



भारत सरकार / Government of India
विद्युत मंत्रालय / Ministry of Power
केन्द्रीय विद्युत प्राधिकरण / Central Electricity Authority
सदस्य (विद्युत प्रणाली) का कार्यालय
Office of Member (Power Systems)
सेवा भवन, आर. के. पुरम, नई दिल्ली-110066
Sewa Bhawan, R. K. Puram, New Delhi-110066



[ISO: 9001:2008]

No. 100/1/EC/2012-SP&PA/124-132

Dated: February 10, 2012

To

1. Shri S. Jayaraman
Member, CERC
Chanderlok Building,
36 Janpath,
New Delhi - 110001
2. Dr. Jaipal Singh
Member (E&C),
Central Electricity Authority
Sewa Bhawan, R.K. Puram,
New Delhi - 110066
3. Joint Secretary (Trans.),
Ministry of Power,
Shram Shakti Bhawan, Rafi Marg,
New Delhi - 110001
4. Shri I.A. Khan / R .K. Kaul
Jt. Adviser, Planning Commission,
Yojana Bhawan, Parliament Street,
New Delhi - 110001
5. Director (Transmission)
Ministry of Power,
Shram Shakti Bhawan, Rafi Marg,
New Delhi - 110001
6. Shri I. S. Jha
Director (Projects), POWERGRID
Saudamini, Plot No. 2, Sector-29,
Gurgaon, - 122001
7. Secretary, CERC
Chanderlok Building,
36, Janpath,
New Delhi-110001
8. Shri V. V. R. K. Rao
Former Chairman, CEA
B-9/C, DDA Flats, Maya Puri,
New Delhi -110064
9. Shri A. K. Mago
Former Chief Secretary(Govt. of
Maha.),
E-7, Nizamuddin West, New Delhi
(Tel. 9811088098/24354747).

Subject: **Meeting Notice** - 28th Meeting of the "Empowered Committee"

Sir,

The 28th Meeting of the "Empowered Committee" constituted in accordance with guidelines for encouraging competition in development of transmission projects, would be held **on February 17, 2012(Friday) at 3.30 PM** under the Chairmanship of Shri S. Jayaraman, Member, CERC.

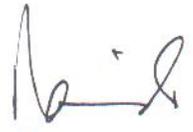
The meeting would be held in the Conference Room of CERC, Chanderlok Building, 36 Janpath, New Delhi.

The following would be discussed in the meeting:

- (1) Review of progress of transmission projects under bidding process
- (2) Confirmation on transmission schemes exempted from Tariff Based Competitive Biding (TBCB)
- (3) Need to align Standard Bid Document(SBD) for competitive bidding with the POC(Point of Connection) mechanism of sharing of transmission charges
- (4) New transmission schemes to be taken up through tariff based competitive bidding.
- (5) Transmission Schemes to be taken up by CTU under regulated tariff mechanism – for information
- (6) Constitution of the Bid Evaluation Committees
- (7) Any other item.

Detailed Agenda note is given at **Annex - Agenda**.

Kindly make it convenient to attend the meeting.



(Ravinder)
Member (Power System)

Copy to:

- i) CMD, REC, Core-4 Scope Complex, 7 Lodhi Road, New Delhi-110003
- ii) CMD, PFC, Urjanidhi, 1 Barakhmba Lane, New Delhi -110001
- iii) Shri S. K. Gupta, CEO, RECTPCL, Core-4 SCOPE Complex, 7 Lodhi Road, New Delhi – 110 003. (Fax-011-24102576)
- iv) Shri N. D Tyagi, CEO, PFC Consulting Ltd, First Floor, Urjanidhi, 1 Barakhmba Lane, New Delhi -110001 (Fax- 011-23456170)

Agenda note for the 28th meeting of the “Empowered Committee”

Date and Time: February 17, 2012 (Friday) at 15:30 Hr.

Venue: CERC, Chanderlok Building, 36 Janpath, New Delhi, New Delhi

1.0 Review of progress of transmission projects under bidding process

Sl. No.	Transmission Scheme	Estimated Line length	Estimated cost (Rs crores)
1.1	Transmission system associated with IPPs of Nagapattinam / Cuddalore Area – Package A		(Rs. 1025 Cr.)
	i) Nagapattinam Pooling Station – Salem 765kV D/c line.	250 km	650
	ii) Salem – Madhugiri 765 kV S/c line.	250 km	375
	Status: <ul style="list-style-type: none">➤ This scheme is under bidding by PFC Consulting Ltd.➤ RfP for the scheme has been issued. The last date for submission of response to RfP documents is 10-02-2012.➤ In the previous meeting of the Empowered Committee, it was decided that bidding process for this scheme may continue as of now but final call will be taken at the end of RfP stage, before the award of work. CTU has intimated that generation project of IL&FS Tamil Nadu in Nagapattinam / Cuddalore area is making good progress and the bidding process for schemes may be continued.		
	Note: <ul style="list-style-type: none">➤ PFC Consulting Ltd to give the latest status during the meeting.➤ CTU to give status of generation projects and substations at Nagapattinam PP, Salem & Madhugiri.		

Sl. No.	Transmission Scheme	Estimated Line length	Estimated cost (Rs crores)
1.2	Transmission System associated with IPPs of Vemagiri Area- Package A		(Rs. 1300 Cr.)
	i) Vemagiri Pooling Station – Khammam 765kV 1xD/c (1st ckt.) line.	250 km	650
	ii) Khammam – Hyderabad 765 kV 1xD/c (1 st ckt.) line.	250 km	650
	Status: <ul style="list-style-type: none">➤ This scheme is under bidding by REC Transmission Projects Limited.➤ RfP for the scheme has been issued. The last date for submission of response to RfP documents is 15-02-2012.➤ In the previous meeting of the Empowered Committee, it was decided that bidding process for this scheme may continue as of now but final call will be		

Sl. No.	Transmission Scheme	Estimated Line length	Estimated cost (Rs crores)
	<p>taken at the end of RfP stage, before the award of work. CTU has intimated that generation project of Samalkot Power Ltd., & GMR Rajahmundry in Vemagiri area are making good progress and the bidding process for schemes may be continued.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ REC Transmission Projects Limited to give the latest status during the meeting. ➤ CTU to give status of generation projects and substations at Vemagiri PP, Khammam & Hyderabad. 		

Sl. No.	Transmission Scheme	Estimated Line length	Estimated cost (Rs crores)
1.3	<p><u>Transmission system associated with DGEN TPS (1200 MW) of Torrent Power Ltd. AND Inter-connection between Srinagar (Uttarakhand) and Tehri</u></p>		(Rs. 453 Cr.)
	i) DGEN TPS-Vadodara 400 kV D/C (twin Moose)	100 km	100
	ii) Two no. 400 kV line bays (GIS) at Vododara (PG) S/S		20
	iii) Navsari-Bheestan 220 kV D/C line	50 km	35
	iv) Two no. 220 kV line bays at Navsari (PG) S/S		4
	v) Two no. 220 kV line bays at Bheestan (GETCO) S/S		4
	vi) Srinagar-Tehri Pooling station 400 kV D/C (Quad)	110 km	260
	vii) Two no. 400 kV line bays at Srinagar (PTCUL) S/S		10
	viii) Two no. 400 kV (GIS) line bays at Tehri Pooling Station (PG)		20
	<p>Status:</p> <ul style="list-style-type: none"> ➤ This scheme is under bidding by PFC Consulting Ltd. ➤ RfQ for the scheme has been issued and was opened on 31-01-2012. <p>Note:</p> <ul style="list-style-type: none"> ➤ CTU to give latest status of the generation projects, signing of BPTA/LTTA, submission of BG and confirm availability of space for line bays as per above scope. ➤ PFC Consulting Ltd to give the latest status during the meeting. 		

Sl. No.	Transmission Scheme	Estimated Line length	Estimated cost (Rs crores)
1.4	Evacuation System for Vizag-Vemagiri Projects- Hinduja (1040 MW)		
	i) Generation switchyard - Vemagiri-II Pooling Station 400 kV D/c (Quad) line	175	315
	ii) Khammam (new)-Nagarjun Sagar 400 kV D/C line	150	165
<p>Status:</p> <ul style="list-style-type: none"> ➤ This scheme is under bidding by REC Transmission Projects Limited. ➤ RfQ for the scheme has been issued. ➤ CTU has informed that the Hinduja generation developer is not coming forward to sign BPTA/LTAA and submission of the requisite Bank Guarantee. However, they have signed BPTA/LTAA with GMR for their 768 MW gas based project in Vemagiri which includes Khammam – Nagarjun Sagar 400kV D/C line under the scope for evacuation of power from the GMR project. ➤ In view of above, the Hinduja Generation Switchyard – Vemagiri-II Pooling Station line may be dropped from the scope. <p>Note:</p> <ul style="list-style-type: none"> ➤ CTU to give latest status of the generation projects, signing of BPTA/LTAA, submission of BG and confirm availability of line bays as per above scope. ➤ REC Transmission Projects Limited to give the latest status during the meeting. <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> ➤ It is to be debated whether the bidding process may be resumed after deleting item no.(i) above in case the Hinduja issue is settled. 			

2.0 Confirmation on transmission schemes exempted from Tariff Based Competitive Bidding

The Ministry of Power, based on the meeting of the Group of Ministers on Power Sector held on 29-10-2010, has clarified vide letter dated December 9, 2010 that the following are exempted from the tariff based competitive bidding:

- (i) Upgradation / strengthening of the existing transmission lines/ sub-stations.
- (ii) Projects for which the BPTA(s)/ TSA(s) has been signed on or before 5.1.2011

The above clarification was issued with respect to the clause 5.1 and 7.1 of the Tariff Policy.

Subsequently, on 8th July 2011, the Para 7.1 of the Tariff Policy was amended. The revised sub-Para 7.1(6) states that the following are exempted from competitive bidding route:

- (i) First two experimental works for 1200 KV HVDC line

- (ii) Works required to be done to cater to an urgent situation or which are required in a compressed time schedule by CTU/STUs as decided by the Central Government on a case to case basis.
- (iii) The intra-state transmission projects by STUs will be exempted from competitive bidding route for further 2 years beyond 6.1.2011.

In view of the above, a doubt has arisen whether the exemption conveyed by the Government earlier vide letter dated December 9, 2010 are still valid. From a practical point of view, it is important that exemptions conveyed/ clarified on December 9, 2010 should be continued even after amendment to the Tariff Policy dated July 8, 2011. This may be confirmed by the Empowered Committee / Ministry of Power. Further, under item(i) 'HVDC should be replaced by 'EHVAC'.

3.0 Need to align Standard Bid Document(SBD) for competitive bidding with the POC(Point of Connection) mechanism of sharing of transmission charges.

The existing RfQ, RfP and TSA documents for Tariff Based Competitive Bidding are based on the regional postage stamp method of sharing of transmission charges. The sharing of transmission charges of the ISTS is now based on the methodology of Point of Connection. Using existing SBD under the present POC based mechanism is causing considerable difficulties in the carrying out the bidding process. Accordingly, there is a need to align Standard Bid Document for competitive bidding with the POC(Point of Connection) mechanism.

The Empowered Committee may recommend to the Government to revise the Standard Bid Document (SBD) aligning with the POC mechanism.

4.0 New transmission schemes to be taken up through Tariff Based Competitive Bidding.

4.1 The following schemes may be taken up for TBCB as one package:

Sl. No.	Transmission Scheme	Estimated Line Length (km)	Estimated Cost (Rs. Crores)	Remarks
A	Bairasuil HEP – Sarna 220kV line (i) Bairasuil HEP – Sarna 220kV D/c	80	70	See Explanation 4.1.1 below
B	Transmission System for Patran 400kV S/S (i) Creation of 2x500 MVA , 400/220 kV Substation at Patran (ii) LILO of both circuits of Patiala-Kaithal 400kV D/c at Patran (Triple snow Bird Conductor)	30	100	See Explanation 4.1.2 below

	(iii) 400kV Bays (iv) 220kV Bays (v) Space for spare Bays	6 8 400kV - 6 no. 220kV-6 no.		
C	ATS of Unchahar TPS i) Unchahar – Fatehpur 400kV D/C line	60	80	See Explanation 4.1.3 below
D	Part ATS of RAPP U-7&8 in Rajasthan (i) RAPP - Shujalpur 400kV D/C line (ii) Bays at Shujalpur? (iii)	260	290	See Explanation 4.1.4 below

Total cost of the package ‘Northern Region Package-“A”(of 2012)’ is estimated to be Rs. 640 Cr.

Explanation 4.1.1: Bairasuil HEP – Sarna 220kV D/c

The system planned for improving reliability of evacuation of power from Bairasuil HEP as the existing evacuation lines are very old and facing number of outages. The system has been approved in the Standing Committee as regional strengthening scheme.

- Bairasuil – Sarna 220 kV D/c line bunched at both ends.
- Provision of 1 no. of 220 kV bay at Bairasuil by NHPC
- Provision of 1 no. of 220 kV bay at Sarna (PSTCL) by POWERGRID or PSTCL – CTU to coordinate

Note:

- CTU to coordinate bays at Bairasuil HEP by NHPC and Sarna S/S by PSTCL/POWERGRID

Explanation 4.1.2: Transmission System for Patran 400/220kV S/S

The above system has been planned as regional strengthening for improving power supply arrangement in Patiala /Sangrur district of Punjab.

- Establishment of new 400/220 kV S/s with 2x500 MVA ICTs at Patran
- LILO of both circuits of Patiala-Kaithal 400kV D/c line- (Triple snow Bird Conductor)

Note:

- CTU to confirm the requirement for 6 no. of 400kV bays and 8 no. of 220kV bays at Patran

- CTU to confirm requirement of space for 220kV spare bays at Patran 400/220kV S/S
- CTU to provide tower locations in and around Patran for deciding location of the new S/S.

Explanation 4.1.3: ATS of Unchahar TPS of NTPC

NTPC has proposed to expand the existing generation of 5x210 MW by 1x500 MW. NTPC has indicated that expansion project is likely to be commissioned by March, 2015.

NTPC have indicated that they have applied for LTA on behalf of their beneficiaries i.e constituents of Northern region which has been agreed by the beneficiaries of NR in the Standing Committee meeting.

- Unchahar-Fatehpur 400kV D/c

Note:

- CTU to confirm availability of 2 no. 400kV bays at Unchahar switchyard of NTPC
- CTU to provide bays at POWERGRID's Fatehpur S/S

Explanation 4.1.4: Part ATS of RAPP U-7&8 in Rajasthan

RAPP – Shujalpur 400kV D/C line is part of transmission system for RAPP U7&8 of NPCIL. The other line i.e. RAPP – Jaipur(South) with one circuit LILO at Kota is being implemented by POWERGRID. The RAPP – Shujalpur 400kV D/C line was earlier identified to be implemented through TBCB route (as RAPP-Nagda line).

Note:

- CTU to confirm availability of 2 no. 400kV bays at RAPP 7&8 switchyard
- CTU to confirm bays at POWERGRID's Shujalpur S/S
- CTU to confirm requirement of line reactors for the above line (50 MVAR on each circuit at each end)
- CTU to confirm estimated length and cost of the scheme
- CTU to confirm schedule of RAPP U7&8 generation

5.0 Transmission Schemes to be taken up by CTU under regulated tariff mechanism

The transmission schemes proposed by CTU to be taken up under Regulated Tariff Mechanism(RTM), as per the exemption provided in the Tariff Policy (Para 7.1) are given at **Annex-I.**

This is submitted for information of the Empowered Committee.

6.0 Constitution of Bid Evaluation Committees

6.1 Bid Evaluation Committee (BEC) for “Transmission system associated with DGEN TPS (1200 MW) of Torrent Power and Interconnection between Srinagar (Uttarakhand) and Tehri”.

The names of the following members are proposed for the BEC of the above project. It is requested that Empowered Committee may approve the nominations and constitute the BEC for “Transmission system associated with DGEN TPS (1200 MW) of Torrent Power and Interconnection between Srinagar (Uttarakhand) and Tehri” project.

Sl. No.	Name	Designation
1.	Shri Vinod Pande GM, SBI Capital Markets, 6 th floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418460-64, Fax: 011 -23418773	Chairman
2.	Sh. D. N. Joshi , Director (Projects), Power Transmission Corporation of Uttrarakhand Ltd.,, 7-B, Lane No.1, Vasant Vihar Enclave, Dehradun-248001 Mobile No. - 09411114953	Member
3.	Sh., G. S. Kalsi MD, CSP Transmission company Ltd., Vidyut Sewa Bhawan, Dagaina, Raipur- 492013 Phone No. 0771-2574500, Mobile No. - Fax No. 0771-2241141 email:	Member
4.	Shri N. C. Jain, Chief Engineer (F&CA) Central Electricity Authority Room no. 402, 4 th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26102088, Mobile: 9971009793	Member
5.	Shri Ravinder Gupta, Director (SP&PA) Central Electricity Authority Room no. 306, 3 rd floor, Sewa Bhawan, R.K.Puram, New Delhi-110066	Member
6.	Shri Y. K. Raizada, Director(Technical), Rajasthan Rajya Vidyut Prasaran Nigam Ltd(RVPN), Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur - 302005	Member
7.	Chairman of SPV constituted by PFC Consulting Ltd.	Convener - Member

6.2 Constitution of Bid Evaluation Committee for “Package-C: Evacuation System for Vizag-Vemagiri projects: Hinduja (1040 MW)”

The names of the following members are proposed for the BEC of the above two projects. It is requested that Empowered Committee may approve the nominations and constitute the Bid Evaluation Committees.

Sl. No.	Name	Designation
1.	Shri A Pandey GM, SBI Capital Markets, 6 th floor, World Trade Tower, Barakhamba Lane, Connaught Place, New Delhi- 110001 Phone No. 011-23418770, Fax: 011 -23418773	Chairman
2.	Shri M.A. Rawther, Member (Tr. & Gen opn.), KSEB, Vidhyuti Bhavnam, Pattom, Thiruvananthapuram- 695004 Mobile No. – 09446008899	Member
3.	Shri P. Sri Rama Rao Director (GO), APTRANSCO, Vidhyut Souda, Hyderabad-500082 Mobile No. - 09491366666	Member
4.	Shri N. C. Jain, Chief Engineer (F&CA) Central Electricity Authority Room no. 402, 4 th floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone No. 011-26102088, Mobile: 9971009793	Member
5.	Sh. Ravinder Gupta, Director (SP&PA) Central Electricity Authority Room no. 306, 3 rd floor, Sewa Bhawan, R.K.Puram, New Delhi-110066 Phone no. 011- , Mobile: e-mail:	Member
6.	Chairman of SPV constituted by REC Transmission Projects Limited	Convener - Member

- **REC TPCL may take the consent of Shri A Pandey to chair the above Bid Evaluation Committees.**

6.3 Modification of the Bid Evaluation Committee constituted for two schemes namely, (i) “Transmission system associated with IPPs of Vemagiri Area- Package-A” and (ii) “Transmission system associated with IPPs of Nagapattinam / Cuddalore Area- Package A”

Shri S.K Ray Mohapatra, Director, CEA is one of the representatives of CEA in the Bid Evaluation Committees for the two schemes viz. (i) “Transmission system associated with IPPs of Vemagiri Area- Package-A” and (ii) “Transmission system associated with IPPs of Nagapattinam / Cuddalore Area- Package-A”. He has been transferred to NERPC, Shillong and thus is not in a position to represent CEA.

Shri Ravinder Gupta, Director, CEA is now proposed to replace him for the above Bid Evaluation Committees.

Empowered Committee may kindly agree to the above modification.

REC Transmission Projects Limited / PFC Consulting Ltd may make modifications in their respective BECs.

7.0 Any other item.

Any other item with the permission of Chair.

**The transmission schemes proposed by CTU to be taken up under
Regulated Tariff Mechanism (RTM), as per the exemption provided in the
Tariff Policy (Para 7.1)**

1.0 Transformation capacity augmentation

Following augmentation of the transformer capacity at the existing 400/220kV sub-stations of POWERGRID has been agreed in the meetings of the Standing Committee on Power System Planning of Northern, Western and Southern Region, details given as below

Sl. No	Substation	Transformation Capacity (MVA)		Agreed in SCM / RPC
		Existing	Proposed	
1.	Hyderabad PG (Ghanapur)	3x315	1x500	33 rd meeting of SCM held on 20.10.2011
2.	Warangal	2x315	1x500	
3.	Khammam	2x315	1x500	
4.	Vijayawada	2x315	1x500	
5.	Gooty	2x315	1x500	
6.	Cuddapah	2x315	1x500	
7.	Melakottaiyur	2x315	1x500	
8.	Somanahalli	2x500	1x500	
9.	Mysore	2x315	1x500	
10.	Narendra	2x315	1x500	
11.	Pugalur	2x315	1x500	
12.	Trichy	2x315	1x500	
13.	Amritsar	2x315	1x500	18 th NRPC meeting held on 27/11/2010
14.	Kishenpur	7x105	4x105	21 st / 24 th NRPC Meetings & 30 th SCM held on 23.12.2011
15.	Allahabad	2x315	1x315	
16.	Bassi	2x315	1x500	
17.	Meerut	3x315	1x500	
18.	Ludhiana	3x315	1x500	30 th SCM held on 23.12.2011
19.	Moga	3x250	2x500	

Sl. No	Substation	Transformation Capacity (MVA)		Agreed in SCM / RPC
		Existing	Proposed	
			(replacement of 2x250 MVA transformer by 2x500 MVA)	
20.	Samba	7x105	3x105	
21.	Gurgaon	2x315	1x500	
22.	Hamirpur	7x105	3x105	
23.	Jullandhar	2x315	1x500	
24.	Dehar	1x250	3x105	
25.	Panchkula	2x315	1x500	
26.	Parbati Pooling station	-	7x105	
27.	Wagoora	13x105	1x105	
28.	Bhadrawati	-	1x315	33 rd meeting of SCM held on 21.10.11
29.	Purnea	3x100	2x160 Replacement of existing 2x100 MVA, 220/132 kV transformer with new 2x160 MVA transformers	16 th meeting of ERPC held on 18 th December, 2010

2.0 Provision of bays in existing Substations in Western Region

- i) 2 no. of 400kV bays at Indore (PG) substation for termination of Indore (PG) – Pithampur (MPPTCL) 400kV D/c line being constructed by MPPTCL.
- ii) 2 no. of 220kV feeder bays at Pirana (PG) 400/220 kV substation for drawal of power by GETCO.
- iii) 1 no 220 kV bay at Chamera Pooling station for drawal of power by Himachal Pradesh

Above transmission scheme was approved in the 31st/ 32nd meeting of the Standing Committee on Power System Planning of Western Region and 29th meeting of Standing Committee on Power System Planning of Western Region.

3.0 Provision of reactors in existing Substations of POWERGRID

- i) Provision of 1x80 MVAR switchable line reactor at Solapur (PG) for Solapur(PG) – Karad line.
- ii) Bus reactors at POWERGRID substations to mitigate the over voltage problems in Western Region grid.

Sl. No.	Substation	Reactive Compensation
1	Jabalpur (PG)	125 MVAR B/R
2	Khandwa (PG)	125 MVAR B/R
3	Shujalpur (PG)	125 MVAR B/R
4	Bhatapara (PG)	125 MVAR B/R
5	Raigarh (PG)	125 MVAR B/R
6	Aurangabad (PG)	125 MVAR B/R
7	Biharshariff	125 MVAR B/R
8	Dehar	2x63 MVAR B/R
9	Kota	1x50 MVAR B/R (existing reactor at Merta to be shifted to Kota)

Provision of above reactors has been approved in the 33rd meeting of the Standing Committee on Power System Planning of Western Region held on 21.10.11 and 30th meeting of Northern region held on 23-12-2011.

4.0 Provision of Static VAR Compensators at existing Substations of POWERGRID

Lundhiana, Kankroli and New Wanpoh are Existing/Under Construction 400/220kV Substations of POWERGRID. Looking into grid requirements following SVC were agreed

- o Ludhiana S/s - (+) 600 MVAR / (-) 400 MVAR
- o Kankroli S/s - (+) 400 MVAR / (-)300 MVAR
- o New Wanpoh S/s - (+) 300 MVAR / (-200) MVAR

5.0 Provision of Spare Converter Transformers for HVDC back to back stations at Chandrapur and Vizag.

The HVDC back-to-back systems at Chandrapur & Vizag (Gazuwaka) were planned for exchange of power between the adjoining regions during contingency conditions. Recently these back-to back links are being used as power evacuation corridor with high utilization factor. To improve the reliability and reduce the downtime of HVDC back to back systems in event of failure of converter transformer, the following spare converter transformers were agreed in the 33rd Standing Committee on Power System Planning of Southern Region held and Western Region held on 20.10.11 and 21.10.11 respectively:

- i) At Chandrapur (3 nos.)
 - 3x Single phase converter transformers - 400/93/93kV, 234 MVA each.
- ii) At Vizag(Gazuwaka)(1+1 no.)
 - 1x Single phase converter transformers - 400/93/93kV, 234 MVA, and
 - 1x Single phase converter transformers - 400/74.5/74.5kV, 201.2 MVA.

6.0 Provision of Spare Transformers and Reactors in NER

For improving grid reliability against failure of major equipments it was decided in the 12th NER Power Committee Meeting held on 15th November, 2011 at Amritsar to provide following spare transformer and reactors

- Reactor: (a) One no. of 63MVAR, 420kV (at Balipara)
- Transformers: (a) One no. of 100MVA, 220/132kV (3-Phase) (at Dimapur)
- (b) One no. of 16MVA, 132/33kV (3-Phase) (at Nirjuli)
- (c) One no. of 5MVA, 132/33kV (1-Phase) (at Ziro)

7.0 Loop in Loop out of Jullandhar-Hamirpur 220KV D/c at Hamirpur 400/220kV S/s of POWERGRID

Jullandhar-Hamirpur is a 220kV D/c is an existing ISTS line of POWERGRID, which is to be LILO at Hamirpur POWERGRID through a LILO of about 4 kms. The Loop In loop out (LILO) of Jullandhar-Hamirpur 220kV D/c is urgently required for stable/reliable operation of the Parbati Pooling – Hamirpur – Amritsar 400 kV line as well as for effective utilization of Hamirpur 400/220 kV substation.

The above augmentation of bays, transformers and reactors are to be carried out at the existing substations of the POWERGRID. As per the clarification issued by Ministry of Power dated 09.12.2010, the up-gradation / strengthening of existing transmission lines and substations are exempted from Tariff based competitive bidding. Therefore it is proposed that the same may be implemented by POWERGRID.