for North Karanpura (3x660MW) generation project of NTPC alongwith creation of 400/220 kV sub-station at Dhanbad – Proposal of JUSNL (ERSS-XIX)  <b>(Est. Cost : Rs. 1390 Crore)</b>	RECTPCL	M/s Adani Transmission Limited	North Karanpura – Gaya	400 kV D/c	120	(i) LOI placed on 24.05.2016. (ii) Special Purpose Vehicle acquired on 08.07.2016.
				North Karanpura – Chandwa (Jharkhand) Pooling Station	400 kV D/c	65	(iii) Scheduled completion : September, 2019
				LILO of both circuits of Ranchi-Maithon RB 400 kV D/C line at Dhanbad	400 kV D/c	20	
				400/220 kV sub-station at Dhanbad			
<b>BIDDING PROCESS RECENTLY COMPLETED (SPV NOT TRANSFERED)</b>							
18.	System Strengthening Scheme in Northern Region (NRSS-XXXVI)” along with LILO of Sikar-Neemrana 400kV D/C line at Babai (RRVPL).  <b>(Est. Cost : Rs. 558 Crore)</b>	RECTPCL	M/s Essel InfraProjects Limited	Koteshwar Pooling Station - Rishikesh 400kV D/C (HTLS) line	400 kV D/C	100	(i) LOI placed on 28.03.2016. (ii) Special Purpose Vehicle yet to be transferred in next week of July, 2016.
				LILO of one ckt of 400 kV D/c Sikar(PG)-Neemrana(PG)	400 kV D/C	2	(iii) Scheduled completion : 30.11.2019

				line at Babai			
				Babai(RRVPNL) – Bhiwani (PG) D/C line	400 kV D/C	252	
19.	Transmission System Strengthening in WR associated with Khargone TPP (1320 MW)  <b>(Est. Cost : Rs. 2370 Crore)</b>	RECTPCL	M/s Sterlite Grid 4 Limited	LILO of one ckt of Rajgarh-Khandwa	400 kV D/c	7	(i) LOI placed on 26.05.2016. (ii) Special Purpose Vehicle yet to be transferred in next week of July, 2016. (i) Scheduled completion : July, 2019
				Khargone TPP Switchyard – Khandwa pool	400 kV D/c	85	
				Khandwa Pool – Indore	765/400KV	130	
				Khandwa Pool – Dhule	765/400KV	242	
				Establishment of 765/400 kV 2x1500 MVA pooling station at Khandwa Poll			
<b>BIDDING PROCESS UNDER PROGRESS</b>							
20.	NER System Strengthening Scheme– II  <b>(Est. Cost : Rs. 1652 Crore)</b>	RECTPCL		Biswanath Chariyalli (NER PP) – Itanagar (Zebra conductor)	132 kV D/C line	95	(i) SPV has been incorporated on 21.04.2015. (ii) RFQ has been issued on 12.04.2015. (iii) CEA has intimated revision in scope. Revised scheme will be notified after next Empowered Committee meeting
				Silchar– Misa	400kV D/C (Quad) line	200	
				Ranganadi - Nirjuli	132 kV D/C line	40	
				Imphal - New Kohima line	400 kV D/C	150	
				Surajmaninagar- P. K. Bari	400 kV D/C	65	

21.	Transmission System for phase – I generation projects in Arunachal Pradesh  (Est. Cost : Rs. 571 Crore)	RECTPCL		Dinchang-Rangia / Rowta Pooling Point	400 kV D/c	120	(i) MoP vide Gazette Notification dated 17.11.2015 appointed RECTPCL as BPC. (ii) SPV incorporated on 02.12.2015. (iii) The RfQ is issued from 04.12.2015 with the last date of submission of response 04.01.2016. (iv) The RfP is issued on 13.04.2016.
				LILO of both ckts of Balipara-Bongaigaon	400 kV D/c	20	
				Establishment of 7x166 MVA 400/220 kV pooling Station GIS at Dinchang			

**Annexure-III (B)**

**Progress of Transmission Projects Awarded Through Tariff Based Competitive Bidding Route to PFCCCL**

**As on 26.07.2016**

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
<b>BIDDING COMPLETED</b>							
1	Scheme for enabling import of NER/ER surplus by NR  Estimated Cost as provided by CEA: <b>Rs. 1700 crore</b>	PFC	<b>Successful Bidder</b> - Sterlite Technologies Ltd.  <b>Address</b> – C-2 Mira Corporate Suite, Ishwar Nagar, Mathura Road, New Delhi-110065  <b>Transmission Service Provider</b> – East North Interconnection Company Ltd.  <b>Address-</b> C/o BALCO, Core-6, 2nd Floor, Scope Office Complex 7, Lodhi Road, New Delhi - 110003	Bongaigaon – Siliguri	400 kV D/C (Quad)	218 km	(i) LOI placed on 07.01.2010
				Purnia – Biharsharif	400 kV D/C (Quad)	210 km	(ii) Special Purpose Vehicle acquired on 31.03.2010  (iii) Approval under section 68 on 25.03.2009  (iv) Scheduled Completion Date is 31.03.200  (v) Transmission License granted on 28.10.2010.  (vi) Tariff adoption approval on 28.10.2010  <b>Project Completed</b>
2	System strengthening common for WR	PFCCCL	<b>Successful Bidder</b> - Sterlite Transmission Projects Ltd.	Dhramjaygarh-Jabalpur	765 kV 1xD/C	384 km	(i) LOI placed on 31.01.2011
				Jabalpur-Bina	765 kV 1xS/C	250 km	(ii) Special Purpose

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	and NR  Estimated Cost as provided by CEA: <b>Rs. 1720 crore</b>		<b>Transmission Service Provider</b> – Jabalpur Transmission Company Ltd.  <b>Address</b> - C/o BALCO, Core-6, 2nd Floor, Scope Office Complex 7, Lodhi Road, New Delhi - 110003				Vehicle acquired on 31.03.2011 (iii) Approval under section 68 on 25.11.2010. (iv) Scheduled Completion Date is 31.03.2014. (v) Transmission License granted on 12.10.2011. (vi) Tariff adoption approval on 28.10.2011.  <b>Project Completed</b>
3	System strengthening for WR  Estimated Cost as provided by CEA: <b>Rs. 2900 crore</b>	PFCL	<b>Successful Bidder</b> - Sterlite Transmission Projects Ltd.  <b>Address</b> – C-2 Mira Corporate Suite, Ishwar Nagar, Mathura Road, New Delhi-110065  <b>Transmission Service Provider</b> – Bhopal Dhule Transmission Company Ltd.  <b>Address</b> - C/o BALCO, Core-6, 2nd Floor, Scope Office Complex 7, Lodhi Road, New Delhi –	Jabalpur-Bhopal Bhopal-Indore 765/400 kV substation at Bhopal, with 2x1500 MVA 765/400 kV and interconnecting 400 kV lines/LILO Aurangabad-Dhule Dhule-Vadodara 765/400 kV substation at Dhule with 2x1500 MVA 765/400 kV and	765 kV S/C 765 kV S/C 765/400 kV substation 10ckm 765 kV S/C 765 kV S/C 765/400 kV substation 20ckm	286 181 2x1500 MVA 232 276 2x1500 MVA	(i) LOI placed on 19.01.2011 (ii) Special Purpose Vehicle acquired on 31.03.2011. (iii) Approval under section 68 on 25.11.2010. (iv) Scheduled Completion Date is 31.03.2014. (v) Transmission License granted on 12.10.2011. (vi) Tariff adoption

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
			110003	interconnecting 400 kV lines/LILO			approval on 28.10.2011.  <b>Project Completed</b>
4	Transmission System associated with IPPs of Nagapattinam/ Cuddalore Area – Package A  Estimated Cost as provided by Empowered Committee: <b>Rs. 1025 crore</b>	PFCCL	<b>Successful Bidder</b> - Power Grid Corporation of India Ltd.  <b>Address</b> – “Saudamini”, Plot No. 2, Sector-29 Gurgaon – 122001  <b>Transmission Service Provider</b> – Nagapattinam -Madhugiri Transmission Company Ltd.  <b>Address</b> – B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016	Nagapattinam Pooling Station-Salem  Salem-Madhugiri	765 kV D/C  765 kV S/C	250 KM  250 KM	(i) LOI placed on 06.03.2012. (ii) Special Purpose Vehicle acquired on 29.03.2012. (iii) Approval under section 68 on 08.10.2011. (iv) Scheduled Completion Date is 29.03.2015. (v) Transmission License – Details not available. (vi) Tariff adoption approval on 09.05.2013.
5.	Transmission System for Patran 400 kV S/S  Estimated Cost as provided by Empowered Committee:	PFCCL	<b>Successful Bidder</b> - Techno Electric and Engineering Company Ltd.  <b>Address</b> – 3F, Park Plaza, 71, Park Street Kolkata– 700016	LILO of both circuits of Patiala-Kaithal 400kV D/c at Patran (Triple snow Bird Conductor)  Creation of 2x500 MVA, 400/220 kV Substation at Patran	400 kV D/C  400/220 kVSubstation	30 KM  2x500 MVA.	(i) LOI placed on 17.09.2013 (ii) Special Purpose Vehicle acquired on 13.11.2013 (iii) Approval under section 68 on 16.05.2013. (iv) Scheduled

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	<b>Rs. 200 crore</b>		<b>Transmission Service Provider</b> – Patran Transmission Company Ltd.  <b>Address –</b> 409, 4th Floor, Skipper Corner, 88, Nehru Place, New Delhi - 110019				Completion Date is 13.05.2016. (v) Tariff adoption approval on 05.08.2014. (vi) License granted on 14.07.2014  <b>Project achieved its COD on 21.06.2016</b>
6	Eastern Region System Strengthening Scheme – VII  Estimated Cost as provided by Empowered Committee: <b>Rs. 370 crore</b>	PFCCL	<b>Successful Bidder</b> - Sterlite Grid Ltd.  <b>Address –</b> C-2 Mira Corporate Suite, Ishwar Nagar, Mathura Road, New Delhi-110065  <b>Transmission Service Provider</b> – Purulia& Kharagpur Transmission Company Ltd.  <b>Address –</b> C-2 Mira Corporate Suite, Ishwar Nagar, Mathura Road, New Delhi-110065	Purulia PSP(WB) – Ranchi (PG) Kharagpur (WBSTCL) – Chaibasa (PG)	400kV D/c 400kV D/c	140 KM 170 KM	(i) LOI placed on 17.09.2013 (ii) Special Purpose Vehicle acquired on 09.12.2013 (iii) Approval under section 68 on 29.05.2013. (iv) Scheduled Completion Date is 09.03.2016. (v) Tariff adoption approval on 20.08.2014 (vii) License granted on 30.05.2014.  <b>Schedule COD March 2016</b>

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
7	Eastern Region System Strengthening Scheme – VI  Estimated Cost as provided by Empowered Committee: <b>Rs. 540 crore</b>	PFCL	<b>Successful Bidder</b> - EsselInfraprojectsLtd.  <b>Address</b> – 513/A, 5th Floor, Kohinoor City, Kirol Road, LBS Marg, Off Bandra-Kurla Complex, Kurla (West), Mumbai - 400070  <b>Transmission Service Provider</b> – Darbhanga - Motihari Transmission Company Ltd.  <b>Address</b> – Essel House, B-10, Lawrence Road, Industrial Area, New Delhi - 110035	Creation of 2x500 MVA, 400/220 kV GIS Substation at Darbhanga with space for future extension (1x500 MVA)	400/220 kV GIS Substation	2x500 MVA	(i) LOI placed on 17.10.2013 (ii) Special Purpose Vehicle acquired on 10.12.2013 (iii) Approval under section 68 on 24.07.2013. (iv) Scheduled Completion Date is 01.07.2016. (v) Tariff adoption approval on 20.05.2014. (vi) Transmission License granted on 30.05.2014.  <b>Schedule COD July 2016</b>
				Creation of 2x200 MVA, 400/132 kV GIS Substation at Motihari with space for future extension (1x200 MVA)	400/220 kV GIS Substation	2x200 MVA	
				Muzaffarpur(PG)-Darbhanga 400 kV D/c line with triple snowbird conductor	400 kV D/C	70 KM	
				LILO of Barh – Gorakhpur 400 kV D/c line at Motihari, 400kV 2xD/C quad	400 kV D/c	50 KM	
8	Part ATS of RAPP U-7&8 in Rajasthan  Estimated Cost as	PFCL	<b>Successful Bidder</b> - Sterlite Grid Ltd.  <b>Address</b> – C-2 Mira Corporate	RAPP - Shujalpur 400kV D/C line	400 kV D/c	260 KM	(i) LOI placed on 17.09.2013 (ii) Special Purpose Vehicle acquired on

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	provided by Empowered Committee: <b>Rs. 310 crore</b>		Suite, Ishwar Nagar, Mathura Road, New Delhi-110065  <b>Transmission Service Provider</b> – RAPP Transmission Company Ltd.  <b>Address</b> – C-2 Mira Corporate Suite, Ishwar Nagar, Mathura Road, New Delhi-110065				12.03.2014 (iii) Approval under section 68 on 16.05.2013. (iv) Scheduled Completion Date is 28.02.2016. (v) Tariff adoption approval on 05.08.2014. (vi) Transmission License granted on 31.07.2014. <b>Project Completed</b>
9	Transmission System Associated with DGEN TPS (1200 MW) of Torrent Power Ltd.  Estimated Cost as provided by CEA: <b>Rs. 275 crore</b>	PFCCL	<b>Successful Bidder:</b> Instalaciones Inabensa S.A.  <b>Address:</b> C/Energia Solar, 1 41014 – Sevilla Spain	DGEN TPS – Vadodara 400 kV D/C, Twin Moose line  Navsari – Bhestan 220 kV D/C line	400 kV D/c  220 kV D/c	114 KM  19 KM	(i) Approval under section 68 on 30.01.2014. (ii) LoI issued on 19.05.2014 (iii) Approval of MoP for transfer of SPV obtained on 04.03.2015. (iv) SPV transferred to the successful bidder on 17.03.2015 <b>Schedule COD May, 2018</b>
10	System	PFCCL	<b>Successful Bidder:</b>	Gwalior 765/400 kV	400 kV D/C	50 KM	(i) LOI placed

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	strengthening for IPPs in Chhattisgarh and other generation projects in Western Region  Estimated Cost as provided by Empowered Committee: <b>Rs. 823 crore</b> <b>Rs. 1285 crore (as per cost Committee)</b>		Adani Transmission Limited the investing affiliate of the successful bidder i.e. Adani Power Limited	– Morena 400 kV D/C line Establishment of substation at Morena Vindhyachal-IV & V STPP – Vindhyachal Pool 400 kV D/C (Quad) 2nd line Sasan UMPP – Vindhyachal Pooling station 765 kV S/C line LILO of one circuit of Aurangabad – Padghe 765 kV D/C line at Pune Raigarh (Kotra) - Champa (Pool) 765 kV 2 <sup>nd</sup> S/C line Champa (pool) – Dharamjaigarh 765 kV 2 <sup>nd</sup> S/C line	400/ 220 kV 400 kV D/C 765 kV S/C 765 kV D/C 765 kV S/C 765 kV S/C	2X315 MVA 15 KM 8 KM 50 KM 100 KM 50 KM	on 28.07.2016 (ii) Special Purpose Vehicle acquired on 23.11.2015. (iii) Approval under section 68 on 24.04.2015. (iv) Transmission License granted on 29.02.2016.  <b>Project Scheduled COD Nov 2018.</b>
11	Additional System Strengthening for Sipat STPS  Estimated Cost as provided by Empowered	PFCCCL	<b>Successful Bidder:</b>  Adani Transmission Limited the investing affiliate of the successful bidder i.e. Adani Power Limited	Sipat – Bilaspur Pooling Station 765 kV S/C line Bilaspur Pooling Station - Rajnandgaon 765 kV	765 kV S/C 765 kV D/C	25 KM 180 KM	(i) LOI placed on 28.07.2016 (ii) Special Purpose Vehicle acquired on 23.11.2015. (iii) Approval

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	Committee: <b>Rs. 867 crore</b> <b>Rs. 1097 crore (as per cost Committee)</b>			D/C line			under section 68 on 30.03.2015. (iv) Transmission License granted on 07.03.2016  <b>Project Scheduled COD November 2018</b>
12	Additional System Strengthening Scheme for Chhattisgarh IPPs – Part B  Estimated Cost as provided by Empowered Committee: <b>Rs. 1930 crore</b> <b>Rs. 2260 crore (as per cost Committee)</b>	PFCL	<b>Successful Bidder:</b>  Adani Transmission Limited the investing affiliate of the successful bidder i.e. Adani Power Limited	Raipur (Pool) – Rajnandgaon 765 kV D/C line	765 kV D/C	60 KM	(i) LOI placed on 28.07.2016 (ii) Special Purpose Vehicle acquired on 23.11.2015. (iii) Approval under section 68 on 20.04.2015. (iv) Transmission License granted on 07.03.2016  <b>Project Scheduled COD July 2018</b>
				Rajnandgaon – New Pooling station near Warora 765 kV D/C line	765 kV D/C	270 KM	
				Establishment of new substation near Rajnandgaon	765/400 kV	2x1500 MVA	
13	Common Transmission System for Phase-II Generation Projects in Odisha and	PFCL	<b>Successful Bidder:</b>  <b>Sterlite Grid 3 Limited</b>	OPGC (IB TPS) – Jharsuguda (Sundargarh) 400kV D/C line with Triple Snowbird Conductor	400 kV	50 KM	(i) LOI placed on 06.01.2016 (ii) Special Purpose Vehicle acquired on

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	<p>Immediate Evacuation System for OPGC (1320 MW) Project in Odisha</p> <p>Estimated Cost as provided by Empowered Committee: <b>Rs. 2596crore (as per EC)</b> <b>Rs. 1698 crore (as per cost Committee)</b></p>			Jharsuguda (Sundargarh) – Raipur Pool 765 kV D/C line	765 kV	350 KM	<p>08.04.2016.</p> <p>(iii) Approval under section 68 on 03.06.2015.</p> <p>(iv) Transmission License is yet to be granted .</p> <p><b>Project Scheduled COD June 2019 and for element 1 is July 2017.</b></p>
14	<p>Additional inter-Regional AC link for import into Southern Region i.e. Warora – Warangal and Chilakaluripeta - Hyderabad - Kurnool 765kV link</p> <p>Estimated Cost as provided by Empowered Committee:</p>	PFCCCL	<b>Successful Bidder:</b> Essel Infracorps Limited	<p>Establishment of 765/400kV substations at Warangal (New) with 2x1500 MVA transformers and 2x240 MVAR bus reactors</p> <p>Warora Pool – Warangal (New) 765kV D/c line with 240 MVAR switchable line</p>	765/400kV	350 KM	<p>(i) LOI placed on 29.02.2016</p> <p>(ii) Approval under section 68 on 22.03.2016.</p> <p>(iii) SPV is transferred on 06.07.2016.</p> <p><b>Project Scheduled COD July 2019.</b></p>

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	Rs. 7760crore Rs. 5200 crore (as per cost Committee)			reactor at both ends.			
				Warangal (New) – Hyderabad 765 kV D/c line with 330 MVAR switchable line reactor at Warangal end.	765 kV	160 KM	
				Warangal (New) – Warangal (existing) 400 kV (quad) D/c line.	400 kV	10 KM	
				Hyderabad – Kurnool 765 kV D/c line with 240 MVAR switchable line reactor at Kurnool end.	765 kV	170 KM	
				Warangal (New) – Chilakaluripeta 765kV D/c line with 240 MVAR switchable line reactor at both ends.	765 kV	250 KM	
BIDDING PROCESS RECENTLY COMPLETED (SPV NOT TRANSFERED)							
15	ATS for Tanda Expansion TPS (2X660 MW)	PFCCL	<b>Successful Bidder:</b> Essel Infraprojects Limited	Tanda TPS –Sohawal 400 kV D/C Line	400 kV D/c	80 KM	(i) LOI placed on 09.10.2015
				Sohawal-Lucknow	400 kV D/c	120 KM	(ii) Approval

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	Estimated Cost as provided by Empowered Committee: <b>Rs. 345 crore</b> <b>Rs. 336 crore (as per cost Committee)</b>			(New) (PG) 400 kV D/C Line.			<p>under section 68 on 06.11.2013</p> <p>(iii) Out of 11 LTTCs, 8 LTTCs have signed the TSA and three LTTCs namely Punjab State Power Corporation Ltd, Tata Delhi Distribution Ltd and BSES Rajdhani Ltd has not yet signed the TSA.</p> <p>(iv) Efforts are being made for signing of TSA. CEA have conducted a meeting with Punjab State Power Corporation Limited and Tata Power Delhi Distribution on 23.10.2015 &amp; 03.12.2015.</p> <p>(v) Further, PFCCCL vide letter dated 17.12.2015 has requested JS(Trans) to intervene and called a meeting</p>

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
							<p>with balance LTTCs for signing of TSA.</p> <p>(vi) MoP has taken a meeting on 23.02.2016.</p> <p>(vii) Further MoP vide mail dated 20.06.2016 has asked CTU, CEA, NTPC, PFCCL to comment on legal options for non-signing of TSA by the LTTCs and sent the same to MoP.</p> <p><b>Project Scheduled COD January 2019.</b></p>
16	<p>Creation of new 400kV GIS Substations in Gurgaon and Palwal area as a part of ISTS:</p> <p>Rs 1759 crore (as per EC) <b>Rs. 1640 crore (as per cost)</b></p>			Aligarh–Prithala 400kV D/C HTLS line		116	<p>(i) LOI placed on 17.03.2016</p> <p>(ii) Approval under section 68 on 26.11.2015</p> <p>(iii) Out of 14 LTTCs, 13 LTTCs have signed the TSA.</p> <p>(iv) SPV is proposed to be transferred by</p>

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	Committee)						12.07.2016.
				Prithala–Kadarpur 400kV D/C HTLS line		56	<b>Project Scheduled COD June 2019.</b>
				Kadarpur–Sohna Road 400kV D/C HTLS line		8.5	
				LILO of Gurgaon– Manesar D/C line at Sohna Road S/		5	
				Neemrana (PG)– Dhonanda (HVPNL) 400kV D/C HTLS line		83	
				Creation of 400/220kV, 2X500 MVA GIS substation at Kadarpur in Gurgaon area		1000	
				Creation of 400/220 kV, 2X500 MVA GIS substation at Sohn Road in Gurgaon area		1000	
				Creation of 400/220 kV, 2X500 MVA GIS substation at PrithalainPalwal area		1000	

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
<b>BIDDING PROCESS UNDER PROGRESS</b>							
17	765 kV System Strengthening Scheme in Eastern Region (ERSS-XVIII) Rs. 4407crores	PFCCCL		Establishment of 765/400kV, 2x1500MVA substation at Medinipur		3000	<ul style="list-style-type: none"> <li>• MoP vide Gazette Notification dated 17.11.2015 appointed PFCCCL as BPC.</li> <li>• SPV incorporated on 22.01.2016</li> <li>• The RfQ is issued from 12.01.2016 with the last date of submission of response 11.02.2016.</li> <li>• CEA vide its letter dated 06.04.2016 has revised the scope of the transmission scheme and advised BPC to redo the RfQ with modified scope.</li> <li>• PFCCCL vide its letter dated 25.04.2016 has requested MoP for allowing to redo the RfQ with normal procedure instead of E-bidding.</li> </ul>
				Establishment of 765/400kV, 2x1500MVA substations at Jeerat (New)		3000	
				Ranchi (New) – Medinipur 765kV D/c line with Hexa ACSR Zebra conductor along with 240 MVAR 765 kV (765 kV, 3x80 MVAR single phase units) switchable line reactor with 750 Ω NGR in each circuit at either ends.		300	
				Medinipur - Jeerat (New) 765kV D/c line		200	

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
				with Hexa ACSR Zebra conductor along with 240 MVAR (765 kV, 3x80 MVAR single phase units) switchable line reactor with 600 Ω NGR in each circuit at Jeerat(New) end			<ul style="list-style-type: none"> <li>MoP vide MoM dated 01.06.2016 and advised PFCCCL to redo the RFQ with normal procedure.</li> <li>The RfQ is re-issued from 14.06.2016 with the last date of submission of response on 13.07.2016.</li> </ul>
				Medinipur – Haldia New (NIZ) (WBSETCL) 400kV D/c line [ACSR Quad Moose/ HTLS (equivalent to ACSR Quad Moose current rating at 85° C)]		130	
				LILO of both circuits of Chandithala – Kharagpur 400 kV D/c line at Medinipur		20	
				Jeerat (New) – Subhasgram 400 kV		120	

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
				D/c line [ACSR Quad Moose/ HTLS (equivalent to ACSR Quad Moose current rating at 85° C)]			
				Jeerat (New) – Jeerat (WB) 400 kV D/c line [ACSR Quad Moose/ HTLS (equivalent to ACSR Quad Moose current rating at 85° C)]		15	
				LILO of Jeerat (WB) – Subhasgram (PG) 400 kV S/c section at Rajarhat (PG)		5	
				2 no. 400 kV line bays at Haldia New (NIZ) (WBSETCL)			
				2 no. 400 kV line bays at Jeerat (WBSETCL)			
18	North Eastern	PFCCL		Establishment of		1000	• MoP vide Gazette

SI No	Name of the project	BPC	Implementing Agency/ Transmission service provider	Scope of work	Nominal Voltage (kV) / type	Length (km) / MVA	Remarks
	Region Strengthening Scheme –V (NERSS-V)			400/220 kV, 2x500 MVA S/S at New Kohima			Notification dated 17.11.2015 appointed PFCCCL as BPC.
	Rs. 653 crores			Imphal – New Kohima 400kV D/c line		120	<ul style="list-style-type: none"> <li>• SPV incorporated on 22.01.2016.</li> <li>• The RfQ is issued from 14.01.2016 with the last date of submission of response 15.02.2016.</li> <li>• 5 nos. RfQ response has been received and RfQ evaluation is under progress.</li> </ul>
				New Kohima – New Mariani 400kV D/c line		110	